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NOVEMBER

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DIVISION

COMPANY



# U.S. DEPARTMENT OF COMMERCE

## OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

November 5, 1968

Volume 856

Number 1

### PATENTS

### NOTICES

#### Board of Appeals Decisions Rendered in the Month of August 1968

Examiner affirmed	146
Examiner affirmed in part	18
Examiner reversed	41
Total	205

#### Foreign Patents Received in the Search Center as of September 30, 1968

Source	Date received	Highest number
Australia:		
(Abstracts)	Sept. 30, 1968	39,101/68
(Patents)	Sept. 27, 1968	281,999
Austria	Sept. 24, 1968	263,865
Belgium	May 6, 1968	676,000
Canada	Sept. 23, 1968	795,000
Czechoslovakia	Sept. 17, 1968	125,350
Denmark	Aug. 6, 1968	109,595
East Germany	Sept. 27, 1968	63,444
Egypt	June 28, 1967	6,873
Finland	June 24, 1968	36,828
France:		
(Patents)	Sept. 24, 1968	1,523,900
(Additions)	Sept. 17, 1968	91,200
(Medicaments)	Sept. 23, 1968	5,300 M
(Additions)	May 2, 1968	162 CAM
Germany:		
(Auslegeschriften)	July 29, 1968	1,268,080
(Patents)	July 29, 1968	1,254,093
Great Britain	Sept. 17, 1968	1,125,500
India	Apr. 11, 1968	101,130
Ireland	Sept. 23, 1968	27,499
Italy	Apr. 25, 1968	670,000
Japan	Sept. 25, 1968	19,000/68
Netherlands:		
(Octrooiaanvragen)	July 29, 1968	6,390/68
(Patents)	Aug. 22, 1968	124,498
Norway	Sept. 23, 1968	113,217
Pakistan	Feb. 3, 1964	112,446
Philippine Republic	Apr. 13, 1962	458
Poland	Sept. 23, 1968	55,599
Rumania	Aug. 6, 1968	50,631
Sweden:		
(Utläggningsskrifter)	Sept. 17, 1968	301,457
(Patents)	Aug. 22, 1968	220,482
Switzerland	Sept. 3, 1968	458,250
U.S.S.R.	Sept. 13, 1968	215,820

#### Final Rejection—Time for Response

In clarification of the Notice of August 7, 1967, published in the OFFICIAL GAZETTE of August 29, 1967 (841 O.G. 1411), the filing of a timely response after a final rejection is construed as including a request for a one month extension of the shortened statutory period.

If the response is complete but fails to place the application in condition for allowance, the request will be granted. The entry of any further amendments filed during the additional month shall be restricted to those which *prima facie* place the application in condition for allowance.

RICHARD A. WAHL,  
Assistant Commissioner.

Sept. 26, 1968.

#### Disclaimer

3,265,082.—Milton Perlman, Detroit, Mich. VALVE AND DIVERTER CONSTRUCTION. Patent dated Aug. 9, 1966. Disclaimer filed Oct. 3, 1968, by the assignee, Modern Faucet Mfg. Co.

Hereby enters this disclaimer to claims 1 and 2 of said patent.

#### Defensive Publication Program

The open season of the New Defensive Publication Program, originally announced in the OFFICIAL GAZETTE of May 7, 1968 (850 O.G. 1) as terminating November 1, 1968, is hereby extended. Accordingly, until January 1, 1969, this program will be open for any pending application awaiting first action by the Patent Office at the time of the request without regard to the filing date of that application.

As originally announced this program will continue to be open until further notice to any applicant having an application awaiting action by the Patent Office and who files a written request no later than eight (8) months after the earliest U.S. effective filing date of the designated application.

RICHARD A. WAHL,  
Assistant Commissioner.

Oct. 1, 1968.

Australia: First 2,000 incomplete  
Belgium: First printed 493,079/1950  
Canada: First printed 445,931/1948  
Czechoslovakia: Not received between 81,300/1952 and 91,901/1959  
Finland: First printed 19,428/1941  
Hungary: First 500 incomplete  
Latest 140,582/1951  
Ireland: First received 10,000/1929  
Italy: First 243,000 incomplete  
Rumania: First received 40,380/1957  
U.S.S.R.: Not received between 2,496/1928 and 116,000/1958  
Yugoslavia: First received 10,001/1933  
Latest 16,461/1941

#### New Applications Received During August 1968

Patents	7445
Designs	371
Plant Patents	6
Reissues	27
Total	7849

#### Issue—Nov. 5, 1968

Patents	1250—No. 3,408,657 to No. 3,409,906, incl.
Designs	86—No. 212,580 to No. 212,665, incl.
Reissues	5—No. 26,482 to No. 26,486, incl.
Total	1341

# PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

## CONDITION OF PATENT APPLICATIONS AS OF OCTOBER 21, 1968

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
* Denotes date of oldest application for each Operation		
<b>CHEMICAL EXAMINING OPERATION</b>		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director..... Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	6-17-68	1-27-64
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director..... Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	5-10-66	*6-10-63
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—L. J. BERCOVITZ, Director..... Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	7-20-66	2-17-64
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBER- MAN, Director..... Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*1-24-68	6-17-63
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director..... Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	5-09-66	4-30-64
<b>ELECTRICAL EXAMINING OPERATION</b>		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director..... Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	7-27-66	4-01-64
SECURITY, GROUP 220—S. BOYD, Director..... Ordnance, Firearms and Ammunition; Radar, Underwater Signaling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	5-18-67	4-27-65
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Director..... Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*10-12-65	*10-23-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director..... Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	1-11-66	8-12-63
PHYSICS, GROUP 280—R. L. EVANS, Director..... Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	10-24-66	4-21-65
DESIGNS, GROUP 290—S. BOYD, Director..... Industrial Arts; Household, Personal and Fine Arts.	2-01-68	4-14-67
<b>MECHANICAL EXAMINING OPERATION</b>		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director..... Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	4-03-67	10-01-65
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director..... Manufacturing Processes; Assembling; Combined Machines; Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding; Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Wood- working; Tools; Cutlery; Jacks.	12-02-66	2-11-65
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, DI- rector..... Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Ex- cavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletory; Printing; Type- writers; Stationery; Information Dissemination.	12-06-66	7-15-64
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director..... Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	10-06-67	12-28-66
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director..... Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Struc- tures.	5-01-67	3-26-65
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUUGH, Director..... Fluid Handling, Including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manu- facture; Sewing Machines; Winding and Reeling.	*6-01-66	*5-31-63
Total number of pending applications (excluding Designs).....		187,566
Total number of Design applications pending.....		2,527

Expiration of patents: The patents within the range of numbers indicated below expire during November 1968, except those which may have ex-  
pired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law  
619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their term curtailed by disclaimer under the provisions  
of 35 U.S.C. 253.

Patents..... Numbers 2,573,674 to 2,576,908, inclusive  
Plant Patents..... Number 1,048

# DEFENSIVE PUBLICATIONS

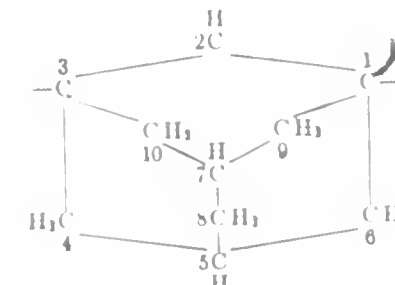
PUBLISHED NOVEMBER 5, 1968

Published at the request of the applicant or owner in accordance with Notice of Apr. 11, 1968, 849 O.G. 1221. The abstracts  
are identified by serial number of the applications and arranged in chronological order. The heading of each abstract of applica-  
tion published herein indicates the number of pages of specification, including claims and sheets of drawing contained in the  
application as originally filed. The files of these applications are available to the public for inspection and reproduction may  
be purchased for 30 cents a sheet.

Applications published under the Defensive Publication Program have not been examined as to the merits of alleged  
invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

**646,766**  
**ADAMANTANE DERIVATIVES**  
Heinz Fritz Reinhardt, Claymont, Del., assignor to E. I.  
du Pont de Nemours and Company, Wilmington, Del.,  
a corporation of Delaware  
Continuation-in-part of application Ser. No. 106,172,  
Apr. 28, 1961, Division of application Ser. No.  
265,062, Mar. 14, 1963. This application Feb. 8,  
1967. Published Nov. 5, 1968  
Class 260—75

**No Drawing. 38 Pages Specification**  
A new class of synthetic polymers are prepared from  
monomeric compounds having the structural formula:  
R—A—(X)<sub>m</sub>—A—R' in which A is a 1,3-adamantylene  
group (a 1,3-radical of adamantane(tricyclo[3.3.1.1<sup>3,7</sup>]  
decane)) which has the formula



and X, R and R' are substituents capable of combining  
with a tertiary alkyl carbon atom (i.e., t-butyl radical)  
to form stable compounds, X being a divalent radical.  
R and R' may be the same or different and may be hy-  
drogen or a monovalent radical, m is an integer equal  
to 0 or 1, and at least one of R and R' has a molecular  
weight greater than six when m is zero.

When m in the above structural formula is zero, the  
monomers are designated as 3,3'-derivatives of -1,1'-bi-  
adamantane and are useful in forming polyamides, poly-  
ethers, and polyesters containing adamantylene radicals  
as well as polymers containing adamantylene groups in  
the backbone of the polymer chain.

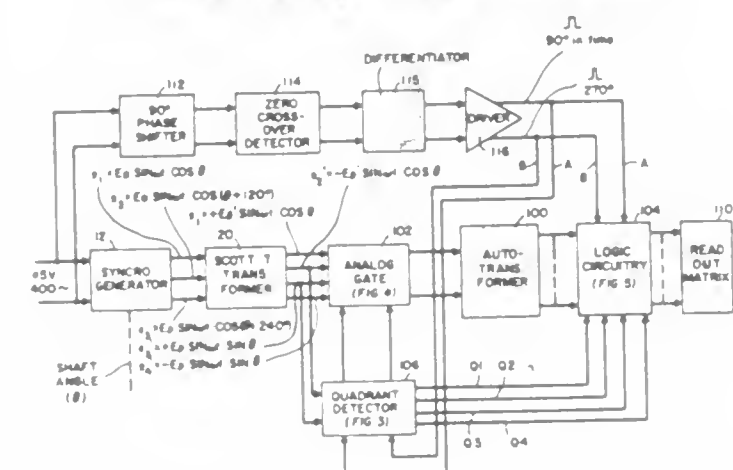
When m is in the above structural formula, the mon-  
omers are bis(adamantyl) compounds and are useful in  
preparing polymers in which the backbone of the poly-  
mer contains spaced adamantylene radicals.

**668,265**  
**CATALYST AND CATALYTIC PROCESS FOR  
PREPARING UNSATURATED ALIPHATIC  
ALDEHYDES AND MONOCARBOXYLIC  
ACIDS FROM OLEFINS**  
Howard S. Young and Edgar L. McDaniel, Kingsport,  
Tenn., assignors to Eastman Kodak Company, Roch-  
ester, N.Y., a corporation of New Jersey  
Original application June 15, 1964, Ser. No. 375,284;  
Divided and this application July 21, 1967. Pub-  
lished Nov. 5, 1968  
Class 252—456

**No Drawing. 3 Pages Specification**  
A catalyst comprising a calcined mixture of an oxide  
of arsenic and a heteropoly acid of molybdenum con-  
taining manganese as the central atom, or salts of said  
heteropoly acids, on a carrier. The carrier is preferably

silica. The catalysts are useful in the production of acro-  
leln, methacrolein, acrylic acid and methacrylic acid by  
oxidizing propylene or isobutylene.

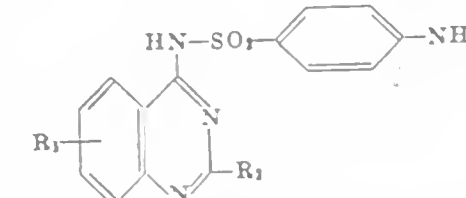
**479,443**  
**SYNCHRO SHAFT POSITION ANALOG-TO-  
DIGITAL CONVERTER**  
Roy Y. Kakuda, 1822 Corinth Ave.,  
Los Angeles, Calif. 90025  
Filed Aug. 13, 1965. Published Nov. 5, 1968  
Class 340—347  
3 Sheets Drawings. 4 Pages Specification



A synchro shaft position to digital converter in which  
three-phase signal voltages are transformed into two-phase  
signals that are applied to a multi-tapped autotransformer  
and a quadrant detector. Digital logic circuitry coupled  
to the quadrant detector and to each tap senses the tap  
at which the signal output registers a null when compared  
with a reference signal.

**718,011**  
**SUBSTITUTED-4-SULFANILAMIDOQUINAZOLINE  
PROCESS AND INTERMEDIATE**  
Tellis A. Martin, 6339 Kratzville Road,  
Evansville, Ind. 47710  
Continuation of application Ser. No. 536,318, Mar. 22,  
1966. This application Apr. 1, 1968. Published Nov. 5,  
1968  
Class 260—239.75

**No Drawing. 4 Pages Specification**  
N<sup>1</sup>-(2-chloro-4-quinazolinyl)sulfanilamides) of the for-  
mula



wherein R<sub>2</sub> is alkoxy, alkenoxy, alkoxy-substituted-alk-  
oxy and alkylthio containing up to 6 carbon atoms, and  
R<sub>3</sub> is hydrogen, methyl, methoxy, dimethoxy, or chlo-  
rine attached to the 6, 7, or 8 positions, and the alkali  
metal salts of these compounds are prepared by the re-  
action of 2,4-dichloro quinazolines and two molecular



proportions of an alkali metal salt of sulfanilamide to produce an N<sup>1</sup>-(2-chloro-R<sup>5</sup>-4-quinazoliny) sulfanilamido alkali metal salt. The said N<sup>1</sup>-(2-chloro-R<sup>5</sup>-4-quinazoliny) sulfanilamido alkali metal salt is heated under anhydrous conditions (50–150° C.) with at least one molecular proportion of an alkali metal salt reactant selected from the group consisting of alkoxide, alloy-oxide, alkoxy-substituted-alkoxide, or alkylmercaptide using an inert organic reaction media to produce the desired products.

594,364

#### PURIFICATION OF RECYCLE METHYLENE CHLORIDE EMPLOYED IN INTERFACIAL POLYMERIZATION PROCESSES

Arthur Nersasian, Wilmington, Del., and Robert Paul Madrulli, Beaumont, Tex., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Nov. 15, 1966. Published Nov. 5, 1968

Class 260—77.5

No Drawing. 7 Pages Specification

In a process of preparing polyurethanes, polyamides, and polyureas by reacting a bischloroformate with a diamine by interfacial polymerization, using methylene chloride as the organic solvent phase and sodium carbonate solution as the aqueous phase, the improvement comprising steam-distilling the reaction mixture to remove methylene chloride, decanting the methylene chloride distillate from the water distillate, treating the methylene chloride distillate with solid soda-lime to remove carbon dioxide and water, and thereafter returning the treated methylene chloride to the process for re-use. The process can be conducted continuously.

This treatment of recycled methylene chloride removes dissolved CO<sub>2</sub> to maintain (1) a desired rate of polymerization and (2) an acceptable quality of polymer. The presence of CO<sub>2</sub> in the recycled methylene chloride reduces the amount of effective base in the polymerization process and lowers the molecular weight of the polymer product.

Other organic bases which can be used include alkali metal and alkaline earth hydroxides and alkali metal carbonates.

594,371

#### TOLYLENE DIISOCYANATE COMPOSITIONS STABILIZED AGAINST LIGHT DISCOLORATION

John R. Cooper, Hockessin, and William C. Percival, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Nov. 15, 1966. Published Nov. 5, 1968

Class 260—453

No Drawing. 10 Pages Specification

2,4-tolylene diisocyanate, 2,6-tolylene diisocyanate and mixtures thereof are stabilized against discoloration from exposure to light by dissolving therein about 0.005–0.5% by weight of 2,6-di-tertiary-butyl-4-methylphenol and about 0.005–0.5% by weight of at least one ultraviolet light absorber from the group (a) 2-hydroxybenzophenone, (b) 2-(2-hydroxyphenyl)-benzotriazole, (c) amides of 2-(2-aminophenyl)-benzotriazole and (d) substituted derivatives of (a), (b) and (c) in which at least one hydrogen on the carbocyclic rings present in (a), (b) and (c) is replaced with at least one of the groups; alkyl, halo, alkoxy or hydroxy. In preferred compositions, the 2,6-di-tertiary-butyl-4-methylphenol and ultraviolet light absorber are each present in the amount of 0.01–0.10% by weight. Derivatives of 2-(2-hydroxyphenyl)-benzotriazole, and in particular 2-(2-hydroxy-5-methylphenyl)-benzotriazole and 2-(2-hydroxy-3-tertiary-butyl-5-methylphenyl)-7-chlorobenzotriazole, are preferred ultraviolet light absorbers.

608,999

#### VULCANIZATION OF FLUORINATED ELASTOMERS WITH AMINES AND HYDRAZINE

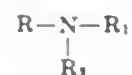
William John Keller, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Jan. 13, 1967. Published Nov. 5, 1968

Class 260—87.7

No Drawing. 4 Pages Specification

Fluorine-containing polymers are vulcanized with hydrazine and a primary, secondary, or tertiary alkyl amine or a quaternary aliphatic ammonium salt. The combination enables rapid, thorough curing without severe scorch. About 0.004 to 0.06 mole of hydrazine (preferably 0.01 to 0.03) and about 0.009 to 0.015 mole of amine (preferably 0.005 to 0.01) are added per 100 parts by weight of polymer. Elastomeric copolymers of vinylidene fluoride with hexafluoropropene, tetrafluoroethylene, or perfluoro(methyl vinyl ether) are preferred. Derivatives which yield hydrazine during vulcanization are preferred. Representative derivatives are the hydrate, hydrochloride, carbamate, salts of a dicarboxylic acid such as oxalic or sebacic, reaction products with hydroquinone, or reaction products containing the aliphatic amine components of the invention. Preferred derivatives are the oxalates, hydrates, and the aliphatic amine reaction products. Amines typically employed are of the formula



where R is C<sub>1</sub> to C<sub>16</sub> alkyl and R<sub>1</sub> and R<sub>2</sub> are hydrogen or C<sub>1</sub> to C<sub>16</sub> alkyl. Preferred compounds are diethyl amine, triethyl amine, n-butylamine, and tetraethylammonium chloride. Amines can be added as salts such as oxalates, hydrochlorides, carbamates, reaction products with hydroquinone, or reaction products containing hydrazine. The latter include reaction products of hydrazine, amine, and carbon dioxide.

617,877

#### COOKING CONTAINERS FOR FOOD HAVING POLY(1,4-CYCLOHEXANEDIMETHYLENE TEREPHTHALATE-ISOPHTHALATE) FILM COVERS

Gordon H. Lawry, P.O. Box 511,

Kingsport, Tenn. 37662

Filed Feb. 23, 1967. Published Nov. 5, 1968

Class 99—171

1 Sheet Drawing. 11 Pages Specification

There is disclosed a packaged food product ready for cooking comprising a rigid tray (aluminum or the like) and a transparent biaxially oriented polyester film cover of copoly(1,4-cyclohexanedimethylene, 8–25% isophthalate, 92–75% terephthalate). During cooking, this polyester does not degrade and become cloudy as does polyethylene terephthalate. Moreover, cooking in the presence of edible oils results in extraction of relatively little oil soluble material from the film.

628,018

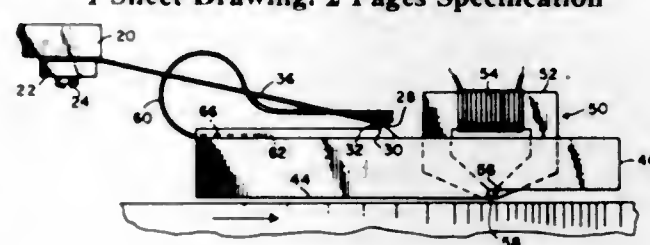
#### READ/WRITE AIR LUBRICATED HEAD POSITION RETENTION MEANS

Frederick F. Harison, 18231 Los Alamos, Northridge, Calif. 91324, and Lowell W. Hixson, 1305 N. California, Burbank, Calif. 91505

Filed Apr. 3, 1967. Published Nov. 5, 1968

Class 340—174.1

1 Sheet Drawing. 2 Pages Specification



A pivoted read/write head assembly having a device for preventing the assembly from becoming accidentally dislocated from its positioning springs. One end of a generally U-shaped retaining spring is secured to the vehicle; the other end rests upon locating detents in order to prevent the fulcrum of the assembly from becoming detached from the positioning springs.

645,508

#### CYANOETHYL POLYSILOXANE PLASTICIZED FLUOROELASTOMERS

Arthur Livingston Barney, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed June 12, 1967. Published Nov. 5, 1968

Class 260—29.1

No Drawing. 4 Pages Specification

A composition comprising a fluoroelastomer which is a copolymer of vinylidene fluoride and hexafluoropropene or a copolymer of vinylidene fluoride, hexafluoropropene, and tetrafluoroethylene and 10–40 parts by weight per 100 parts of fluoroelastomer of a fluid polysiloxane containing about 40–100 mole percent (cyanoethyl)methyl siloxane units and about 60–0 mole percent dimethylsiloxane units. The polysiloxane has a boiling point higher than about 300° C. at a pressure of 1 mm. Hg and an absolute viscosity not greater than 50,000 centipoises at 25° C.

656,369

#### STABILIZED ETHYLENE SULFIDE POLYMERS

Ephraim H. Catsiff, Trenton, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed July 27, 1967. Published Nov. 5, 1968

Class 260—18

No Drawing. 17 Pages Specification

Thermal degradation is prevented during the high temperature processing of solid, high molecular weight ethylene sulfide homo-, co-, or inter-polymers by the addition of .1 to 10% by weight of (a) a tin compound such as tetrahydrocarbyltin, trihydrocarbyltin hydroxides, dihydrocarbyltin oxides, hydrocarbylstannic acids and salts thereof, dihydrocarbyltin mercaptoesters, Sn<sup>II</sup> esters of

mono-, and polycarboxylic acids, Sn<sup>IV</sup> acetylacetonates, phenolates and alcoholates; .5 to 3% by weight of (b) a rosin compound which is either modified, unmodified, or a derivative; and optionally .05 to 5% by weight of a weak base.

680,655

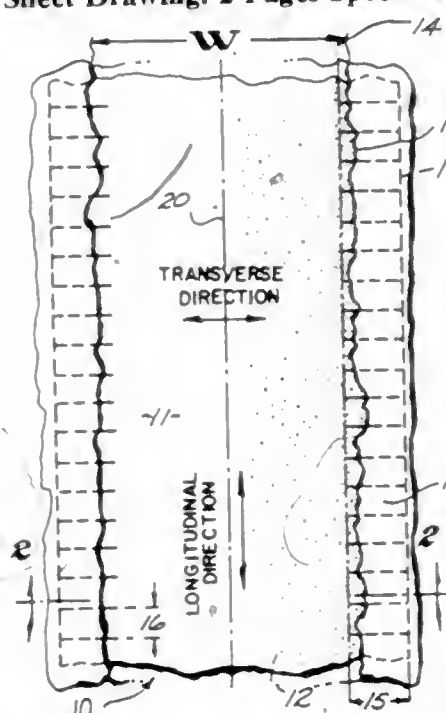
#### AGRICULTURAL FILM COVER

Gordon C. Newland, P.O. Box 511, Kingsport, Tenn. 37662; John W. Tamblin, P.O. Box 92, Jonas Ridge, N.C. 28641; George R. Greear, 54 Deerfield Terrace, Ramsey, N.J. 07446; and William D. Kennedy, P.O. Box 511, Kingsport, Tenn. 37662

Filed Nov. 6, 1967. Published Nov. 5, 1968

Class 47—9

1 Sheet Drawing. 2 Pages Specification



A polymeric film cover for agricultural purposes comprising a polymeric film adapted to extend over a seed bed, the film being degradable under weather conditions during use, and a multiplicity of tether strips extending outwardly from the edges of the film for overlaying with soil to prevent the film from being inadvertently disposed from the seed bed.



# DECISIONS IN PATENT AND TRADEMARK CASES

## U.S. Court of Customs and Patent Appeals

IN RE CHARLES J. KOESTER AND ELIAS SNITZER

No. 7924. Decided April 4, 1968

[55 CCPA—; 392 F.2d 626; 157 USPQ 220]

### 1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"METHOD AND APPARATUS FOR DIRECTING OUTPUT OF OPTICAL MASERS."

The refusal of certain claims in an application entitled "Method and Apparatus for Directing Output of Optical Masers," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 256,033.

AFFIRMED.

Morton Amster, J. Albert Hultquist for appellants.

Joseph Schimmel (Fred W. Sherling, of counsel) for the Commissioner of Patents.

Before WORLEY, Chief Judge, RICH, SMITH and ALMOND,  
Associate Judges

SMITH, J., delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals,<sup>1</sup> affirming the Examiner's rejection of all claims in appellants' application.<sup>2</sup>

Two issues are presented in this appeal: (1) whether appellants' claimed invention would have been obvious at the time it was made within the meaning of 35 U.S.C. 103; and (2) whether the decision of the Board of Appeals included a new ground of rejection.

### The Invention

Appellants' claimed invention relates to an apparatus and method for directing a laser beam along a prescribed path. By way of background, appellants' brief explains that a laser essentially comprises a rod of a material, such as ruby, capable of emitting energy when stimulated by other energy. The rod has plane, parallel reflective surfaces at its opposite ends. The reflective end surfaces define a resonant cavity. When the rod is stimulated, by a flash tube for example, it emits a pulse of radiant energy from one end surface of the body in a direction perpendicular to that surface. The emitted pulse is typically of very brief duration, but highly intense. The light beam thus emitted is also substantially collimated, coherent and monochromatic. It was recognized in the art that the laser would find use in medical applications. In the subject application, a laser beam is shown in a photo-coagulation apparatus for correcting retinal detachments.

Appellants further explain that, in photo-coagulation of the human eye, it is not feasible to experiment with the laser beam itself to direct and focus it on the patient's retina. In the process of aiming the beam, the patient's vision could be seriously impaired because the laser beam is so intense. Moreover, it would be exceedingly difficult to aim the beam itself since the duration of the beam is often in the order

<sup>1</sup> The board consisted of Messrs. McCann, Kreek and Keely, Examiners-in-chief. Mr. Keely wrote the opinion of the board.

<sup>2</sup> Serial No. 256,033, filed February 4, 1963 for "Method and Apparatus for Directing Output of Optical Masers." The application is denominated a "division" of appellants' co-pending application, Serial No. 108,020, filed May 5, 1961.





### The References

The references relied upon are:

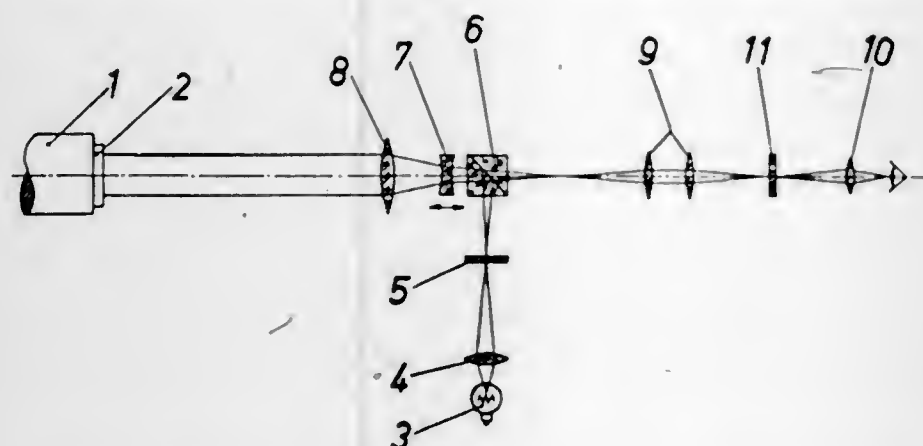
Carl Zeiss Jena (Switzerland), 346,708, July 15, 1960.

Electronics, "Light Amplifier Extends Spectrum," July 22, 1960, vol. 33, page 43.

The Electronics article discloses an oversimplified version of the basic theory and the structural features of a laser, including reflective end surfaces from one of which a laser beam may be emitted. Although the article does not describe the emitting face as being in a plane perpendicular to the direction of the laser beam, applicants do not contend that they were the first to note this property of the laser. The article states that, according to its source, no work had as yet been done on focusing the laser output beam.

The Swiss patent is the most pertinent reference and discloses a method and apparatus for determining the alignment and orientation of the axis of a rod or shaft by projecting parallel light rays upon a mirror attached to a perpendicular end surface of the rod. The light rays are reflected from the mirror in the same direction as the axis of the rod whenever they are projected in a direction parallel to the axis of the rod.

The sole figure of the Swiss patent is reproduced below:



The optical equipment has a horizontal or test axis, shown in the drawing by the dotted line. Shaft 1 similarly has a longitudinal axis, shown in the drawing as coincident with the axis of the optical apparatus. During orientation or direction testing of the respective axes, testing lamp 3 is operated and the angular deviation is measured.

### The Rejection

The Examiner, in his final letter, rejected claims 1-4 as being "unpatentable under section 103 over Switzerland taken with Electronics." He elaborated, as follows:

• • • The purpose of such an arrangement [in the Swiss patent] is to determine the alignment of the shaft axis with the axis of the telescope. As applicant has pointed out the energy emitted from an optical maser is [in] a direction perpendicular to the maser end surface. It is also well known that an object reflected straight back on itself will be at right angles to the face of the reflecting mirror. This is the basic principle of auto-reflection and is a method commonly used in aiming and aligning, as shown by Switzerland. The problem of aiming the output of an optical maser such as that disclosed by Electronics and that of alignment, as disclosed by Switzerland, are the same. The solution to that problem is therefore shown by Switzerland. It would be obvious that the output of the optical maser of Electronics may be directed by an apparatus and in the manner, such as that disclosed by Switzerland. The apparatus claim language beginning with "whereby" is not given any patentable weight. Such a recitation is a statement of a desired result rather than the apparatus intended to accomplish that

result. The two steps recited in the method is the basic principle of auto-reflection noted above. In addition the method is clearly not limited to or peculiar to optical masers. [Brackets added.]

In his answer on appeal, the Examiner reiterated essentially the same position. He further urged that:

Considering the prior art combination as properly analogous, a superficial examination of the Switzerland reference reveals that if shaft 1 were in fact a ruby rod, the invention being claimed herein would be disclosed in the reference. The applicants have not challenged the Examiner's contention that plane parallel end surfaces are conventional in optical masers.

The Board affirmed, stating its "accord" with the position of the Examiner. However, the Board added:

• • • It appears to us that these claims as broadly drawn are readable on the device of Electronics when taken into the open and one end of the ruby crystal thereof exposed to sunlight. Light from the sun reaches the earth in parallel rays and is therefore considered to be collimated.

When the present claims are stripped of their non-significant statements of capabilities, functions and results • • • they recite only the laser of Electronics exposed to sunlight, or the manipulative steps of exposing said laser to sunlight. [Citations omitted.]

### Opinion

In view of our disposition of this appeal, it is not necessary to decide whether that portion of the Board's opinion quoted above constitutes a "new ground of rejection," as appellants urge.

On the issue arising under 35 U.S.C. 103, we agree with the position of the Examiner as affirmed by the Board. Appellants here first argue that, for the proper operation of the reference apparatus, which they term a "testing device," the impinging light beam must necessarily be at an angle with respect to the mirror on the end of the shaft when the shaft is not properly oriented. On the contrary, in appellants' claimed invention, the low-intensity beam must always be perpendicular to the end faces of the laser. They point out that the lamp 3 is only operated in the reference apparatus during orientation testing to measure the deviation of the shaft axis from the telescope axis. Thus, appellants conclude that, even if the laser, as taught by Electronics were substituted for the shaft of the Swiss patent, the requirements of the claims would not be met.

The Solicitor contends that the usefulness of the Swiss apparatus is to orient and align the axis of the rod along the telescope axis as shown in the drawing. The Swiss patent, in the Solicitor's view, thus desires, achieves, and shows apparatus to provide a light beam perpendicular to the end face of the shaft. We view the Solicitor's argument as stating that the teachings of the Swiss patent would continue to be equally applicable to a laser as it is analogous for purposes of the claimed invention to the shaft of the Swiss patent. At oral argument, the laser in the present context was considered by the Solicitor to be a rod in the mechanical sense. The Solicitor concludes that applying the teachings of the Swiss patent to an admittedly known laser would render the invention as claimed in the appealed claims obvious in the sense of 35 U.S.C. 103. We agree that the claims, as presented, would have been obvious in view of this art within the statutory sense.

Appellants next urge that a "precondition" of the orientation test is that the projected beam follow the test axis toward the mirror on the shaft. They conclude that the Swiss apparatus is operative only if the projected beam always takes the same initial path, i.e., along the telescope axis. Thus, it is appellants' position that they, too, wish



their projected beam to coincide with an apparatus axis, in their case, the laser axis, and so, they claim means and method for achieving this result, even though it is "presupposed" in the reference.

The Solicitor responds that any criticism that appellants make of the Swiss apparatus in this regard also applies to appellants' apparatus, since the projected light beam must be aligned along the desired axis in either apparatus. We agree with the Solicitor that this may be accomplished in the Swiss apparatus by adjusting the light source relative to the reflective surface of the rod until the reflected light is concentrated upon the center of the scale plate 11. This, in our view, appears to be at least equivalent to the method of adjustment described by appellants in their application.

In any event, we think that insofar as appellants' argument is directed to a factual difference between the claimed invention and the prior art, it must be considered. However, viewing appellants' claimed invention as a whole, as we must, it seems to us that appellants' argument is not convincing on that issue.

Finally, appellants argue that the references fail to suggest that the end face of a laser rod may be used to enable precise aiming of the laser beam with the aiming of another, lower intensity light beam. In this respect, appellants submit that the internal silvered face of a silvered end of the laser rod was used in developing the laser beam whereas appellants' invention entails the use of the *external* face of the silvered end.

That argument seems to detract from whatever differences may exist between the laser and the shaft as mechanical elements of a disclosed combination. We think it sufficient to note that the Swiss patent suggests the use of an external reflecting face of any rod or shaft to indicate the direction of the axis thereof and to aim or align the axis in a desired direction.

We have thus considered appellants' arguments, but believe that the position taken by the Examiner, and affirmed by the Board, on the issue of obviousness was basically sound.

[1] Therefore, we affirm the decision of the Board.  
AFFIRMED.

#### U.S. Court of Customs and Patent Appeals

IN RE CONTINENTAL BAKING COMPANY

No. 7863. Decided February 15, 1968

[55 CCPA—; 390 F.2d 747; 156 USPQ 514]

#### 1. TRADEMARK—CONFUSING SIMILARITY—EVIDENCE—CONSENT BY PRIOR REGISTRANT *In re National Distillers Products Co.* OVERRULED—LANHAM ACT, SECTION 2(d).

"It may well be that individual agreements regarding use and registration of trademarks are of 'evidentiary value,' as the Board here has demonstrated. However, in enacting section 2(d) of the Lanham Act Congress clearly charged the Patent Office with the initial responsibility of determining whether certain trademarks are entitled to registration, as distinguished from use, within the scope of that section. To hold that the present consent to register should control would be to allow individuals to take the law in their own hands, thus usurping the responsibility that Congress has placed in the Patent Office. Should there be any language in *National Distillers* intimating that individuals have such rights regarding registration of trademarks, then to that extent that decision is hereby expressly overruled. See also *In re Wilson Jones Company*, 52 CCPA 805, 337 F.2d 670, 143 USPQ 238."

AFFIRMED.

Warren H. Rotert (*Morgan, Finnegan, Durham & Pine, Granville M. Pine*, of counsel) for appellant.

Joseph Schimmel (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before WORLEY, Chief Judge, CLARK, Justice,<sup>1</sup> RICH, SMITH, and KIRKPATRICK,<sup>2</sup> Judges

WORLEY, Chief Judge, delivered the opinion of the court.

Continental seeks registration of "County Fair" for fresh bread, cake and sweet goods—namely cinnamon sticks, sweet rolls and assorted pastries. Registration has been refused on the ground that applicant's mark so resembles the mark "County Fair," previously registered for frozen fruit and cream pies, as to be likely to cause confusion. In so holding, the Trademark Trial and Appeal Board stated, 147 USPQ 333:

Applicant's director of marketing in his affidavit has pointed out the differences in the production and marketing of fresh bread, cake and sweet goods, on the one hand, and frozen fruit and cream pies on the other. Notwithstanding that there may be differences in the production and marketing of such goods by companies as the applicant and registrant, it is common knowledge that bread, cake, sweet goods, and pies of all sorts are produced and/or sold in the same bake shops. It may be argued that this is true only with regard to the neighborhood bakery but the fact remains that the public knows that bread, rolls, cakes, pastries and pies do emanate from a single producer or seller. In this regard we note that applicant, through its various divisions, produces and sells bread, rolls, pastries, frozen fruit pies and frozen cream pies.

The involved products are bakery products which are sold in the same type retail outlets to the same class of purchasers. In view of the identity of the marks, we conclude that there is a likelihood of confusion.

We have found nothing in the record to refute that reasoning and conclusion.

During proceedings below appellant introduced a document signed by an officer of Carnation Co., present owner by assignment of the registered mark "County Fair." In evaluating that instrument the Board stated:

Applicant has submitted an affidavit by an official of the Carnation Company, the present owner of the cited registration, and it is stated therein that "The said Carnation Company hereby consents, in the matter of the above-entitled trademark application, and otherwise to the use by the Continental Baking Company of the trademark 'County Fair' for fresh bread, cake and sweet goods," and further that "The Carnation Company, being engaged in and thoroughly familiar with the business of food production and distribution, considers said goods . . . to be in a different category from frozen fruit and cream pies . . . and believes that the use by Continental Baking Company to which consent is above given is in no way likely to cause confusion or mistake or to deceive."

A fair reading of the above clearly indicates that the owner of the cited registration consents to applicant's use and registration of "County Fair" for bread, cake and sweet goods. [Emphasis supplied.]

The cases relied upon by applicant are readily distinguishable. In the case of *In re National Distillers Chemical Corp.*, 132 USPQ 271, 273 (CCPA, 1962), the court ruled that the marks there involved did not look alike, sound alike nor evoke the same psychological responses and in the case of *In re Electro Vox, Inc.*, 134 USPQ 463 (TT&A Bd., 1962) the cited mark and the mark sought to be registered were not the same. In the instant case, we have identical marks. The situation here also differs from that of *In re A. C. Gilbert Company*, 135 USPQ 38 (TT&A Bd., 1962), where it was found that there were differences between the goods, both in character and uses, that the trade channels differed, that the means of production were different and that the classes of purchasers were

<sup>1</sup> Retired, Supreme Court of the United States, sitting by designation.

<sup>2</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.



different. Here the goods are bakery products which can be made by the same producers, which are sold in the same type of retail outlets and which are or can be purchased by the same person.

We express no doubt as to our conclusion that there is a likelihood of confusion and therefore do not find the registrant's consent or its opinion persuasive in this matter.

Appellant argues that *In re National Distillers Products Co.*, 49 CCPA 854, 297 F.2d 941, 132 USPQ 271, does control in the present circumstances. Certainly there is nothing in *National Distillers* to justify the controlling effect appellant seeks here. There a majority<sup>3</sup> expressly found the competing marks and goods to be different, stating:

We shall first consider whether the differences in the marks and in the goods are such that confusion or mistake or deception of purchasers is likely. The marks MARQUES DEL MERITO and MERITO do not look alike, sound alike nor evoke the same psychological responses. Wines and rum are goods whose differences are clearly recognized by the purchasers thereof. These differences are sufficient to raise a doubt as to likelihood of confusion, mistake or deception of purchasers arising from the common use of the word MERITO. Under these circumstances, we think the alleged agreements between applicant and the owner of the reference registration are of evidentiary value.

[1] It may well be that individual agreements regarding use and registration of trademarks are of "evidentiary value," as the Board here has demonstrated. However, in enacting section 2(d) of the Lanham Act<sup>4</sup> Congress clearly charged the Patent Office with the initial responsibility of determining whether certain trademarks are entitled to registration, as distinguished from use, within the scope of that section. To hold that the present consent to register should control would be to allow individuals to take the law in their own hands, thus usurping the responsibility that Congress has placed in the Patent Office. Should there be any language in *National Distillers* intimating that individuals have such rights regarding registration of trademarks, then to that extent that decision is hereby expressly overruled. See also *In re Wilson Jones Company*,<sup>5</sup> 52 CCPA 805, 337 F.2d 670, 143 USPQ 238.

The decision is affirmed.

AFFIRMED.

RICH, J., dissenting.

The majority has no basis for disparaging the opinion for the court in *National Distillers* as that of a "nominal" majority. The majority in that case consisted of Judge Smith, who wrote the opinion, Judge Kirkpatrick, who joined it, and myself.<sup>6</sup> I have just reread my concurring opinion of six years ago and there is not a word in it in conflict with Judge Smith's opinion with which I then fully agreed, as I do now. My only purpose in writing a concurring opinion was, as I stated, to examine the Patent Office Solicitor's concepts, as there stated in his brief, about the Patent Office duty to protect the public by refusing registrations and to show that this not only does not pro-

<sup>3</sup> Perhaps more accurately described as a nominal majority since one judge did not participate, another judge concurred with opinion, and another judge dissented with opinion.

<sup>4</sup> Trademark Act of 1946.  
<sup>5</sup> There the court held: "While we have held that an agreement by the owner of a reference registration giving express consent to register should have an important persuasive effect in determining registrability, see *In re National Distillers Products Co.*, 49 CCPA 854, 297 F.2d 941, 132 USPQ 271, that situation is not here. The agreement here conveys only the right to use the reference mark. We do not see that this agreement supports the inference that the owner of the reference thought confusion between the marks sought to be registered and the reference mark to be unlikely. Moreover, we do not feel that the inference, even if correct, is persuasive."

<sup>6</sup> There was a lone dissent in that case, since Judge Martin did not participate, by the author of the present majority opinion.

tect the public but actually interferes with the normal protection of the public through the enforcement of private rights.

The same reasoning, some of which appellant quotes in its brief, is equally applicable here.

Lest I again be relegated to a nonparticipating status for lack of an explicit statement, I declare my present full agreement with Judge Smith's dissenting opinion herein.

In no event can I subscribe to an opinion which speaks of "expressly" overruling a prior decision of this court on a hypothetical or "if" basis that it may contain "language" "intimating" something or other. We know what is in our opinions. We can say whether or not we will or will not follow decisions as precedents. Overruling is serious business, not to be confused with distinguishing prior cases or the reasoning in prior opinions. Judge Smith has pointed out how it upsets the business community. The decision in *National Distillers* stands. "Overruled" is not a term to be bandied about in a casual manner.

For reasons I stated in the *National Distillers* case, I think we must not be so literal minded about section 2(d) of the Trademark Act of 1946 that we defeat its basic purpose, as the majority is doing here. It follows the reasoning of the Board which categorized the goods of both parties as "bakery products." To leave it at that is to leave a false impression and to ignore the evidence in the affidavit of Mr. Boote, the food industry expert employed by appellant, which points out the manufacturing and marketing differences respecting the fresh bakery products of the applicant and the frozen food techniques of production and distribution of the consenting registrant's frozen fruit pies and frozen cream pies.<sup>7</sup> It is these differences which support the affidavit form of consent (construed by the Board to be a consent to both use and registration) by the owner of the reference registration in which the vice president of that company expresses the view that confusion, deception, or mistake is unlikely.

The facts of this case are, I believe, such as to bring it clearly within the principles expressed by Judge Smith in the three-judge majority opinion in *National Distillers* as well as the further views of my concurring opinion therein. This calls for reversal.

SMITH, J., with whom RICH, J., joins, dissenting.

On the record here, I respectfully dissent from the conclusion of the majority and disagree with some of the reasons stated by the majority in support of that conclusion.

In order to place this appeal in its proper perspective, it should be noted that, as an appellate court, we are charged by Congress with the responsibility to "hear and determine" an appeal from a decision of the Trademark Trial and Appeal Board "on the evidence produced before the Patent Office." The statute requires that our decision shall be confined to the points set forth in the reasons of appeal. 15 U.S.C. 1071. We, therefore, are required to determine whether, on the record below, the Board erred in affirming the Examiner's refusal to register.

<sup>7</sup> The description in the registration (which is not of record) appears to be "frozen fruit and cream pies," an ambiguous statement. The record shows, however, that two kinds of pies are intended, rather than frozen fruit on the one hand and cream pies on the other. It is not clear to me that frozen pies would ordinarily be classed as "bakery products" to be obtained from a bakery. I would expect them to come from a manufacturer of frozen foods and to be found in a freezer, not with the baked goods. That is what the record shows to be the method of distribution.



To arrive at that determination, we must decide, as a matter of law, under section 2(d) of the Trademark Act of 1946 and on the basis of the record made below, whether appellant's mark so resembles the cited registration as to be likely, when applied to the goods of the applicant, to cause confusion, or to cause mistake, or to deceive. 15 U.S.C. 1052(d).

While this restatement of our responsibility under the applicable statutes is somewhat elementary, it is necessary in placing this dissent in proper perspective.

I disagree with the majority in its eroding of *In re National Distillers & Chemical Corp.*, 49 CCPA 854, 297 F.2d 941, 132 USPQ 271 (1962).<sup>8</sup> In my opinion, *National Distillers* is a proper statement of the law, notwithstanding footnote 1 of the majority opinion and the discussion accompanying footnotes 2 and 3 therein.

The introduction to section 2 of the Trademark Act of 1946 states that "No trademark by which the goods of the applicant may be distinguished from the goods of others shall be refused registration" unless one or more of the grounds enumerated in subsections (a) through (e) are applicable. Under those provisions, the Commissioner of Patents is charged with the responsibility of refusing registration when he believes, as the arbiter of the evidence before the Patent Office, that registration is proscribed. See *In re Apparel, Inc.*, 54 CCPA 733, 366 F.2d 1022, 151 USPQ 353 (1966); cf. *In re Fleet-Wing Corp.*, 38 CCPA 1039, 188 F.2d 476, 89 USPQ 369 (1951); *In re Laskin Bros., Inc.*, 32 CCPA 820, 146 F.2d 308, 64 USPQ 225 (1944).<sup>9</sup>

Here, the applicant has applied for registration of "COUNTY FAIR" for "fresh bread, cake and sweet goods—namely, cinnamon sticks, sweet rolls and assorted pastries." [Emphasis added.] The cited registration, "COUNTY FAIR" for "frozen fruit and cream pies," initially provides sufficient evidence to overcome the applicant's *prima facie* right to registration. If the applicant had produced no additional evidence, bearing on the issue of whether confusion would be likely, the cause here would require an affirmance. But the applicant here proceeded to build a strong case from the evidentiary standpoint.<sup>10</sup>

There are several approaches which an applicant for registration may take in seeking to overcome a refusal to register his mark based on a reference registration. Here because the marks are identical, the applicant was restricted to showing that the goods were in fact different, from which the legal conclusion under section 2(d) could be drawn that confusion was not likely. He first argued that a meaningful factual difference exists between the "frozen" character of the registrant's goods and the "ready-baked" or "fresh" attributes of applicant's goods. When unsupported argument on this issue proved unsuccessful, applicant provided the affidavit of Mr. Edward K. Boote, its director of marketing. As a factual showing of differences between fresh and frozen products, I think that the affidavit should have been given some weight.

<sup>8</sup> Note, 76 Harv. L. Rev. 1691 (1963); see generally, Developments in the Law: Trade-Marks and Unfair Competition, 68 Harv. L. Rev. 814 (1955).

<sup>9</sup> See Derenberg, The Patent Office as Guardian of the Public Interest in Trade-Mark Registration Proceedings, 14 Law & Contemp. Prob. 288, 31 J.P.O.S. 647 (1949).

<sup>10</sup> In *American Drill Bushing Co. v. Rockwell Mfg. Co.*, 52 CCPA 1173, 1176, 342 F.2d 1019, 1021-22, 145 USPQ 144, 146 (1965), this court noted:

It is fundamental, however, that identity or similarity of the marks alone is not enough to be conclusive of a likelihood of confusion. We must also consider the nature of the goods and the mark as applied thereto, the channels of trade, the class of purchasers, and other showings, such as, but not exclusively limited thereto, third party registrations, and absence of actual confusion.

The Examiner, however, adhered to his position of refusing to register, choosing, in his final action, to ignore entirely the affidavit and its factual showing.

In a further attempt to overcome the final refusal to register, applicant produced and made of record the registrant's consent which applicant considered to give it the right to use and register the mark in issue. The evidence as to that consent is an affidavit which states:

E. S. Hartwick, being first duly sworn, deposes and says:

1. He is vice president of the Carnation Company, a Delaware corporation having its principal office at Carnation Building, Los Angeles, California.

2. Said Carnation Company is the owner of United States Trademark Registration No. 607,398, issued June 14, 1955.

3. The said Carnation Company hereby consents, in the matter of the above-entitled trademark application, and otherwise, to the use by the Continental Baking Company of the trademark "COUNTY FAIR" for fresh bread, cake and sweet goods.

4. The Carnation Company, being engaged in and thoroughly familiar with the business of food production and distribution, considers said goods mentioned in paragraph 3 above to be in a different category from frozen fruit and cream pies, which are the goods mentioned in the said Registration No. 607,398, and believes that the use by Continental Baking Company to which consent is above given is in no way likely to cause confusion or mistake or to deceive. [Emphasis added.]

Appellant argued that all of the evidence of record brought the case within the holding of *National Distillers*, supra. I agree.

In *National Distillers*, we found differences in the goods and differences in the marks. We said, 49 CCPA at 856, 297 F.2d at 943, 132 USPQ at 273:

We shall first consider whether the differences in the marks and in the goods are such that confusion or mistake or deception of purchasers is likely. The marks MARQUES DEL MERITO and MERITO do not look alike, sound alike nor evoke the same psychological responses. Wines and rum are goods whose differences are clearly recognized by the purchasers thereof. These differences are sufficient to raise a doubt as to likelihood of confusion, mistake or deception of purchasers arising from the common use of the word MERITO. Under these circumstances, we think the alleged agreements between applicant and the owner of the reference registration are of evidentiary value. [Emphasis added.]

I disagree with the majority that *National Distillers* stands for any such narrow proposition as it extracts from the opinion to state:

To hold that the present consent to register should control would be to allow individuals to take the law in their own hands, thus usurping the responsibility that Congress has placed in the Patent Office. Should there be any language in *National Distillers* intimating that individuals have such rights regarding registration of trademarks, then to that extent that decision is hereby expressly overruled.

While consents to register cannot control in all instances, they definitely should be "of evidentiary value" as bearing on the factual basis for supporting a legal conclusion as to likelihood of confusion. We here should be concerned with the legal sufficiency of all of applicant's proofs (including the consent) and nothing more and base our determination solely upon their sufficiency to support the legal conclusions required by the statute.

In *In re Wilson Jones Company*, 52 CCPA 805, 337 F.2d 670, 143 USPQ 238 (1964) we referred to consents to register as having an "important persuasive effect in determining registrability." However, we there considered proof of a mere right to use as not being sufficient



to control on the issue of likelihood of confusion.<sup>11</sup> This decision is in accord with *National Distillers*, in considering the agreement between the parties as relevant evidence. As such, it is at odds with the majority here, for as I see it, the majority is unwilling to accord any evidentiary weight to the agreement between the prior registrant and the applicant on the issue of likelihood of confusion.

Certainly, where, as here, the facts of record support a finding of doubt as to likelihood of confusion, any properly admissible statement from the registrant asserting a belief that confusion is not likely, may well have the "important persuasive effect" to convince us to conclude, as a matter of law, that confusion is not likely. As evidence on that issue, it must be considered.

Thus, I believe that the majority decision here is not based on a logical interpretation of *National Distillers*. Though the marks here are identical, applicant's proofs raise a substantial doubt as to whether confusion would be likely. The consent filed by the registrant is sufficient additional evidence to tip the scales in favor of registration.

I also disagree with the approach of the majority in "overruling" language in *National Distillers*, if it is there at all. As a court, we ought to strive for clarity and stability in the law, especially so where our opinions are looked to as a guide for the actions of an administrative body, applicants for registrations, their lawyers, businessmen and other courts, cf. *Field Enterprises Educational Corp. v. Grossett and Dunlap, Inc.*, 256 F. Supp. 382 (S.D.N.Y. 1966). The legal propositions supporting *National Distillers* are clear; they were made clearer in *Wilson Jones*. The action of the majority here is a regression from the broad intent of Congress in enacting the Trademark Act of 1946 for the purpose of bringing stability into the Federal trademark law. At best, the present majority opinion will cause considerable uncertainty as to the evidentiary proofs required to support a right to register where relative certainty previously prevailed.

A review of the case law, particularly opinions of the Board, indicates that consents to register are quite commonly presented, are considered as relevant evidence, but are not always persuasive as to a right to register a trademark. This is as it should be. A list of some of these decisions appears in the Appendix A to this opinion. Consents to use a registered trademark given by the owners of such registrations must be presumed to be the acts of reasonable men who are in a better position than either examiners or judges to testify as to the factual basis for determining the issue here.

Mindful then of the impact the majority dicta is sure to have in encouraging the substitution of mere legalistic speculation for evidence of facts in such cases as the present, I find no proper purpose served in "overruling" anything in *National Distillers*. Indeed, as Professor Derenberg commented on *National Distillers*:<sup>12</sup>

Although the Chief Judge dissented, it may well be expected that under the authority of this important precedent, the Patent Office will now show greater latitude and cooperation in accepting letters of consent and will resolve any doubt in borderline situations in favor of the applicant, such as is the practice

<sup>11</sup> In *National Distillers*, the prior registrant's consent to the applicant to use and register the mark in issue was before the court. In *Wilson Jones*, however, only an agreement conveying the right to use was of record. We refused to infer that the consent to use the registered mark was probative evidence on the issue of whether confusion would be likely. I regard consents to register as evidentiary. The consent need not, in my view, contain express language conveying a right to register, as long as the agreement, as here, contains language bearing on the factual bases necessary to determine the legal issue of likelihood of confusion.

<sup>12</sup> The Fifteenth Year of Administration of the Lanham Trademark Act of 1946, 134 USPQ No. 8, part II, August 6, 1962.

in most other countries, including Great Britain, where in situations of this sort the public record may carry a notice, "By Consent."

Finally, similar to the situation in *National Distillers*, I think the agreements here relied upon by the appellant are limited to certain conditions which are expressly contained in that consent. As such, they are limited or restricted consents. Under section 1(a)(1) of the Trademark Act of 1946, 15 U.S.C. 1051, appellant should be required to state these limitations and restrictions as exceptions to a claim of an exclusive right to use. I hardly think that the registrant would permit simultaneous use of the same mark for the identical goods for which he has already obtained registration.

Thus, I would reverse the decision of the Board and remand the case for further proceedings consistent with the views herein expressed.

#### APPENDIX A

Some recent decisions in which the consent of the registrant was of record and the conclusion that confusion is likely was reached: *In re Robert Hall Clothes, Inc.*, 155 USPQ 754 (TTAB 1967); *In re Electro-Voice, Inc.*, 148 USPQ 616 (TTAB 1966); *Monarch Mufflers, Inc. v. Goerlich's, Inc.*, 148 USPQ 20 (TTAB 1965); *In re Variety Supply Co.*, 137 USPQ 387 (TTAB 1963); *Country Tweeds, Inc. v. Joseph & Feiss Co.*, 136 USPQ 314 (TTAB 1962); *St. Regis Paper Co. v. Malanco, Inc.*, 136 USPQ 88 (TTAB 1962); *Central West Oil Corp. v. Continental Oil Co.*, 135 USPQ 469 (TTAB 1962); *In re W. H. Barber Oil Co.*, 135 USPQ 372 (TTAB 1962) (involving identical marks).

Other recent decisions in which the consent of the registrant was of record and the conclusion was reached that confusion would not be likely: *In re Executone, Inc.*, 153 USPQ 648 (TTAB 1967) (involving identical marks); *In re Transitel Corp.*, 149 USPQ 794 (TTAB 1966); *In re A. C. Gilbert Co.*, 135 USPQ 38 (TTAB 1962); *In re Electro-Vox, Inc.*, 134 USPQ 463 (TTAB 1962).

#### U.S. Court of Customs and Patent Appeals

IN RE ELLIS H. BRYANT, JR.

No. 7892. Decided March 7, 1968

[55 CCPA—; 390 F.2d 1006; 156 USPQ 685]

##### 1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"HIGH SPEED COUNTERS."

The decision of the Board of Appeals, refusing the single claim in an application entitled "High Speed Counters" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 312,966.

AFFIRMED.

*Watson, Cole, Grindle & Watson, Laurence R. Brown* for appellant.  
*Joseph Schimmel (Joseph F. Nakamura, of counsel)* for the Commissioner of Patents.

Before WORLEY, Chief Judge, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK<sup>1</sup>

WORLEY, Chief Judge, delivered the opinion of the court.

<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.



This appeal is from the decision of the Board of Appeals affirming the Examiner's rejection of the single claim in appellant's application<sup>2</sup> for "High Speed Counters" as "unpatentable over Wollar<sup>(1)</sup> in view of Paschen et al.<sup>(2)</sup> under 35 U.S.C. 103."

The invention relates to an electromagnetically operated mechanical counter which operates at relatively high speeds, e.g. 200 counts per second. The counter mechanism includes a series of co-axial, digit-bearing wheels and an electromagnetically-operated advancing mechanism for rotating the first digit wheel in one direction in a step-wise fashion. The advancing mechanism comprises a ratchet gear or star wheel, and a pawl which is reciprocated by a solenoid responsive to electrical impulses and by a return spring and which effects step-wise rotation of the star wheel. According to the specification, the *attainable reliable* counting speeds in such a system are substantially less than those theoretically obtainable from optimization of part and electromagnetic circuit design "because of the bounce or chatter encountered in the drive mechanism which can cause either extra counts or skipping of counts in an erratic fashion at the upper limit of attainable counting speed." The specification states:

• • • the design speeds of the preferred rugged mechanical counters operated electromagnetically are limited and reliable operation is attainable only at about half the required speeds when electromagnetic drives and mechanisms are optimized.

In accordance with the invention it has been found that as mechanical counters reach their limiting speeds, considerable chatter and bounce is encountered in ratcheting or advancing mechanisms causing erratic operation from time to time. Yet it is not readily feasible to mechanically design the mechanisms to overcome this limiting factor. According to the present invention it was discovered that by immersing the mechanical counter mechanism in a viscous liquid such as oil, which is also preferred for its lubricating qualities, the bounce and chatter was damped to such an extent that the *reliable* counter speed could be almost doubled. [Emphasis supplied.]

The viscosity of the oil is chosen to provide proper damping action dependent upon the masses and speeds of the respective parts of the counter mechanism.

Claim 1 reads:

1. A high speed counter having a mechanism operable at a limited top counting speed comprising a series of interconnected digit wheels with visibly readable indicia thereon, each actuated cyclically by a preceding wheel except for the initial digit wheel, means actuating the initial wheel comprising a reciprocally movable pawl mechanism and a star wheel movable in a single direction of rotation bit by bit as the pawl mechanism reciprocates, a hermetically sealed compartment surrounding said counter mechanism with a window displaying said visible indicia externally of the compartment, a liquid in the compartment enveloping the pawl mechanism having a selected viscosity to damp out chatter and bounce of the pawl mechanism when operated at counting speeds outside said top counting speed, whereby higher counting speeds are attained and an electromagnetic circuit for reciprocating the pawl at a speed greater than said limiting top counting speed.

Recognizing that Wollar shows an electromagnetic counter mechanism concededly similar to appellant's but for the concept of sealing that mechanism in a compartment containing a liquid which damps out chatter and bounce, the Examiner turned to Paschen who discloses an odometer mounted in an axle box of a railway car. Paschen's ob-

<sup>2</sup> Serial No. 312,966, filed October 1, 1963.

<sup>(1)</sup> U.S. Patent 2,993,187, issued August 29, 1961.

<sup>(2)</sup> U.S. Patent 2,071,654, issued February 23, 1937.

ject is to provide an odometer which "accurately registers" and "is protected to a great extent against shocks when in operation." To that end, the operating elements of the odometer—a ratchet wheel and a pawl-carrying frame, the latter reciprocated by an eccentric disk on the end of the axle and a return spring—are immersed in a lubricating oil reservoir of the axle box. The patent states:

• • • [an] advantage of this construction is that the oil acts as a shock-absorbing and damping means for the individual elements of the register. This is as tests have shown highly important for the operation of odometers. • • •

In the Examiner's view it would be obvious to operate the Wollar counter in a pool of oil in view of Paschen. He thought it apparent that Paschen's counter is capable of higher reliable counting speeds in the oil than in air "because the oil damping process prevents erroneous bounces" of the odometer mechanism. "Certainly," said the Examiner, "the very reason for placing the Paschen et al. odometer in oil was to improve its performance." The Board agreed, and so do we.

Appellant contends that his "simple expedient" of immersing his counter mechanism in oil is unobvious and has attained "an unexpected result," since

• • • it would normally be reasoned that the immersing of a counter into a higher viscosity liquid than air would tend to damp and slow down its counting operation over that attained in the lower viscosity of air rather than to result in this entirely unexpected higher counting speed.

Although perhaps consistent with the terminology employed in his claim,<sup>3</sup> the import of appellant's argument as phrased is, we think, contradicted by his specification. We do not understand appellant's specification to teach that placing the counter mechanism in oil results in higher counting speed *per se*. Rather, the specification teaches that *reliable* counting speeds are increased when the mechanism is immersed in oil—counting speeds more closely approximating the limiting or top counting speed at which it potentially could be driven. The Patent Office did not find that to be unexpected, nor do we.

We do not think one of ordinary skill in this art would be unaware of the fact that as the device of Wollar is operated at higher speeds more error-causing "chatter and bounce" would ensue and that that phenomenon could be damped by placing the mechanism in a damping fluid as suggested by Paschen. Just as Paschen's odometer more "accurately registers" over the range of speeds at which the railway car operates because the oil damps out shocks to the operating mechanism, so appellant's device counts more reliably or accurately at speeds near the upper limit of its possible operating range of speeds—increases the reliable counting speed as it were.

With due regard for appellant's arguments, we are satisfied the Board committed no reversible error in sustaining the rejection. [1] The decision is affirmed.

**AFFIRMED.**

<sup>3</sup> The Examiner observed that appellant has employed the phrase "limited top counting speed" rather loosely, stating

• • • the final clause of the claim, "at a speed greater than said limiting top speed" is obviously vague and misleading. Moreover there is no basis for this phrase in the specification. Reading the phrase literally, it means that the electromagnetic circuit is capable of reciprocating the pawl at a speed greater than the top counting speed. • • •

Assuming appellant does mean that he increases *reliable* counting speeds, it is not intuitively obvious that one would expect those speeds to be reduced by placing the mechanism in a liquid having a higher viscosity than air. Certainly there is no evidence of record to support such an assertion.



RICH, J., dissenting, with whom KIRKPATRICK, J., joins.

I find no suggestion whatever in the prior art of record that immersing the admittedly old electromagnetic counter of Wollar in oil, as claimed, would enable it to operate accurately at a higher, even double, speed. I therefore find no reason to hold the claimed invention obvious.

The sole basis of the rejection is the Paschen et al. patent (Paschen) which discloses an odometer (distance meter) for railway car axles arranged to run in the axle grease or oil. The patent says the grease or oil acts as a shock-absorbing and damping means and that this has been found to be important in such railway odometers. Presumably this is because the odometer is thus protected from road shocks, not the internal chattering of its own mechanism due to operating speed. I presume this because, as I will show, Paschen did not have a mechanism that would operate at high speed and must have been talking about something else.

The Examiner in his answer practically admitted appellant was right in pointing out that if Wollar's counter, which is like appellant's, were inserted in railroad axle lubricating oil, the high speed operation defined by appellant would *not* be obtained. "This statement may perhaps be true," said the Examiner. He then made the cautious, hedging statement that Paschen nevertheless teaches that "operating performance" is improved by placing the odometer in axle oil or grease. So what? This is a far cry from disclosing or suggesting appellant's invention or discovery or solving his problem.

Appellant's counter is different in kind from Paschen's odometer. The starting point is the Wollar counter which has already been engineered mechanically to operate accurately as a counter at 100 counts per second. The invention, it is asserted without contradiction, doubled its speed to 200 per second.

What does Paschen's odometer do by way of speed? He does not say but a little arithmetic\* will show. Assume a car wheel diameter of 2 feet and a train speed of 60 miles per hour—a mile a minute. The fastest moving part of his odometer is a pawl which makes one short stroke per revolution of the axle, turning a ratchet wheel which has about 20 teeth. At a mile a minute, the pawl would move only 14 times per second and the ratchet wheel would make about three-fourths of a revolution per second. From there on, in the Paschen mechanism, everything is geared down, beginning with a worm gear, and nothing moves with any appreciable speed. It resembles the odometer part of an automobile speedometer. In the roller bearing modification of Paschen wherein a drum counter of the general type of Wollar is present, things move even more slowly, the *first* moving element in the train being a worm gear, driven at the wheel speed and rotating an eccentric at a much lower speed to actuate the pawl. It could perfectly well operate in "grease," as Paschen expressly says it does. Appellant's counter obviously could not, at any rate, not at the speeds contemplated by the claim.

I agree with appellant's counsel that the rejection is predicated on the "clairvoyance of hindsight," not on 35 U.S.C. 103. The references wholly fail to show obviousness. Paschen teaches nothing at all about increasing possible speed. I would reverse.

\* A 2' wheel has a circumference of about 6.3' and will make about 840 revolutions per mile. At 60 miles an hour—a mile a minute—it will revolve 840 times per minute, or 14 times a second. Since railroad car wheels are likely of greater diameter than 2', the estimate may be on the high side. A speed of 14 times a second is less than the slow speed of 100 per second which appellant has increased by his invention. Paschen was not dealing with a comparable situation.

# U.S. Court of Customs and Patent Appeals

IN RE PAUL D. HARWOOD

No. 7830. Decided March 7, 1968

[55 CCPA—; 390 F.2d 985; 156 USPQ 673]

## 1. PATENTABILITY—UTILITY—EVIDENCE OF OPERATIVENESS—INSECT STERILANT.

"It is true, as appellant suggests, that there is language of the Examiner, if not the Board, which indicates that the Patent Office would require appellant *prove* that the nitrofurans contemplated by him would sterilize *all* insects before claims of the present scope would be found allowable. Presumably the only way in which appellant could satisfy that requirement would be to submit experimental data demonstrating that the contemplated nitrofuran compositions would be operative to sterilize *each* and *every* insect species of the tens of thousands of known insect species. This court has previously commented on the practical impossibility of providing such evidence."

## 2. SAME—SAME—SAME—SAME.

"While to \* \* \* [an] extent the position of the Patent Office appears to be in error, we do not think that there is reversible error in the remaining substance of its position. Appellant has stated by way of observation or affidavit evidence corroborating the specific examples of his specification that a number of particular nitrofuran derivatives are operative to sterilize two rather diverse insect species which require symbionts for reproduction, and has suggested their general applicability to sterilize other insects which also appear to require symbionts in order to reproduce. The Patent Office has accepted appellant's observations and evidence insofar as the two insect species are concerned, and has submitted no evidence which would detract from appellant's assertion that the contemplated nitrofurans are generally applicable to sterilize other insects which *do* depend upon the presence of symbionts for reproduction. The Examiner, however, has submitted evidence strongly suggesting that appellant's process would not be operative on a number of insects within the scope of the broad claims—namely, those insects apparently not possessing symbionts at all or those which nevertheless survive and reproduce after symbionts are removed."

## 3. SAME—SAME—SAME—BROADLY CLAIMED SUBJECT MATTER—35 U.S.C. 101.

"An inoperative invention, of course, does not satisfy the requirement of 35 U.S.C. 101 that an invention be useful. We think it was incumbent upon appellant either to limit his claims to the area where operativeness has not been challenged by appropriate and convincing evidence, or to submit representative evidence refuting the apparent suggestion of inoperativeness of the invention as broadly claimed arising from the references cited by the Examiner."

## 4. SAME—SAME—SAME—SAME.

"We recognize that the validity of the Patent Office rejection is somewhat dependent in a very real sense upon the validity of appellant's *theory* of how his invention works. As noted by the Board: \* \* \* If appellant's theory \* \* \* is correct, this procedure [of invention] would at most be operative on insects which depend upon symbionts for reproduction. \* \* \* In other words, if appellant's theory is in fact erroneous, has the Patent Office actually given adequate reason for believing the invention partly inoperative as broadly claimed? At the present time, however, there is nothing of record to indicate that appellant's theory is inaccurate, or that the Examiner was not justified in accepting it. While there is some suggestion in the proceedings below that appellant had become somewhat disenchanted with the validity of his theory, there is nothing here to suggest that he now abjures it. We think the burden of going forward with the evidence lay with appellant in this particular situation. Evidence that the contemplated nitrofurans *do* sterilize a representative number of insects which do not require symbionts for reproduction would at once disprove appellant's hypothesis as well as overcome the rejection."

## 5. CLAIM—BROADER THAN DISCLOSURE—35 U.S.C. 112.

"We think those expressions ['a 5-nitrofuran,' 'a 5-nitrofurfurylidene,' and 'a 2-nitrofuran' in the claims] are broader than the invention described in appellant's specification. It seems to us that one skilled in the art would learn from the specification that only *certain* nitrofuran derivatives substituted in the 2 and 5 positions of the nucleus are effective for appellant's purposes, not that *any* nitrofuran, including those substituted in the 3 and 4 positions would



be so suitable. See *In re Lund*, 54 CCPA 1361, 378 F.2d 982, 153 USPQ 625, and cases cited therein."

APPEAL from the Patent Office. Serial No. 171,824.

AFFIRMED.

Harvey W. Edelblute (George R. Jones, Beale and Jones, George P. Maskas, of counsel) for appellant.

Joseph Schimmel (Raymond E. Martin, of counsel) for the Commissioner of Patents.

Before WORLEY, Chief Judge, and Judges RICH SMITH, ALMOND, and KIRKPATRICK<sup>1</sup>

WORLEY, Chief Judge, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals affirming the Examiner's rejection of claims 24-37 in appellant's application<sup>2</sup> for "Insect Population Control."

The invention relates to compositions and methods for control of insect populations. In contrast to more ordinary methods of insect control employing stomach or contact poisons, appellant causes sexual sterility in insects by treating them with insect baits containing certain nitrofurans derivatives. The specification states:

The present invention is based upon the surprising discovery that the nitrofurans, which possess antibacterial, antifungal and antiprotozoal activity against a wide spectrum of microorganisms, . . . [are] effective in inducing sterility in the male and female of a variety of insect species without, however, killing them or reducing their sexual activities. This discovery followed the observation that adult flour beetles, *Tribolium confusum* (Order Coleoptera), were able to live in a mixture of corn meal and alfalfa meal even though the mixture contained as much as 11% by weight of nitrofurazone, but failed to reproduce.

In his specification appellant explains his theory of the manner in which the nitrofurans derivatives cause sterility in insects:

The microbiology of insects is a highly technical and complex subject. It has been demonstrated that several species of insects require symbionts for reproduction. These specialized microorganisms obtain food and shelter from the insect and return to the insect certain metabolic products such as vitamins of the B-complex, hormones and other chemical metabolites that are necessary for sexual reproduction. These symbionts include protozoa, bacteria, yeast and bacteria-like organisms. . . .

The intimate relationship between fertility among insects and infection with symbionts has been illustrated by studies upon certain scale insects. . . . Male cockroaches when deprived of symbiont were found to be sterile although mated with normal females. Presumably all insects harbor symbionts.

Although symbionts may be destroyed in insects in a variety of ways, both physical and chemical, none of these are of practical value because they cannot be applied to insect control. Although it has not been definitely established that the nitrofurans when used according to the present invention are effective in sterilizing insects because of their action on the symbionts, this appears to be the case [since] the amounts of the nitrofurans that are effective are much lower than would be expected to be effective in sterilization of the insects by action on their gonads. Also, the nitrofurans are known to be highly effective against a wide variety of microorganisms at very low dilutions. . . . [Emphasis supplied.]

After setting forth a detailed example illustrating the effectiveness of a particular nitrofurans derivative, nitrofurazone, in controlling the propagation of a representative insect, the common vinegar fly, the specification states:

The present invention is applicable to the control of a large number of different insects which include most of the orders of the class Hexapoda. Among

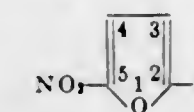
<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.  
<sup>2</sup> Serial No. 171,824, filed February 8, 1962.

the more important of these from an economical point of view are the Orthoptera (grasshoppers, cockroaches, etc.); Homoptera (aphids, cicadas, etc.); Hemiptera (the true bugs); Coleoptera (beetles); Lepidoptera (moths and butterflies); Diptera (the two-winged flies); and the Hymenoptera (bees, ants and others).

In addition to nitrofurazone, a number of other nitrofurans derivatives are disclosed to be useful in carrying out the method:

. . . It has been found, for instance, that 2-nitrofurans and 5-nitro-2-furfural have substantially the same sterilizing effects. Others, such as 5-nitro-2-furfuraldehyde 2-methylisemil-carbazone, N-(5-nitro-2-furfurylidene)-1-amino-2-pyrrolidone, and 5-nitro-2-furfural hydrazone, are more effective than nitrofurazone in these tests in controlling the insect population. . . .

Various other 2-substituted-5-nitrofurans are effective in sterilizing insects in accordance with the present invention. The effective compounds of the present invention are characterized by having the nucleus:



The group R may represent hydrogen or other substituent radicals such as alkyl, hydroxyalkyl, acyloxyalkyl, oximidoalkyl, semicarbazonoalkyl, hydrazonoalkyl, diacyloxyalkyl, carboxyalkenyl, carbalkoxyalkenyl, acyl, carbalkoxy, halogenocarbalkoxy, carbamyl, dialkylcarbamyl and still others. Many of these are described in United States Patents 2,436,214, 2,610,181, 2,742,462, 2,802,002 and others.

Among the specific 5-nitro-furfurylidenes that are available and may be used in practicing the present invention are included: 5-nitro-2-furfuraldehyde semicarbazone, N-(5-nitro-2-furfurylidene)-3-amino-2-oxazolidone, N-(5-nitro-2-furfurylidene)-3-amino-5-(N'-morpholinylmethyl)-2-oxazolidone, 5-nitro-2-furfuraldehyde acetylhydrazone, 5-nitro-2-furfuraldehyde-2-(2-hydroxyethyl) semicarbazone, N-5(5-nitro-2-furfurylidene)-1-amino-2-pyrrolidone, N-(5-nitro-2-furfurylidene)-1-amino-2-imidazolidone, N-(5-nitro-2-furfurylidene)-1-amino-2-imidazolidine-thione, and N-(5-nitro-2-furfurylidene)-1-amino hydantoin. Still others and some not mentioned in the above U.S. patents may also be used in the same manner and in the same amounts indicated hereinabove.

Claim 32 is representative:

32. A method of causing sexual sterility in insects which comprises administering to the insect a 2-nitrofurans.

With that background information concerning appellant's invention in mind, we turn to the issues presented to us by the decision of the Board and appellant's reasons of appeal. As those issues are quite diverse in nature, we shall discuss each separately.

#### Operativeness Rejection

Faced with the recitations in appellant's specification as above set forth, the Examiner rejected all claims "for lack of proof of utility." Although the Examiner appears to have accepted appellant's assertions and evidence that nitrofurazone and certain other 2- or 5-nitrofurans sterilized flour beetles and vinegar flies,<sup>3</sup> both of which insect species apparently require the presence of symbionts for reproduction, he questioned the operativeness of appellant's compositions and process to sterilize all species of insects, observing that the claims recite "insects" without qualification. As evidence of the asserted inoperativeness, he cited two literature articles,<sup>4</sup> each of which is said to disclose that some insects initially require symbionts for reproduction while others do not, and that still different species of insects which

<sup>3</sup> The Examiner allowed six process claims directed to a method of sterilizing the vinegar fly with specific compounds.

<sup>4</sup> Koch, "Experimental Parasitology," vol. 5, pp. 481-518 (1956). Richards, "Annual Review of Entomology," vol. 3, pp. 37-56 (1957).



have been rendered symbiont-free may or may not lose their reproductive capacity. In view of those references, the Examiner found that:

• • • those of ordinary skill would not readily accept allegations that all insects which have been rendered symbiont-free would be sexually sterile. Therefore, the rejection for lack of proof of utility is deemed proper in the absence of a showing that insects not dependent upon symbionts for their reproductive capabilities would be rendered sexually sterile by ingesting nitrofurans. No such showing has been offered.

The Board agreed, adding that the cited articles demonstrate that "elimination of symbionts from many" of the large number of insects mentioned in appellant's specification "would not effectively sterilize them." It concluded that appellant had not sustained his burden of proving operativeness, citing *In re Novak*, 49 CCPA 1283, 306 F.2d 924, 134 USPQ 335, where we stated:

• • • when an applicant bases utility for a claimed invention on allegations of the sort made by appellants here, unless one with ordinary skill in the art would accept those allegations as obviously valid and correct, it is proper for the Examiner to ask for evidence which substantiates them.

[1] It is true, as appellant suggests, that there is language of the Examiner, if not the Board, which indicates that the Patent Office would require appellant *prove* that the nitrofurans contemplated by him would sterilize *all* insects before claims of the present scope would be found allowable. Presumably the only way in which appellant could satisfy that requirement would be to submit experimental data demonstrating that the contemplated nitrofuran compositions would be operative to sterilize *each* and *every* insect species of the tens of thousands of known insect species. This court has previously commented on the practical impossibility of providing such evidence.<sup>5</sup>

[2] While to the above extent the position of the Patent Office appears to be in error, we do not think that there is reversible error in the remaining substance of its position. Appellant has stated by way of observation or affidavit evidence corroborating the specific examples of his specification that a number of particular nitrofuran derivatives are operative to sterilize two rather diverse insect species which require symbionts for reproduction, and has suggested their general applicability to sterilize other insects which also appear to require symbionts in order to reproduce. The Patent Office has accepted appellant's observations and evidence insofar as the two insect species are concerned, and has submitted *no* evidence which would detract from appellant's assertion that the contemplated nitrofurans are generally applicable to sterilize other insects which *do* depend upon the presence of symbionts for reproduction.<sup>6</sup> The Examiner, however, has submitted evidence strongly suggesting that appellant's process would not be operative on a number of insects within the scope of the broad claims—namely, those insects apparently not possessing symbionts at all or those which nevertheless survive and reproduce after symbionts are removed.

[3] An inoperative invention, of course, does not satisfy the requirement of 35 U.S.C. 101 that an invention be useful. We think it was incumbent upon appellant either to limit his claims to the area

<sup>5</sup> In *In re Sarett*, 51 CCPA 1180, 327 F.2d 1005, 140 USPQ 474, the court stated:

It is certainly not incumbent on an applicant who has made a broad process invention and supported it by an adequately broad disclosure to demonstrate the operativeness of *every* substance falling within the scope of the broad claims to which he is entitled. In the instant case the research to do this would quite evidently be endless. [Emphasis supplied.]

See also *In re Surrey*, 54 CCPA 855, 370 F.2d 349, 151 USPQ 724; *In re Grimme*, 47 CCPA 785, 274 F.2d 949, 124 USPQ 499.

<sup>6</sup> See, in that respect, *In re Gazave*, 54 CCPA 1524, 379 F.2d 973, 154 USPQ 92.

where operativeness has not been challenged by appropriate and convincing evidence,<sup>7</sup> or to submit representative evidence refuting the apparent suggestion of inoperativeness of the invention as broadly claimed arising from the references cited by the Examiner.<sup>8</sup> Appellant has done neither. As we stated in *In re Pottier*, 54 CCPA 1293, 376 F.2d 328, 153 USPQ 407:

• • • whatever the nature of the subject matter, it has not hitherto been supposed that reasonable requests for evidence were inappropriate where operativeness was not apparent.

All claims have been treated together by the Patent Office and appellant for purposes of the above rejection. We so treat them here. The rejection is affirmed.

#### The Section 112 Rejection

Appellant also alleges error in the rejection of claims 24, 25, 27 and 32 under 35 U.S.C. 112. The Examiner found, and the Board agreed, that the expressions "a 5-nitrofurans," "a 5-nitrofurfurylidene," and "a 2-nitrofurans" appearing in those claims were "too broad" and lack "supporting antecedent disclosure in the specification" because the terms encompass "all possible derivatives of the recited compounds."

[5] We think those expressions are broader than the invention described in appellant's specification. It seems to us that one skilled in the art would learn from the specification that only *certain* nitrofurans derivatives substituted in the 2 and 5 positions of the nucleus are effective for appellant's purposes, not that *any* nitrofurans, including those substituted in the 3 and 4 positions, would be so suitable. See *In re Lund*, 54 CCPA 1361, 376 F.2d 982, 153 USPQ 625, and cases cited therein. The rejection of claims 24, 25, 27 and 32 under § 112 is affirmed.

#### The Section 102 Rejection

Finally, appellant posits error in the rejection of composition claims 24–26 as anticipated under 35 U.S.C. 102 by patents to Stillman<sup>9</sup> and Manzelli.<sup>10</sup> Contrary to appellant's arguments, the description in both those references of adding various 5-nitrofurans to food materials such as sugar or seed appears to us to result in a material satisfying the claim limitations "an insect bait containing edible material attractive to insects." In our view, however, appellant's position before the Examiner and Board, and unanswered by them, that Stillman does not describe the quantities of nitrofurans recited in those claims is correct. While Manzelli does describe applying to food material sufficient 5-nitrofurans-containing solution to provide 0.5–1.0%

<sup>7</sup> At oral argument, the Solicitor pointed out that limitation of the claims to treating insects which require symbionts for reproduction might well obviate the rejection.

[4] We recognize that the validity of the Patent Office rejection is somewhat dependent in a very real sense upon the validity of appellant's theory of how his invention works. As noted by the Board:

• • • If appellant's theory • • • is correct, this procedure [of the invention] would at most be operative on insects which depend upon symbionts for reproduction. • • •

In other words, if appellant's theory is in fact erroneous, has the Patent Office actually given adequate reason for believing the invention partly inoperative as broadly claimed? At the present time, however, there is nothing of record to indicate that appellant's theory is inaccurate, or that the Examiner was not justified in accepting it. While there is some suggestion in the proceedings below that appellant had become somewhat disenchanted with the validity of his theory, there is nothing here to suggest that he now abjures it. We think the burden of going forward with the evidence lay with appellant in this particular situation. Evidence that the contemplated nitrofurans *do* sterilize a representative number of insects which do not require symbionts for reproduction would at once disprove appellant's hypothesis as well as overcome the rejection.

<sup>9</sup> U.S. Patent 2,416,234, issued February 18, 1947.

<sup>10</sup> U.S. Patent 2,924,554, issued February 9, 1960.



by weight of those nitrofurans, thus satisfying the particle size and quantity limitations appearing in some of the claims, the Patent Office has not pointed out, nor can we find, where that patent does disclose the particular nitrofuran of claim 26. It follows that claims 24 and 25 were, and claim 26 was not, properly rejected under 35 U.S.C. 102 in view of the references.

The decision is affirmed.

**AFFIRMED.**

KIRKPATRICK, J., took no part in the decision of this case.

## PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

**2,009,816**, Gittings, Gittings and Olsen, CHAIR BACK; D. 189,343, W. L. Gittings, COLLAPSIBLE CHAIR, filed Mar. 18, 1964, D.C. E.D. Wis. (Milwaukee), Doc. 64-C-74, L. F. Strassheim Company, doing business as Boucling Green Chair Co. v. Gold Medal Folding Furniture Company. Finding patents valid, defendants entitled to an accounting and award of profits and damages from plaintiff, June 18, 1968.

**2,485,631**, D. G. Scorgie, PUSH-PULL MAGNETIC AMPLIFIER D. 195,261, R. J. McAuley, ULTRA HIGH FREQUENCY TELEVISION AND RADIO INDOOR ANTENNA, filed Mar. 15, 1965, D.C. S.D.N.Y., Doc. 65-C-758, Parker Metal Goods Co. v. R.M.S. Electronics Inc. Stipulation and order of dismissal, Oct. 28, 1966.

**2,938,718**, F. M. Williamson, HYDRAULIC CUSHION FOR THE DIE PAD OF A RAM TYPE PRESS; **3,065,530**, same, HYDRAULIC PRESS RAM CUSHION; **3,147,723**, same, HYDRAULIC CONTROL SYSTEM FOR DIE PADS IN PRESSES; **3,147,962**, same, TWO-STAGE HYDRAULIC CUSHION FOR DIES; **3,147,657**, same, HYDRAULICALLY ACTUATED PIERCING UNIT, filed May 4, 1965, D.C. W.D. Mich. (Grand Rapids), Doc. 5043, Di-Dro Engineering Company, Inc. v. Die-Draulic, Inc., and Grand Valley Machine & Tool Co. Final judgment, action dismissed without prejudice. Counterclaim dismissed without prejudice, June 4, 1968.

**2,962,764**, Trojanowski and Brandt, PROCESS FOR THE MANUFACTURE OF MOLDED ARTICLES; **2,962,767**, same, MOLDING PROCESS, filed Dec. 6, 1965, D.C. S.D.N.Y., Doc. 65-C-3712, Oceana International, Inc. v. Emsig Manufacturing Co. et al. Order, action dismissed for lack of prosecution without prejudice, June 18, 1968.

**2,962,767**. (See 2,962,764.)

**3,430,503**, L. R. Kahn, DIVERSITY RECEIVING SYSTEM, filed Apr. 4, 1966, D.C., S.D.N.Y., Doc. 66-C-966, Leonard R. Kahn v. Western Union Telegraph Co. Order dismissing action for lack of prosecution, June 26, 1968.

**3,465,520**. (See 2,938,718.)

**3,117,373**, J. L. Wallace, DRUM OPENING TOOL; Reg. No. 813,919 (JET DRUM DE-HEADER AND DESIGN), Fort Wayne Truck Parts and Equipment, Inc., Hand tool for opening metal drums, filed July 21, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1272, Fort Wayne Truck Parts and Equipment Inc. v. Indus-Tool Corp., Mark Industrial Supply Company, and Ronald (Louis) Levin. Judgment order only as to defendants Mark Industrial Supply Company and Ronald Levin, having been served with the complaint herein have failed at all times to answer or respond thereto and is therefore in default with respect thereto; Patent No. 3,117,373 is valid. Defendants have infringed and are hereby enjoined, May 23, 1968.

**3,132,581**, Isbey and De Berard, COLD PROCESS LAMINATION MACHINE; **3,205,995**, J. J. Hill, COIN ACTUATOR FOR VENDING MACHINES; D. 205,468, Dunn and Gembicki, VENDING MACHINE FOR LAMINATING SHEET OR

CARD-LIKE ARTICLE, filed May 28, 1968, D.C. N.D. Ill. (Chicago), Doc. 66c1134, Marlan Company v. Perma-Vend Corporation. Consent judgment; patents held valid, defendant enjoined, counterclaim dismissed, May 28, 1968.

**3,147,657**. (See 2,938,718.)

**3,147,723**. (See 2,938,718.)

**3,147,962**. (See 2,938,718.)

**3,188,665**, H. M. Snyder, CUSHION STRUCTURE; **3,287,750**, W. H. Jessup, LUXURY CROWN CUSHION, filed May 31, 1968, D.C. W.D.N.C. (Statesville), Doc. 553, Snyder Paper Corporation v. Dixie Foam Rubber, Inc. Consent judgment; defendant restrained and enjoined, Pat. No. 3,188,665, except upon consent or license by plaintiff; Pat. No. 3,287,750, counterclaim dismissed with prejudice to defendant, June 3, 1968.

**3,205,995**. (See 3,132,581.)

**3,209,647**, W. J. Hall, SLIDE PROJECTOR USING A BOX OR CIRCULAR SLIDE MAGAZINE, filed June 17, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1121, GAF Corporation v. Hanimez Corporation Limited and Hanimez, U.S.A., Inc.

**3,236,022**, Loveland and Warshaw, AUTOMATIC CARTON CLOSING MACHINE, filed June 17, 1968, D.C.N.H. (Concord) Doc. 2897, The Loveshaw Corporation v. Commando Packaging Machine, Inc.

**3,287,750**. (See 3,188,665.)

**3,326,310**, D. P. Hand, DRIVE ASSEMBLY FOR CARRIER VEHICLE, filed June 5, 1968, D.C., W.D. Wash. (Seattle), Doc. 7757, Scott Douglas Industries, Inc. v. Weyerhaeuser Company et al.

**3,378,307**, Dempsey and Barnes, CIRCULAR SAW FOR CUTTING CONCRETE SURFACES, filed Apr. 16, 1968, D.C. C.D. Calif. (Los Angeles), Doc. 68-609WPG, Concrete Cutting Equipment Co., Inc. v. L. B. Penhall Co. et al.

D. 172,494, P. Dom, TYPE FONT; D. 179,774, E. J. Klumpp, TYPE FONT, filed June 17, 1968, D.C., S.D.N.Y., Doc. 68-C-2460, American Type Founders Co., Inc. v. Prestype Inc.

D. 179,774. (See D. 172,494.)

D. 189,343. (See 2,690,816.)

D. 195,261. (See 2,885,631.)

D. 205,468. (See 3,132,581.)

D. 207,644, J. Matyas, CLOTHES BAR, filed July 20, 1967, D.C., E.D. Mich. (Detroit), Doc. 30178, John Matyas, doing business as Alliance Metal Products v. Great Lakes Hardware. Consent judgment for permanent injunction, May 28, 1968.

D. 209,467, J. A. King, SHOWER CURTAIN HOOK, filed Dec. 13, 1967, D.C., S.D.N.Y., Doc. 67-C-4884, Ames Shower Curtain Co., Inc. v. Heinz Nathanson, Inc. Judgment against the defendant on the issue of infringement, June 4, 1968.

D. 209,771, G. Saltzman, DIAMOND, filed June 4, 1968, D.C., S.D.N.Y., Doc. 68-C-2290, George Saltzman et al. v. Samuel Bitran.

Reg. No. 813,919. (See 3,117,373.)

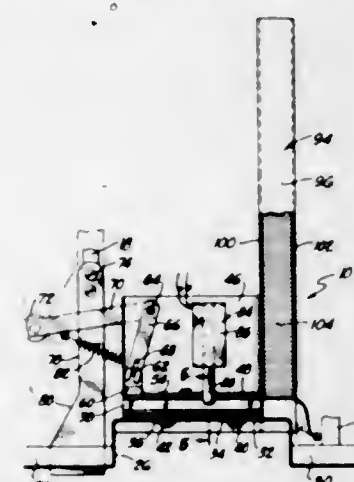
## REISSUES

NOVEMBER 5, 1968

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

**26,482**  
**SLUG INSERTER FOR LINE-CASTING MACHINES**  
Stuart L. Roberts, Anaheim, Calif., assignor of one-half to J. Richard Huffman, Anaheim, Calif.  
Original No. 3,262,555, dated July 26, 1966, Ser. No. 461,691, June 7, 1965. Application for reissue July 25, 1966, Ser. No. 570,126

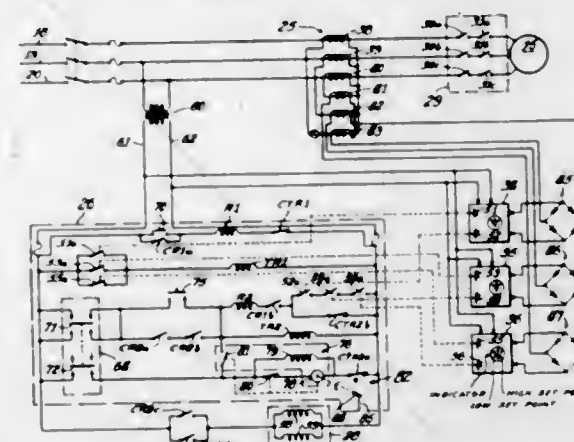
9 Claims. (Cl. 199—61)



The slug inserter is arranged to be secured to a line-casting machine for the insertion of precast slugs into the line casting machine galley in proper serial relationship to the slugs cast by the line casting machine. This is accomplished by means of slug inserter and slug inserter control means. The slug inserter has a slug chute and has a blade which is stressed to discharge a slug from the chute into the line casting machine galley. A cam on the line casting machine elevator retracts the slug inserter blade when the elevator rises and the slug inserter blade is held in this cocked position by means of a lock means. The control means accepts a tape reader signal and delays release of the lock means until the line casting machine has performed enough linecasting operations so that the lock means is released at the correct point and the slug inserter is inserted by the slug inserter blade after the correct line produced by the line casting machine.

**26,483**  
**CONTROL SYSTEM FOR POWER UNITS SUCH AS ELECTRIC MOTORS AND THE LIKE**  
Leo V. Legg, Tulsa, Okla., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois  
Original No. 3,283,236, dated Nov. 1, 1966, Ser. No. 491,677, Sept. 30, 1965. Application for reissue Nov. 24, 1967, Ser. No. 689,737

2 Claims. (Cl. 318—447)

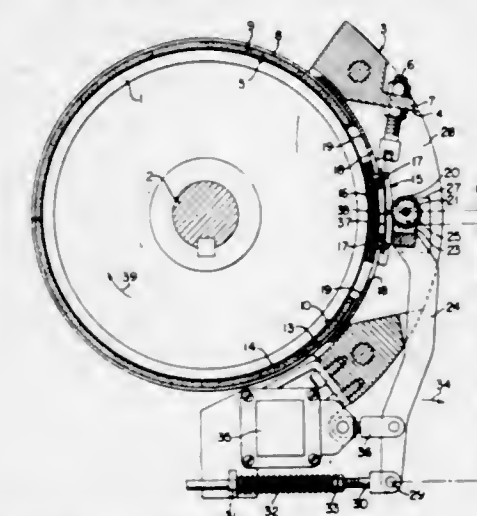


A control system for controlling energization of a motor or the like from a multi-phase power source,

including means for monitoring current in each phase to the motor, comprising a circuit responsive to signals from the sensing means in each circuit, the circuit functioning to detect unbalance in each phase by sensing the decrease in current in any one phase to thereby uncouple the motor and the source.

**26,484**  
**WRAP-AROUND BRAKE**  
Carl E. Bricker, Cuyahoga Falls, and Kenneth P. Hille-gass, Copley, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio  
Original No. 3,310,136, dated Mar. 21, 1967, Ser. No. 482,469, Aug. 25, 1965. Application for reissue June 13, 1967, Ser. No. 659,824

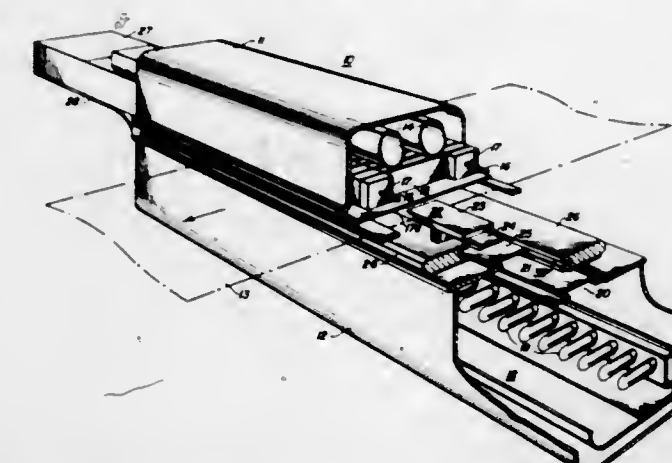
8 Claims. (Cl. 188—77)



This invention relates to a wrap type brake, primarily used on industrial machines, but not limited thereto, wherein a pair of brake bands are wrapped a plurality of times around a brake drum and are so mechanized to tighten on the drum in either direction of rotation thereof to effect the braking action.

**26,485**  
**PINHOLE DETECTORS**  
Daniel R. Brosious, Bethlehem, and James K. Hollings-head, Coopersburg, Pa., assignors, by mesne assignments, to Bethlehem Steel Corporation, a corporation of Delaware  
Original No. 3,263,086, dated July 26, 1966, Ser. No. 277,886, May 3, 1963. Application for reissue June 12, 1967, Ser. No. 651,637

5 Claims. (Cl. 250—219)



An apparatus for detecting pinholes in moving strip in which light within first and second frequency ranges



is directed toward the strip. A shutter containing a photo-electric cell is automatically positioned at each edge of the strip in response to light within the second frequency range, light within the first frequency range being absorbed by the shutters. A light filter across the detection chamber passes only light within the first frequency range, such light having been directionally controlled by louvers positioned above the strip.

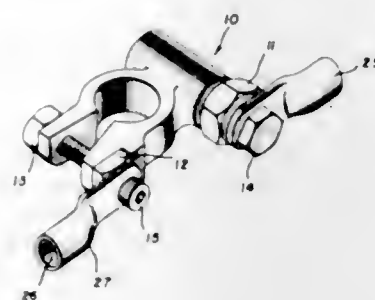
**26,486**  
**BATTERY CLAMP CONNECTORS**  
Clarence B. Haegert, P.O. Box 318,  
Coffeyville, Kans. 67337

Original No. 3,230,499, dated Jan. 18, 1966, Ser. No. 450,256, Apr. 19, 1965, which is a continuation of Ser. No. 347,332, Feb. 14, 1964, which in turn is a continuation of Ser. No. 56,285, Sept. 15, 1960. Application for reissue May 1, 1967, Ser. No. 646,743

2 Claims. (Cl. 339—230)

A conventional battery clamp includes a clamping por-

tion having free spaced ends with aligned holes receiving a threaded bolt for drawing the spaced ends together. This bolt has an enlarged head having a threaded hole for re-



ceiving a headed clamping screw for clamping a lug end to the unit, such lug end being connected with an additional electrical conductor.

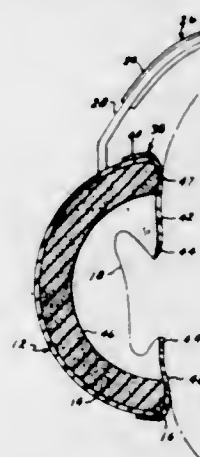
**PATENTS**  
GRANTED NOVEMBER 5, 1968  
**GENERAL AND MECHANICAL**

**3,408,657**  
**FINGER LOCK DEVICE**  
Frank J. Gallagher, 13261 Prospect Ave.,  
Santa Ana, Calif. 92705  
Filed May 11, 1967, Ser. No. 637,669  
4 Claims. (Cl. 2—159)



A finger lock device for temporarily holding the wearer's finger in tight conformity to the handle portion of a swingable shaft, such as a golf club, baseball bat, or the like. The device preferably includes a finger stall with a lace connected thereto, and of sufficient length to wrap around the handle as a projection of the arc defined by the finger stall when the finger engages the handle in gripping attitude. The lace includes an extension which is drawn between the fingers to cinch it up and frictionally temporarily pinch it there between for tight lodgement.

**3,408,658**  
**HEARING PROTECTOR**  
Fred P. Beguin, Sturbridge, and Francis T. Ashe, Southbridge, Mass., assignors, by mesne assignments, to American Optical Company, Southbridge, Mass., a corporation of Delaware  
Filed Aug. 25, 1966, Ser. No. 575,149  
2 Claims. (Cl. 2—209)



A low-cost hearing protector comprising an open ended rigid ear cup lined with a relatively thick layer of soft and readily compressible sound dampening material. The thick edge of the lining is extended outwardly beyond the open end of the cup as means for cushioning the cup against the head of a wearer. A thin highly flexible cover having a centrally disposed elongated opening therein extends over the open end of the cup. The edge of the cover is flanged over the outer side of

the cup wherewith the cover may be gripped and rotated on the cup for preselected orientation of the elongated opening.

**3,408,659**  
**ARTIFICIAL BLOOD VESSELS AND PROCESS OF MAKING SAME**  
Heinrich Thiele, Kiel, and Arnold Wiechen, Kronshagen near Kiel, Germany, assignors to Heinrich Thiele, Kiel, Germany  
No Drawing. Filed July 21, 1965, Ser. No. 473,819  
Claims priority, application Germany, July 25, 1964, T 26,670

17 Claims. (Cl. 3—1)

1. A process of producing artificial tubular bodies for the replacement of natural tubular parts of the human and animal body, said process comprising the steps of
  - (a) causing a natural tubular part of the human and animal body to swell,
  - (b) mechanically separating said swollen tubular part into separate layers according to the specific histological structure of said natural starting material,
  - (c) separately dissolving said layers in solvents without substantially affecting the protein components of said layers, and
  - (d) successively causing formation of superposed gels from said solutions to reconstruct the tubular part of the human and animal body from said solutions.

**3,408,660**  
**JOINT LOCK CONTROL**  
Mitchell Walters, Lexington, Ky., assignor of forty-nine percent to Edgar W. Borchert, Lexington, Ky.  
Filed June 20, 1966, Ser. No. 558,665  
10 Claims. (Cl. 3—1.2)

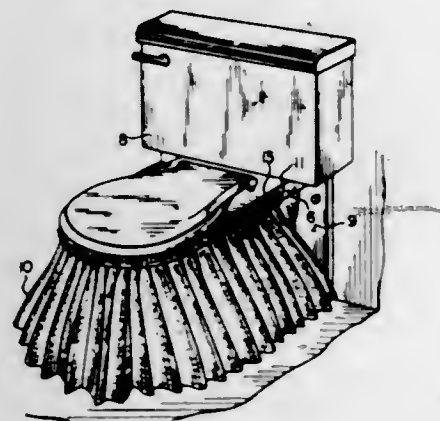


5. In a joint lock and control for an artificial leg including upper and lower leg members, a vertical mount positionable between said members, means adapted for pivotally engaging the upper end of said mount with the upper member, means adapted for fixing the lower end of the mount to the lower member, a latch pivotally mounted on said mount, means engaged between said latch and said mount for resiliently biasing said latch in a first locking direction, a pressure member pivotally mounted relative to said mount, an expansible member engaged between said mount and said pressure member for effecting, upon an expansion thereof, an outward



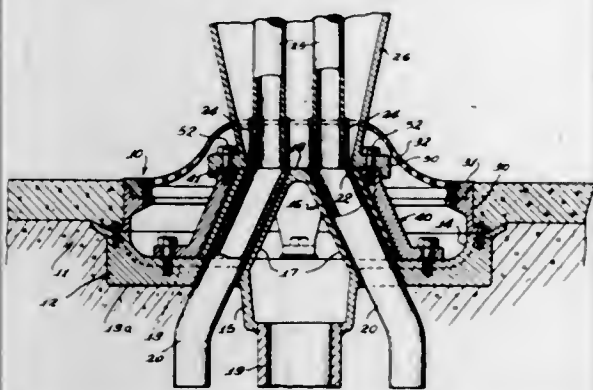
pivotal movement of said pressure member, and link means engaged between said pressure member and said latch for moving said latch in a second releasing direction against the biasing force in response to an outward pivotal movement of said pressure member.

**3,408,661**  
**SKIRT FOR COMMODES**  
Peggy L. Hammond, 1110 SE. 11th St.,  
Fort Lauderdale, Fla. 33316  
Filed Mar. 14, 1966, Ser. No. 534,206  
2 Claims. (Cl. 4-1)



A decorative cover for a toilet bowl having a top opening defined by a marginal edge, the cover including two pieces (1) a first elongated flexible band having adhesive material on its opposite sides, and (2) a unit consisting of a second elongated flexible band having adhesive material only on one side thereof and carrying a skirt for covering the toilet bowl when the skirt and band unit is applied to the edge of the toilet bowl. In use, the first band is adhered to the marginal edge of the toilet bowl, and then the adhesive side of the second band is applied to the outer side of the first band to anchor the skirt to the toilet bowl with the skirt extending downwardly to a point adjacent a floor in order to provide a decorative cover over the toilet bowl.

**3,408,662**  
**SHOWER DRAIN**  
Hugh H. Logan, Glendale, and George I. Doty, La Canada, Calif., assignors to The Logan Manufacturing Company, Glendale, Calif., a corporation of California  
Filed Oct. 19, 1965, Ser. No. 497,714  
2 Claims. (Cl. 4-145)



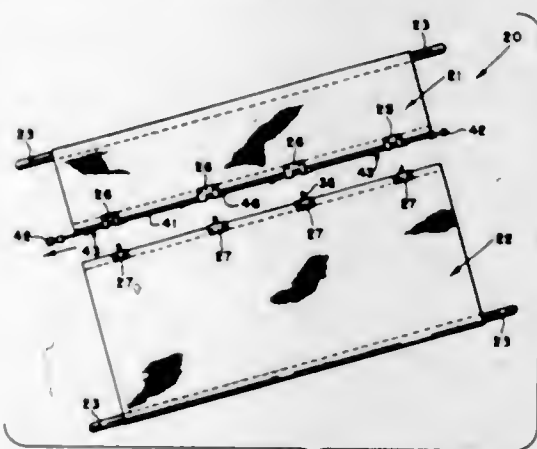
A shower drain base and shower fixture column comprising a drain basin with a central downwardly opening discharge port, and with a pyramidal column support structure having legs mounted in the basin and a column supporting platform at the top. A pedestal comprised of two upwardly converging tubes is formed integrally with the bottom of the basin, and joins together and extends through an aperture in the platform at the top. Pipes are run through the converging tubes, and have pipe coupling elements at their upper ends.

**3,408,663**  
**BATH MAT**  
Edison E. Bunting, 8007 Oakleigh Road,  
Baltimore, Md. 21234  
Filed Feb. 10, 1966, Ser. No. 526,593  
2 Claims. (Cl. 4-185)



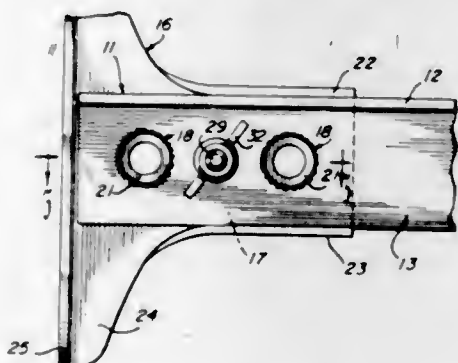
A plastic bath mat having straps for freely suspending the mat from a towel rack or other suitable support for purposes of drying the mat when not in use.

**3,408,664**  
**STRETCHER CONSTRUCTION**  
David J. Jarman, 3520 Michigan,  
Cincinnati, Ohio 45208  
Filed Feb. 16, 1967, Ser. No. 616,540  
11 Claims. (Cl. 5-82)



This disclosure relates to a stretcher construction whereby the stretcher is constructed of two sections of different dimension and having improved locking means for locking the sections together thereby facilitating the placing of a patient upon the stretcher and removal of a patient from the stretcher.

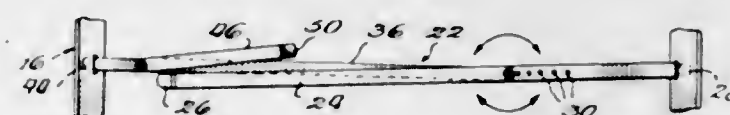
**3,408,665**  
**CORNER BRACKET FOR BED RAILS**  
Allan E. Harris, Winnetka, Ill., assignor to Harris-Hub Company, Inc., a corporation of Illinois  
Filed June 24, 1966, Ser. No. 560,206  
2 Claims. (Cl. 5-304)



A corner bracket for bed rails is provided with a pair of projections spaced the same as two apertures in

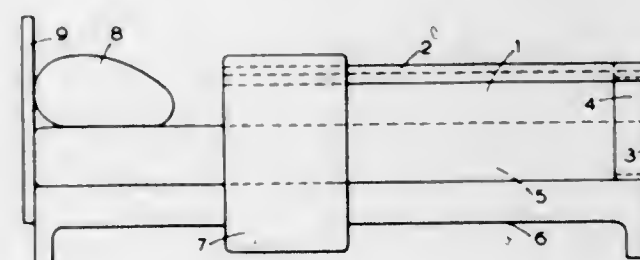
a bed rail. Each projection has its outer surface tapered to make one end fit easily into one of the apertures and has a base portion of larger diameter than said aperture. The bracket also has an aperture that is aligned axially with a third aperture in the bed rail by the interengagement of the tapered surfaces of the projections with the edges of the rail defining the first mentioned apertures as a nut is tightened on a bolt projecting through the aperture in the bracket and the third aperture in the bed rail.

**3,408,666**  
**BED RAIL**  
Allan E. Harris, Winnetka, Ill., assignor to Harris-Hub Company, Inc., a corporation of Illinois  
Continuation of application Ser. No. 472,111, July 15, 1965. This application Feb. 15, 1967, Ser. No. 616,359  
6 Claims. (Cl. 5-305)



A bed rail system for connecting together side rails of beds of different widths, which system consists of strap members that are pivotally connected together and which contain at their ends offset flanges adapted to interfit with bed side rails.

**3,408,667**  
**BED COVER**  
Wijemuni Eton Rajakaruna, 52 Bathurst St., Porter St.,  
Hull, Yorkshire, England  
Filed Dec. 9, 1966, Ser. No. 600,567  
11 Claims. (Cl. 5-334)



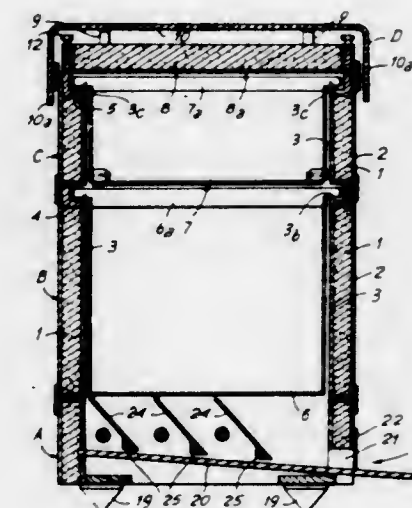
1. A bed cover for a bed with a mattress thereon, including two fabric side-pieces incorporating elastic means to tend to urge them to flat shape, one side of each of said side-pieces underlying said mattress in operative position, a fabric top-piece, means for connecting one side of each of said two side-pieces to opposite sides of said top-piece on curving said side-pieces to hold said top-piece spaced from said mattress, and a fabric end-piece with an edge flange portion to overlap at least the adjacent ends of said pieces in operative position.

**3,408,668**  
**HIVE FOR BEEKEEPING PROVIDED WITH QUICK ACCESS WAYS FROM THE BOTTOM TO THE HONEY SMALL FRAMES**  
Giovanni Paoletti, Via E. Rubleri 5,  
Florence, Italy  
Filed Mar. 11, 1966, Ser. No. 533,607  
Claims priority, application Italy, Mar. 16, 1965, 6,025/65  
7 Claims. (Cl. 6-1)

A beehive including a base, having front, rear and side walls, on which are superposed frame supporting cases each having front, rear and side walls forming continuations of the corresponding walls of the base, the base

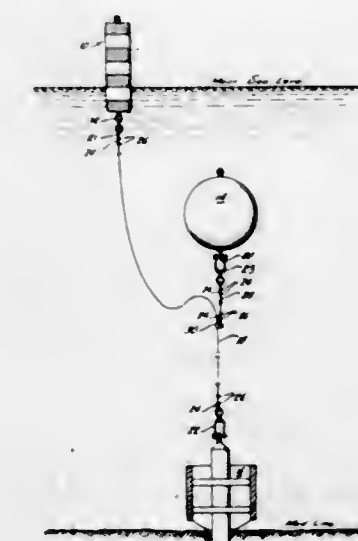
having an open upper end and the cases being opened at both ends. The base has a removable bottom which extends from its rear wall through an opening in the front wall, the bottom extending between the side walls of the base and sloping downwardly and outwardly through the opening in the front wall. An adjustable closure bar is provided for the front wall whereby, by inverting the bar, the effective size of the opening may be changed.

A plurality of ramps extend between the front and rear walls and between the side walls, these ramps being spaced along the direction of slope of the bottom of



the base. The ramps incline upwardly and rearwardly, with their lower edges being spaced from the bottom of the base by a short distance sufficient to permit passage of the bees through the clearance thus provided. The upper edges of the ramps are closely adjacent the lower edges of the frames. The ramps are pivoted at their lower edges to the side walls, and means are provided for adjusting the slopes of the ramps in accordance with the heights of the particular frames in the lowermost case. Vent openings are provided in the base side walls, with each vent opening being behind and beneath a respective ramp.

**3,408,669**  
**DUAL BUOY MARKER SYSTEM**  
George E. Mott, Metairie, La. (% Texaco Inc., P.O. Box 60252, New Orleans, La. 70160)  
Continuation-in-part of application Ser. No. 474,091  
Filed July 22, 1965. This application June 20, 1967, Ser. No. 647,409  
1 Claim. (Cl. 9-8)



A system of dual buoys for marking the location of underwater well heads wherein an intermediate buoy is attached to a line connecting a surface buoy to the well



head to maintain the lower portion of the connecting line under constant tension to prevent fouling.

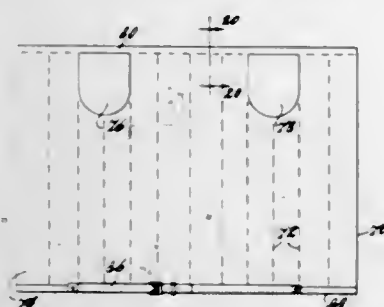
3,408,670

## SWIMMING DEVICES

Gerald W. Wolfe, Woodhaven and Pinewood Roads, Philadelphia, Pa. 19116

Filed Aug. 17, 1967, Ser. No. 661,769

3 Claims. (Cl. 9—307)



A swimming device comprising a unitary, thin, flat sheet of flexible material incorporating stiffening means along the forward and trailing edges thereof, and incorporating arm and hand engaging means whereby the device may be repetitively flexed to aid a swimmer in propelling himself through the water.

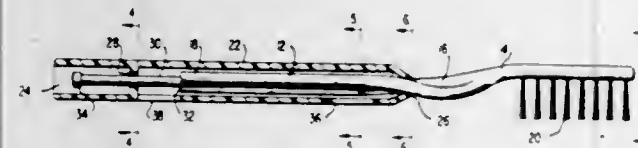
3,408,671

## OSCILLATING TOOTHBRUSH WITH TWISTED SUPPORT ROD

William Klang, 1371 E. 85th St., Brooklyn, N.Y. 11236

Filed Sept. 21, 1966, Ser. No. 580,945

3 Claims. (Cl. 15—22)



1. A manually operated oscillating toothbrush comprising:

- an elongated brush support rod of plastic material,
- the rod including an offset end portion, an intermediate twisted portion which is non-circular in section, and an opposite cylindrical end portion,
- bristles carried by and projecting from the offset end portion,
- a hollow open-ended tubular handle of plastic material,
- a bearing within the handle for slidably and rotatably journaling the cylindrical end portion of the rod, and
- one open end of the handle having an opening configuration complementary to the non-circular section of the intermediate twisted portion, this opening cooperating with the intermediate twisted portion to impart oscillation to the rod and to the bristles when the rod and handle are reciprocated relative to one another.

3,408,672

## SHOE BUFFER

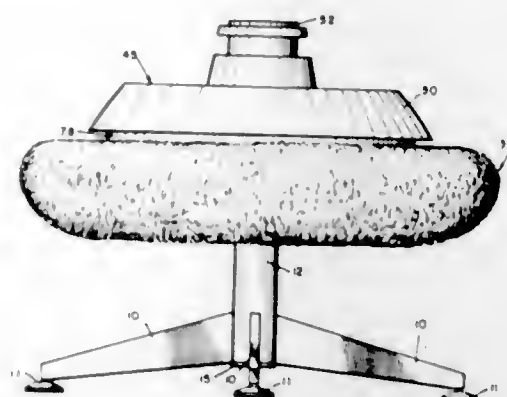
John K. Miles and John R. Davis, Columbus, Ind., assignors to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana

Filed Sept. 21, 1967, Ser. No. 669,441

12 Claims. (Cl. 15—97)

A shoe buffing apparatus comprising a floor-engageable base having a vertically extending post mounted thereon. An annular frame having a buffing pad mounted thereon

is rotatably mounted on said post. Said frame is rotatably driven for rotating the buffing pad by a motor operatively



supported from said post and actuated by switch means mounted on a cover extending over said motor and frame.

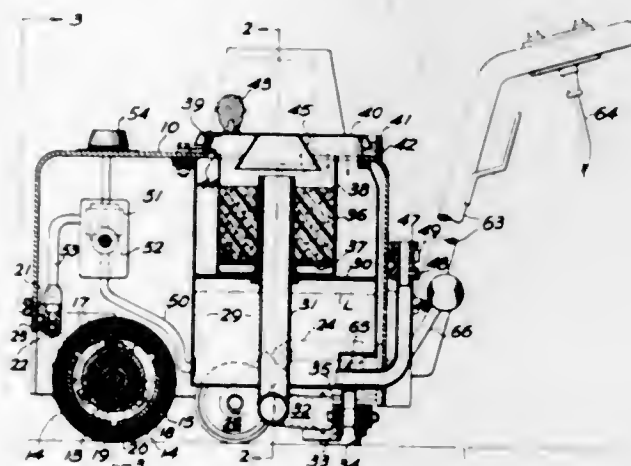
3,408,673

## FLOOR SCRUBBING MACHINE

Berton R. Oxel, New Castle, Pa., assignor to Agressive Floor Machine Corporation, Lawrence County, Pa., a corporation of Pennsylvania

Filed June 16, 1965, Ser. No. 464,307

2 Claims. (Cl. 15—98)



A floor scrubbing machine having a floor scrubbing element in the form of a foamed plastic scrubbing cylinder expandably mounted on a segmented expandable roll device actuated by the centrifugal spin of the device.

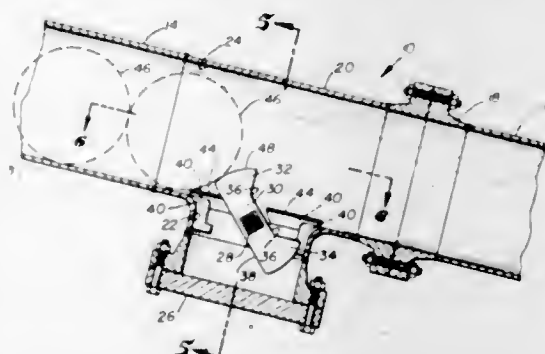
3,408,674

## SPHERE LAUNCHER

Alfred D. Hogan, Tulsa, Okla., assignor to FWI, Inc., Tulsa, Okla., a corporation of Oklahoma

Filed May 8, 1967, Ser. No. 636,798

5 Claims. (Cl. 15—104.06)



This invention relates to an improved sphere launcher. The invention provides a device for use in launching spheres, pigs, scratchers and other items into pipelines. The invention provides a body having a passageway of a diameter to freely permit the passage of spheres there-

through, the body having a closed lower recess. A cradle member is supported within the recess about a horizontal shaft and includes forward and rearward normally up-standing leg portions which function to prevent the passage of spheres except when the cradle is pivoted. The improvement of this invention includes an arrangement in which the sphere passing through the launcher is neither raised nor lowered but is supported over the recess in the launcher by rail members. An additional improvement includes the provision wherein the cradle may be rotated 180° to an inverted position in which the launcher provides a full uninterrupted spherical passageway therethrough for launching of pigs, scratchers, and other devices.

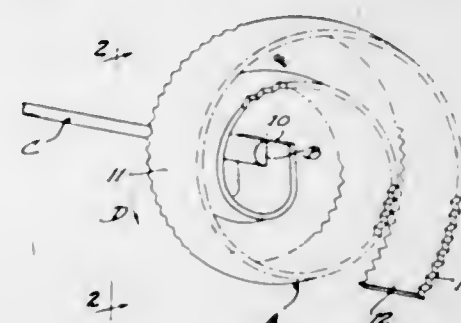
3,408,675

## ROTARY ROOT CUTTER

Peter L. Ciaccio, Los Angeles, Calif., assignor to Flexible, Inc., Pittsburgh, Pa., a corporation of Delaware

Filed Feb. 13, 1967, Ser. No. 615,672

6 Claims. (Cl. 15—104.09)



Disclosed herein is a rotary cutter of the type comprising a spiral band with saw teeth on one or both margins thereof, having at the center of the spiral a terminal portion which functions as a hub to transmit rotary drive to the outwardly-spiraling toothed blade. The blade is of shallow channel section, convex on its radially outer side, and the teeth are slanted inwardly from rounded shoulders adjacent the toothed margins, so as to be spaced away from the wall of a sewer pipe against which the cutter may be rotating.

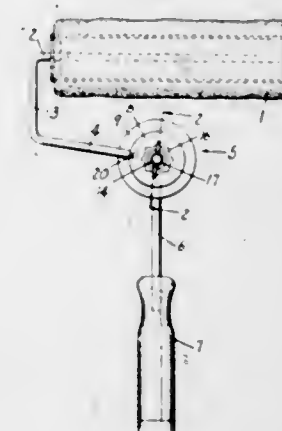
3,408,676

## ANGULARLY ADJUSTABLE AND FRICTIONALLY HELD HANDLE FOR PAINT ROLLERS AND THE LIKE

Julius N. Cayo, 1126 E. Empire Ave., Benton Harbor, Mich. 49022

Filed Oct. 11, 1967, Ser. No. 674,538

4 Claims. (Cl. 15—230.11)



A roll applicator for paint having a roll receiving spindle with a U-shaped bend on one end, a first cupped stamping with a flat annular flange and a cylindrical side wall with the free end of the U-bend of the spindle extending therethrough, a second cupped stamping op-

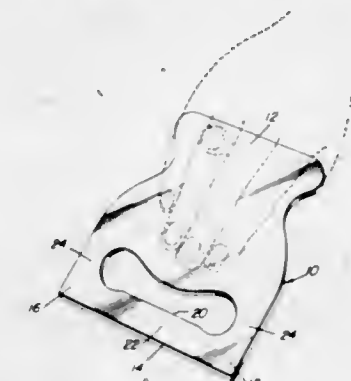
3,408,677

## WINDSHIELD SCRAPER

George H. Yates, 37 Hill St., Ellicott City, Md. 21043

Filed Mar. 3, 1966, Ser. No. 531,511

4 Claims. (Cl. 15—236)



This invention is directed to a windshield scraper made from a sheet of uniform thickness of such gauge to provide a substantial working edge of abutting type as opposed to a knife edge. The stiffness of such a thick edge is greatly reduced by an adjacent parallel slot which forms connecting bridges at the sides. These bridges transmit hand pressure to concentrate at spaced points on the blade edge with curvature adaption flexibility therebetween.

3,408,678

## WINDSHIELD WIPER ASSEMBLY

Roy E. Linker, Nursery Road, Titusville, N.J. 08560

Filed Aug. 17, 1966, Ser. No. 573,109

8 Claims. (Cl. 15—250.05)



An electrically heated windshield wiper assembly comprising an arm movable over a windshield and having two oppositely extending blade supporting members carried thereby. The blade supporting members are formed of



electrically conducting material and are electrically insulated one from the other. A windshield wiper blade is operably connected to the blade supporting members and is provided with an electrical resistance element for raising the temperature of the windshield wiper blade. Current is supplied to the electrical resistance element by connections between the blade supporting members and the opposite ends of the electrical resistance element.

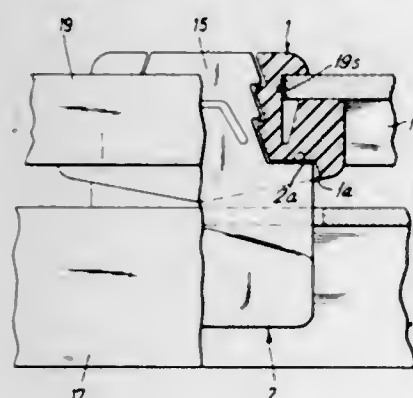
3,408,679

**WINDSHIELD WIPER CONSTRUCTION**

Hans Christian Deutscher, Ludwigsburg, Willy Bock and Alfred Kohler, Bietigheim, and Kurt Bauer, Kleiningersheim, Germany, assignors to SWF-Specialfabrik für Autzubehör Gustav Rau G.m.b.H., Bietigheim, Germany

Filed May 13, 1966, Ser. No. 549,928  
Claims priority, application Germany, Oct. 6, 1965,  
S 99,961

8 Claims. (Cl. 15-250.32)



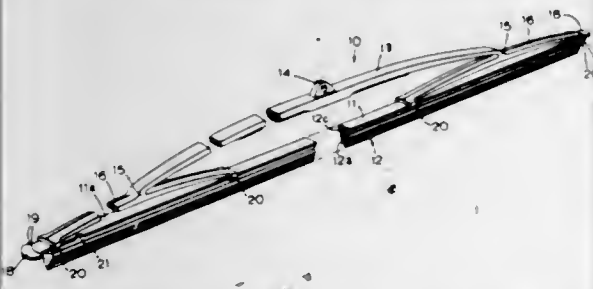
A joint between two parts, for example, between a first wiper blade stirrup and a second wiper blade stirrup includes a female socket part having spaced exterior flange portions which are adapted to engage around the periphery of as lot defined in a U-shaped stirrup member and a central cavity having engagement teeth. The second joint part includes a male member having a projection with engagement teeth which interengage with the female part and a transverse base portion defining a high central point about which a second wiper blade stirrup is pivotal. The two parts are joined together with the male and female elements by first engaging the female element around the slot of the first part so that the transverse shoulder thereof engages beneath a rim of the second part and then interconnecting the two parts by directing the male part into the female part.

3,408,680

**WINDSHIELD WIPER ASSEMBLIES**

Lothar R. Heller, Stoney Creek, Ontario, Canada, assignor to Fridon Manufacturing Limited, Burlington, Ontario, Canada

Filed Jan. 28, 1966, Ser. No. 523,743  
13 Claims. (Cl. 15-250.42)



In a windshield wiper squeegee assembly wiping and retention portions of the squeegee are joined by a narrower neck portion and the retention portion is held in a groove formed between spaced webs upstanding from a

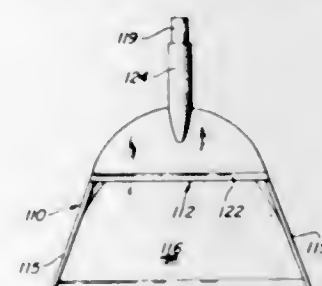
squeegee support of extruded plastic material; the squeegee support has transversely projecting edges, one of which is notched and permits release from and attachment to embracing claws of a pressure-applying superstructure by successively registering the notch with the pairs of claws. In a method of making the assembly the support is formed by cutting from an extruded length of channel section, the squeegee element is engaged in the channel and then the ends of the support are deformed to form stop means limiting movement of the squeegee in the channel and also movement of the support in the superstructure.

3,408,681

**GATHERING PAN STRUCTURES**

Stig A. Isakson, 5751 SW. 54th Ave.,  
Portland, Oreg. 97221

Filed July 26, 1965, Ser. No. 474,631  
3 Claims. (Cl. 15-257.2)



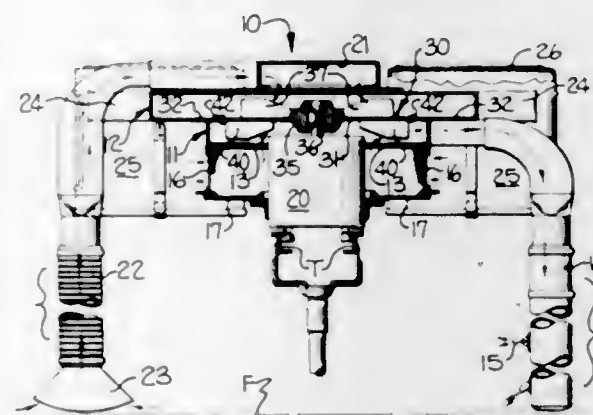
Gathering pan structures in which pusher members are secured by detents in positions covering the rear portions of pans and are detachable from the pans for use as pushers. One pusher member is secured in a slotted gripping portion at the rear of the pan. Another pusher member has a handle which snaps over the handle of the pan and a third pusher member has a socket adapted to fit over a projection of the pan.

3,408,682

**AIR IMPELLER MEANS FOR UNITARY SUCTION AND BLOWING TRAVELING CLEANERS**

Robert L. Black, Jr., Charlotte, N.C., assignor to Parks-Cramer Company, Charlotte, N.C., a corporation of Massachusetts

Filed Oct. 14, 1966, Ser. No. 586,694  
8 Claims. (Cl. 15-312)



1. In a unitary suction and blowing traveling pneumatic cleaner adaptable for travel above and along rows of textile machines and comprising superposed blowing and suction housings, and tubes depending from the suction and blowing housings for applying respective suction and blowing air currents to surfaces to be cleaned; rotary air impeller means for both of said housings comprising a rotary partition separating said suction and blowing housings into separate, non-air-communicating suction and blowing compartments, a first plurality of air impeller blades projecting from one side of said rotary partition and positioned within said suction compartment,

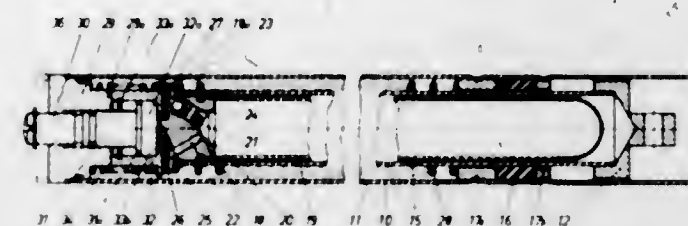
a second plurality of air impeller blades projecting from the opposite side of said rotary partition and positioned within said blowing compartment; and means for unitarily rotating said partition and said first and second pluralities of blades for circulating independent air currents through the suction and blowing housings.

3,408,683

**DOOR CLOSER**

Paul Zahn, 9 Lindenweg, Sennestadt  
via Bielefeld, Germany

Filed May 25, 1965, Ser. No. 458,640  
Claims priority, application Germany, May 25, 1964,  
Z 10,863  
20 Claims. (Cl. 16-51)



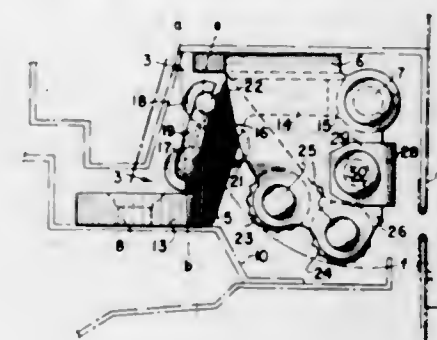
A hydraulic door closer is provided including a housing, a piston axially movable in the housing and dividing the interior of the housing into two fluid spaces, and a back-pressure valve, also serving as a throttle valve, incorporated in the piston for the passage therethrough of a fluid and constructed as a disc valve with a resilient valve seat ring fixed to one end face of the disc valve and covering supply and discharge passages provided in the disc valve and terminating in a common axial passage in the disc valve, with the supply passage being constructed as a ball check valve. The door closer is linked to the door frame by a linkage including at least one lever arm hingedly connected between the door closer and the door frame.

3,408,684

**DOOR HINGE WITH BUILT-IN PRELOADED TORSION BAR HOLD-OPEN MEANS**

Joseph H. Marchione, Rockford, Ill., assignor to Atwood Vacuum Machine Company, Rockford, Ill., a corporation of Illinois

Filed Aug. 11, 1966, Ser. No. 571,852  
10 Claims. (Cl. 16-145)



1. In a hinge comprising a generally channel-shaped outer hinge member providing vertically spaced top and bottom walls and an inner hinge member disposed between said top and bottom walls and pivotally connected thereto by a substantially vertical pintle, one of said hinge members being adapted to be secured to a body and the other to a door swingable to and from open position relative to the body about the substantially vertical pintle axis, the inner hinge member having laterally spaced substantially parallel inner and outer end portions and a transverse intermediate connecting portion, the improvement which consists in the provision of a substantially vertical torsion bar that is generally J-shaped mounted on one side of the intermediate portion of said inner hinge member, the tor-

sion bar having a radius arm on one end of the vertical leg of the J, said radius arm having on the outer end thereof a substantially vertical detent projecting from one edge of said intermediate portion of said inner hinge member, a striker on one of the top and bottom walls of the outer hinge member, the striker engaging the detent to deflect the radius arm of the torsion bar and go past said detent in the door opening and closing movement of the hinge members relative to one another for a hold-open action, the other end of said torsion bar remote from said radius arm when free being normally in a vertical plane at an angle to the vertical plane of said radius arm and detent, and means securing said J-shaped portion of the torsion bar with all portions thereof substantially parallel to the transverse portion of said inner hinge member to provide a preload spring tension in said bar, the detent being movable with its radius arm relative to the inner hinge member upon engagement with the striker only in a direction to increase such spring tension in said bar.

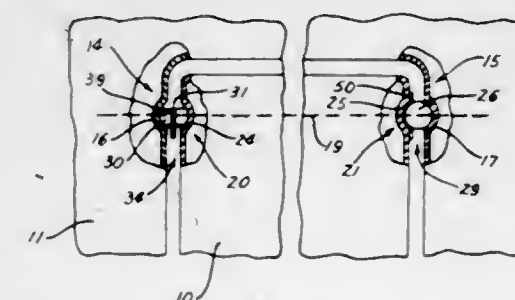
3,408,685

**HINGE STRUCTURE**

Tad B. Anthony, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware

Filed July 13, 1966, Ser. No. 564,899

10 Claims. (Cl. 16-169)



A hinge structure is disclosed in the form of a ball and socket type hinge structure wherein the ball or pivot element has unequal dimensions and is freely insertable between the hinged members and then movable to an engaged position. Retainer means may be assembled to the pivot element to prevent accidental removal of the pivot element.

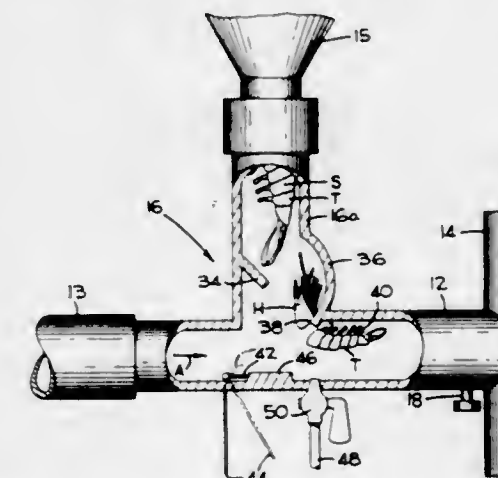
3,408,686

**DEVICE FOR DEHEADING SHRIMP**

Fred W. Stephenson, 625 Margaret St.,  
Key West, Fla. 33040

Application Aug. 30, 1965, Ser. No. 483,732, now Patent No. 3,309,731, dated Mar. 21, 1967, which is a continuation-in-part of application Ser. No. 342,634, Feb. 5, 1964. Divided and this application Sept. 23, 1966, Ser. No. 604,081

6 Claims. (Cl. 17-2)



Whole shrimp are received in the upper end of a water-filled standpipe and are permitted to descend ver-



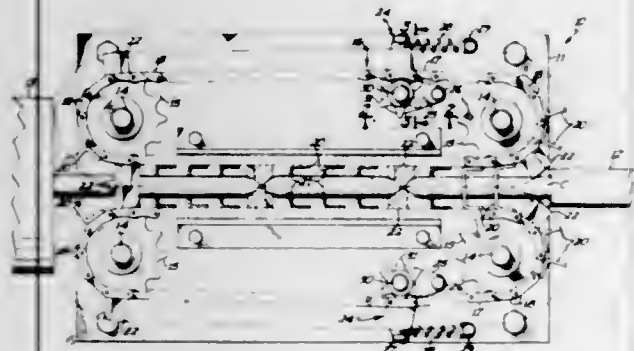
tically in the pipe to a T intersection with a horizontally positioned conduit carrying a stream of water flowing at a relatively high velocity as compared to the velocity of the water in the standpipe and the velocity of the descending shrimp. As the leading tail section of the shrimp is received in the high velocity stream it is rapidly accelerated and the trailing head portion is separated therefrom. The head and tail portions are then conveyed in the water stream to apparatus which separates them so that the tail portions can be collected together.

3,408,687

### CHAIN TIGHTENER FOR FRANKFURTER LINKER CHAIN

Oscar H. Amundson, Austin, Minn., assignor to Geo. A. Hormel & Company, Austin, Minn., a corporation of Delaware

Filed Apr. 26, 1966, Ser. No. 545,308  
3 Claims. (Cl. 17-34)



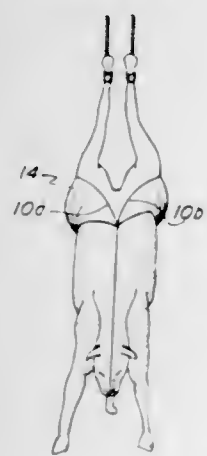
A pair of tensioning mechanisms for use with a link forming device employed in forming elongate meat stuff casing into a plurality of links. The link forming device, including a pair of endless chain members trained about sprockets and each having guide elements thereon and a plurality of pincher elements thereon to grip and constrict the stuff casing as it passes between parallel proximal runs of the chain members. The tensioning mechanism serving to maintain the chain members in a tensioned condition without effecting the synchronized movement of the chain members.

3,408,688

### HIDE REMOVAL METHOD

Thomas Franklin Sparks, West Point, Nebr., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware

Filed July 7, 1966, Ser. No. 563,511  
4 Claims. (Cl. 17-45)



1. In a method for removing the hides from suspended livestock carcasses the steps of:  
(a) slitting the hide longitudinally along the back of the carcass,

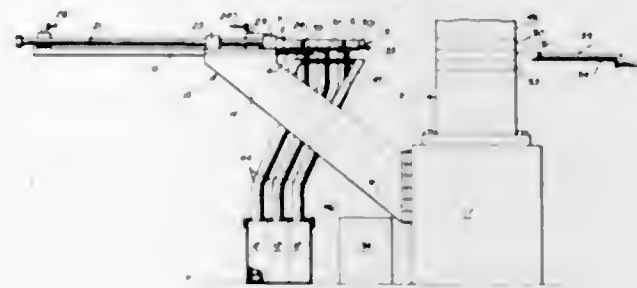
(b) gripping the upper portions of the hide on each side of said longitudinal slit, and  
(c) applying a pulling force to the hide in a direction wherein said pulling force has vertical and horizontal components, said vertical component being in a downward direction and said horizontal component being directed from the back of the carcass to its underside.

3,408,689

### MULTI-RECEPTACLE CONVEYOR AND DISCHARGE APPARATUS FOR DISSIMILAR MOLDED PARTS

Edward A. Heiner, Rocky Hill, Conn., assignor to Litton Business System, Inc., a corporation of New York

Filed Apr. 3, 1967, Ser. No. 628,037  
7 Claims. (Cl. 18-2)



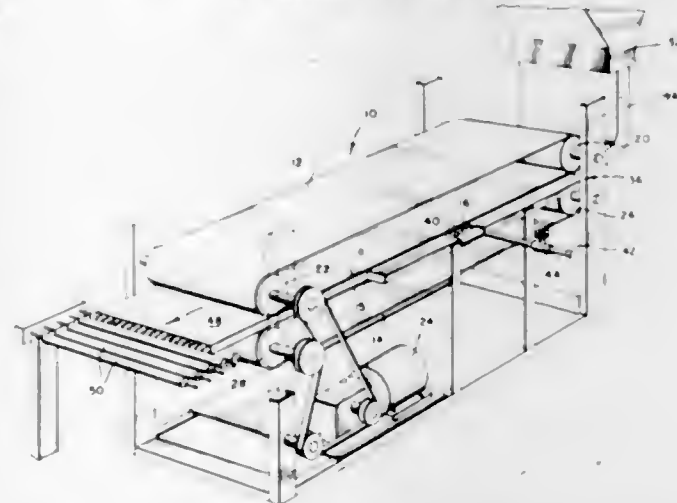
A multi-receptacle conveyor and discharge apparatus for carrying segregated dissimilar molded parts from a mold station to a discharge station characterized by an assembly of a plate having a plurality of openings and a relatively movable shutter underlying the plate and movable relative thereto to block said openings when the plate is moved toward the mold station whereby segregated parts stripped from the mold are individually received in and held segregated in said blocked openings, and movable to allow said segregated parts to drop through said openings into separate part storage containers when said plate is moved to said discharge station.

3,408,690

### APPARATUS FOR MAKING FOAMED POLYMERIC STRUCTURES

Francis J. Jacob, New Castle, Pa., assignor to W. R. Grace & Co., a corporation of Connecticut

Filed Dec. 7, 1966, Ser. No. 599,906  
9 Claims. (Cl. 18-4)



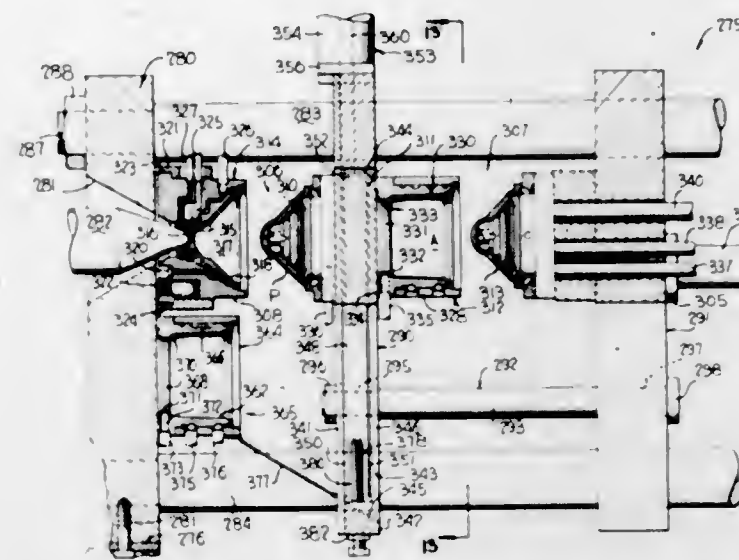
The disclosure relates to an apparatus for continuously expanding and foaming polymeric materials, such as polystyrene. Beads of the polymeric material containing a suitable blowing agent are heated in a molding channel provided by opposed continuous conveyors to cause softening of the polymer and evaporation of the blowing agent, with resultant expansion and foaming. The heating is achieved by the injection of steam at high velocities into the polymeric material through the side walls of the molding channel, which connect the opposed conveyors.

3,408,691

### INJECTION BLOW MOLDING MACHINES

Herbert S. Ruekberg, Highland Park, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Jan. 22, 1964, Ser. No. 339,545  
10 Claims. (Cl. 18-5)



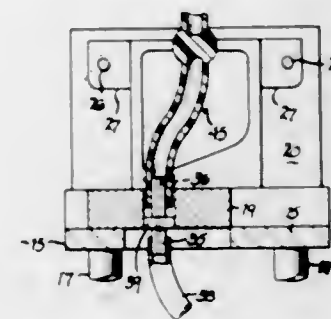
1. A molding machine comprising first (280), second (290) and third (291) platens disposed in that order, means (300) for moving said platens relative to each other along a predetermined path, first cooperative means (306) between said first (280) and said second (290) platens for molding a parison (P), second cooperative means (307) between said second (290) and third (291) platens for forming a finished article (A) from a parison, and third cooperative means (317, 313) between said first (280) and third (291) platens for molding a parison (P').

3,408,692

### APPARATUS FOR PRODUCING OFFSET FINISH ON CONTAINERS

Wilbur A. Schaich, Maumee, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed May 21, 1965, Ser. No. 457,579  
4 Claims. (Cl. 18-5)



Apparatus is provided for making containers having offset finishes by utilization of a free extrusion process. The finish-defining portion of an extruded tubular parison is shifted to its final location in response to the closing movement of a pair of separable blow mold sections.

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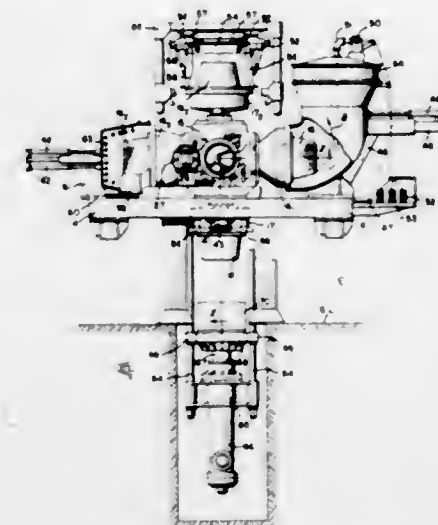
### APPARATUS FOR MOLDING REINFORCED PLASTICS

Kenkichi Murakami, Kyotoshi, Osamu Ishikawa, Hirakata-shi, Shigeru Shimizu, Osakashi, Shiro Imano, Sakai-shi, and Hisao Morimoto, Otokunigun, Japan, assignors to Sekisui Kagaku Kogyo Kabushiki Kaisha, Osakashi, Japan, a corporation of Japan

Filed Feb. 2, 1966, Ser. No. 524,441  
7 Claims. (Cl. 18-5)

An apparatus for producing reinforced molded plastic articles. It comprises a frame, a hollow shaft rotatably

mounted on said frame, and shaft rotating means coupled to said shaft for rotating said shaft intermittently. A plurality of preforming screens and shaping molds are mounted alternately at spaced positions around said shaft, and a preforming chamber is mounted on said frame adjacent the path of said screens and molds and means for supplying a reinforcement material onto the preforming screens. Said screens and molds pass through said preforming chamber during rotation of said shaft. A com-



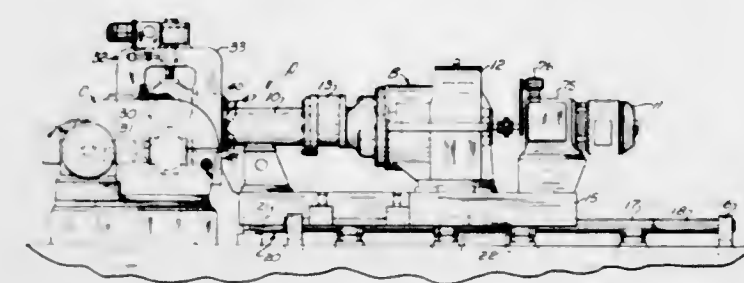
pression molding means on said frame has a further shaping mold complementary in shape to the molds on said shaft and movable back and forth toward and away from a position in the path of said molds and screens. Said preforming chamber and compression molding means are positioned so that when a mold on the shaft stops at the position of the compression molding means, a preforming screen is in the preforming chamber. A transfer valve is provided in said shaft and around which said shaft rotates.

3,408,694

### EXTRUDER

James T. Matsuoka, Brecksville, Ohio, assignor, by mesne assignments, to Stewart Bolling & Co. Inc., Cleveland, Ohio, a corporation of Ohio

Filed Aug. 25, 1966, Ser. No. 575,132  
4 Claims. (Cl. 18-12)



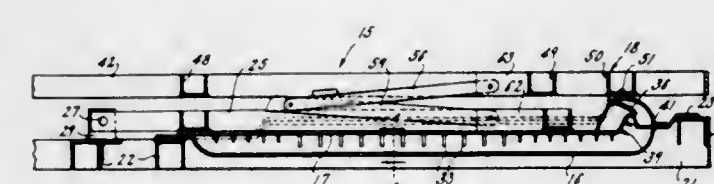
A slot-type die for a sheet or slab extruder split through the die slot parallel to the length thereof into at least two separate parts for facilitating opening and cleaning of the die.

3,408,695

### FOAM CUSHION MOLD

Benjamin H. Scott, Mishawaka, Ind., assignor to Uniroyal, Inc., a corporation of New Jersey

Filed Mar. 31, 1966, Ser. No. 539,189  
4 Claims. (Cl. 18-39)



1. A mold assembly for making a foam cushion article having a body portion and an integral lip portion extend-

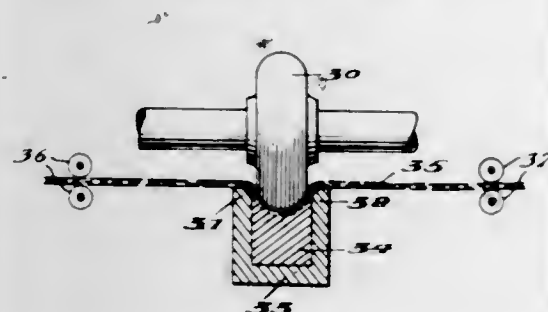


ing outwardly therefrom, comprising: a lower mold for forming said body portion; a top cover plate for partially closing said mold, said plate having a first lip forming member spaced from said mold when said plate is in a closed position, so that, an opening is formed through which a predetermined amount of excess foam may pass; and a second lip forming member for closing said opening and cooperating with said first lip forming member to mold said lip portion from said excess foam.

3,408,696

**CRIMPED TOW DEREGISTRATION APPARATUS**  
Paul M. Cole, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

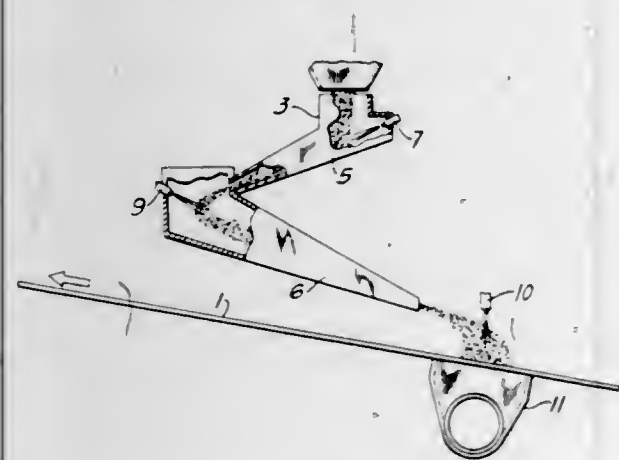
Filed July 20, 1967, Ser. No. 654,891  
5 Claims. (Cl. 19—65)



An apparatus and process for deregistration of crimped synthetic filamentary tow by forwarding a continuous tow in a longitudinal direction over a surface and contacting the tow with the surface by laterally traversing a plurality of discs over the tow. The traversing discs cause a sequential drag in adjacent filaments across the tow whereby the adjacent filaments are deregistered, that is, moved out of phase with each other.

3,408,697

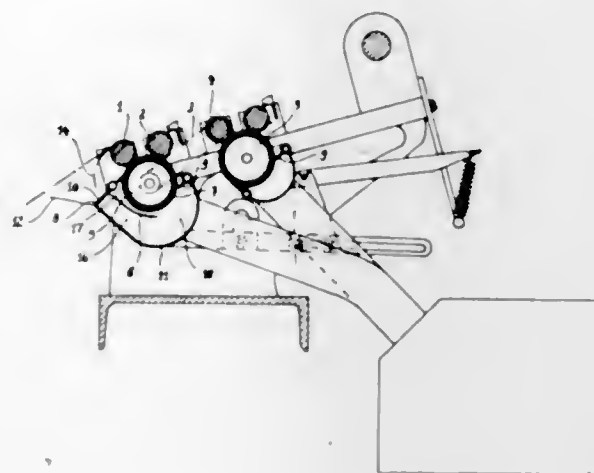
**APPARATUS FOR FORMING A FIBER MAT**  
Willis G. Craig, Willoughby, Ohio, assignor, by mesne assignments, to Koppers Company, Incorporated, Pittsburgh, Pa., a corporation of Delaware  
Original application Sept. 21, 1965, Ser. No. 489,030, now Patent No. 3,363,036. Divided and this application Sept. 25, 1967, Ser. No. 684,081  
3 Claims. (Cl. 19—156.3)



Apparatus for forming a fiber mat includes a source of supply of random length fibers located above a continuously moving belt; the fibers being propelled by air down an inclined diverging chute and discharging into another air stream that directs the fibers in the opposite direction downwardly in scattered array onto the moving belt. Suction means below the porous belt creates a holding force to keep the fibers on the belt.

3,408,698  
**APPARATUS FOR CLEANING THE DRAWING ROLLERS IN SPINNING MACHINES**  
Franz Xaver Rosele, Harthausen, and Hans Fischer and Adolf M. Muller, Augsburg, Germany, assignors to Franz X. Rosele and Adolf M. Muller, trading as Unilever G.m.b.H., & Co. K.G.

Filed Nov. 1, 1966, Ser. No. 591,275  
Claims priority, application Germany, Nov. 2, 1965, U 12,164; May 9, 1966, U 12,670  
10 Claims. (Cl. 19—263)

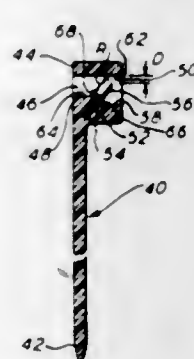


A device for cleaning the drawing rollers of spinning machines wherein a cleaning roller having a leather periphery is rotated in contact with the drawing rollers and is disposed in a suction trough so that the lint and fluff picked up by the cleaning roller is entrained in the suction stream of the trough without additional devices to dislodge the lint and fluff; the trough is subdivided by a partition into a pair of compartments including a compartment extending ahead of the cleaning rollers and provided with a perforated cover through which the suction stream draws broken rovings and threads into a trough.

3,408,699

**BUNDLING STRAP**  
Frank J. Reynolds, North Brunswick, N.J., assignor to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey

Filed Aug. 7, 1967, Ser. No. 658,944  
10 Claims. (Cl. 24—16)

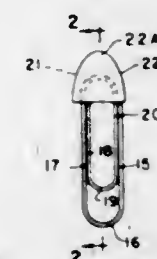


The disclosure is directed to an improved bundling strap of the type which consists of an elongated relatively flat strap having at one end a tapered tail section and at the other end a head portion. The head portion includes an aperture for the passage of the tail-end tapered portion therethrough after it has been passed about a bundle of wires. The head portion includes in its aperture a flexure restraining means such that the tapered-tail portion of the strap may be inserted through the aperture of the head portion to form said cable bundle, but that when attempts are made to withdraw the strap from the head portion, the flexure restraining means prevents such removal, thus assuring that the strap remains locked in its

cable bundling position. The improvement consists of modifications to the flexure restraining member found in the aperture of the head portion. These modifications reduce the resistance of said flexure restraining member to the insertion of the strap into the aperture of the head portion, while increasing the resistance of said flexure restraining member to the withdrawal of the strap from the head-end portion. The decrease in insertion resistance is accomplished by weakening the flexure restraining member at its flexure region. The increased withdrawal resistance is accomplished by strengthening the flexure restraining member. This weakening is achieved in any of a number of ways. Firstly, material may be removed from the flexure restraining member at its flexure region, that is the region of flexure during insertion. Additionally, the dimensions of the flexure restraining member may be changed so that the portion at or adjacent the flexure region is thinner than the remainder of the flexure restraining member. Such weakening can also be produced by chemical treatment or processing such as by annealing the two sections of the flexure restraining member differently or in the alternative the upper portion of the flexure restraining member, that is above the flexure region may be strengthened by adding tabs or by other stiffening means or by forming.

3,408,700

**REINFORCED PAPER CLIP**  
Marston S. Chase, 1330 New Hampshire Ave. NW., Washington, D.C. 20036  
Filed Apr. 12, 1967, Ser. No. 630,407  
10 Claims. (Cl. 24—66)



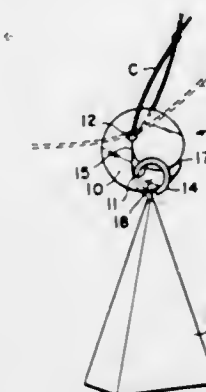
The present invention relates to wire paper clips of the type having a large first U-shaped section with a smaller second U-shape section nested within the first section and connected thereto by a connecting U-shaped section having its legs as continuations of opposite legs of the first and second U-shape sections with a member positively connected to the bight portion and portions of the continuation legs to maintain the continuation legs in substantially parallel relation rigidifying the bight portion of the connecting U-shape section to improve the clamping characteristics between the first and second U-shape sections.

3,408,701

**CLIP FOR FISHING LINE**  
John Richard Decker, 5710 Harder St., San Jose, Calif. 95129  
Filed Aug. 23, 1966, Ser. No. 574,378  
6 Claims. (Cl. 24—73)

A fishing clip of plastic material of a type, for example, acetate, which is tough, resiliently bendable, resists fatigue, and has a definite, ascertainable tear or break-away strength when stressed beyond its elastic limit. The clip comprises a body portion with two holes in it, one to receive a fishing line and one to receive the attaching eye of a sinker or other item to be attached by the clip to such line. A first slit in the body, of less thickness than the material from which an eye is used with the clip is made, communicates the hole in the body for the eye

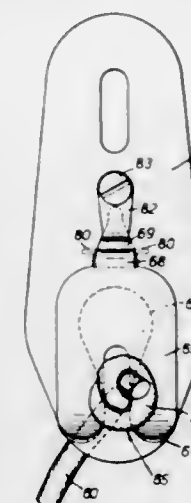
with a lateral edge of the body at a point remote from the hole for the eye by a distance greater than the internal diameter of such eye. This first slit is spaced throughout its length from an edge of the body by a distance not greater than the internal diameter of the smallest eye to be used therewith so as to form a tongue insertible in such eye. A second slit of less width than the thickness of a fishing line, to be used with the clip communicates



the hole for the line with a lateral edge of the clip, either directly or via the hole for the eye. One of the holes is spaced at a selected minimum distance from an edge of the body, the plastic material of the body along said minimum distance comprising a breakaway zone which will fracture when subjected to a known tensile stress exerted between a fishing line in its hole and an eye in its hole in the clip.

3,408,702

**CONNECTOR DEVICES**  
Frank Bernard Harley, Egham, England, assignor to Harley Patents (International) Limited, Egham, England  
Original application Feb. 15, 1965, Ser. No. 432,784, now Patent No. 3,335,468, dated Aug. 15, 1967. Divided and this application June 1, 1967, Ser. No. 642,805  
Claims priority, application Great Britain, Feb. 24, 1964, 7,617/64  
6 Claims. (Cl. 24—128)



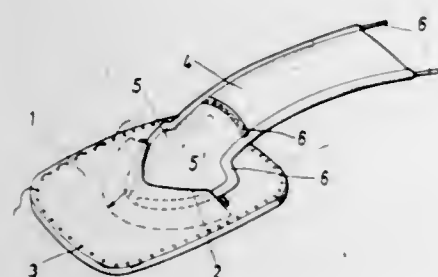
This invention provides a connector device by means of which a cord, rope, chain, wire or the like may be simply connected to another part and the specification specifically discloses two constructions each of which comprises a flat plate having a relatively flat abutment support connected to it for movement between normal and displaced positions, the abutment support having in it a slot, and the plate a hole, the slot and hole only partially overlying one another so that by insertion of, for example, a knot on a cord upwards through the aperture with the abutment support in the displaced position the run of the cord can then be slid down the slot of the abutment support whereafter the abutment sup-



port can return to the normal position at which time the knot is prevented from passing back through the slot and hence prevented from passing back through the aperture.

### 3,408,703 HANGER AND FASTENING DEVICE

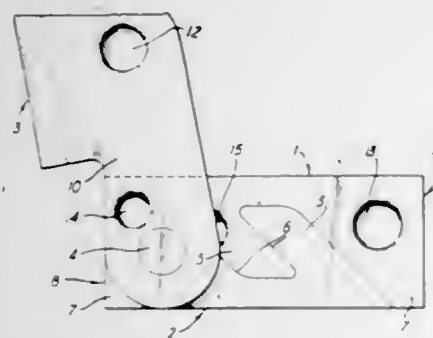
Kurt Brandenburg, Sophienstrasse 90,  
Frankfurt am Main, Germany  
Filed Aug. 24, 1966, Ser. No. 574,653  
Claims priority, application Germany, Aug. 24, 1965,  
B 83,395  
1 Claim. (Cl. 24—201)



A strap device formed (1) of an insert provided with a head portion and (2) of a slotted receiving portion; said head lockingly engages said receiving portion when introduced thereinto; an elastically deformable reinforcing inlay extending along the periphery of said head portion.

### 3,408,704 SEPARABLE FASTENER

Roger Milner King, White Hill House, Batchworth Heath,  
Rickmansworth, Hertfordshire, England  
Filed Sept. 19, 1966, Ser. No. 580,515  
Claims priority, application Great Britain, Sept. 20, 1965,  
39,949/65  
6 Claims. (Cl. 24—201)



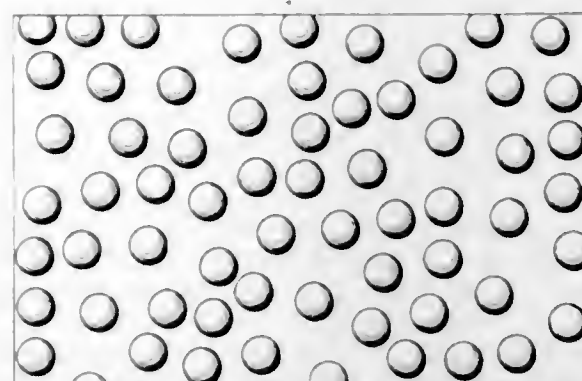
A clasp for joining together the two ends of a loop member such as a wrist band or a safety belt comprising two interengaging portions, one of which carries a single tongue member which engages with and is fully enclosed by a groove in the other portion. A safety catch is pivotally mounted on one end of one of the clasp portions to close and catch over the top of the two portions.

### 3,408,705 FASTENER ARTICLES

James H. Kayser, St. Paul, Minn., and William C. Flanagan, Jr., Hudson Township, St. Croix County, Wis., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware  
Filed July 7, 1966, Ser. No. 563,520  
7 Claims. (Cl. 24—204)

Fasteners comprising pairs of unitary interengaging articles. Each article has a base carrying a multiplicity of headed engaging elements over its surface. The positions of the element heads are unordered with respect to

each other. This lack of order makes the engagement force of the articles much more uniform at all relative

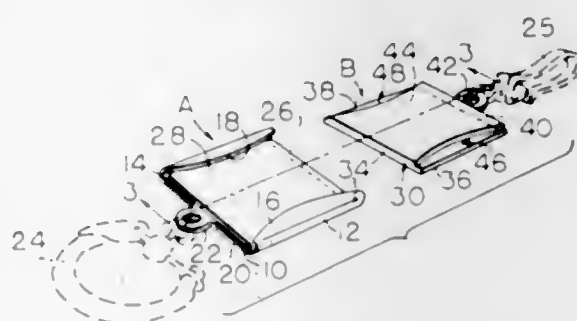


angles and positions of engagement than if the elements were ordered, e.g. in rows.

### 3,408,706 FASTENER DEVICE

Philip Allan Hodge, Warwick, R.I., assignor to Anson, Incorporated, Providence, R.I., a corporation of Rhode Island

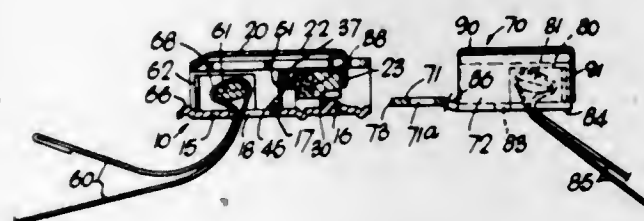
Filed Jan. 19, 1967, Ser. No. 610,322  
11 Claims. (Cl. 24—230)



This invention relates to clasp type fastener devices and, more particularly, to a two-piece device suitable for detachably connecting in a positive manner two separate members such as jewelry bracelet strap members, separable key chain elements or belt ends. More specifically, this fastener, which is inherently reliable for making frequent disconnections and reconnections, comprises two relatively slidable, resiliently interlockable members having a concealed resilient spring member disposed within the casing of one element and possessing interlocking complementary groove and retaining flange means the respective members.

### 3,408,707 BUCKLE FOR SAFETY BELTS

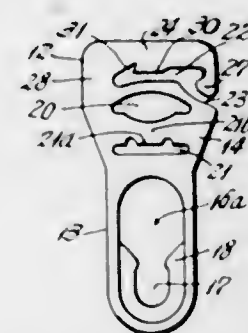
Desmond John Hemphill, 73 Melville Road,  
West Brunswick, Victoria, Australia  
Filed June 19, 1967, Ser. No. 646,876  
Claims priority, application Australia, July 11, 1966,  
8,082/66  
5 Claims. (Cl. 24—230)



A safety belt buckle having an apertured tongue member engageable with lugs in a socket member. A spring biased latch member is slidable above the tongue member

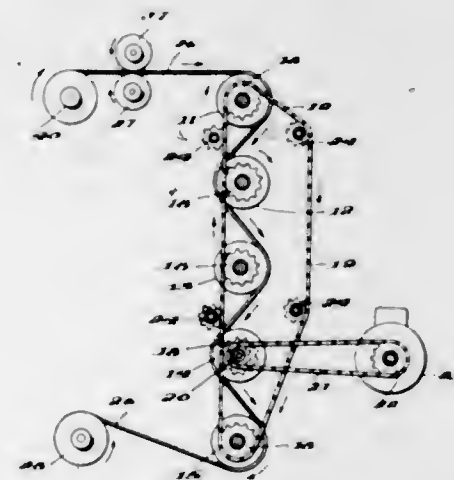
to hold it against the lugs. A pivoted release member actuates the latch member into disengaged position and is assembled by sliding it along intumed flanges on the socket member.

3,408,708  
**DETACHABLE GARTER GRIPS**  
Gabriel S. Hawie, Bridgeport, Conn., assignor to The Hawie Manufacturing Company, Bridgeport, Conn., a Corporation of Connecticut  
Filed Sept. 1, 1967, Ser. No. 665,028  
2 Claims. (Cl. 24—245)



A plastic garter grip frame in which the garment-loop attaching bar has serrations on its lower edge to prevent gathering of the material of the loop at the free end of the bar and escaping from the bar through an entrance slot when the tension between the frame and the loop is excessive.

3,408,709  
**METHOD FOR SOFTENING FIBROUS SHEET MATERIAL**  
Charles Frederick Reitz, Richmond, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
Filed Dec. 29, 1964, Ser. No. 421,902  
1 Claim. (Cl. 26—51)

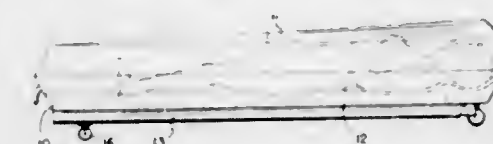


Continuous method for softening a non-woven, polymeric, film-fibril sheet composed of cohesively bonded, flash-spun, plexifilamentary material comprising stroking opposite sides of the sheet in transit via "button breaker" rolls while stretched between a supply and take-up therefor.

3,408,710  
**PROCESS FOR THE MANUFACTURE OF BERYLLIUM PRODUCTS**  
José Mallen-Herrero, Paris, and Michel Weisz, Orsay, France, assignors to Commissariat à l'Energie Atomique, Paris, France  
No Drawing. Filed Oct. 19, 1964, Ser. No. 404,906  
Claims priority, application France, Oct. 25, 1963, 951,894  
3 Claims. (Cl. 29—423)  
A cast beryllium ingot is covered with a thin soft steel coating; compressed at 800° C.; extruded at about 900°

C.; covered with a thick soft steel envelope; and forged. After heating to 1000° C. the ingot is compressed and the steel cover removed. The billet may be coated with silver and then extruded at 900° C.

3,408,711  
**CRYOEMBALMING CASKET**  
Richard S. Pauliukonis, Cleveland, Ohio, assignor to Cryobank, Inc., Cleveland, Ohio, a corporation of Delaware  
Filed Apr. 15, 1966, Ser. No. 542,913  
10 Claims. (Cl. 27—6)



1. A casket comprising an elongated walled metal box or frame proportioned to receive and protectively surround a corpse and having substantially regular heat transfer characteristics at all local areas so that no relatively highly heat-opaque localities are present and substantial local aberrations in heat absorption through said walls are avoided, a yielding resilient bed of heat-conductive metal wool or metal fabric supported over the bottom of said box or frame and connected through a large heat path with the metal of the box or frame, whereby the bed conforms to a corpse supported thereon, and heat-absorbing solid contact is maintained between the corpse and the bed over a large surface area of the corpse and thereby a large heat path is established between a large area of the corpse and the metal of the box or frame during exterior cooling of said box or frame.

3,408,712  
**CRYOGENIC EMBALMING PROCESS**  
Richard S. Pauliukonis and George Matlow, Cleveland, Ohio, assignors to Cryobank, Inc., Cleveland, Ohio, a corporation of Delaware  
No Drawing. Filed Apr. 15, 1966, Ser. No. 542,755  
8 Claims. (Cl. 27—22)

1. A method of embalming, without flushing of body fluids, by lowering the temperature of the remains of a newly deceased person from a temperature at or above room temperature to an extremely low temperature at which the remains are held, said method comprising first and second temperature-reducing steps and a storing step, said first temperature-reducing step comprising reducing the temperature of the remains at a relatively rapid rate of from about .5° F. to 50° F. per minute to a temperature below about -20° F. and said second cooling step comprising further reducing the temperature of the remains at a reduced rate to a temperature below about -240° F. and said storing step comprising maintaining said remains at below about -240° F.

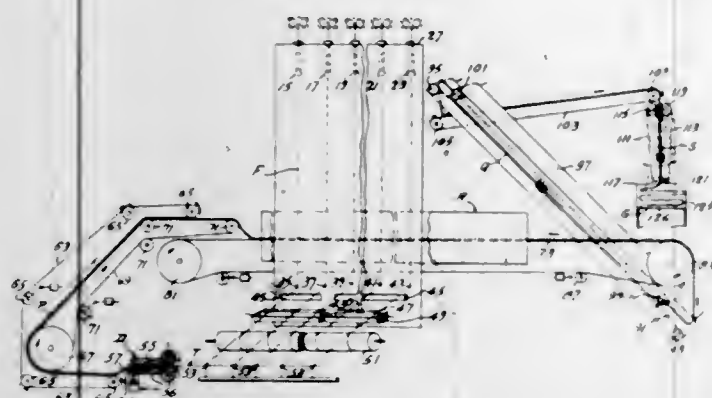
3,408,713  
**PREPARATION OF FILTER TOW**  
Frank A. Parker, Drummondville, Quebec, Canada, and Joseph L. Killoran, deceased, late of Drummondville, Quebec, Canada, by Irene Agnes Buchanan Killoran, sole heir and executrix, Drummondville, Quebec, Canada, assignors to Chemcell Limited—Chemcell Limitee  
Filed Jan. 24, 1966, Ser. No. 522,798  
Claims priority, application Great Britain, June 15, 1965, 25,311/65  
8 Claims. (Cl. 28—1)

An apparatus for conveying under tensionless conditions a continuous length of crimped tow into a packaging container, where pairs of endless conveyor belts having juxtaposed surfaces are arranged to move together at the



same speed with the material gripped therebetween. At the end a pair of belts are mounted on a pivotal frame; the

for winding thread thereon and means movable relative to said reeling units for lacing the hanks wound on said reeling units.

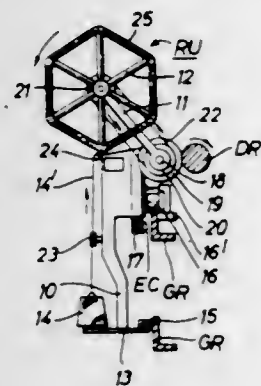


frame is allowed to reciprocate, and thus the material is folded while preventing undue tension.

### 3,408,714 AUTOMATIC REELING MACHINE

Koichiro Kubo and Yojiro Murata, Kyoto, Japan, assignors to Shimadzu Seisakusho Ltd., Kyoto, Japan, a corporation of Japan

Filed June 23, 1967, Ser. No. 648,337  
11 Claims. (Cl. 28-21)

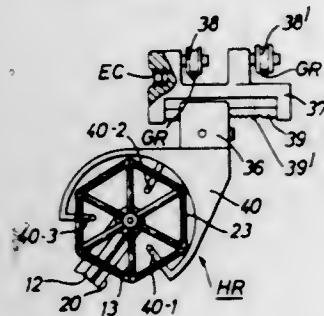


An automatic reeling machine including a plurality of reeling units each having a reel for a single hank to be wound thereon, means for circulating the reeling units through an endless path and means for rotating each reel for winding thread thereon, said machine including means disposed adjacent the endless path for lacing said hanks on said reeling units.

### 3,408,715 AUTOMATIC REELING MACHINE

Koichiro Kubo and Yojiro Murata, Kyoto, Japan, assignors to Shimadzu Seisakusho Ltd., Kyoto, Japan, a corporation of Japan

Filed June 23, 1967, Ser. No. 648,456  
10 Claims. (Cl. 28-21)



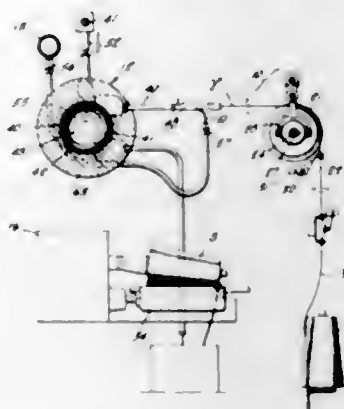
An automatic reeling machine including a plurality of reeling units arranged side-by-side and spaced a predetermined distance apart, each unit having a reel for a single hank to be wound thereon, means for rotating each reel

Undrawn synthetic polymer filaments are deformed under controlled pressure while being drawn to molecularly orient the same.

### 3,408,716 YARN PROCESSING APPARATUS

George E. Tradewell, Hatfield, Pa., assignor to Heltra Incorporated, Kulpville, Pa., a corporation of Pennsylvania

Filed Mar. 24, 1967, Ser. No. 625,873  
14 Claims. (Cl. 28-62)

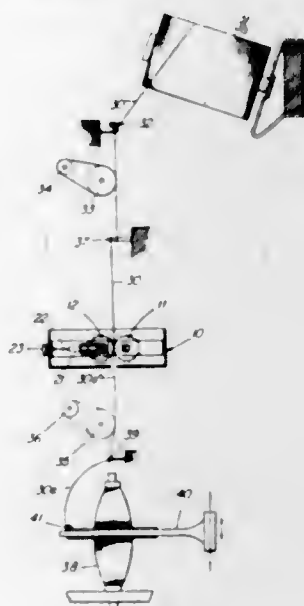


Apparatus for processing yarn by heat while in a substantially relaxed state, for example to permit shrinkage and/or bulking of the yarn. The yarn is positively fed into a tubular conduit which is wrapped into a plurality of helical convolutions and maintained at a controlled temperature by immersion in a bath of fluid in a pressure vessel. The yarn is caused to travel through the conduit by using a laminar flow of air which is preheated by the pressure vessel. The processed yarn is cooled and collected at a rate correlated to the infeed and yarn shrinkage to heat-treat the yarn in a substantially relaxed state. The air may be introduced into the tubular member with either a left-hand or a right-hand vortex or with straight axial flow, as desired.

### 3,408,717 METHOD FOR TEXTURING SYNTHETIC POLYMER FILAMENTS

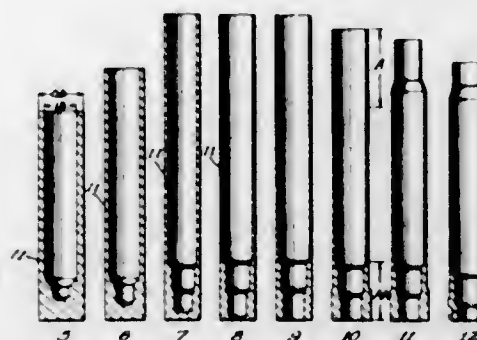
Ronald O. Bryant and Derek W. Thom, Charlotte, N.C., assignors to Fiber Industries, Inc., a corporation of Delaware

Filed Jan. 19, 1966, Ser. No. 521,728  
3 Claims. (Cl. 28-72)



### 3,408,718 METHOD OF MANUFACTURING CARTRIDGE CASES AND ARTICLE OF MANUFACTURE

Lazelle William Weaver, Mentor, Ohio, assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio  
Filed June 16, 1966, Ser. No. 557,948  
9 Claims. (Cl. 29-1.3)



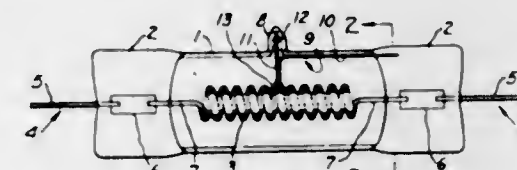
A method of manufacturing brass, drawn, articles, such as for example, cartridge cases, of superior finished physical characteristics wherein a plurality of successive forming operations are undertaken each of which provides a limited reduction in wall thickness and outside part diameter. The method permits elimination of substantially all intermediate annealing stages conventionally employed in prior art systems and is preferably performed in a manner causing successive forming steps to occur without intermediate cooling.

### 3,408,719 METHOD OF ASSEMBLING LAMP FILAMENT AND SUPPORT STRUCTURE

Robert H. Van Sickle, Lyndhurst, and James F. Dagley, Mayfield Heights, Ohio, assignors to General Electric Company, a corporation of New York

Original application Nov. 8, 1965, Ser. No. 506,644.  
Divided and this application Nov. 21, 1967, Ser. No. 684,816

4 Claims. (Cl. 29-25.15)



A coiled-coil filament is assembled and supported axially in a vertically disposed tubular vitreous envelope by engaging a lateral short leg of a support wire with the interior of a laterally extending exhaust tube, with another oppositely extending short leg connected to the filament at its midpoint and a long leg extending generally downward, pulling down on the lower end of the filament to stretch it and to swing the long leg flat against the envelope wall, and then pinch sealing the lower end of the long leg in the lower end of the envelope along with a lower lead-in conductor attached to the filament.

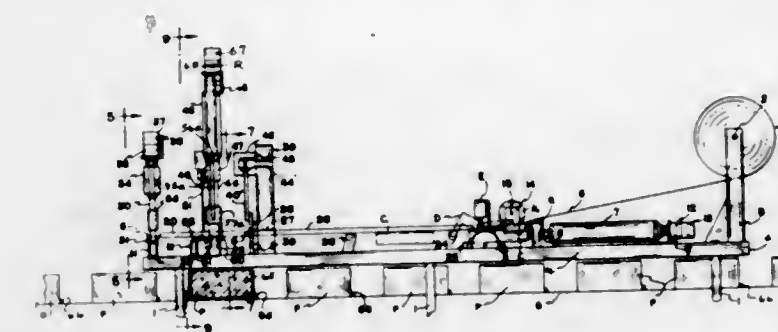
### 3,408,720 MACHINE FOR INSERTING TIE WIRES INTO ADOBE BLOCKS

Delano E. Larsen, 3633 Christensen Lane, Castro Valley, Calif. 94546

Filed May 2, 1966, Ser. No. 546,812  
8 Claims. (Cl. 29-33)

A machine for forming adobe blocks having tie wires embedded therein. The tie wires are of uniform length and cut from spools of wire prior to being bent into

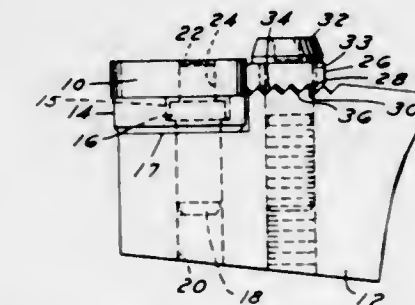
U-shapes for insertion into forms having semi-set concrete therein. At the time that the wires are bent and inserted



into the concrete blocks suitable cutters are moved through the semi-set blocks to form the adobe blocks.

### 3,408,721 PIN-TYPE TOOLHOLDER

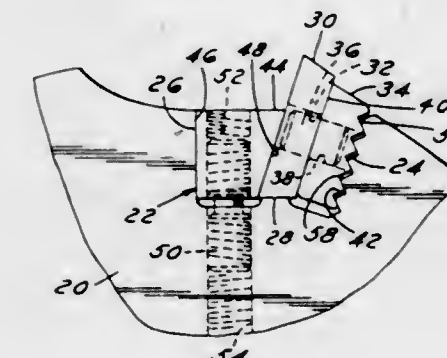
Robert W. Berry, Jr., Ferndale, Mich., assignor to Fansteel Inc., a corporation of New York  
Filed Jan. 23, 1968, Ser. No. 699,965  
6 Claims. (Cl. 29-96)



This invention relates to improvements in pin-type toolholders which are used to hold indexable carbide inserts which contain a plurality of single point cutting edges. The applicant's device protects the main body of the toolholder from the abrasive effects of the carbide insert and the component parts, which are subjected to the carbide's abrasive effects, are designed to be readily replaced at a low cost. The disclosed device has a low manufacturing cost and a low maintenance or service cost.

### 3,408,722 ROTARY CUTTING TOOLS

Robert W. Berry, Jr., Ferndale, Mich., assignor to Fansteel Inc., a corporation of New York  
Filed Jan. 23, 1968, Ser. No. 699,841  
3 Claims. (Cl. 29-105)



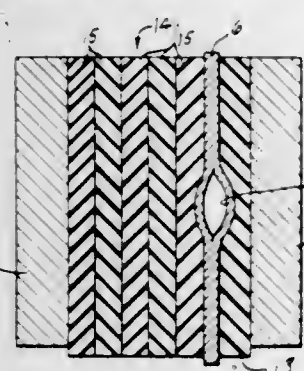
This invention relates to improvements in rotary cutting tools and more particularly to a rotary cutting tool with an improved means of attaching indexable throw-away carbide inserts to the main body of the cutter. The



improved means of attaching the inserts to the main body utilizes a set of coating wedges or cam surfaces and a suitably actuated wedge. This device provides a pin-type insert with a controlled wedge lock to exert a positive locking force on a cutting insert.

### 3,408,723 METHOD OF EXPANDING MULTI-HARDNESS PANELS

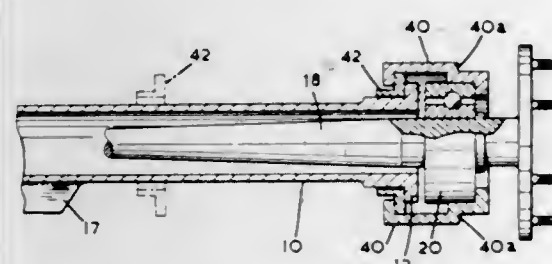
Lyell V. Myers, Hazelwood, Mo., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia  
Filed Mar. 24, 1965, Ser. No. 442,256  
13 Claims. (Cl. 29—157.3)



A method of expanding to a desired configuration a partially expanded passageway within a panel, said passageway having opposed sides of materials of different hardness, the method comprising positioning at least one restraining pad on each side of said passageway, said restraining pads being of a hardness to limit expansion of the side of the passageway on which it is positioned to a desired extent relative to the expansion of the opposed side, applying clamping forces to each of said restraining pads, and inserting into said passageway a tool having the desired configuration to expand said unexpanded passageway.

### 3,408,724 BEARING PULLER FOR REMOVING BEARINGS FROM VEHICLE AXLES

William C. Hoeijenbos, 194 Gary Drive, Weston, Ontario, Canada  
Filed Aug. 26, 1966, Ser. No. 575,402  
Claims priority, application Canada, Oct. 21, 1965, 943,424  
1 Claim. (Cl. 29—263)



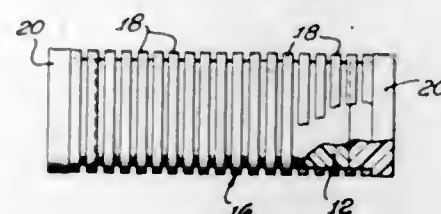
The bearing puller of this invention essentially consists of a tube for receiving an axle or the like from which a bearing is to be removed with the tube being provided at one end with a screw device for forcing the axle from the tube and an integral flange and a pair of bearing grippers adapted to cooperate with the bearing and the flange to restrain the bearing so the axle may be forced through it. The invention also includes adaptors for removing a bearing inner race and modified grippers adapted to grip two different sized bearings.

### ERRATUM

For Class 29—423 see:  
Patent No. 3,408,710

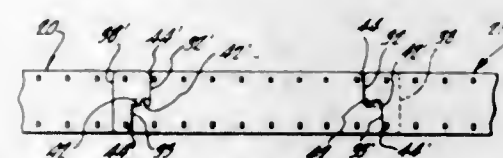
### 3,408,725 HEAT MOTOR

Richard D. Grayson, Arcadia, Calif., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland  
Filed May 24, 1966, Ser. No. 552,572  
1 Claim. (Cl. 29—447)



A heat responsive actuator comprising a cylindrical body of resilient material having a high coefficient of expansion confined in an enclosure formed of a plurality of radially rigid annular elements of a material having a significantly lower coefficient of expansion so that volumetric expansion of the body is axially directed into a linear output. Caps cover the ends of the heat responsive body for transmitting the axial movement of the body.

3,408,726  
FILM SPLICING TOOL AND METHOD  
Richard P. Brown, Monrovia, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California  
Filed Dec. 3, 1965, Ser. No. 511,384  
4 Claims. (Cl. 29—450)

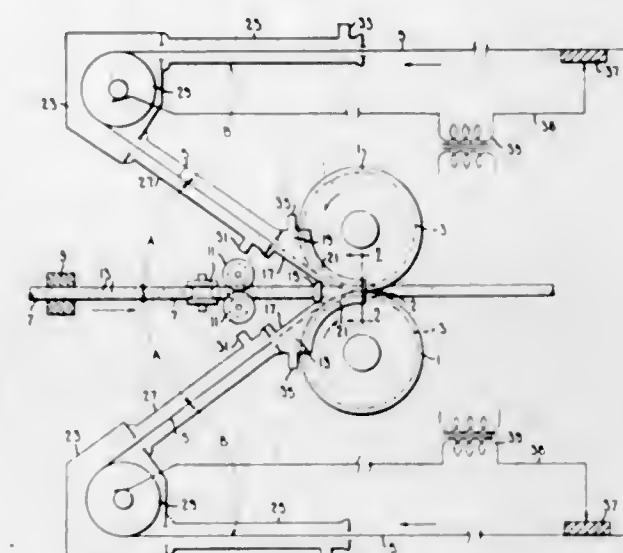


A method of forming a splice between two lengths of photographic film having uniformly spaced marginal sprocket holes in which first and second slits extending halfway across the width of the film length are formed in the terminal portion of each length of film at locations equally spaced from each other. The first slits extend from one edge of the film adjacent the ends of the terminal portions and the second slits extend from the other edge of the film at locations spaced from the ends of the film terminal portions. The film terminal portions are interlinked so that they overlie each other between the second slits and the ends thereof with the respective edges of the film lengths being aligned. Interlinking is achieved by engaging the first slit of each film length in the second slit of the other film length. The first and second slits are formed at such locations along the film lengths that the sprocket holes of one film length register with the sprocket holes of the other film length when the film lengths are interlinked.

3,408,727  
METHOD OF METAL CLADDING  
Paul A. Dion, North Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware  
Filed Jan. 5, 1966, Ser. No. 518,821  
4 Claims. (Cl. 29—474.1)

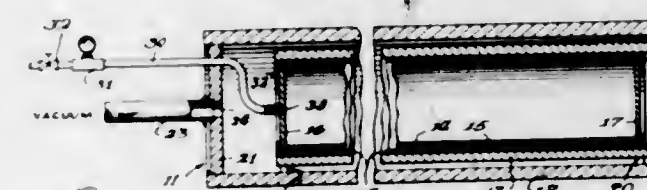
An aluminum round wire core moves along a path toward draw rolls in sequence through a drawing and back-tensioning die, a group of guide rolls, a peripheral skiving die, and a protective atmosphere which is maintained between the skiving die and the rolls. Clean copper strips are electrically resistance-heated and move through oxide-reducing atmospheres along angular approach paths on opposite sides of the core path and con-

verge on the core within said protective atmosphere. The draw rolls form and squeeze the copper strips around



the core with a reduction in the area of the composite cross-section of the core and strips thereby bonding them in the solid-phase as they are drawn together.

3,408,728  
THERMAL CLADDING METHOD  
William R. Fickett, Birmingham, Ala., and Ernest E. Michaels, Chicago, Ill., assignors to Chicago Bridge & Iron Company, Oak Brook, Ill., a corporation of Illinois  
Filed May 15, 1963, Ser. No. 280,570  
4 Claims. (Cl. 29—474.5)



1. A method for thermally cladding a tubular liner having first and second ends to a tubular shell having different thermal expansion properties than said liner, said method comprising:

assembling said liner in telescoped relation within said shell with brazing material therebetween, and without mechanically attaching said liner to said shell from a location adjacent said first end of the liner along the rest of the length of said liner to and including the second end of the liner;

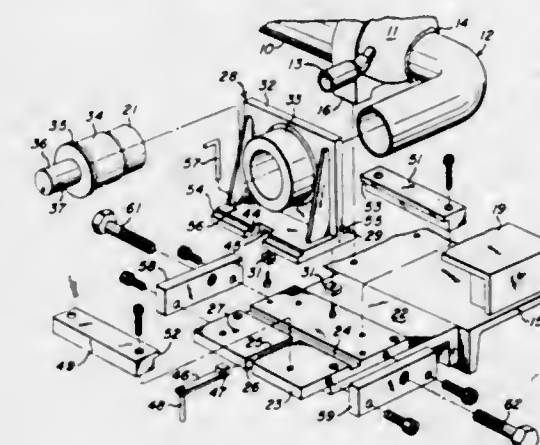
arranging at least a portion of the outer surface of said liner in radially spaced relation from the inner surface of the shell so that said liner is loosely telescoped within the shell to facilitate longitudinal expansion of the liner relative to the shell during heating of the assembly comprising the shell, the liner and the brazing material;

evacuating the space between said liner and said shell; heating said assembled shell and liner to a predetermined temperature at which said brazing material is operative and at which both said shell and said liner undergo thermal expansion, without obstructing longitudinal thermal expansion of at least one of the ends of said liner for the entire longitudinal expansion distance through which said liner moves;

and adjusting the relative pressure internally with respect to the inner liner through the use of expandable gas to urge the inner liner radially outwardly, evenly along substantially the entire peripheral area of the inner liner, into contact with the inner surface of the outer shell while permitting longitudinal thermal expansion of the inner liner relative to the

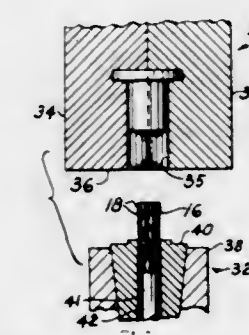
outer shell, said inner liner being urged into said contact with the inner surface of the outer shell no earlier than during said heating step.

3,408,729  
LOW DIMENSIONAL TOLERANCE WELDING METHOD  
Harry C. Gersbacher, Dayton, Ohio, assignor to United Aircraft Products, Inc., Dayton, Ohio, a corporation of Ohio  
Filed Sept. 19, 1966, Ser. No. 580,349  
3 Claims. (Cl. 29—493)



1. A method of welding one part to another where the dimensional tolerances of the resulting assembly are low, including the step of supporting said parts, one of said parts being supported in a substantially fixed position and the other being supported for freedom of extending motion under the heat of welding and for freedom of retracting motion as the weld cools, connecting said other part to a body member freely slidable in a sense corresponding to said extending and retracting motions and restrained from motion in other senses, said body member being part of a welding fixture, locking said body member in said fixture in a position locating said other part in an initial position slightly extended from the final position it is required to occupy upon completion of the weld, temporarily fixing said other part to the said one part in said initial position, unlocking said body member, effecting the weld of said other part to the said one part, said other part extending beyond said initial position under welding heat, and allowing the weld to cool, said other part retracting to and through said initial position to said final position, said body member accommodating the extending and retracting movements of said other part while preventing torsional movements thereof.

3,408,730  
METHOD OF MAKING ANTI-SKID ELEMENTS  
Edward A. Anderson, Cleveland Heights, Ohio, assignor to The Lamson & Sessions Co., Cleveland, Ohio, a corporation of Ohio  
Filed Jan. 20, 1966, Ser. No. 521,906  
4 Claims. (Cl. 29—505)



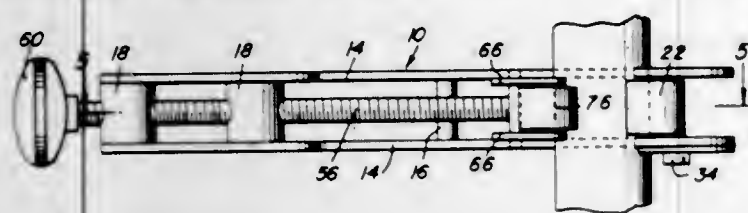
Method of making an anti-skid element in which a carbide insert is pressed into a block of metal with the insert being used as a punch.







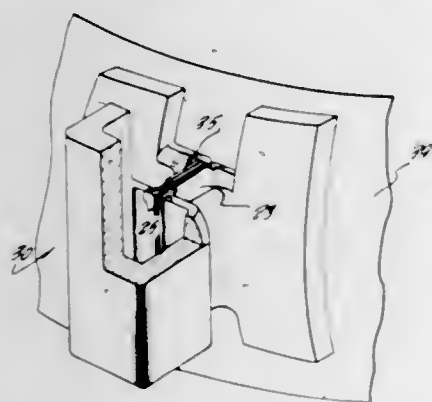
about the pipe section, the rollers carried by the frame being readily adjustable in relative positions so as to adapt



the frame for journaled support from various size pipe sections.

3,408,739

**ORTHODONTIC BRACKET**  
Frank W. Johnson, Monrovia, Calif., assignors to  
Unitek Corporation, Monrovia, Calif., a corporation of California  
Filed Apr. 18, 1966, Ser. No. 543,165  
9 Claims. (Cl. 32-14)



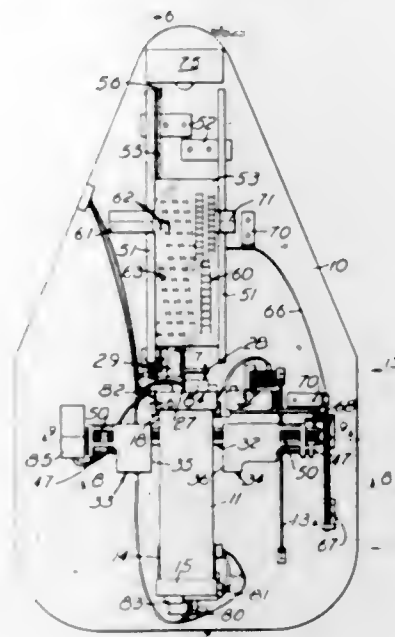
7. An orthodontic bracket for use with light-wire corrective techniques, and formed from an initially flat, unitary, elongated strip of sheet metal having front and rear sides, a top surface and a bottom surface, and having a pair of longitudinally spaced-apart notches on opposite sides of the center of the strip and extending from the top surface toward the bottom surface, the strip having a center section between the notches, a pair of flange sections on opposite ends of the strip extending away from the notches, and a pair of spaced-apart web sections extending between the center section and the flange sections, the web sections having upper surfaces, at least a portion of the upper surfaces sloping upwardly from the front side toward the rear side and away from the bottom surface;

the center section of the strip being bent in a generally U-shaped configuration whereby the rear side of the center section curves concavely to define a lock-pin channel extending transversely the length of the strip;

the web sections being bent toward each other across the open end of the U-shaped configuration and then bent to extend away from the channel with upper portions of the rear sides of the web sections in juxtaposition, the upper surfaces of the juxtaposed web sections forming a relatively narrow pivotal edge to support an arch wire, the pivotal edge having a width less than twice the thickness of the strip; and the flange sections extending away from each other and approximately perpendicularly away from the pivotal edge, the rear sides of the flange sections being adapted to be secured to a tooth band, the top surfaces of the flange sections being approximately level with the top surface of the center section whereby an arch-wire channel is defined by the front sides of the flange sections, the pivotal edge, and the ends of the center section, the arch-wire channel extending approximately parallel to the flange sections and approximately perpendicular to the pivotal edge and the lock-pin channel.

3,408,740  
**APPARATUS FOR MEASURING FOOT LENGTH AND WIDTH**

Michel H. Saad, 1226 E. 28th Ave., Spokane, Wash. 99203, and MacDonald Rogers, Veradale, Wash.; said Rogers assignor to said Saad  
Filed Feb. 7, 1966, Ser. No. 525,478  
10 Claims. (Cl. 33-3)



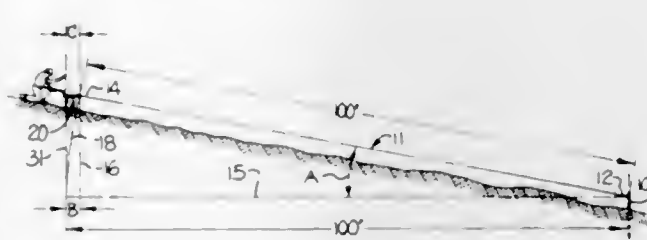
An apparatus for mechanically registering the length and width of a foot. Two length registering abutments are mounted on a foot support, the abutments being differentially connected to permit random foot placement during measurement. A width registering apparatus including two foot contacting abutments is movably mounted along with one of the length registering abutments. Foot, length and width is indicated by movable slides, preferably of transparent material so as to permit visual projection of the registered length and width on a suitable screen.

3,408,741

**SLOPE COMPENSATOR INSTRUMENTS**  
John G. Bane, 285 S. Stratford Road,  
Winston-Salem, N.C. 27103

Continuation-in-part of application Ser. No. 512,730, Dec. 9, 1965. This application Nov. 21, 1967, Ser. No. 687,417

12 Claims. (Cl. 33-71)



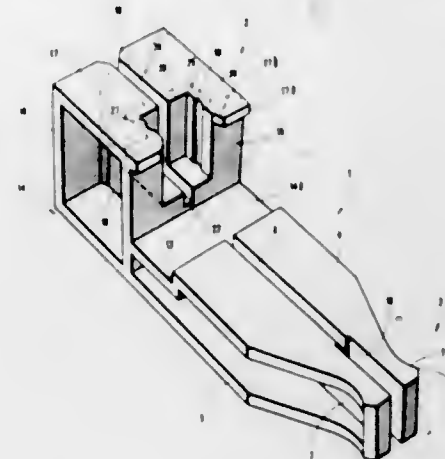
A hand held bracket carrying a bubble level is attached to a measuring tape of predetermined length. The tape is stretched along a slope and the bracket aligned with the tape. The bubble moves in its tube to indicate against cooperating indicia a correction distance. An adjustable correction tape is connected between the bracket and the measuring tape to adjust the length of the measuring tape by the indicated correction distance so that the horizontal projection of the corrected length of the measuring tape is equal to the original predetermined length of the measuring tape.

ing tape. The correction distance can also be subtracted from the original predetermined length of the measuring tape so that corrected length of the measuring tape is equal to the horizontal projection of the original predetermined length of the measuring tape when it is stretched along the slope.

3,408,742

**MASON'S BLOCK**

Lawrence A. Caprio, Whitman, and Israel Nesson, Brookline, Mass., assignors to Louis M. Gerson Co., Inc., Dorchester, Mass., a corporation of Massachusetts  
Filed June 30, 1967, Ser. No. 650,513  
5 Claims. (Cl. 33-85)



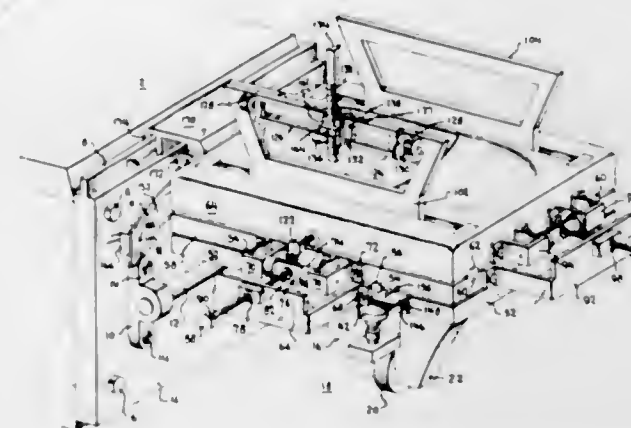
A pair of mason's guideline holders adapted to be interlocked for convenience in handling. Each holder of plastic is identically formed and has substantially an L-shape with the longer portion or leg of the L-shape tapered at its end and adapted to be interlocked with a recess formed in the face of the shorter portion or leg.

3,408,743

**WHEEL ALIGNING DEVICE FOR THE FRONT END OF AN AUTOMOBILE**  
Melvin E. Piper, 2324 Union Ave.,  
Altoona, Pa. 16602

Continuation-in-part of application Ser. No. 378,270, June 26, 1964. This application Oct. 10, 1966, Ser. No. 585,446

14 Claims. (Cl. 33-203.12)

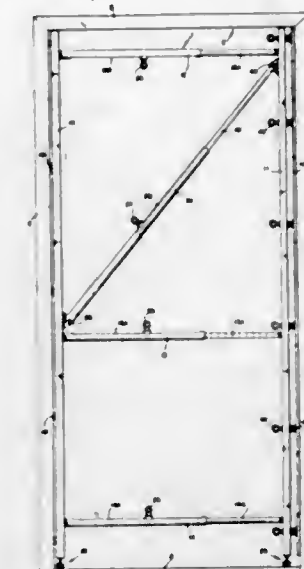


Wheel aligning device for the front end of an automobile. A carriage is mounted at each end of a ramp for gripping and supporting a wheel. A plurality of measuring devices are incorporated on each carriage to measure the looseness, straightness and misadjustment of the front end parts. The caster and camber can be set while the wheels are gripped and moved into the proper caster and camber positions.

3,408,744

**DOOR TEMPLATE**

Lloyd W. Fitzgerald, 2870 Ferry St.,  
Eugene, Oreg. 97405  
Filed May 11, 1966, Ser. No. 549,350  
7 Claims. (Cl. 33-194)



A template is disclosed for taking the measurements of a doorway opening and having a pair of standards for spaced apart placement adjacent the upright jambs of the doorway and being vertically positionable relative to one another. Telescoping cross members interconnect the standards and permit such relative movement while a lockable diagonal cross member is provided for retention of the standards at different adjusted heights upon operationally positioning the template. A resilient foot assembly carried by each standard includes provision for accurately measuring the vertical distance of the doorway opening along the opposed upright jambs thereof.

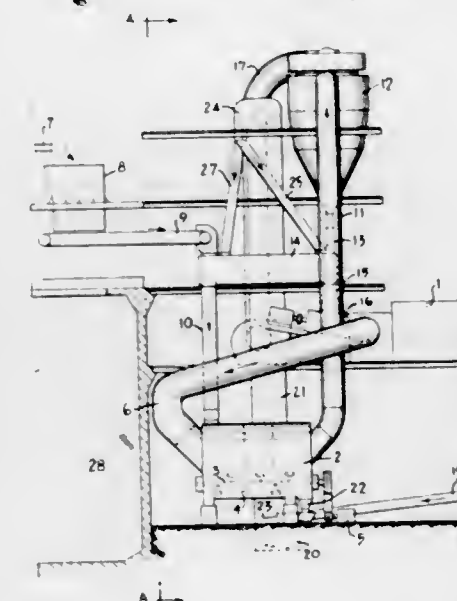
3,408,745

**METHODS OF AND MEANS FOR PRODUCING ANHYDROUS ALUMINA**

Luigi Filippi, Porto Marghera, Veneto, and Hans Dinner, Mogliano Veneto, Treviso, Italy, assignors to Swiss Aluminium Ltd., Chippis, Switzerland, a corporation of Switzerland

Continuation of application Ser. No. 349,693, Mar. 5, 1964. This application Aug. 23, 1966, Ser. No. 574,472  
Claims priority, application Switzerland, Mar. 7, 1963, 2,886/63

4 Claims. (Cl. 34-10)



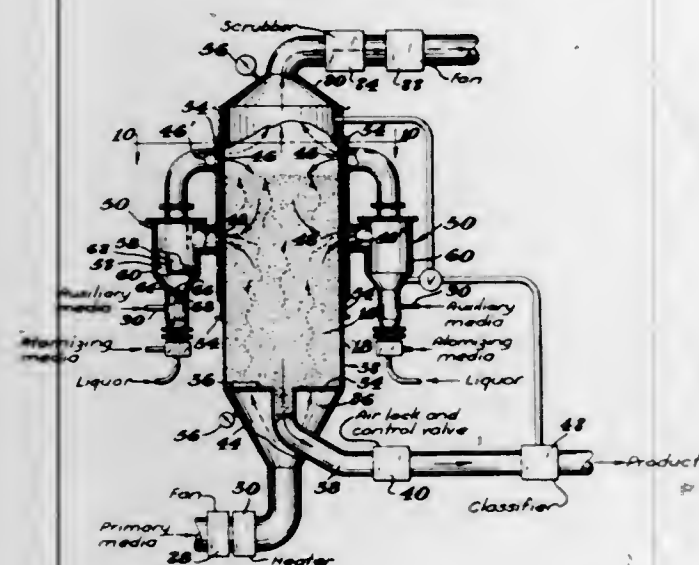
In producing anhydrous alumina from moist hydrate of alumina, the hot waste gases of a revolving calcination oven are conducted to the upper part of a drier,



moist hydrate of alumina is charged also into the upper part of the drier, and in the lower part of the drier the hydrate is agitated by agitators and thrown thereby repeatedly upwardly into the gas stream, and then the hydrate and fine particles are separated from the gases and conveyed into the oven.

**3,408,746**  
**APPARATUS AND METHOD FOR**  
**RECOVERING SOLIDS**

**Jack B. Reynolds and Robert A. Stowe, Ludington, Mich.,  
assignors to The Dow Chemical Company, Midland,  
Mich., a corporation of Delaware**  
**Filed Mar. 13, 1967, Ser. No. 622,519**  
**7 Claims. (Cl. 34—10)**



This specification discloses an apparatus and method for separating solids from liquid mixtures wherein the solids are recovered as pellets; the apparatus comprising a main drying chamber through which drying gases are passed from the bottom to the top through a bed of said pellets, at least one draft tube assembly located externally of said main chamber, including atomizing means therein, through which pellets are recycled, and means to withdraw pellets from the apparatus and exhaust gases therefrom. In the method disclosed solid pellets are recycled with the aid of pneumatic gaseous media from the drying chamber through the external draft tube assembly where a liquid mixture of solids is atomized onto the recycling pellets to deposit and accumulate solids thereon, whereupon, the pellets so-coated return to the main chamber for drying and recycling.

**3,408,747**  
**PROCESS FOR CONDITIONING GRAIN**

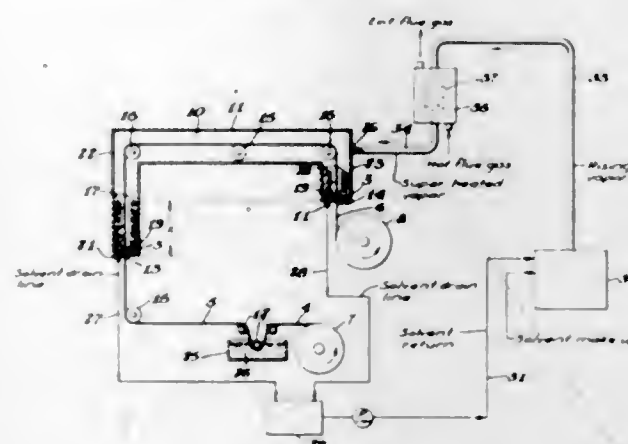
Sylvester L. Steffen, New Hampton, Iowa 50659  
No Drawing. Filed Apr. 24, 1967, Ser. No. 632,889  
4 Claims. (Cl. 34-15)

This invention pertains to a process of conditioning grain in a storage bin having a closeable roof opening, a plenum chamber defined by the bottom of the bin and a perforated floor, an air blower operable to force air into the plenum chamber, and a heater attached to the blower for heating the air blown into the plenum chamber when desired. The invention includes the process of depositing grain into the bin in a level manner, operating the blower to force air into the plenum chamber, measuring by means of a thermometer the temperature of the air within the plenum chamber, and by means of a static psychrometer the wet-bulb temperature depression of the air within the plenum chamber, and by means of a manometer the volume of air being introduced into the plenum chamber, continuing the depositing of grain into the bin while main-

taining a predetermined ratio of air volume for volume of deposited grain, operating the heater to maintain a predetermined temperature of from 50° F. to 70° F. within the bin if the ambient air temperature falls below 50° F., and continuing the circulation of air until the grain is dried to a desired final moisture content.

3,408,748  
**DRYING AND RECOVERY PROCESS**

**James L. Dunn, Jr., Lake Jackson, Tex., assignor to  
The Dow Chemical Company, Midland, Mich., a  
corporation of Delaware**  
Filed Aug. 17, 1966, Ser. No. 572,948  
7 Claims. (Cl. 34-22)



1. A method for removing a volatile, liquid solvent from a material wetted by the solvent, which method comprises

contacting said solvent wetted material with superheated vapor of an organic solvent in a vapor confining chamber in the substantial absence of a non-condensable gas;

introducing said superheated vapor at a temperature and amount sufficient to provide the sole heating medium to vaporize said liquid solvent by means of said superheated vapor from said material:

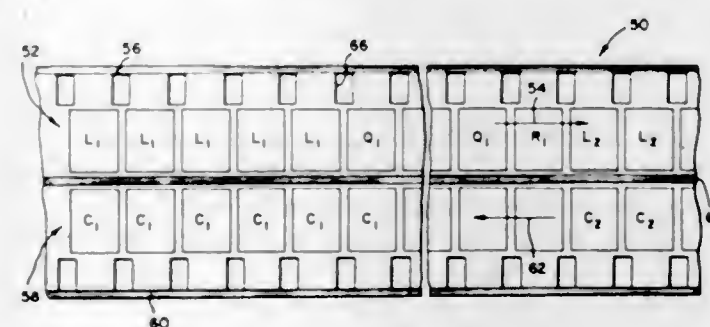
removing said organic vapor and the vapor of said liquid solvent by condensing the vapors at inlet and outlet areas of said chamber; and

introducing said liquid solvent wetted material through said inlet and withdrawing said material through said outlet, said inlet and outlet each being below the point of introduction of said superheated vapor and below said condensing means

3,408,749  
BRANCHING-INSTRUCTION TEACHING DEVICE  
Harvey J. Brudner, Piscataway, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Continuation-in-part of application Ser. No. 534,843,  
Mar. 16, 1966. This application Apr. 11, 1967, Ser.  
No. 656,962

**15 Claims. (Cl. 35—9)**

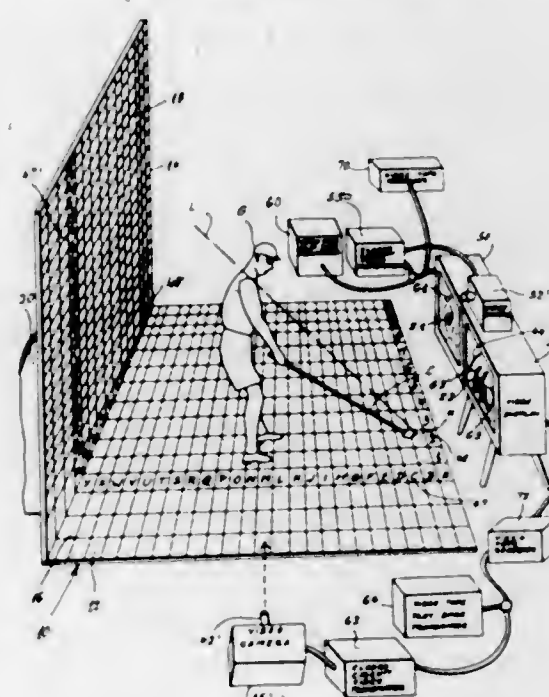


A sound-motion-picture teaching machine presents lessons each terminating in a question. Upon entry of an in-

correct student answer, supplemental instruction is thereupon presented, followed by repetition of the question. The supplemental material is recorded on the film in a manner permitting this branching type of instruction without interruption of the visual presentation. Advantages may be partially obtained in teaching devices employing other visual reproduction media.

**3,408,750**  
**VISI-GOLF MODERN METHOD OF**  
**GOLF INSTRUCTION**

George T. McCollough, 16644 Fielding Drive, Detroit,  
Mich. 48219, and Fred C. Edwards, 1007 S. Ocean  
Drive, Hollywood, Fla. 33020  
Filed Sept. 15, 1965, Ser. No. 487,437  
2 Claims. (Cl. 35-29)

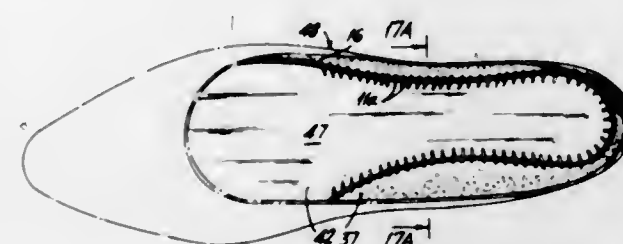


A golf instruction system including a special grid platform on which a student golfer stands while simultaneously a picture of a master golfer is projected on a screen and the student golfer assumes a proper playing position on the grid platform while video cameras pick up his position and superimposes it on the screen, whereby the student golfer can look at this screen and reposition his golf stand to be substantially coincident with the position of the master golfer.

**3,408,751**  
**SHOE CONSTRUCTION**

David Levy, 65—11 108th St., Forest Hills, N.Y. 11375  
Original application Aug. 14, 1964, Ser. No. 389,648.  
Divided and this application Oct. 14, 1965, Ser. No.  
509,243

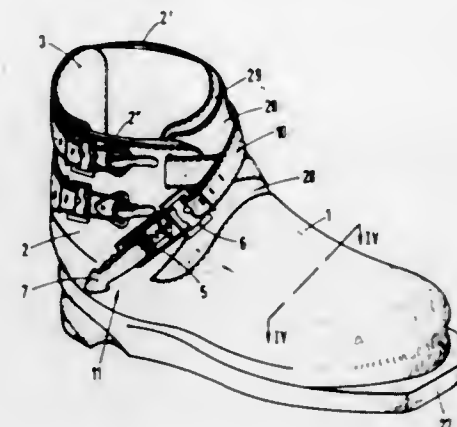
**2 Claims. (Cl. 36—2.5)**



A shoe in which the upper comprises a leather blank having a complete toe or heel portion whose entire peripheral edge is stitched in abutting relationship to an insole to form a substantially flat bottom portion consisting of the insole, the peripheral edge of the upper and the stitching therebetween. The lasting operation for attaching the upper to the insole is eliminated.

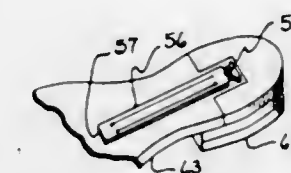
**3,408,752**  
**SPORTS BOOT**

**SPORTS BOOT**  
Paul Löllmann, Tuttlingen, Germany, assignor to  
Rleker & Co., Tuttlingen, Germany  
Filed June 13, 1966, Ser. No. 557,003  
Claims priority, application Germany, Dec. 6, 1965,  
R 42,142  
13 Claims. (Cl. 36—2.5)



A ski boot, and a closure device for use therewith. The ski boot has an upper whose neck part is divided at its front so as to form a front opening and thus two flaps, the closure means being provided to close the opening and to tighten the flaps to each other. The closure means include tensioning straps as well as a closure device for closing the same, the closure device incorporating a pivotally mounted tensioning lever which is carried by a slidable bearing, the lever coacting with spring means in such a way that the lever is biased to its closed position and that the sliding motion of the bearing is opposed by the spring means.

3,408,753  
**SHOE AND METHOD OF MAKING THE SAME**  
 Verne E. Bolen, Springfield, Tenn., assignor to Genesco,  
 Inc., Nashville, Tenn., a corporation of Tennessee  
 Filed Aug. 10, 1966, Ser. No. 571,451  
 14 Claims. (Cl. 36—2.5)

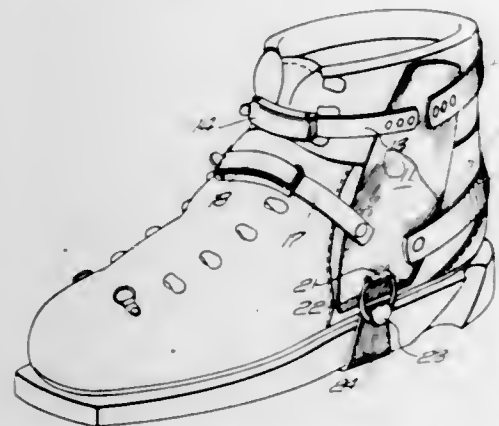


1. A method of making shoes or the like comprising the steps of: providing a last with alignment means on the plantar portion thereof; prefabricating an insole to the exact size desired to fit the shoe, including providing alignment means on the insole adapted to engage said alignment means on the last to thereby permit alignment of said insole with said last when the former is superimposed upon the latter; placing said insole on said last in accordance with the last recited step; placing an upper about the last and securing the over-lasted lasting allowance to the insole to provide a lasted assembled upper shoe part; and attaching an outsole assembly in properly aligned relationship to the bottom portion of the assembled upper shoe parts, said alignment means provided on the last includes a stud at the heel portion and a protuberance at the toe portion; the alignment means provided on said insole includes an apertured heel portion and a looped wire at the toe portion; whereby the apertured heel portion is received about the stud and



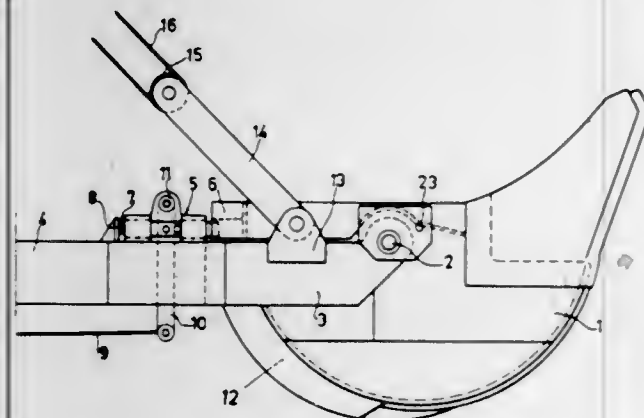
the looped wire is received about the protuberance to provide precise alignment with the insole with respect to the last.

**3,408,754**  
**SKI BOOT STIFFENING**  
Hubert C. Kueter, R.R. 2, Oakland, Maine 04963  
Filed July 3, 1967, Ser. No. 650,788  
10 Claims. (Cl. 36-2.5)



The specific ski boot stiffening means described comprises a pair of stiff plates that embrace the ankle. The plates are held in place by an upper pair of straps and a lower pair of straps with the lower pair of straps being pivotally attached to each plate. The lower edge of each plate is connected to a stirrup that is secured to the bottom of the ski boot sole adjacent to the boot heel.

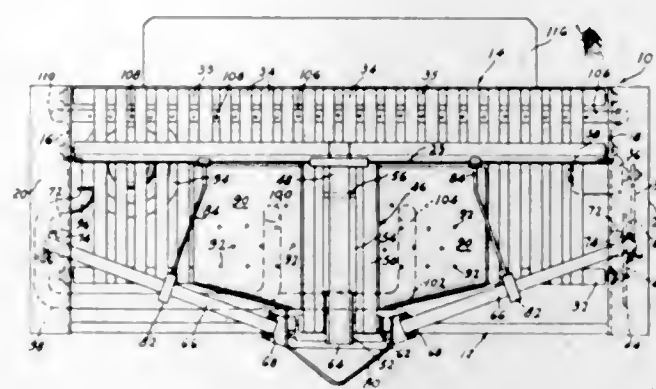
**3,408,755**  
**DEVICE FOR VERTICAL EXCAVATORS**  
Ingvar N. Vikström, Saltsjö-Duvnas, Sweden, assignor to Eric S. Franzen & Co. Aktiebolag, Stockholm, Sweden, a corporation of Sweden  
Filed July 19, 1965, Ser. No. 472,874  
1 Claim. (Cl. 37-138)



This invention relates to a shovel having means to pivotally mount the shovel, means to lock the shovel in a first position, means to unlock the shovel and means to move the shovel assembly wherein the means to lock the shovel comprises a bar carried by the supporting means and a rail having a catch carried by the shovel.

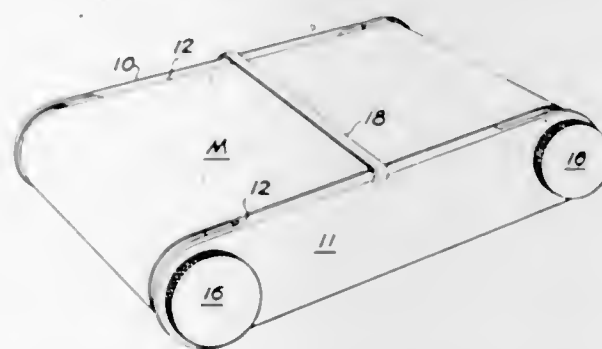
**3,408,756**  
**LAUNDRY FLATWORK SPREADER**  
Dan D. Mazzolla, 2464 Raleigh Drive, York, Pa. 17402  
Filed Aug. 17, 1965, Ser. No. 480,443  
6 Claims. (Cl. 38-143)

A laundry flatwork spreader having cooperating opposing belt and roller means arranged to engage a piece of flatwork to spread it both transversely and longitudinally for ready feeding to an ironer by means of angularly diverging spreading belts and longitudinal feeding



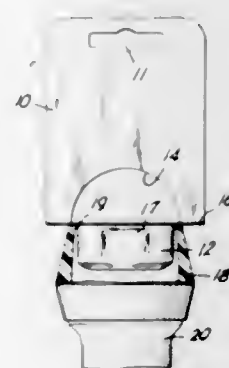
plication to flatwork pieces while being spread to effect preliminary partial drying thereof.

**3,408,757**  
**MAP ROLL AND DISPLAY DEVICE**  
Dale A. McQuistlon, 433 Fairfield Ave., Columbiana, Ohio 44408  
Filed Aug. 25, 1966, Ser. No. 575,105  
3 Claims. (Cl. 40-86)



A display device for strip maps having a flat top portion with down turned sides and spaced outwardly extending portions on the ends of said sides for receiving rollers on which said strip map is carried, and a transversely positioned raised indicator above said top portion.

**3,408,758**  
**DISPLAY CARD**  
William H. Doring, Old Greenwich, Conn., assignor to Union Carbide Corporation, a corporation of New York  
Filed June 28, 1966, Ser. No. 561,260  
5 Claims. (Cl. 40-124.1)



1. A display card adapted to support an article having a recessed end, said card having a main body portion

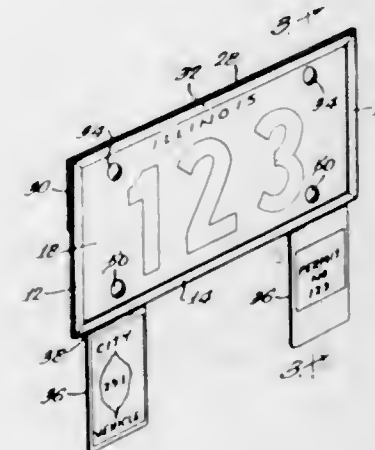
having an aperture therein for hanging said card on a support and a cup-like concave plug portion in said card, said main body portion being scored and partially cut to provide a hinge area for said plug portion, said plug portion being adapted to fit securely but releasably within the recessed end of said article and through hinge action provided by said hinge area to display and support said article in a plane substantially parallel to the plane of said main body portion when said card is hung on a support, said plug portion having a plurality of ribs substantially parallel to the longitudinal axis thereof adapted to grip the inner side walls of the recess of said article to be displayed.

**3,408,759**  
**PICTURE FRAME**  
Jerome H. Rotheraine, 729 Loneshore Ave. 19111, and Haig Vartanian, 4935 N. Ella St. 19120, both of Philadelphia, Pa.  
Filed Mar. 15, 1967, Ser. No. 623,463  
2 Claims. (Cl. 40-152)



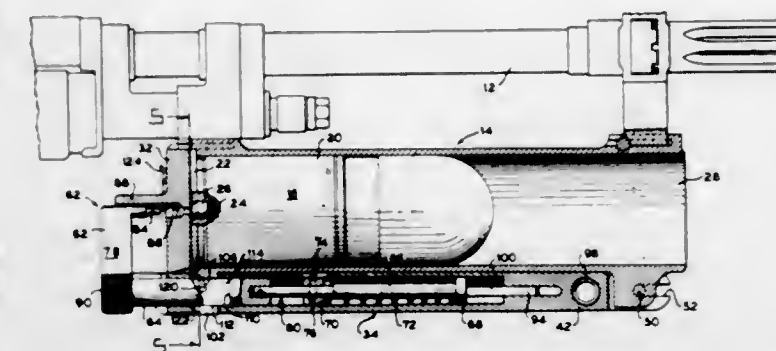
In this invention, a picture frame is so constructed that the main body of the frame could be used to frame either pictures or photos, and an insert is provided which interlocks with the body portion of the main frame surrounding the picture opening, the insert having a flange adapted to interlock with the rear marginal face of the picture opening of the main frame.

**3,408,760**  
**LICENSE PLATEHOLDER**  
Thomas E. Barr, 546 E. Lincoln Ave., Palatine, Ill. 60067  
Filed Jan. 23, 1967, Ser. No. 611,124  
2 Claims. (Cl. 40-210)



A frame type license plateholder with auxiliary mounting areas for local permits and the like.

**3,408,761**  
**AMMUNITION LAUNCHER FIRING MECHANISM WITH BREECH CLOSURE MEANS**  
Stanley D. Silsby, Granby, Mass., assignor to the United States of America as represented by the Secretary of the Army  
Filed June 13, 1961, Ser. No. 116,886  
7 Claims. (Cl. 42-1)



1. An ammunition launcher for discharge of a round of ammunition, the launcher including a tube attachable to a firearm barrel and adapted for receiving the round for discharge, a breechblock, means for guiding said breechblock between an open and a closed position relative to said tube, a firing mechanism including a casing and a firing pin slidably disposed therein, means for mounting said casing between said tube and said breechblock to provide means for pivotally mounting said breechblock to said tube for actuation between the open and closed positions, and cooperating means on said firing pin and said tube for releasably locking said breechblock in the closed position.

**3,408,762**  
**CHOKE FOR SHOTGUNS**  
Américo Durão, 52, Caminho de Santo Antonio, Funchal, Ilha da Madeira, Portugal  
Filed Nov. 2, 1966, Ser. No. 591,635  
Claims priority, application Portugal, Jan. 29, 1966, 45,320  
4 Claims. (Cl. 42-79)



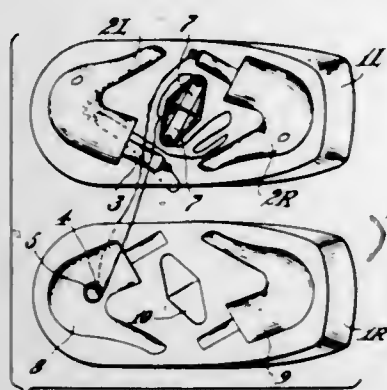
This invention relates to a shotgun choke that is adjustable by means of a slidable grip. The grip is linked to the choke by screw means having two separate pitches. Linear movement of the grip rotates the screw means which in turn causes linear movement of the choke facilitated by the mechanical advantage obtained with the double pitch screw means.



3,408,763

## TWIN DECOYS

Leroy C. Rudolph, Chico, Calif., assignor of one-half to Edmond C. Johnson, Chico, Calif.  
Filed Oct. 22, 1965, Ser. No. 500,679  
3 Claims. (Cl. 43-3)

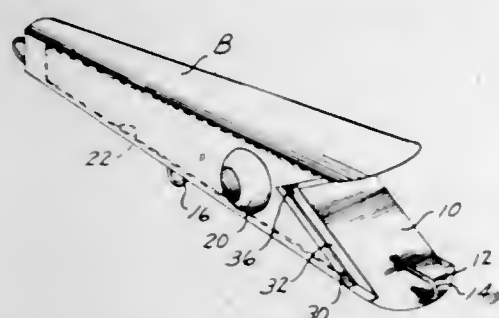


Decoys having removable heads are provided with recesses in each of two body portions to partly receive the heads of two decoys. During storage and transport, the heads lie between the recesses of the two bodies.

3,408,764

## FISHING LURE

James E. McCurry, 2171 Nautical St., Anaheim, Calif. 92802  
Filed Oct. 24, 1965, Ser. No. 504,620  
2 Claims. (Cl. 43-42.09)

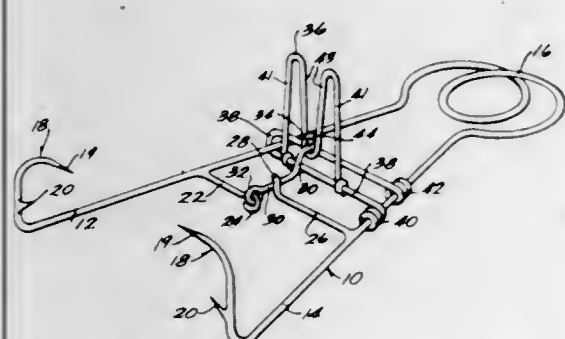


A fishing lure having a transparent fish-simulating body formed with generally longitudinal vertical slots in its side portions and with openings to the slots located adjacent its front side edges. The slots removably receive flexible colored inserts, the inserts being held in place by stop means adjacent the openings. The colored inserts may be changed as desired to meet the existing fishing requirements.

3,408,765

## GOPHER TRAP

Rupert E. Caryl, Downing, Wis., assignor of one-half to Verna Wigdahl  
Filed Nov. 10, 1966, Ser. No. 593,337  
4 Claims. (Cl. 43-88)



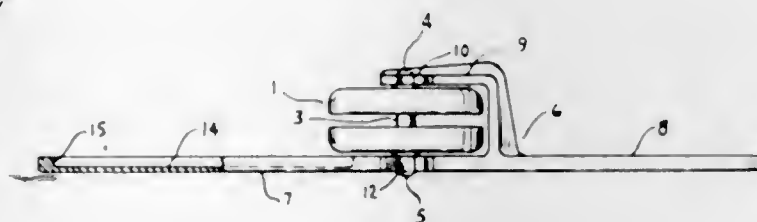
1. An animal trap comprising first and second legs having jaw portions at one end, a spring at the other end of said legs urging said legs together, a first strut integral with said first leg and spaced from said spring

and extending inwardly toward said second leg, a second strut integral with said second leg and spaced from said spring and extending inwardly toward said first leg, a trigger pivoted for movement about an axis transverse to said legs, a tongue having one end pivoted to said first strut and the other end adapted for removable engagement with said trigger, said tongue being engaged intermediate its ends with the end of said second strut when the end of said tongue is in engagement with said trigger, thereby preventing closure of said legs in response to said spring until said trigger is displaced to release said tongue.

3,408,766

## TOY COMPRISING TOP AND PLAYING PADDLE AND LAUNCHER

Fortunato S. Ajero, 3939 E. Adams St., Cudahy, Wis. 53110  
Filed Jan. 10, 1966, Ser. No. 519,489  
6 Claims. (Cl. 46-65)

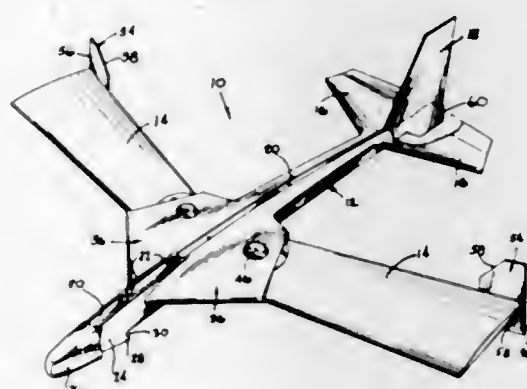


A top with projecting spindle ends has axially separated fly wheel portions between which an operating string may be wound. The projecting ends not only provide a peg upon which the top may spin but also are engageable with notches provided by a paddle handle and bracket and opening laterally for the release of the spinning top. The paddle has a resiliently flexible web portion surrounded by a rim.

3,408,767

## TOY AIRPLANE WITH FOLDING WINGS HAVING TABS

Gordon H. Anderson, Palos Verdes Estates, Calif., assignor to Lakeside Industries, Inc., a corporation of Delaware  
Filed Dec. 21, 1965, Ser. No. 515,350  
10 Claims. (Cl. 46-80)



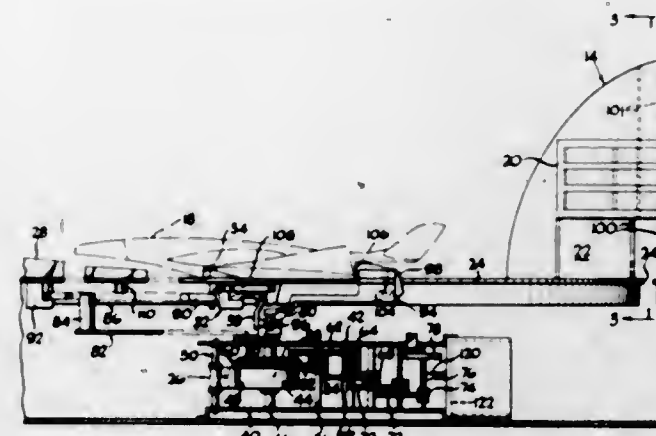
The device is a toy airplane made of light weight materials having folding wings that can fold rearwardly and which are urged into extended position by resilient means. The wings fold rearwardly for launching into a position underneath the tail assembly. The airplane is launched by rubber band means preferably in the form of a slingshot. When launched tabs mounted on each wing provide for air resistance to allow the airplane to accelerate to velocity before the wings become fully extended. When the wings are fully extended the tabs pro-

vide air resistance to reduce speed during gliding of the airplane.

3,408,768

## TOY AIRPLANE LAUNCHING DEVICE

Marvin I. Glass, Chicago, and Gunars Licitis, Lombard, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership  
Filed May 5, 1965, Ser. No. 453,430  
6 Claims. (Cl. 46-81)

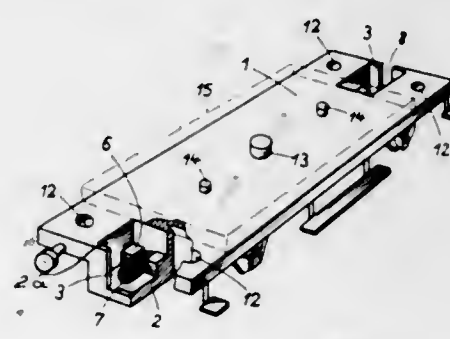


A toy aircraft launching device comprising an elongated hollow base structure with a slot in the upper wall thereof, drive means mounted within the base structure and including a part projecting upwardly in the slot and movable through a path defined by the slot between a first position and a second position, means at the first position providing for the stacking of a plurality of toy airplanes, and a launching element disposed in the slot on the base structure at a position forwardly of the second position. The launching element is biased toward the forward end of its path of movement and away from the second position, and a latch mechanism is provided for releasably holding the launching element in its biased position adjacent the second position. The projecting part of the drive means engages the lowermost toy airplane at the first position and moves it through the slot to the second position where it is transferred onto the launching element. As the projecting part thus reaches the second position in the slot, it trips the latch mechanism to effect launching of the airplane.

3,408,769

## COUPLING FOR VEHICLES OF TOY AND MODEL RAILROADS

Max Ernst, Lohengrinstrasse 14, Nuremberg, Germany  
Filed Oct. 24, 1965, Ser. No. 504,435  
Claims priority, application Germany, May 15, 1965, E 29,314  
4 Claims. (Cl. 46-218)



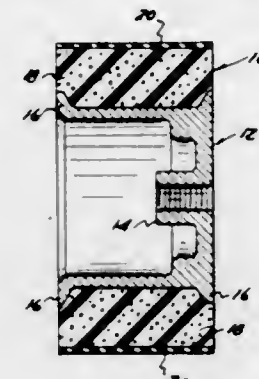
A rail vehicle for toy and model railroads, especially coupling structure therefor, which comprises a single

piece coupling hook member and a coil spring with a portion of said hook member and the entire coil spring arranged in a compartment partly formed by the upper-structure and partly formed by the understructure of a toy vehicle car, the remainder of said hook member protruding outwardly through a slot of said compartment.

3,408,770

## RACING TIRE

Robert Smolinski, 28618 Boston, St. Clair Shores, Mich. 48081, and Roland Maxson, 26080 Ronald, Roseville, Mich. 48066  
Filed Apr. 6, 1966, Ser. No. 540,657  
2 Claims. (Cl. 46-221)

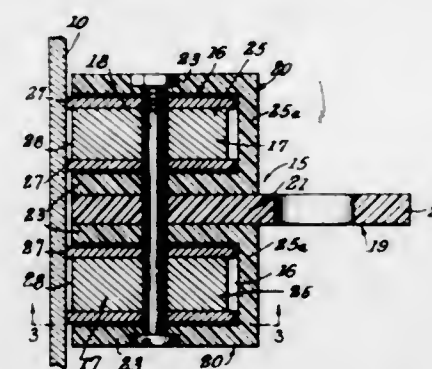


A slot car racing tire comprises a resilient annulus of porous material such as neoprene sponge coated on its outer peripheral surface with a silicone rubber for increasing road surface traction. The silicone coating interlocks with the pores of the neoprene annulus to create a firm bond which will not peel off during the stress of use.

3,408,771

## MAGNETIC AISLE CORD

Jim C. Garrett, Inglewood, and Jack Shelton, South Pasadena, Calif. (both of 3300 E. Spring St., Long Beach, Calif. 90806)  
Filed Nov. 25, 1966, Ser. No. 597,088  
4 Claims. (Cl. 49-34)

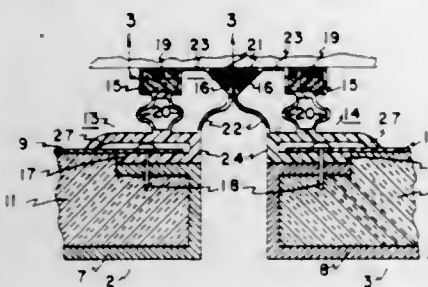


The magnetically mounted cord shown, while adapted for other uses to span between two ferrous members, is more particularly provided for spanning across an aisle for controlling or restricting movement of personnel into and through said aisle. The same constitutes a means either end of which may be detached from one of said members or the other and returned to operative position, merely by placing such detached end near or in contact with the member from which it has been detached. An important feature is that the fitting at each end of the cord is so formed as to magnetically cling to any member formed wholly or partly of iron in a manner to resist lateral pressure, thereby offering great resistance to accidental detachment. Yet the cord remains firmly in place as a warning that the area beyond it is temporarily restricted to access, due to one of several reasons, as cleaning, presence of employees on movable ladders, and like conditions.



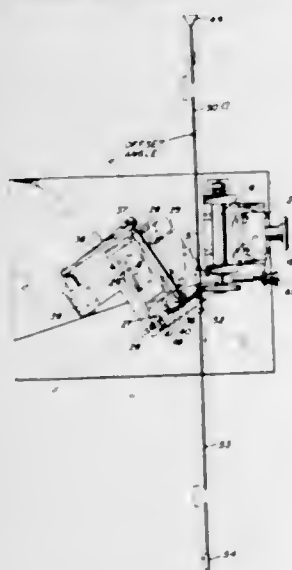
**3,408,772**  
**GASKET FOR A MULTIPLE DOOR CABINET**  
 Walter C. Frehse, Evansville, Ind., assignor to The General Tire & Rubber Company, a corporation of Ohio  
 Continuation-in-part of application Ser. No. 464,483, June 16, 1965. This application Nov. 18, 1966, Ser. No. 604,099

7 Claims. (Cl. 49—366)



This invention relates to a gasket of the type used on the doors of cabinets, such as refrigerators, and more specifically it relates to a gasket utilizing the forces of magnetic attraction to hold the doors of a cabinet in sealing engagement with the frame of the cabinet and with one another. Yet more particularly this invention relates to a magnetic gasket for a cabinet of the type that utilizes two oppositely swinging doors which, when closed, abut one another in sealing relationship.

**3,408,773**  
**GRINDING MACHINES**  
 John William Cole, Georgetown, and Eric Menzer, Jr., Danbury, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine  
 Filed May 12, 1966, Ser. No. 549,513  
 4 Claims. (Cl. 51—103)

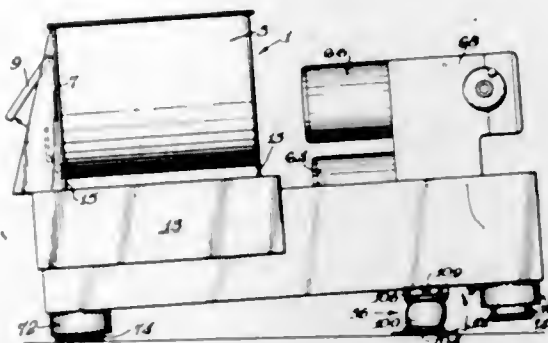


Long soft strands, such as surgical sutures are ground to size in a centerless grinding machine using a cylindrical grinding wheel, and a frustoconical to hyperboloid of revolution shaped regulating wheel, having an offset angle of about 10° to about 60° and a feed angle of about 5° to about 15°, with respect to the grinding wheel, forming a tapered grinding throat, with an exit diameter of finished strand size, and which regulating wheel has essentially rolling contact with the strand all along the throat, avoiding internal twisting of the strand.

**3,408,774**  
**VIBRATORY FINISHING APPARATUS**  
 J. Anthony Engel, Hagerstown, Md., assignor to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware  
 Filed Apr. 5, 1965, Ser. No. 445,663  
 4 Claims. (Cl. 51—163)

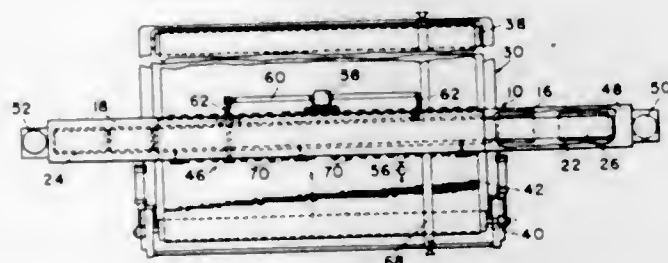
A vibratory apparatus includes a vibratory tub resiliently mounted upon a base support by inflatable

cushions with a door being at one end of the tub extending substantially to the bottom thereof and with inflatable



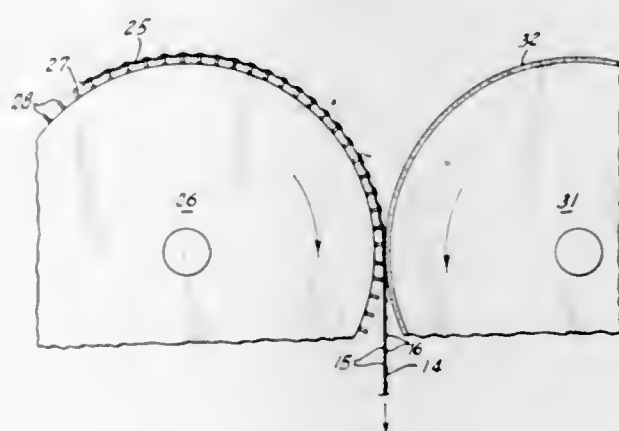
able cushions resiliently supporting the base support; the tub is tilted for unloading by an additional inflatable cushion disposed remote from the door.

**3,408,775**  
**BELT SANDING AND POLISHING MACHINE**  
 Richard D. Rutt, Wilson, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware  
 Filed Feb. 16, 1966, Ser. No. 527,670  
 10 Claims. (Cl. 51—146)



A sanding and polishing machine utilizing an abrasive belt in which the effective pressure pad length of a caul assembly is adjustable and strip-like means is incorporated in said assembly to permit flexibility of the pressure pad in the lengthwise direction while maintaining the pad rigid in a direction normal thereto so that uniform pressure will be applied across the full width of the abrasive belt.

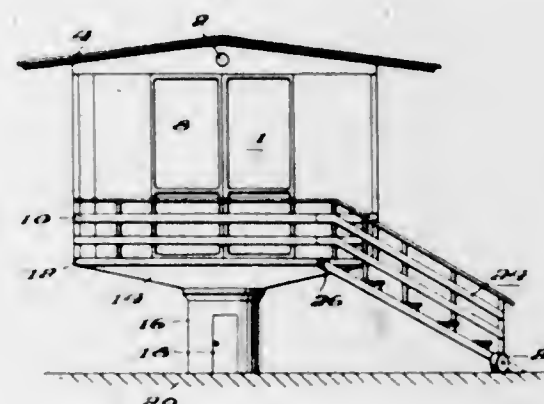
**3,408,776**  
**METHOD FOR PRODUCING PERFORATED SHEET MATERIALS**  
 Frank Kalwaites, Somerville, N.J., assignor to Johnson & Johnson, a corporation of New Jersey  
 Filed Mar. 5, 1965, Ser. No. 437,469  
 2 Claims. (Cl. 51—324)



A method for perforating sheet material comprising supporting the material at spaced areas over one surface

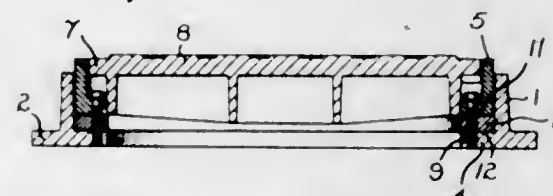
and allowing the material to sag between supported areas. Abrading the opposite surface of the supported areas to form perforations in the sheet material.

**3,408,777**  
**HELIOTROPICALLY ROTATING BUILDING STRUCTURE**  
 Bruno Ghirelli, Noceto Parma, Italy, assignor of one-third to Emile M. Croci, Washington, D.C.  
 Filed Nov. 26, 1965, Ser. No. 509,729  
 10 Claims. (Cl. 52—1)



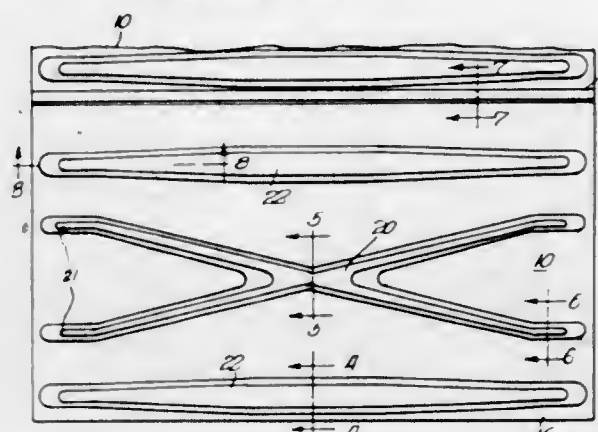
A heliotropically rotating structure comprising a rotatably mounted support platform carried by a center vertical support column means. The platform is rotated by manually operated means and by electric motor means. The electric motor means has a manual switch control and a heliotropic control. The heliotropic control comprises a photoelectric device secured to the structure and is responsive to a predetermined low level of sunshine to energize the electric motor means to rotate the platform. As soon as the platform is rotated and the photoelectric device is moved to be exposed to the full light effect of sunshine, rotation is terminated until the sun's effect on the photoelectric device again diminishes and the electric motor means is again energized to rotate the structure. Thus, the structure is rotated to follow the sun.

**3,408,778**  
**INSPECTION HOLE CLOSURE ASSEMBLY**  
 Keith K. Mason, Seacliff, South Australia, Australia, assignor to Castings & Forgings Pty. Limited, 9/6 Milton Harris, North Adelaide, South Australia, Australia  
 Filed Sept. 19, 1966, Ser. No. 580,544  
 Claims priority, application Australia, Mar. 8, 1966, 2,600  
 2 Claims. (Cl. 52—20)



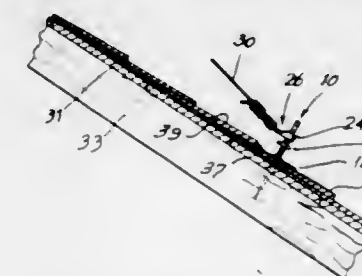
A manhole cover assembly wherein a manhole is supported by a support ring which is in turn supported by an adjustment support segment within the outer base member of the assembly, the cover and support ring height being varied to suit road variations by replacement of the segment, and the manhole cover being prevented from rocking by a depending flange engaging the support ring, the support ring in turn engaging the inner walls of the outer base member.

**3,408,779**  
**X TYPE PANEL ROOF SHEET**  
 John W. Allen, Flossmoor, and James E. Baker, Lansing, Ill., assignors to Stanray Corporation, Chicago, Ill., a corporation of Delaware  
 Filed June 27, 1966, Ser. No. 560,734  
 3 Claims. (Cl. 52—53)



A railroad freight car roof composed of paneled roof sheets extending from side plate to side plate of a car, secured at their ends thereto and at their sides to each other, each of said roof sheets provided with a pair of upwardly pressed corrugations adjacent the side margins thereof and an upwardly pressed X-type corrugation between the pair of corrugations, whereby the roof is strengthened against torsional and racking stresses imposed thereon by service movements of the car.

**3,408,780**  
**GUY WIRE ANCHORAGE DEVICE FOR ATTACHMENT TO A SLOPING SHINGLE ROOF**  
 William C. Brister, P.O. Box 87, East Dennis, Mass. 02641  
 Filed Aug. 23, 1966, Ser. No. 574,333  
 3 Claims. (Cl. 52—58)



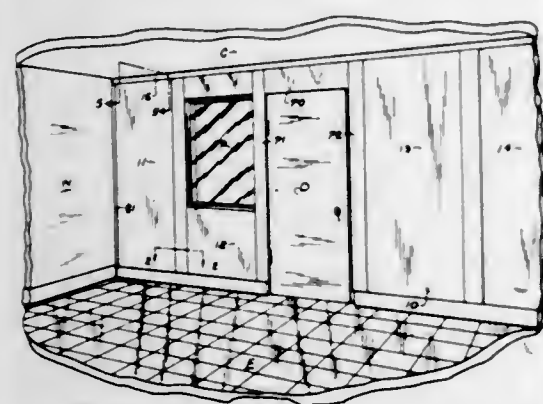
An improved anchorage device for guy wires in which there is provided a substantially flat flashing plate arranged in off-set relation to a means for ready attachment to a sloping shingle roof with the off-set flat flashing plate having a sealing relation to the attachment means, and including a portion thereof adapted to be slipped between overlapping shingles so that, as the attachment means is inserted through a puncture in a roofing shingle, the flashing plate may be drawn down tightly in a contiguous relation to the roofing shingle to prevent leakage of water through the shingle at the puncture through which the attachment means has been inserted.

**3,408,781**  
**PARTITION AND METHOD OF TILTING INTO POSITION**  
 Gordon J. Pollock, Parma Heights, Ohio, assignor to The Mills Company, Cleveland, Ohio, a corporation of Ohio  
 Filed Feb. 14, 1966, Ser. No. 527,005  
 4 Claims. (Cl. 52—122)

A prefabricated partition wall having channel members connected to the floor and ceiling, panel members of less height than the distance between the floor and ceiling



channel members having their upper ends slidably received in the ceiling channel and their lower ends adjustably supported by thread members provided with adjusting nuts projecting from the lower edge of the panel mem-



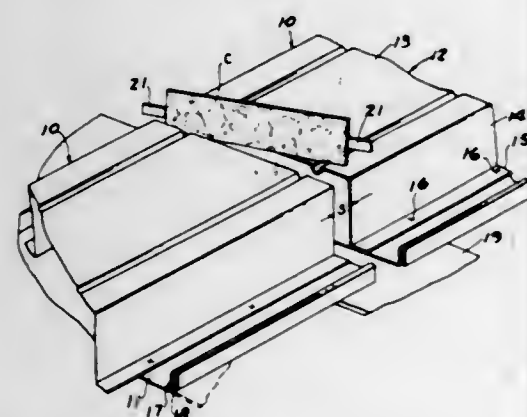
bers and engaging the tops of saddle members slidably received in the floor channel, and baseboard members detachably secured to the lower edge of the panel member and projecting toward the floor.

3,408,782

**CELLULAR FLOOR CONSTRUCTION**

Donald J. Kovacs, Ferndale, Mich., assignor to The R. C. Mahon Company, Warren, Mich., a corporation of Michigan

Filed Oct. 23, 1965, Ser. No. 503,640  
15 Claims. (Cl. 52-220)



The cellular floor construction disclosed herein comprises a plurality of longitudinally extending cells wherein each cell comprises a bottom wall, a top wall and side walls. At least some of the cells are supported on an intermediate support with their ends in spaced relation. A joint is provided between the aligned cells by a plate that has a width greater than the space between the ends of the cells. The plate rests on the inner surfaces of the bottom walls of the aligned cells and bridges the area therebetween. Sealing compound is provided between the plate, the bottom walls and a portion of the intermediate support. A closure member having top and sides complementary to the top and side walls of the cell is provided over the space between the cells and sealing compound is interposed therebetween.

3,408,783

**ANCHORAGE FOR POST-STRESSED CONCRETE STRUCTURES**

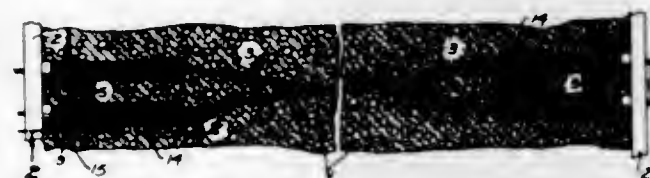
Edward K. Rice, 2077 Linda Flora Drive, Los Angeles, Calif. 90024

Continuation-in-part of application Ser. No. 357,547, Apr. 6, 1964. This application Dec. 28, 1967, Ser. No. 697,279

2 Claims. (Cl. 52-223)

An anchorage intended to be embedded in a stressed concrete structure inwardly but adjacent an end thereof,

the anchorage being rigid and defining a conical wedge receiving portion intended to receive and secure a stressing tendon and surrounded by an expansion resisting plate



from which extends one or more columnar elements which are bonded to the concrete to distribute to the concrete the load exerted by the anchorage.

3,408,784

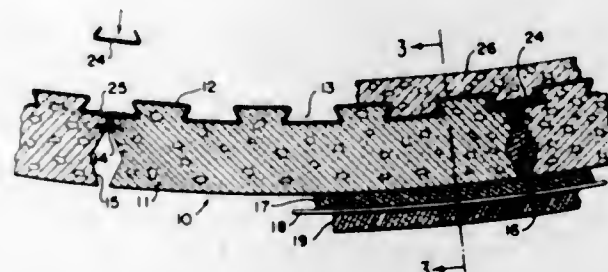
**PRESTRESSED CONCRETE TANK, PROCESS AND STRUCTURAL UNIT THEREFOR**

Francis X. Crowley, Wellesley, Mass., assignor to Crowley Hession Engineers, Boston, Mass., a partnership

Filed Jan. 10, 1966, Ser. No. 519,749

The portion of the term of the patent subsequent to Oct. 25, 1983, has been disclaimed and dedicated to the Public

5 Claims. (Cl. 52-224)



A prestressed tank constructed of panels of concrete precast with a sheath of sheet material presenting open channels in the inner face of the panel, that is to say, the face which is innermost in the complete tank, the panels being connected by key plates fitted in said channels and the assembled panels thus connected being wound with prestressing wire under tension. The disclosure also includes a process of making a tank of the aforesaid characteristics.

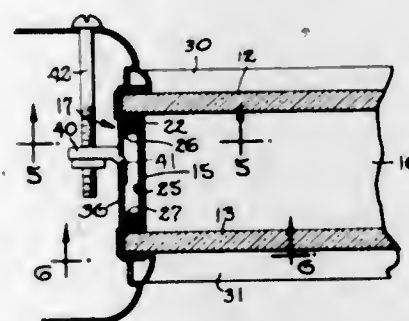
3,408,785

**OVEN WINDOW CONSTRUCTION**

George A. Kochanowski, Chicago, Ill., assignor to Kinkead Industries, Incorporated, Chicago, Ill., a corporation of Illinois

Filed Oct. 15, 1965, Ser. No. 496,308

2 Claims. (Cl. 52-304)



A fog-resistant window construction for ovens is described which utilizes rounded bezels, square glass plates, and a flexible circumferential one-way sealing gasket which provides both a seal against the entry of moisture and a self-clearing effect when the oven is used.

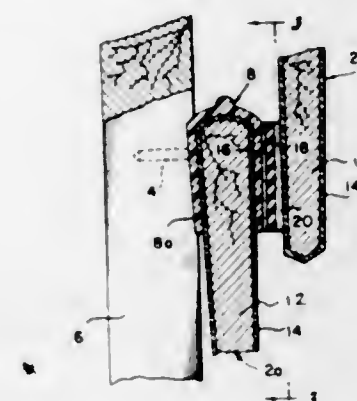
3,408,786

**SIDING CLIP FASTENER MEANS**

Jerome E. Snyder, International Falls, Minn., assignor to Boise Cascade Corporation, Boise, Idaho, a corporation of Delaware

Filed Jan. 11, 1967, Ser. No. 608,551

4 Claims. (Cl. 52-309)



A concealed fastener means for adhesively connecting the adjacent upper and lower edges, respectively, of a pair of overlapped synthetic plastic coated exterior wall siding members.

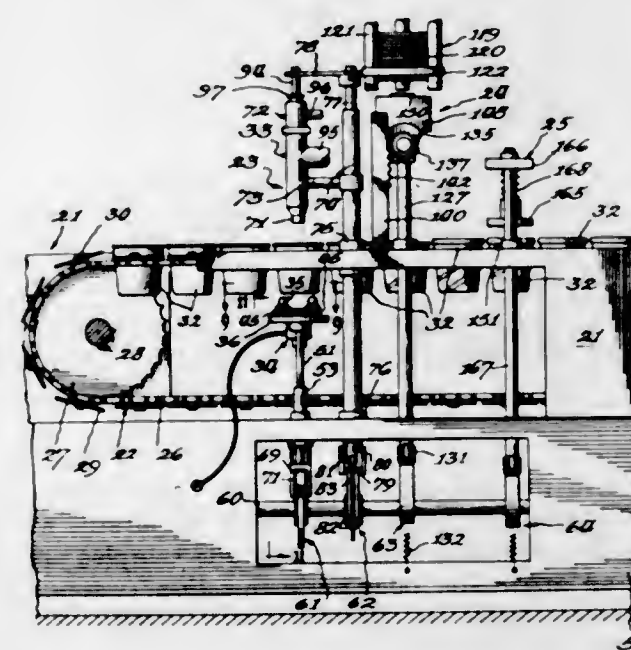
3,408,787

**METHOD FOR CAPPING CONTAINERS**

Martin Mueller, Chicago, Ill., assignor to Lily-Tulip Cup Corporation, New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 560,754, June 27, 1966, which is a division of application Ser. No. 296,563, July 22, 1963, now Patent No. 3,267,971, dated Aug. 23, 1966. This application Dec. 19, 1967, Ser. No. 691,745

5 Claims. (Cl. 53-37)



The method is directed to applying a cover to a container in such a manner as to provide an air-free sealed package. The removal of air from under the cover of the container permits the container to be fully packed without any unsightly bulging which would impair the esthetic appeal of the package and which would also make it harder to pack the sealed packages in a carton or a freezer. The air is removed by engaging opposite sides of the container rear the upper edge thereof and squeezing them toward each other to form a path for the escape of any air trapped beneath the cover.

856 O.G.—2

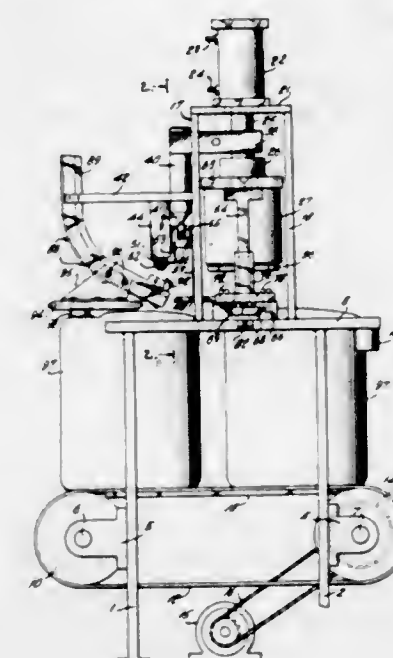
3,408,788

**METHOD AND APPARATUS FOR SECURING CLOSURE CAPS TO CONTAINERS**

Eugene Greck, Westfield, N.J., assignor to American Flange & Manufacturing Co. Inc., New York, N.Y., a corporation of Delaware

Filed July 18, 1966, Ser. No. 565,827

13 Claims. (Cl. 53-42)



11. The method of capping containers comprising loosely placing a closure cap over the opening of a container neck at a cap applying station, conveying the container and loosely applied cap to a cap securing station, restraining said cap against dislodgement from said container neck during said conveying, releasing said cap after said container has fully reached said securing station and securing said closure cap onto said container neck.

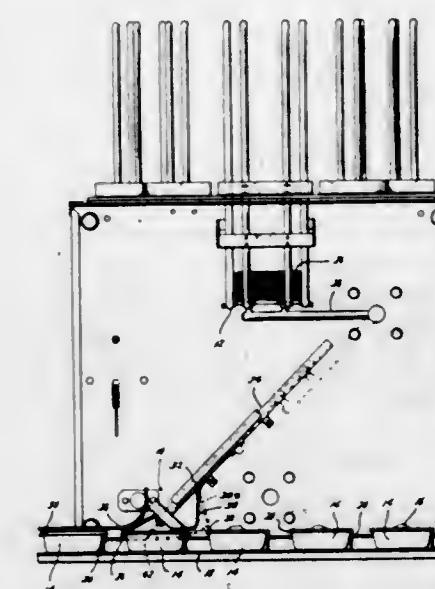
3,408,789

**CAP APPLYING METHOD AND APPARATUS**

John A. Reddick, Houston, Tex., assignor to Anderson, Clayton & Co., Houston, Tex., a corporation of Delaware

Filed Mar. 21, 1966, Ser. No. 536,006

4 Claims. (Cl. 53-315)



The present invention provides a device for applying resilient lids to resilient containers. A lid is hooked onto a container moving on a horizontal belt and is bendingly



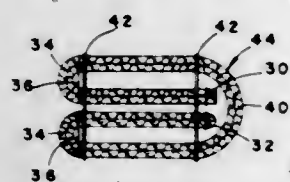
stretched and at the same time forced onto the container through simultaneous contact of the lid with a shoe and a slide. A pivotal lid retainer member is provided on the slide for retaining lids thereon when no container is present to receive a lid for capping purposes.

3,408,790

## LIGHTWEIGHT HARNESS

Willard C. Beach, Glen Rock, Pa.; National Bank and Trust Company of Central Pennsylvania, administrator of Mary B. and Willard C. Beach, deceased  
Continuation-in-part of application Ser. No. 363,118, Apr. 28, 1964. This application June 14, 1966, Ser. No. 557,546

6 Claims. (Cl. 54-2)



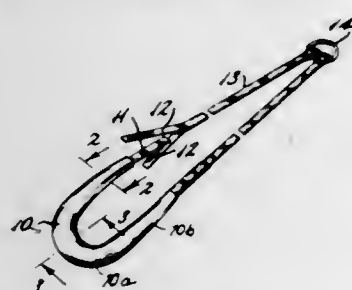
A lightweight harness item formed from a strip of thermoplastic synthetic resin woven fabric of substantially uniform width folded upon itself a number of times to provide a plurality of plies and the folded product having opposite smoothly rounded edges, said plies being secured firmly together by rows of threads and spaced holes being formed therein by fusion and displacement of fibers of the fabric so as not to impair the tensile strength, and a buckle having a transverse bar and pivoted tongue thereon being connected to one end portion of said harness item by passing the tongue of said buckle through a hole in said item and folding the end portion of the item upon itself and fastening it around said transverse bar of the buckle, whereby the tongue of the buckle may be received selectively in spaced holes in another harness item for connection thereto.

3,408,791

## CRUPPER

Herbert A. Creef, Jr., P.O. Box 396,  
Manteo, N.C. 27954  
Filed June 23, 1966, Ser. No. 559,971

6 Claims. (Cl. 54-22)



A crupper member comprising a strap member having an enlarged molded plastic element enclosing a central portion thereof. The plastic element being provided with a circular central section and tapered end portions of oval shape.

3,408,792

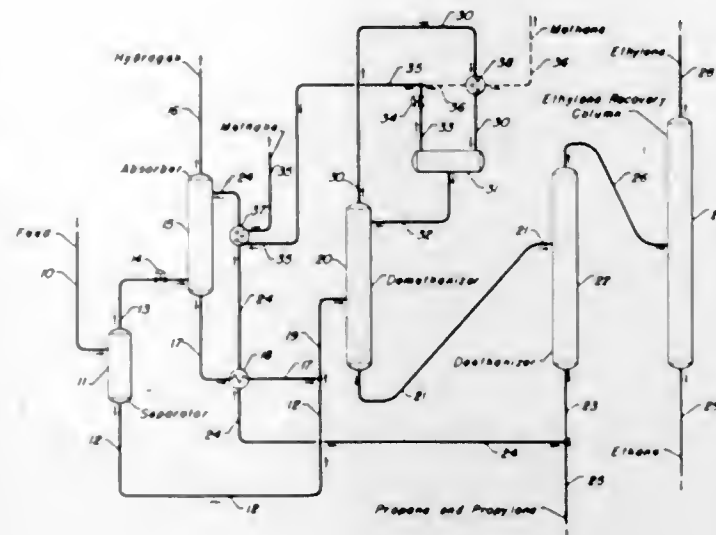
## PURIFICATION OF HYDROGEN-CONTAINING GASEOUS STREAMS

Robert E. McHarg, Arlington Heights, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware  
Filed Aug. 22, 1966, Ser. No. 573,894

7 Claims. (Cl. 55-43)

Process for purifying and recovering hydrogen from a gaseous feed mixture comprising hydrogen and C<sub>1</sub> to C<sub>3</sub>

hydrocarbons using an absorber system, a demethanizing tower and a deethanizer. The absorber is operated at a temperature of at least as low as -90° F. so that hydro-



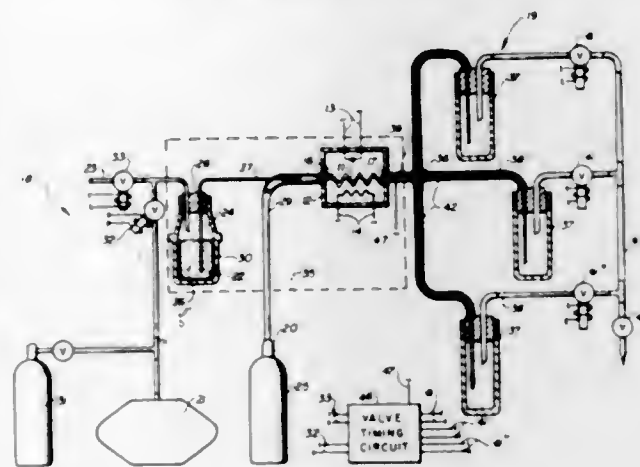
3,408,793

## APPARATUS FOR AUTOMATIC PREPARATIVE GAS CHROMATOGRAPHY

Jack W. Frazer, Pleasanton, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Jan. 17, 1967, Ser. No. 610,215

6 Claims. (Cl. 55-197)



Preparative gas chromatography apparatus which has no moving parts in those portions of the apparatus which are at elevated temperatures, wherein the samples are injected by an automatic pneumatic injection system, and the resolved products are distributed to a system of traps through diffusion tubing, the flow through which is controlled by valves located in the gas passages beyond the traps.

3,408,794

## FILTERING SYSTEM AND FILTER STRUCTURE

Edgar S. Stoddard, 626 S. Columbia St.,  
Naperville, Ill. 60540

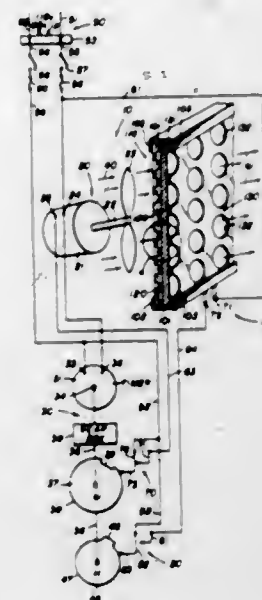
Filed Dec. 22, 1966, Ser. No. 603,795

15 Claims. (Cl. 55-282)

A self-cleaning air filtering system including a porous filter member of glass fiber threads having disposed on one surface or woven therein an electrically resistive wire connectable to a source of electrical power, the

wire being energized periodically to heat it to a temperature in the range from about 700° F. to about 1,000° F.

gaseous medium out through the discharge opening of the plenum. A small auxiliary separator unit of the same type is mounted within the plenum adjacent the small auxiliary



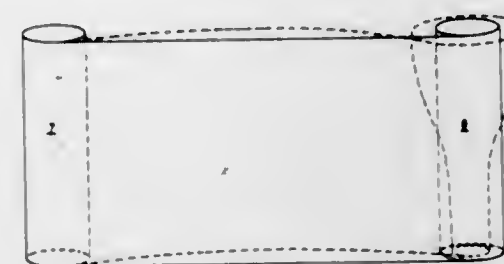
to clean the filter member by heating to destruction the combustible materials entrapped on the filter member.

3,408,795

## SEALING ARRANGEMENT FOR ROLL-TYPE FILTERS

Alan E. Revell, Louisville, and Orville C. Parrott, Fern Creek, Ky., assignors to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware  
Filed June 14, 1967, Ser. No. 645,931

3 Claims. (Cl. 55-354)



An improved sealing arrangement in a roll-type filter assembly wherein a filter medium edge has a tendency to pull away from an edge seal in the filtering section including means cooperating with the filter medium take-up roll to place such filter medium edge under greater tension as it passes through such edge seal to maintain it in sealed position.

3,408,796

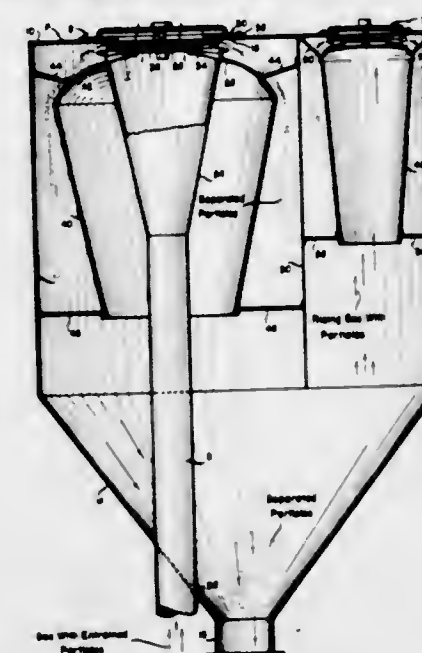
## CENTRIFUGAL FAN SEPARATOR UNIT

John M. Murray, 519 Elizabeth Ave.,  
South Charleston, W. Va. 25303

Filed Sept. 16, 1964, Ser. No. 396,864

12 Claims. (Cl. 55-403)

A plurality of axially spaced plates rotatably mounted on a shaft and having circumferentially ports form a multi-stage axial flow separator unit. Corresponding ports in each plate are circumferentially spaced and have an upstanding backwardly curved impeller vane adjacent the trailing edge of each port. Outer peripheral nozzle means discharges centrifugally separated particulate material, while the purified gaseous medium passes axially through the unit. The precipitated unit with a large vane separator and a small auxiliary separator are mounted within a plenum adjacent discharge openings in the top thereof. The main separator is connected at its intake side to an impure gas source which extends into the plenum, the discharge side of the main separator passing purified



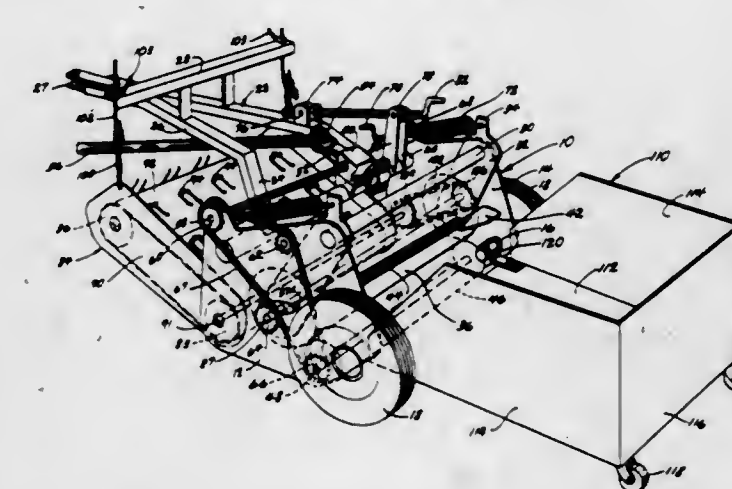
3,408,797

## HARVESTING DEVICE

Howard D. Currence, Ames, Iowa, assignor to Iowa State University, Research Foundation, Ames, Iowa, a corporation of Iowa

Filed June 17, 1965, Ser. No. 464,776

18 Claims. (Cl. 56-19)



A harvesting device contains a wheel mounted frame means, a first roll extending transversely across the frame and rotatably mounted thereon, a plurality of finger elements extending from the first roll, a second roll extending transversely across the frame and being positioned adjacent the peripheral ends of the finger elements, and means for rotating the rolls.

3,408,798

## MEANS FOR AUTOMATICALLY LEVELING A VEHICLE

Ralph D. Hale, Carthage, Mo., and Byron L. Morris, Wichita, Kans., assignors to Slope Tractor, Inc., Harper, Kans., a corporation of Kansas

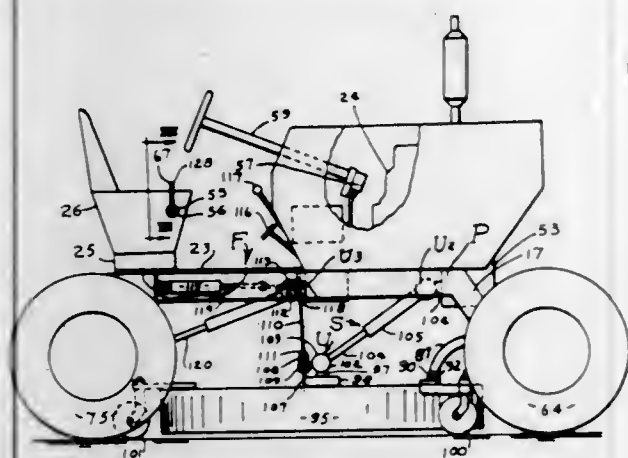
Continuation of application Ser. No. 459,069, May 26, 1965. This application June 13, 1967, Ser. No. 655,257

6 Claims. (Cl. 56-25.4)

A vehicle for carrying a mower or the like for use on a sloping surface wherein the frame of the vehicle is pivotally attached to its supporting axle and steering structure in such a manner that the frame may be maintained

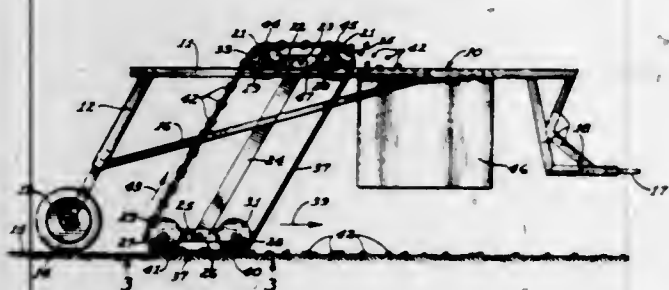


in a level, upright position while the axles and mower are maintained parallel to the sloping surface, with the wheels of the vehicle being maintained in a vertical position,



there being hydraulic apparatus for tilting the frame with respect to the axles and maintaining the mower in its desired relative position.

**3,408,799**  
**COTTON HARVESTING APPARATUS**  
Samuel J. Jennings, Phoenix, Ariz.  
(Pima Road, P.O. Box 3546, Scottsdale, Ariz. 85257)  
Filed Sept. 19, 1966, Ser. No. 580,353  
3 Claims. (Cl. 56—28)



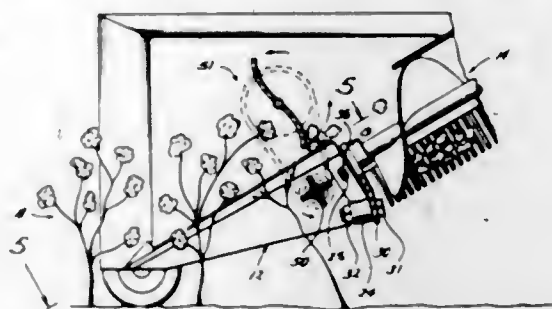
1. A cotton pick-up apparatus comprising in combination:

- (A) a frame,
- (B) a hitch on said frame,
- (C) ground engaging wheels journaled on said frame to support said frame when towed over the ground surface of a field,
- (D) a pair of radially spaced pulleys floatingly mounted on said frame and arranged to yieldingly roll over the ground so as to conform to the irregularities of the surface thereof,
- (E) a pair of belts operating over said pulleys and in contact with the ground surface,
- (F) and annular grooves in said pulleys arranged to receive said belts so that said belts move in laterally converging direction to sidewise abutting engagement from a laterally spaced position relative to the direction of travel of said belts and pulleys over the ground surface to thereby laterally grip seed cotton on the ground and deliver the same to a discharge position on said frame.

**3,408,800**  
**COTTON STRIPPING FINGERS**  
Louis F. Jezek, Jr., Rte. 3, Box 204,  
Temple, Tex. 76501  
Filed Apr. 26, 1965, Ser. No. 450,991  
11 Claims. (Cl. 56—34)

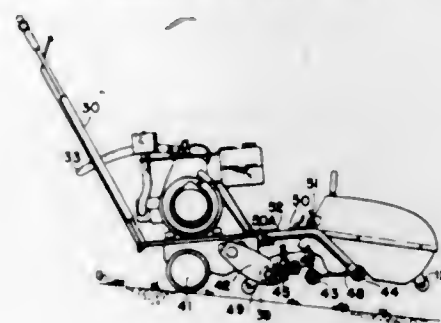
Cotton stripping fingers are mounted on a vehicle in spaced, side-by-side, parallel relationship to comb the bolls from cotton stalks through which the fingers are moved. The fingers are L-shaped. Each has a stripping leg inclined downwardly in the direction of travel of the

vehicle and a mounting leg for mounting the finger on a vehicle. Each finger is mounted for pivotal movement around an axis that extends in the direction of travel of the vehicle and intersects the front end of the stripping leg. This allows two adjacent legs to pivot and move apart as a large cotton stalk passes between them without increasing the space between their front any longer than is required for the stalk to pass between their front ends. A vertical mounting plate extends between the middle two fingers. An elongated rod extends transverse the fingers through the mounting legs and the mounting plate and



is movable axially relative to the fingers and the plate. A coil spring is located between each two adjacent fingers except the two between which the mounting plate extends. These springs resiliently hold the fingers apart. Two additional coil springs are supported on the rod, each being located on one end of the rod outside the fingers. The spacer springs have a higher spring rate than the outside springs so that the outside finger of any two adjacent pairs on each side of the mounting plate will do most of the moving, when the two fingers are forced apart by the cotton stalk.

**3,408,801**  
**NON-SPILL GRASS CATCHER**  
Harley E. Kroll, Chaska, Minn., assignor to Toro Manufacturing Corporation, Minneapolis, Minn., a corporation of Minnesota  
Filed Oct. 22, 1965, Ser. No. 500,543  
10 Claims. (Cl. 56—199)

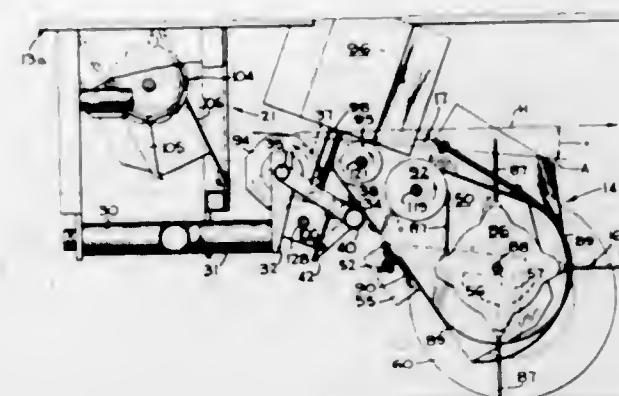


A front mounted catcher for a lawn mower which tilts downwardly and forwardly relative to the frame when the front end of the mower is raised to prevent spilling of the clippings from the catcher. The catcher is also capable of longitudinal shifting movement relative to the frame when the frame is pulled rearwardly to encourage the clippings to move to the back of the catcher.

**3,408,802**  
**HARVESTING DEVICE**  
Larry L. Slates, Wellington, and Dennis R. Schultz, Rossville, Ill., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware  
Filed Mar. 30, 1966, Ser. No. 538,689  
10 Claims. (Cl. 56—364)

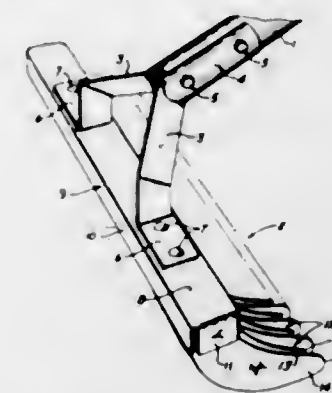
1. In portable apparatus for harvesting vine crops having an elevated inlet for receiving the crop and a gathering unit, said gathering unit comprising a power driven pick-up unit including rotary finger means for engaging and

lifting the crop from the ground, rotary transfer means cooperable with said rotary finger means for receiving the crop therefrom and transferring it rearwardly to said elevated inlet, and compressing means disposed above and adjacent said rotary transfer means for confining the crop to a predetermined lateral path of travel, said rotary transfer means including a set of two rollers having



crop transfer surfaces, and means for mounting said rotary transfer means and said pickup unit on said gathering unit so that a line drawn across said crop transfer surfaces will not exceed an angle of 15 degrees downwardly with respect to the horizontal whereby the vine crop can be effectively moved between and rearwardly of said compressing means.

**3,408,803**  
**RAKE**  
Frederick B. Vanderveer, Grand Rapids, Mich., assignor to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan  
Filed Dec. 2, 1965, Ser. No. 511,171  
5 Claims. (Cl. 56—400.01)

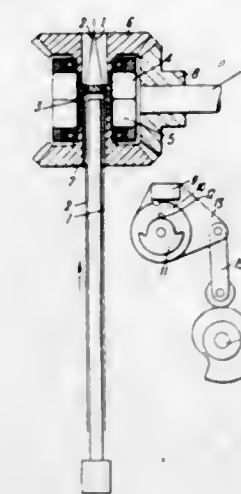


1. In a rake:
- (a) a bracket for attachment to a handle,
  - (b) a brace attached to said bracket,
  - (c) a plurality of rearwardly facing sharp ended teeth attached to said brace,
  - (d) and a plurality of rearwardly facing blunt ended teeth disposed between said sharp ended teeth,
  - (e) said blunt ended teeth being generally coextensive with and longer than said sharp ended teeth.

**3,408,804**  
**RANDOM LAY IN CABLES**  
Bernard Edwin Ash, Bexleyheath, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware  
Filed Nov. 30, 1966, Ser. No. 598,026  
9 Claims. (Cl. 57—34)

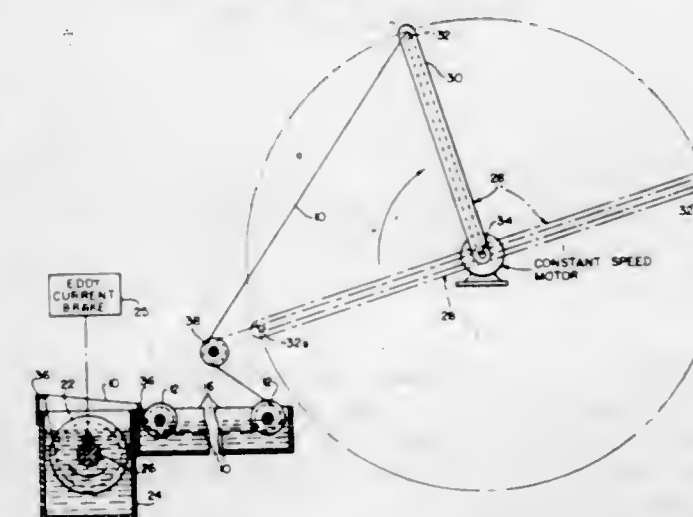
Apparatus and method for making a telecommunication cable having twist reversal points including means for changing the direction and angle of lay of the cables and also the point on the circumference of the cable at which

the twist reversal occurs. The reversing of the cable lay means is effected by a cam arrangement which acts on



means for activating a bistable circuit which in turn acts on a reversing clutch.

**3,408,805**  
**PROCESS AND APPARATUS FOR THE MANUFACTURE OF SUTURES**  
Jerry R. Reeder, Lockport, and Raymond W. Bergman, Joliet, Ill., assignors to Ethicon Inc., a corporation of New Jersey  
Filed Aug. 30, 1965, Ser. No. 483,446  
22 Claims. (Cl. 57—35)



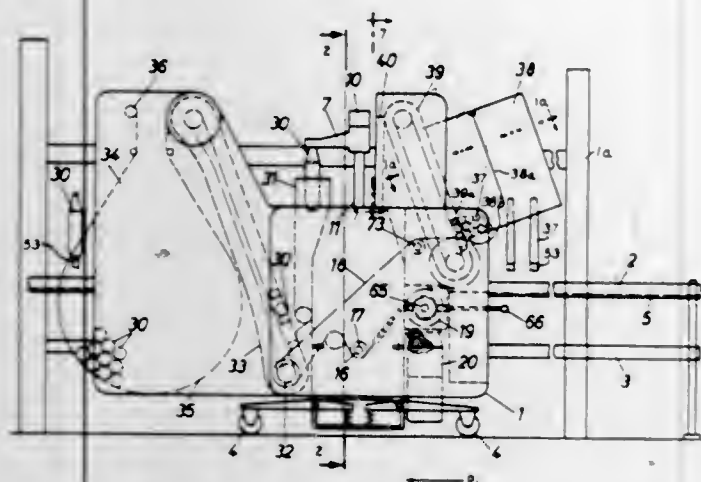
Continuous twisted strings of animal gut are drawn under tension through a bath of treating liquid which gives the desired properties to the gut. While in the bath, the tension of the string is varied, particularly by cyclically applying tension and completely removing tension. This alternately stretches the gut to express liquid from it and relaxes the gut to permit it to absorb liquid again thus more rapidly circulating the liquid within the string and increasing the effectiveness of its treatment.

**3,408,806**  
**APPARATUS FOR THE CONTINUOUS REPLACEMENT OF FULL COPS WITH EMPTY COPS**  
Emil Fess, Andreas Mahr, and Eberhard Grimm, Ingolstadt, Germany, assignors to Deutscher Spinnereimaschinenbau Ingolstadt, Ingolstadt (Danube), Germany, a corporation of Germany  
Filed June 25, 1964, Ser. No. 378,013  
Claims priority, application Germany, July 4, 1963, D 41,902  
28 Claims. (Cl. 57—53)

Apparatus for lifting cops from spindles. The cop manipulating apparatus is mounted on a carriage which travels at a constant speed past the spindles on which the cops are mounted, a cop engaging member mounted on the carriage grips a cop and simultaneously the engaging



member is lifted to raise the cop off the spindle and is moved in a direction opposite the direction of movement



of the carriage to eliminate relative movement of the spindle and the engaging member.

3,408,807

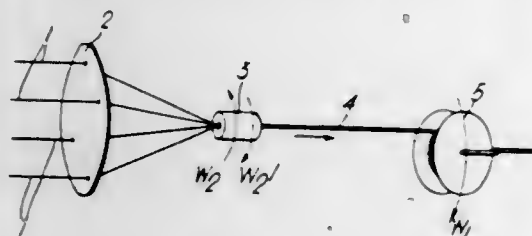
**TWISTING MACHINE**

Kjell Sylthe, Oslo, Norway, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 10, 1966, Ser. No. 585,441

Claims priority, application Norway, Oct. 29, 1965, 160,255

3 Claims. (Cl. 57-59)



Cable reactive imbalances are reduced by rotating a twisting die alternately in the same and opposite directions relative to the rotation of the twisted conductors. Either the pay-off or take-up member is held stationary while the other rotates.

3,408,808

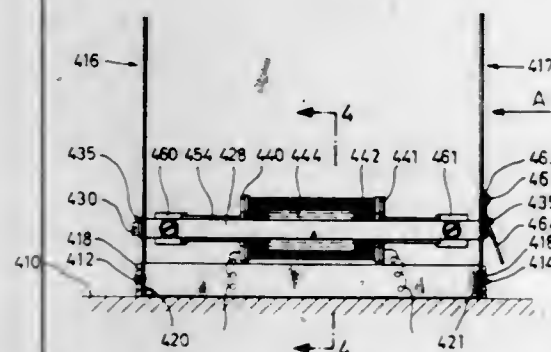
**WATCH VIBRATOR**

Klaus Andreas Sparing, Pforzheim, and Wilhelm Paul Tilse, Pforzheim-Birkenfeld, Germany, assignors to The United States Time Corporation, Waterbury, Conn., a corporation of Connecticut

Filed Feb. 7, 1966, Ser. No. 525,458

Claims priority, application Germany, July 13, 1965, U 11,883

12 Claims. (Cl. 58-23)



1. A horological instrument in which a mechanical frequency standard is pulsed by an electrical circuit comprising

a base, a first vibratory member connected to said base, a second vibratory member connected to said base, means to oscillate the members simultaneously in opposite directions, and an auxiliary spring which is connected to both vibratory members and is only connected to said base through said vibratory members.

3,408,809

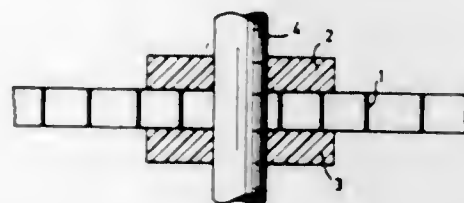
**DEVICE FOR SECURING A BALANCE SPRING TO A BALANCE STAFF**

Marcel Dumont and Gabriel Fahndrich, both of Bienne, Switzerland

Filed Apr. 21, 1966, Ser. No. 544,147

Claims priority, application Switzerland, Apr. 21, 1965, 5,513/65; July 13, 1965, 9,807/65

2 Claims. (Cl. 58-115)



Assembly for securing the inner end of a coiled balance spring to a balance staff, including a pair of spaced, elastically deformable plastic securing rings at least one of which is rigidly secured to the staff, the inner end of the spring being gripped between opposing faces of these rings along a length of about one coil and a half.

3,408,810

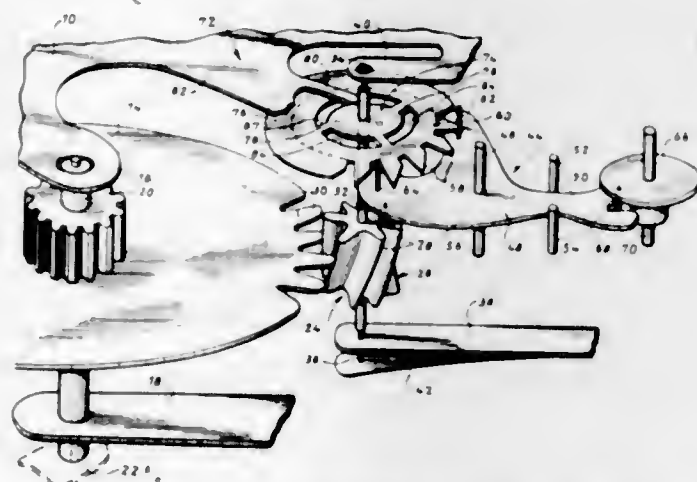
**JUMP SECONDS HAND**

Heinz Meltinger, Pforzheim, Germany, assignor to The United States Time Corporation, Waterbury, Conn., a corporation of Connecticut

Filed Sept. 16, 1966, Ser. No. 580,120

Claims priority, application Germany, Sept. 29, 1965, U 12,070

13 Claims. (Cl. 58-125)



1. In a horological instrument having a seconds hand, a motive means, and a frame plate, a drive train to said seconds hand including an index wheel driven by said motive means, an elongated gear connected to said index wheel and fixedly mounted on a staff, said gear having teeth which slant relative to its axis and having axial positions of an initial setting and an indexing motion, means to journal said staff on the plate so that it is rotatable and movable axially, a seconds wheel adapted to be driven by said elongated gear and connected to said seconds hand,

means to journal said seconds wheel on said frame plate, means to move said elongated gear staff axially from an initial setting into rapid indexing motion of said elongated gear, and means to control said axial motion so that it is operative once every second.

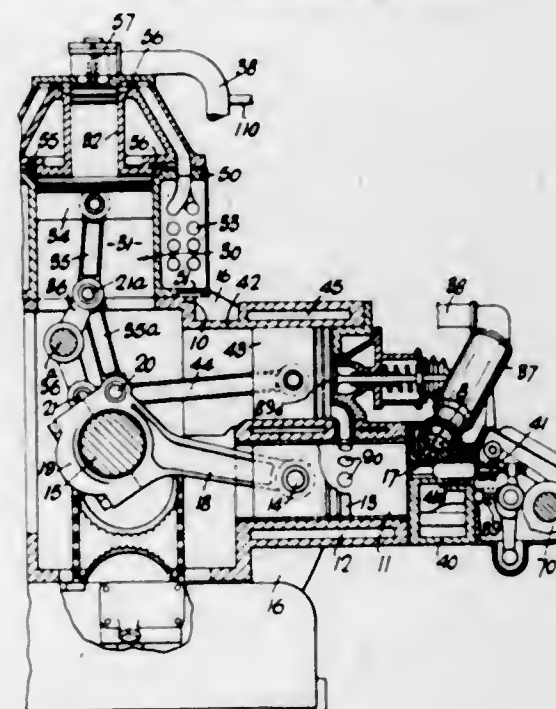
3,408,811

**INTERNAL COMBUSTION ENGINES**

John Donald Wishart, 93 Railway Road, Blackburn, Victoria, Australia

Continuation-in-part of application Ser. No. 478,553, Aug. 10, 1965. This application July 24, 1967, Ser. No. 655,391

9 Claims. (Cl. 60-15)



Improved two-stroke internal-combustion engine which divides each precompressed air charge into a plurality of isolated streams to suppress backfiring and control temperature, pumps into the charge, proportionately to its rate of turbulent flow through a restricted passage into the explosion cylinder with variable cutoff after top dead center, a metered and vaporized fuel charge arranged to become stratified on entry, ignites it with a spark timed with relation to the cutoff point, and, after normal expansion, connects an auxiliary expansion cylinder to the explosion cylinder by an internally insulated port uncovered by its piston to obtain further expansion.

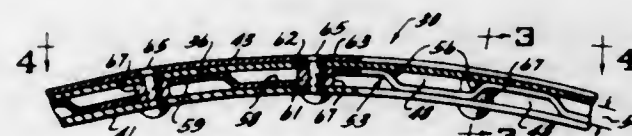
3,408,812

**COOLED JOINT CONSTRUCTION FOR COMBUSTION WALL MEANS**

Richard E. Stenger, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York

Filed Feb. 24, 1967, Ser. No. 618,455

8 Claims. (Cl. 60-39.65)

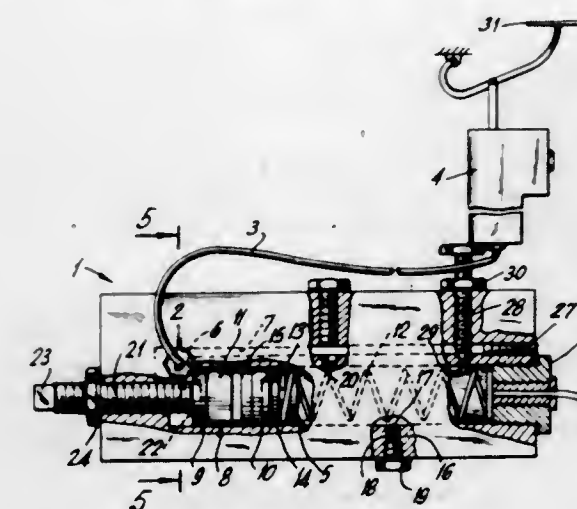


A combustion wall or liner includes a joint construction in which overlapping wall members are maintained in spaced relationship by a corrugated spacer, a cooling air passage being formed between the wall members through which air can flow from an air space on one side of the wall to a combustion space on the opposite side of the wall.

3,408,813

**HYDRAULIC SAFETY VALVE**

Jack Dufault, Ferry Road, Lewiston, Maine 04240  
Filed Oct. 28, 1966, Ser. No. 590,254  
4 Claims. (Cl. 60-54.5)



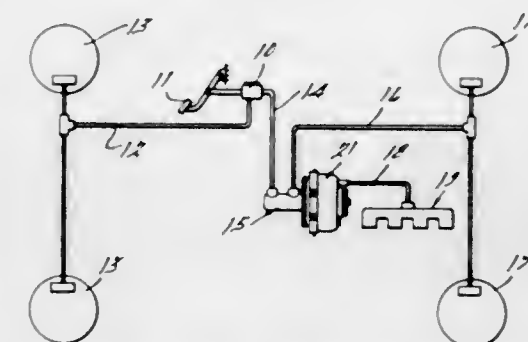
The present invention provides a safety valve system adaptable for use with existing hydraulic systems generally including a block adapted to be joined with the master cylinder, the block having a plurality of passages, each passage having a corresponding valving chamber with a valving piston in each chamber adapted to act upon damage to a braking conduit and a by-pass chamber connecting the passage with its respective valving chamber.

3,408,814

**POWER OPERATED BRAKE PRESSURE PROPORTIONING AND BOOSTING DEVICE**

William Stelzer, Bloomfield Hills, Mich., assignor to Kelsey-Hayes Company, a corporation of Delaware  
Filed Nov. 2, 1966, Ser. No. 591,578

11 Claims. (Cl. 60-54.5)



A hydraulic brake system using a brake pedal and master cylinder applies pressure directly to one set of front or rear brake cylinders and applies pressure to the cylinders of the other set of wheels in stages through a proportioning device and a motor operated thereby to increase the pressure on the last said brake cylinders in accordance with an ideal curve.

3,408,815

**POWER ASSISTED FLUID MOTOR FOR HYDRAULIC BRAKE SYSTEMS**

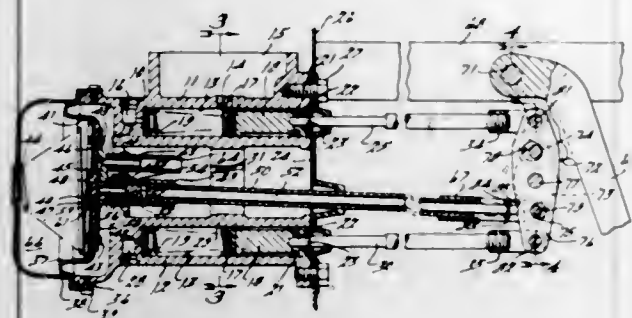
William Stelzer, Bloomfield Hills, Mich., assignor to Kelsey-Hayes Company, a corporation of Delaware  
Filed Dec. 12, 1966, Ser. No. 600,983

15 Claims. (Cl. 60-546)

An assembly consisting of a dual master cylinder, a power unit, a brake pedal and a pivoted linkage connecting the pedal and power unit to the dual master cylinder. The control valve of the power unit has a control rod connected to the linkage to cause the power unit to deliver a force to the linkage proportional to the applied pedal force during the initial stages of the brake application.



By this means, equal forces are delivered to separate actuating rods for the two pistons of the dual master cylinder until a predetermined "power runout" of the power

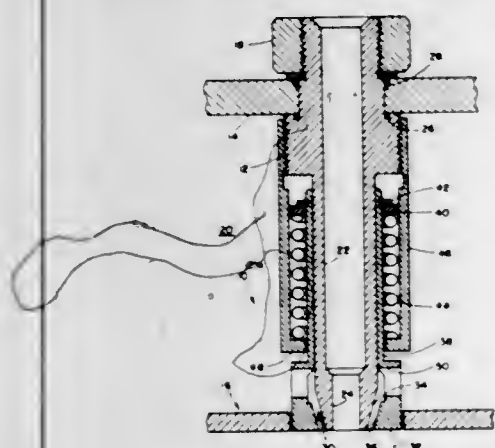


unit is reached, after which one of the actuating rods will receive a greater portion of any further increases in pedal effort due to its relationship to the pedal in the linkage.

3,408,816

**ROCKET ENGINE INJECTOR**

Samuel Stein, Cleveland, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration  
Filed Oct. 31, 1966, Ser. No. 591,014  
5 Claims. (Cl. 60—240)



Maintaining the mass flow rate of propellant into a rocket combustion chamber substantially constant as propellant temperature changes by automatically varying the cross-sectional area of the injector orifice to accommodate changes in density, velocity, and pressure.

3,408,817

**LIQUID ROCKET ENGINE AND FUEL SYSTEM THEREFOR**

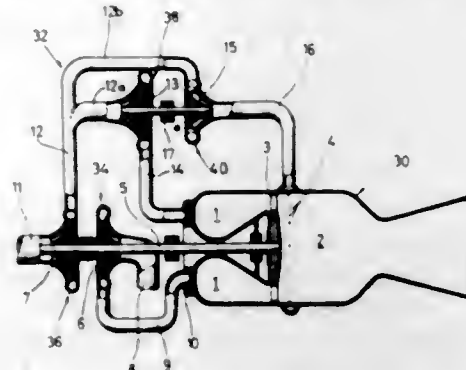
Otto Waltz, Neukirchstockach, and Rudl Nehr Korn, Putzbrunn, Germany, assignors to Bolkow Gesellschaft mit beschränkter Haftung, Ottobrunn, near Munich, Germany

Filed Oct. 19, 1966, Ser. No. 587,708  
Claims priority, application Germany, Oct. 21, 1965, B 84,192

7 Claims. (Cl. 60—246)

A rocket engine which is operated by liquid fuel or a liquid propellant includes at least one precombustion chamber which is arranged to discharge combustion gases through turbine blades and into a main combustion chamber. The turbine blades are carried by an auxiliary turbine which is arranged at the head of the main combustion chamber and centrally of a plurality of the precombustion chambers and rotates a shaft to drive two separate fuel component pumps. At least one of the pumps includes two separate branches. A high pressure pump is connected to take suction from one of the branches and to discharge the fuel to the precombustion chamber. The second branch is connected directly to the main com-

bustion chamber. The complete arrangement includes a fluid motor which is driven by the flow of fuel in the



second branch and is connected to the high pressure pump to drive the high pressure pump.

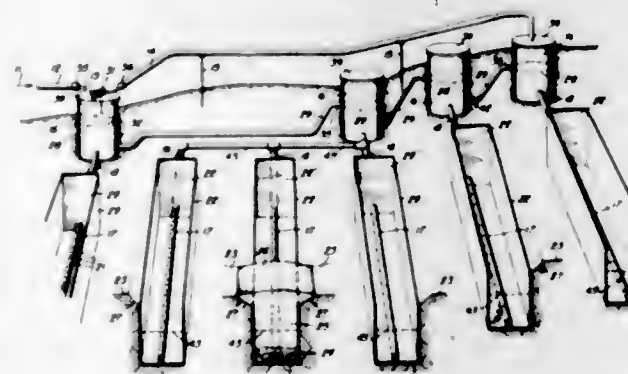
**ERRATUM**

For Class 60—271 see:  
Patent No. 3,409,622

3,408,818

**CAPILLARY SUBTERRANEAN IRRIGATION SYSTEM**

Lawrence F. Hemphill, 644 Benvenue Ave.,  
Los Altos, Calif. 94022  
Filed June 6, 1966, Ser. No. 555,372  
7 Claims. (Cl. 61—13)



A subterranean irrigation system having longitudinally extending level perforated water distributing conduits in trenches lined with water impermeate sheets extending part way up the sides of the trenches at least higher than the conduits. A water supply system formed by headers connected to the conduits and interconnected to assure a predetermined free water level in the soil adjacent to each conduit, the trenches being filled with capillary feed material over the conduits and in contact with the adjacent soil for feeding the water thereto. A visual water flow indicator may be used by connecting it between the water source and the headers with a readily visible open flow therein. A suitable supply valve, such as a float valve, responsive to water level in the lowest header, controls the supply of water to the system.

3,408,819

**STABILISING UNDERWATER SURFACE**

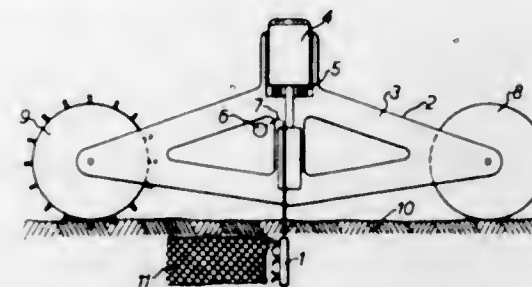
Joseph V. Delfosse, Berchem-Antwerp, Belgium, assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed June 16, 1966, Ser. No. 558,067  
Claims priority, application Great Britain, June 17, 1965, 25,715/65

15 Claims. (Cl. 61—35)

8. A method of stabilizing a subsurface layer of a bed of non-cohesive granular material which comprises:  
(a) fluidizing, at a depth below the surface layer of a non-cohesive granular material sufficient to minimize disturbance of said surface layer, a first portion of a

subsurface layer of a non-cohesive granular material;  
(b) applying a binder material directly to the fluidized material; and

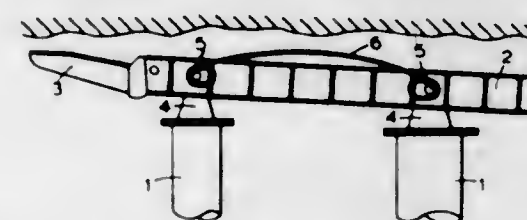


(c) subsequently fluidizing and applying the binder material to a second portion of a subsurface layer of granular material to form a continuous stabilized subsurface layer.

3,408,820

**MINE SUPPORT WITH RESILIENT RELEASE MEANS**

Lewis R. Bower, Hillstown, near Chesterfield, Derby, England, assignor to A. G. Wild & Co. Limited, Sheffield, Yorkshire, England, a British company  
Filed Aug. 17, 1966, Ser. No. 573,084  
7 Claims. (Cl. 61—45)



A mine roof support having a pair of laterally spaced extendable length fluid operated chocks or jacks, a roof supporting bar movably connected to and extending across the upper ends of the chocks and one or more spring means mounted on the roof supporting bar and normally extending above the upper surface thereof to engage the mine roof and assist in releasing the roof supporting bar from contact with the mine roof upon release of the chocks.

3,408,821

**WATERBORNE VESSEL**

Leonard Redshaw, Askam-in-Furness, England, assignor to Vickers Limited, London, England, a British company  
Filed Aug. 2, 1966, Ser. No. 569,617

Claims priority, application Great Britain, Aug. 10, 1965, 34,262/65

5 Claims. (Cl. 61—46.5)



The disclosed waterborne or floatable vessel, primarily useful to be transported to a location where it is moored,

comprises an upright column carrying a ballast chamber at or near its lower end, a superstructure mounted on the column for movement therealong between a lower position near the ballast chamber and an upper position at or near the upper end of the column. In one form the upper portion of the column is of lesser cross-sectional area than the lower portion and a collar is provided on the upper portion along which the superstructure is movable and to which it may be attached. In another form, the upright column includes telescoping upper and lower sections and a buoyancy chamber carried by the lower end portion of the upper section.

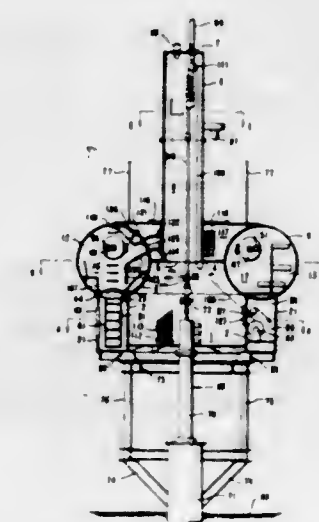
3,408,822

**DIVING METHOD AND APPARATUS**

Frederick J. Chate and Steven A. T. Kapteyn, The Hague, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware  
Filed Aug. 5, 1966, Ser. No. 570,658

Claims priority, application Netherlands, Aug. 6, 1965, 6510238

13 Claims. (Cl. 61—69)



A method and apparatus for carrying out underwater operations with the aid of diving apparatus provided with at least a living compartment, a decompression compartment, a water-lock compartment and a working compartment. The diving apparatus is lowered into the water to an operating depth at which a gas pressure approximately equal to the static water pressure at the operating depth is maintained in the working compartment. A predetermined substantially constant gas pressure higher than atmospheric pressure and lower than the water pressure at the operating depth is maintained in the living compartment. Divers in the diving apparatus move periodically from the living compartment via the decompression compartment to the working compartment and vice versa as gas and water is selectively supplied and discharged to and from the water-lock compartment so as to maintain a desired pressure in the water-lock compartment.

3,408,823

**SEED TAPE PLANTING MACHINE**

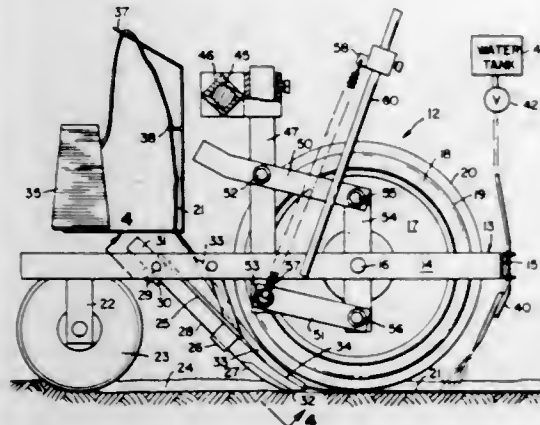
Haruto Okita and Frederick W. Rohnert, Hollister, and James W. Chaney, Gilroy, Calif., assignors to Waldo Rohnert Co., Hollister, Calif., a corporation of California

Filed Nov. 9, 1966, Ser. No. 593,192  
7 Claims. (Cl. 61—72.6)

1. A seed tape planting device, including in combination:  
a supporting frame extending lengthwise and having a forward end and a rear end,  
a coulter wheel supported by said frame in fore-and-aft alignment therewith adjacent said forward end,



a tired wheel adjacent the rear end of said frame and in fore-and-aft alignment therewith, said tired wheel having a central radially outward circumferential projection therearound,

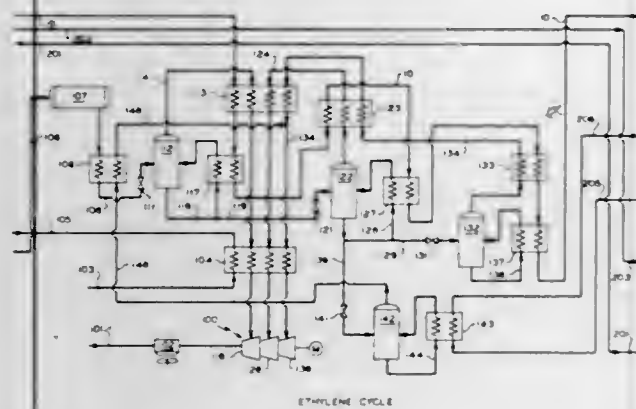


tape-core support means adjacent said forward end of said frame for supporting a core around which the seed tape is wound, a plowshare just forward of said tired wheel supported by said frame, and seed-tape feeding means supported by said plowshare terminating adjacent the lower end of said plowshare.

3,408,824

**GAS LIQUEFICATION EMPLOYING THERMO-SYPHONED EXTERNAL LIQUID REFRIGERANT**  
Joseph T. Karbosky and Ernest A. Harper, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Mar. 31, 1967, Ser. No. 627,544  
6 Claims. (Cl. 62-9)



A gaseous feed stream is cooled and liquefied by employing external refrigeration in which the refrigerant is expanded in series to provide plural vapor and liquid portions of refrigerant in plural flash zones. Each vapor and liquid portion of refrigerant is passed in heat-exchange with the gaseous feed stream with the liquid portion passing upwardly through the heat exchange zone by thermosyphonic effect and returning to the respective flash zone.

3,408,825

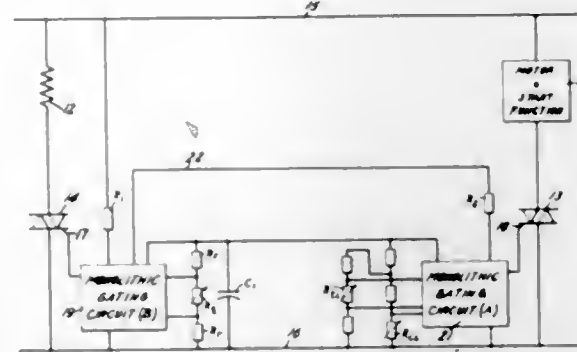
**ELECTRONIC REFRIGERATION CONTROL SYSTEM**

Donald L. Watrous, Scotia, and John D. Harnden, Jr., Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed Oct. 6, 1966, Ser. No. 584,819  
18 Claims. (Cl. 62-156)

A refrigerator cooling and defrosting control circuit includes controlled conducting means in the form of semiconductor devices for respectively connecting the

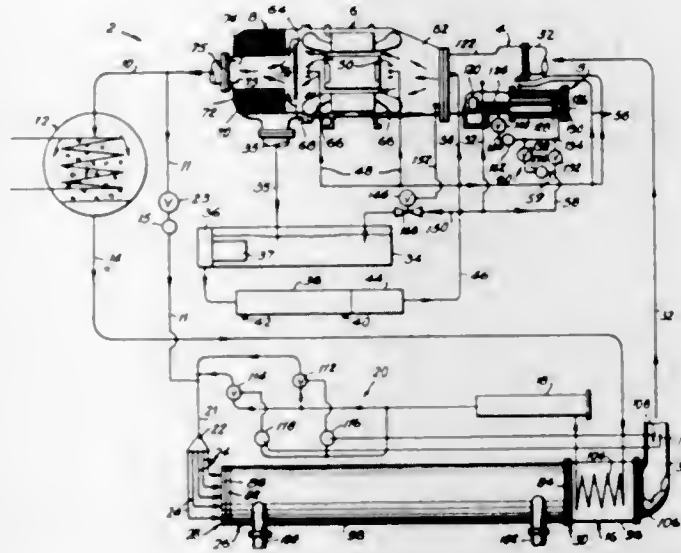
compressor motor and the defrost means directly across alternating current power supply terminals and synchronously operable control circuit means for controlling



conduction through the controlled conducting means synchronously with the zero crossing intervals of the alternating current power supply current.

3,408,826

**REFRIGERATION SYSTEM AND SYSTEMS FOR COOLING AND CONTROLLING COMPRESSORS**  
Henri Soumerai, West Hartford, Harold Moody, Farmington, Clark B. Hamilton, Wethersfield, and James R. Blatt, Coventry, Conn., assignors to Dunham-Bush, Inc., West Hartford, Conn., a corporation of Connecticut  
Filed Jan. 27, 1967, Ser. No. 612,222  
13 Claims. (Cl. 62-193)



A refrigeration system is disclosed in the form of a liquid chiller. The compressor is of the screw type, and a stream of compressed gas and oil mist is used to cool the compressor and the motor. Variations in load are accommodated by an unloader on the compressor.

3,408,827

**REFRIGERATION SYSTEM WITH LOADING AND UNLOADING CONTROL**

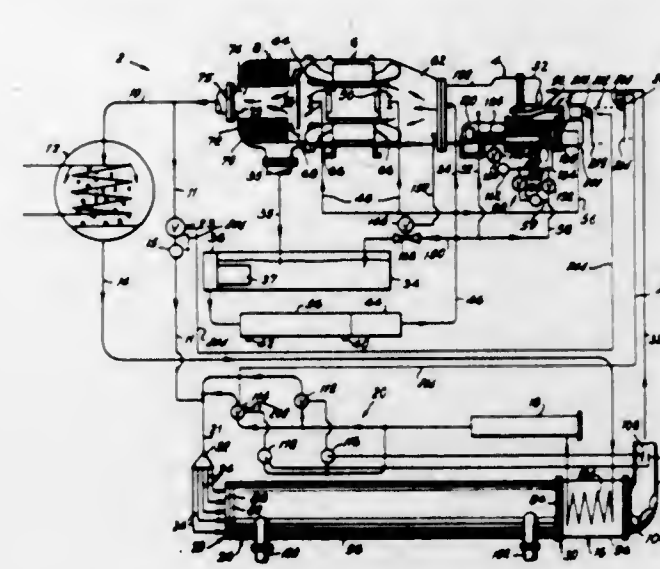
Henri Soumerai, West Hartford, Harold W. Moody, Jr., Farmington, Clark B. Hamilton, Wethersfield, and James R. Blatt, Coventry, Conn., assignors to Dunham-Bush, Inc., West Hartford, Conn., a corporation of Connecticut

Continuation-in-part of application Ser. No. 612,222, Jan. 27, 1967. This application Sept. 19, 1967, Ser. No. 668,804

8 Claims. (Cl. 62-196)

A refrigeration system is disclosed having a compressor of the screw type, and a stream of compressed gas and oil mist is used to cool the compressor and the motor. The

oil is separated by passing the stream of refrigerant gas and oil through a unit which subjects the oil-laden gas to a drive surface on such a tooth is complementary to a drive surface on its cooperating groove and wherein these

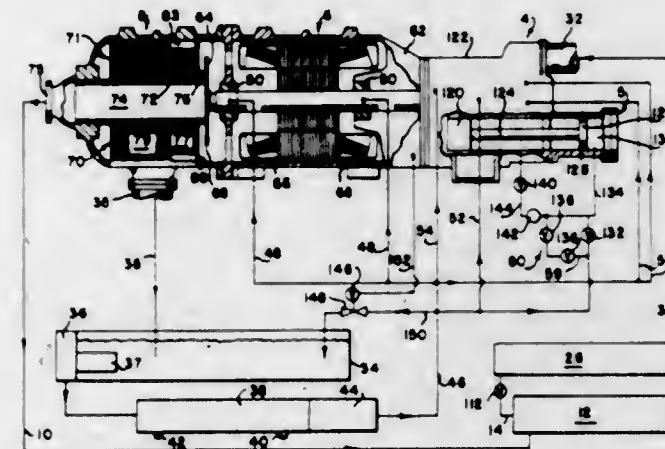


a thorough oil-separating treatment without restricting the flow of the oil-free gas.

3,408,828

**REFRIGERATION SYSTEM AND SYSTEM FOR SEPARATING OIL FROM COMPRESSED GAS**  
Henri Soumerai, West Hartford, Harold W. Moody, Jr., Farmington, Clark B. Hamilton, Wethersfield, and James R. Blatt, Coventry, Conn., assignors to Dunham-Bush, Inc., West Hartford, Conn., a corporation of Connecticut  
Continuation-in-part of application Ser. No. 612,222, Jan. 27, 1967. This application Sept. 8, 1967, Ser. No. 666,372

5 Claims. (Cl. 62-470)

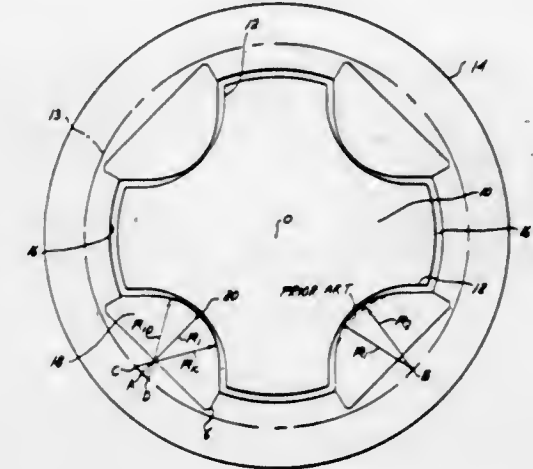


A refrigeration system is disclosed having a compressor of the screw type, and a stream of compressed gas and oil mist is used to cool the compressor and the motor. The oil is separated by passing the stream of refrigerant gas and oil through a unit which subjects the oil-laden gas to a thorough oil-separating treatment without restricting the flow of the oil-free gas.

3,408,829

**DRIVE APPARATUS**  
Paul E. Gage, Wyomissing, Pa., assignor to The Polymer Corporation, a corporation of Pennsylvania  
Filed May 19, 1966, Ser. No. 551,359  
7 Claims. (Cl. 64-9)

A drive apparatus having a relatively telescoping shaft and sleeve member, the shaft having a plurality of axially extending grooves and the sleeve member having sufficient teeth projecting from the interior thereof so that one tooth extends into each groove in the shaft, wherein



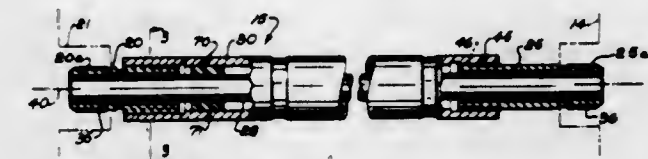
drive surfaces are congruent when they are in driving inter-engagement.

3,408,830

**TORSION DRIVE ASSEMBLY**

Alex Sutaruk, Hazel Park, Raymond L. Friedeman, Detroit, and Paul A. Lytkainen, Taylor, Mich., assignors to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio

Filed Aug. 25, 1966, Ser. No. 575,495  
3 Claims. (Cl. 64-27)



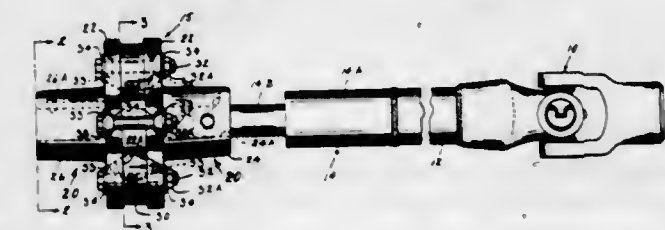
The present invention relates to a torsion drive assembly for use in transmitting torque from a drive element to a driven element, such as from an output element of a differential to a wheel of a motor vehicle. The present invention particularly relates to a two stage torsion drive assembly having a first torsion element for normally transmitting the torque and a second element which is automatically coupled to transmit the torque when the torsion element has been twisted a predetermined angular extent.

3,408,831

**SHOCK-DAMPENING SHAFT COUPLING**

Michael J. Schoeben, Homewood, Ill., assignor to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed June 23, 1967, Ser. No. 648,254  
9 Claims. (Cl. 64-27)

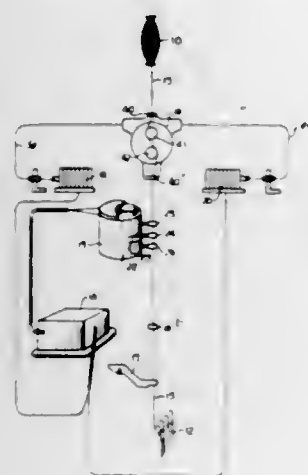


A shock-dampening shaft coupling having a pre-compressed elastomer member disposed between a pair of spaced discs. The discs are connected together by a series of equally spaced rigid tension bolts having universal



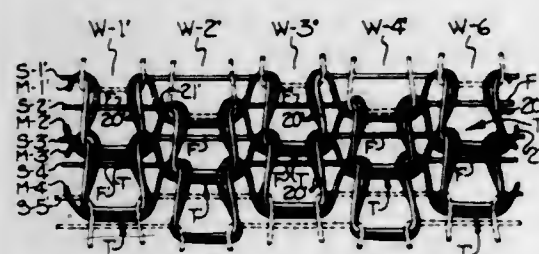
connection with the discs to allow angulation of the bolts as the coupling "winds up" upon the application of torque.

**3,408,832**  
**YARN TENSIONING REGULATING APPARATUS FOR STOCKING MACHINE**  
Renpei Abe and Kakuji Maruyama, Nishikanbara-gun, Niigata-ken, Japan, assignors to Nagataseiki Kabushiki-gaisha, Tokyo, Japan  
Filed Sept. 8, 1965, Ser. No. 485,722  
Claims priority, application Japan, May 19, 1965, 40/29,045  
1 Claim. (Cl. 66—146)



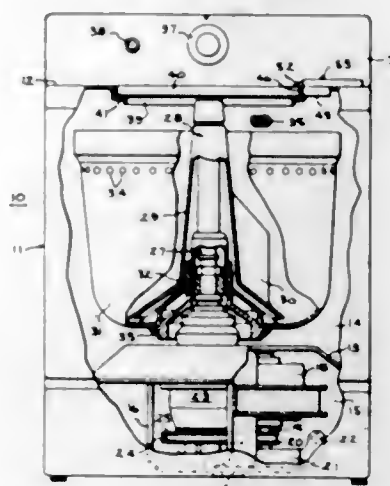
A yarn tensioning device, comprised of a rotatable disc having a pair of upstanding pegs thereon, adapted to vary the tension in a yarn passing over said pegs upon rotation of the disc. The disc is rotated in opposite direction by a pair of solenoid operated cables and the solenoids are controlled by means of a yarn tension detector. The yarn tension detector is comprised of a rotatable member having a yarn guide and light shutter mounted thereon whereby the light shutter is adapted to control the light to a pair of photocells, each of which controls a respective solenoid.

**3,408,833**  
**METHOD OF PRODUCING NONRUN HOSIERY**  
Mahlon M. Frederick, Souderton, Pa., and Robert L. Connors, Saratoga Springs, N.Y., assignors to Vac Hosiery Corporation, Charlotte, N.C., a corporation of North Carolina  
Filed Sept. 28, 1965, Ser. No. 490,835  
7 Claims. (Cl. 66—178)



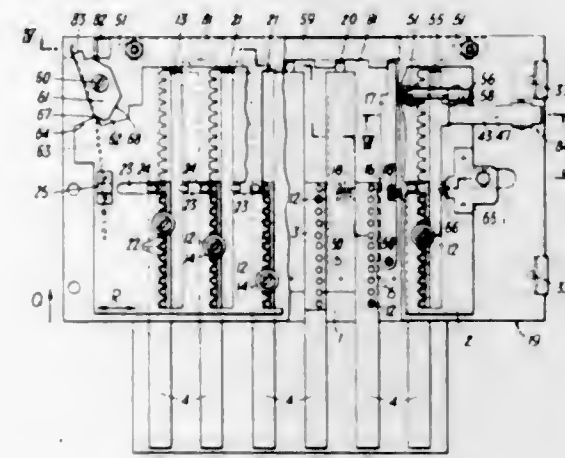
Each course of the major portion of the leg of the hose is knit of first and second yarns with the first yarn having a greater shrinkage capacity than the second yarn. The first yarn is alternately knit and tucked while the second yarn is alternately knit and floated and the first yarn forms loose, randomly disposed loops intertwined and dispersed between the loops of the second yarn. The hose is treated to shrink the first yarn to a greater extent than the second yarn and to thereby reduce the size of the loose loops initially formed by the first yarn.

**3,408,834**  
**LID LATCH AND INTERLOCK**  
Stephen L. McMillan, Wheaton, Ill., assignor to General Electric Company, a corporation of New York  
Filed Apr. 3, 1967, Ser. No. 628,114  
7 Claims. (Cl. 68—12)



An automatic fabric washer including means for insuring that the washer door is closed during centrifugal extraction. In the washer a door closure indicator member is moved out of the washer access opening by closing the washer door, a lock member is movable to a position restraining the door in its closed position and a latch member is movable to a position preventing the lock member being moved from its door restraining position. A first switch is closed in response to the indicator and lock members being in the positions described and a second switch is closed when the washing machine is centrifugally extracting liquid. Power means are energized when both the switches are closed to move the latch member to its position blocking the lock member.

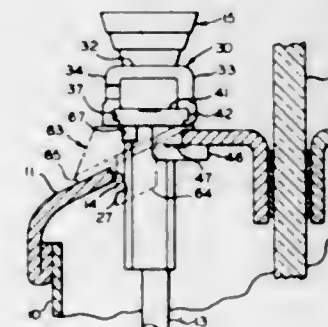
**3,408,835**  
**COMBINATION SAFETY LOCK**  
Franz Bauer, Porzellangasse 53/4, Vienna 9, Austria  
Filed July 7, 1967, Ser. No. 651,896  
10 Claims. (Cl. 70—156)



A cover plate is provided with a plurality of parallel apertures and with a plurality of series of marks spaced along each of said apertures. A slide plate is substantially parallel to and laterally spaced from said cover plate and has a plurality of openings, which are substantially parallel to said apertures, lands between said openings, and a slot, which intersects said openings. A guide plate is disposed between and substantially parallel to said cover and slide plates and fixed to the cover plate and provided with a plurality of guides, which are parallel to each other and substantially parallel to said openings and apertures. A plurality of sliders are provided, each of which is slidably

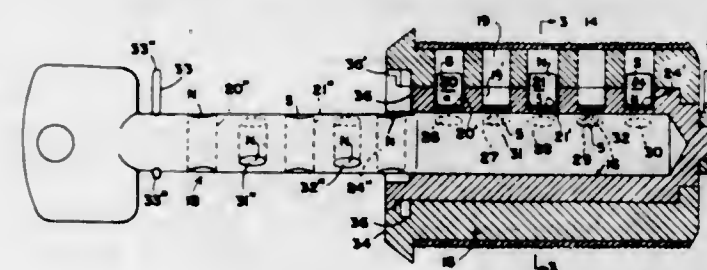
mounted in one of said guides. A plurality of setting handles are provided, each of which is mounted on one of said sliders and extends through one of said apertures. Each of said sliders is provided on its side remote from said cover plate with a series of holes, which are spaced apart by the same distances and in the same direction as said marks alongside the aperture through which the setting handles mounted on the slider extends. A pin is fitted in a single hole of each of said series of holes and extends into one of said openings. A bolt is slidably mounted in a bolt guide, which extends parallel to said slot, and said bolt is adapted to be coupled to said slide plate for movement along said bolt guide. Each of said sliders is movable along said guides in said guide plate to an unlocking position, in which said pin in said slider extends into said slot. Said slide plate is movable in the direction of said slot when, and only when, all said sliders are in said unlocking position.

**3,408,836**  
**SAFETY DOOR LOCK**  
Earl M. Trammell, Jr., Ladue, Mo.  
(P.O. Box 435, St. Louis, Mo. 63166)  
Filed Oct. 20, 1965, Ser. No. 498,747  
12 Claims. (Cl. 70—181)



The latch-conditioning device includes a reciprocating plunger, which extends through a housing mounted on a door, and which connects to the plunger rod of an automobile door lock. The plunger includes a flat lock abutment. A lock member is reciprocally mounted within the housing in a direction perpendicular to the path of the plunger to engage the flat abutment and lock the plunger. The lock member extends out of the housing, when in the plunger-unlocked position, for digital locking operation. The unlocking operation is performed by inserting a thin instrument, such as a key, through an elongate slot in the housing to cooperate with a shouldered recess in the lock member. The lock member may thus be moved outward of the housing to a plunger-unlocked position.

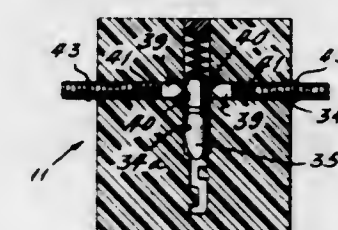
**3,408,837**  
**MAGNETIC LOCK DEVICES**  
Ronald Felson, 228-40 Mentone Ave.,  
Laurelton, N.Y. 11413  
Filed Mar. 1, 1967, Ser. No. 619,857  
7 Claims. (Cl. 70—276)



A spring-less magnetic lock in which each tumbler is a permanent magnet and the key has permanently magnetized inserts, one for each tumbler, and so arranged that

upon insertion of the key in proper position into the lock, the tumblers are repelled by said inserts respectively, to unlocking position. For each tumbler there is a fixed foil disc of magnetizable material between each tumbler and the hole for the key, to which disc the tumbler is attracted and thus moved to locking position. The force of repulsion exerted by each of said inserts is sufficient to move the tumblers over the attraction of the tumblers for their related discs. This lock operates regardless of its position or the line and direction of movement of the tumblers. Gravity in no manner effects the operation of this lock regardless of the line and direction of movement of any tumbler.

**3,408,838**  
**ELECTRIC DOOR LOCK**  
Jonathon H. Katz, Clayton, Mo., assignor of one-half to C. Hager & Sons Hinge Mfg. Co., St. Louis, Mo., a corporation of Missouri  
Continuation of application Ser. No. 499,674, Oct. 21, 1965. This application Oct. 24, 1967, Ser. No. 677,787  
8 Claims. (Cl. 70—277)



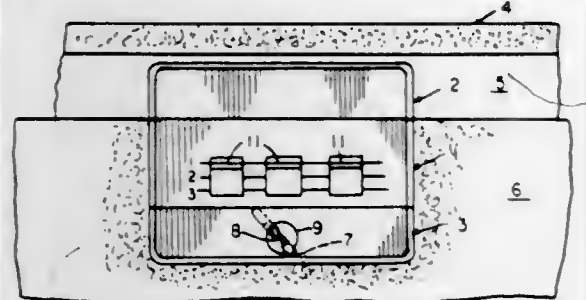
An electric lock device for controlling voltage flow to a latch mechanism including an insulated housing having a series of aligned electrically non-conducting tumbler pins positioned in openings in the housing and projected into a keyway so that the pins are displaced when a key is inserted into the keyway. The pins are provided with conducting portions of the same diameter as the adjacent non-conducting portions to make the lock pick-proof. When the key is inserted into the keyway the conducting portions of the pins are aligned with opposed transverse openings communicating with the pin openings. In the openings are opposed conducting members having knife-edge contact points engaging the pin and contact extensions connected in series to the latch coils, so that when a key is inserted into the keyway, a series circuit is established through the lock and actuates the latch coil.

**3,408,839**  
**UNIVERSAL COMBINATION LUGGAGE LOCK**  
Russell W. Walters, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware  
Filed July 16, 1965, Ser. No. 472,472  
18 Claims. (Cl. 70—285)

A universal combination luggage lock adapted for use on luggage or other articles having a case assembly secured to one section of an article of luggage adjacent the parting line, a separable cam housing on the other section of the article of luggage, and a release bar assembly reciprocally mounted on the case assembly. The case assembly includes a casing having therein a reciprocable latching bolt coupled to a reciprocable slotted fence plate, a plurality of fences received in the slots of the fence plate, and a plurality of indexing buttons with each button operatively connected to one of the fences; the casing having recesses cooperating with projections on said fences to allow the fence plate to reciprocate when the fences and buttons are properly positioned. The release bar is operatively connected to the fence plate and includes a rotatable key post to receive a key that can directly engage and actuate the latching bolt. The cam housing has a reciprocable latch plate adapted to interengage with the latching bolt and



a pair of pivotally mounted spring-biased cam members operatively connected to the latching plate and which,

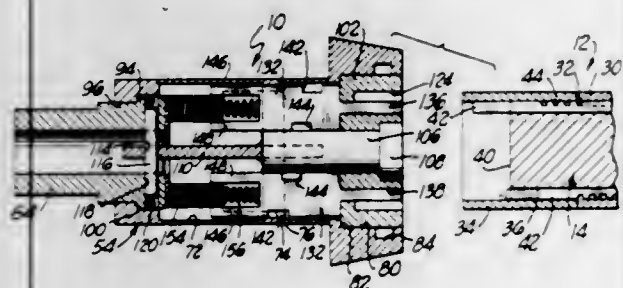


in the latching position of the latch plate, engage in recesses formed in the casing.

### 3,408,840 LOCK

Alfred Hasenbein, Anaheim, Calif., assignor to Aljo Enterprises, Inc., Whittier, Calif., a corporation of California

Filed Mar. 22, 1966, Ser. No. 536,398  
6 Claims. (Cl. 70-363)



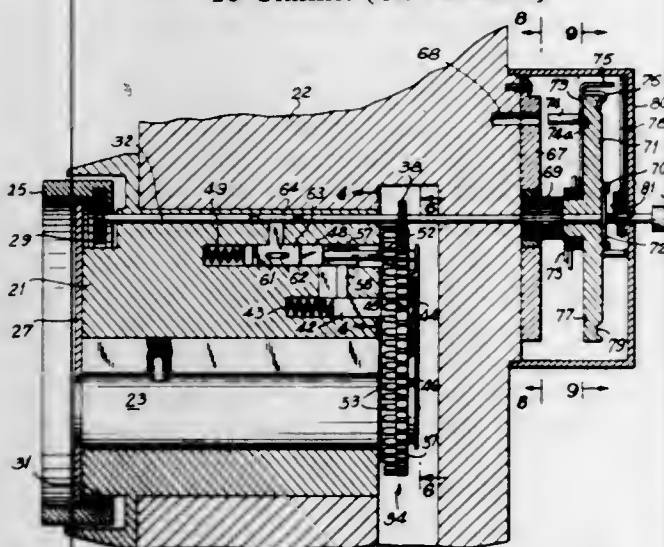
An axial tumbler lock having a barrel rotatably mounted within a housing is disclosed. The barrel is provided with a plurality of tumbler slots, each of which carries a tumbler having a tumbler pin extending to the face of the barrel. A recessed bore adjacent to the front of the housing is provided in the housing around the barrel adjacent to the tumbler pins. This lock is used with a key having a locking lug which is adapted to fit through one of the latter slots into the bore as the tumblers are moved to a position in which the barrel can be rotated and to rotate within the bore as the barrel is rotated within the housing. In at least one position of the barrel when the key is inserted the barrel can be withdrawn from its housing.

### 3,408,841

#### SAFETY LOCK MECHANISM

Sam Shiao-Ming Hsu 147-35 Grand Central Parkway, Jamaica, N.Y. 11435

Filed Mar. 8, 1966, Ser. No. 532,677  
10 Claims. (Cl. 70-390)



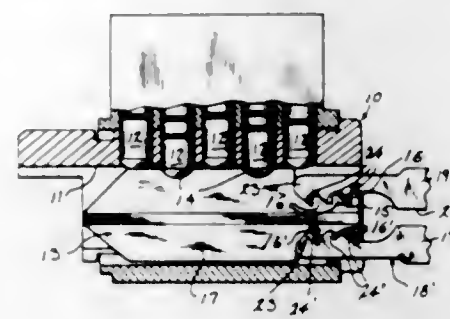
A safety mechanism in combination with the usual lock which prevents unauthorized opening of the lock

even by one possessed with the proper key by the provision of a mechanism which must be preset in order to permit the lock to be opened. If the safety mechanism is not properly preset, one possessed with the proper key, for example, could only partially open the lock and the key would thereupon become trapped in the lock.

### 3,408,842 CYLINDER KEYWAY SLOT PLUG AND EXTRACTOR

Hyland J. Barnes, Milwaukee, and Daniel J. Foote, Wauwatosa, Wis., assignors to Master Lock Company, Milwaukee, Wis., a corporation of Wisconsin

Filed June 28, 1967, Ser. No. 649,613  
2 Claims. (Cl. 70-424)



There is provided a plug for complete insertion into a lock keyway specially constructed to fit the particular keyway of the lock into which it is inserted, together with an extractor or plug-removing tool that is notched and shaped complementary to the plug for insertion into the keyway for engagement with the inserted slot plug so that when the extractor or tool is drawn outwardly it will carry with it the keyway plug to thereafter permit operation of the lock by the proper key, entry of the lock by the proper key having been prevented by the inserted plug to forestall opening of the lock by an unauthorized possessor of the lock key.

### 3,408,843 LUBRICANT-COOLANT EMULSION STABILIZATION AND REUSE

Lyle Treat, Ferguson, Mo., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Continuation-in-part of application Ser. No. 443,528, Mar. 29, 1965. This application Oct. 26, 1966, Ser. No. 589,730

8 Claims. (Cl. 72-42)

A lubricant-coolant oil-in-water emulsion used in the shaping of a metal is stabilized and kept filterable by periodically adding polycarboxylic acid chelating agent, such as a polyacetic acid, or salt thereof, in the requisite amount to adjust and maintain the hardness level of the emulsion below about 400 p.p.m. (expressed as  $\text{CaCO}_3$ ) and the pH value in the range of about 5 to 11. Preferably the hardness level is maintained in the range of about 25 to 400 p.p.m. and the emulsion is also filtered to remove solid particles larger than about 0.5 to 10 microns maximum dimension.

### 3,408,844

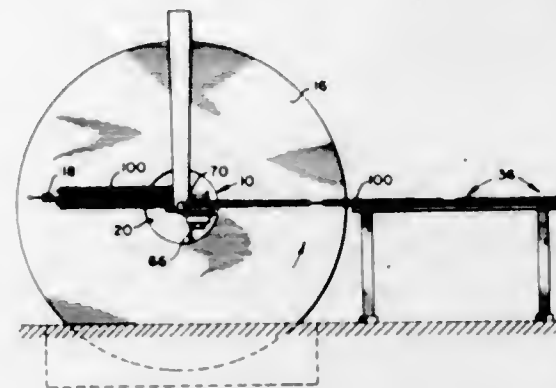
#### APPARATUS FOR THE PRODUCTION OF BENT, SERPENTINE-SHAPED FINNED PIPE REGISTERS FROM CROSS-ROLLED FINNED PIPES

Walter Strachauer and Werner Henze, Halle an der Saale, Germany, assignors to Veb Maschinen- und Apparatebau Schkeuditz, Schkeuditz, Germany

Filed Apr. 12, 1966, Ser. No. 542,111  
6 Claims. (Cl. 72-150)

Apparatus for making pipe registers for heat exchangers, comprising a rotatable bending disk having a

central opening, mechanism for feeding cross-rolled finned pipes to the bending disk, including a bending shaft concentric with said opening, a driven bending shaft concentric with said opening, and a drive mechanism for



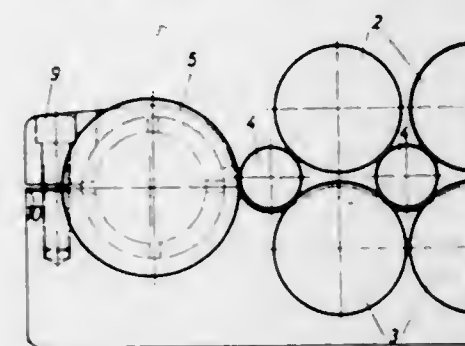
operating the disk and the bending shaft so that bends of predetermined angles can be made, in alternating opposite directions, by actuating the bending disk to which the free end of the pipe is preferably attached by way of a clamping device.

### 3,408,845

#### SHEET STRAIGHTENING MACHINE HAVING INTERMEDIATE ROLLERS AND AN ADJUSTABLE OUTER BACKING ROLLER

Fritz Ungerer, deceased, late of Pforzheim, Germany, by Irma Ungerer, sole heir, Friedenstrasse 86, Pforzheim, Germany, assignor to Irma Ungerer, Pforzheim, Germany

Filed July 6, 1966, Ser. No. 564,505  
5 Claims. (Cl. 72-163)



A machine for straightening sheet metal which includes straightening rolls, backing rollers, and a set of horizontally spaced apart intermediate rollers. One of the outer backing rollers is arranged to support one of the aforesaid intermediate rollers. The machine furthermore includes mounting means supporting the outer backing roller and adapted to effect an individual adjustment of this roller.

### 3,408,846

#### HYPODERMIC NEEDLES

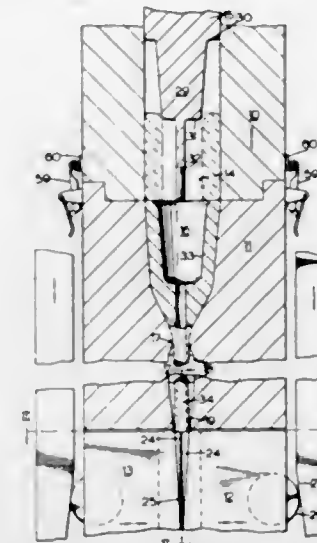
Hubert Percival Schofield, "Langdale," Hatchet Lane, Windsor Forest, Berkshire, England

Continuation-in-part of application Ser. No. 298,719, July 30, 1963. This application Oct. 31, 1966, Ser. No. 590,933

Claims priority, application Great Britain, Aug. 3, 1962, 29,833/62  
6 Claims. (Cl. 72-254)

There is disclosed a method and apparatus by which a hypodermic needle having a hub and a cannula extending therefrom is produced, by impact extrusion, from an annular billet of nontoxic material. Such billet is disposed in the cavity of a female die and is extruded into a cup-shaped recess corresponding to the hub to be formed and into a bore extending from the recess to form the tubular cannula with the end portion of the latter remote from

the hub being deflected so as to assume a longitudinal curvature, whereupon the end portion of the cannula, at the inside of its curve, is laterally compressed or pinched to define an ear which is severed from the cannula to de-



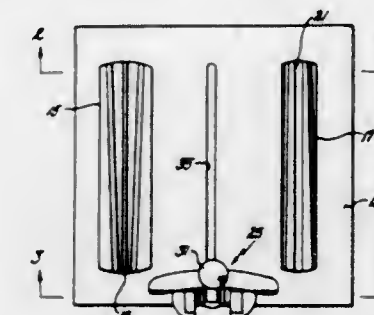
fine a longitudinal slit at a side of the tapered end terminating in a solid point. The apparatus for performing the foregoing operations has a die assembly made up of parts which are automatically displaced relative to each other in the necessary sequence.

### 3,408,847

#### SPECTACLE NOSEPAD ADJUSTER

Benjamin Kislin and J. W. Miller, San Antonio, Tex., assignors to the United States of America as represented by the Secretary of the Air Force

Filed May 27, 1966, Ser. No. 554,299  
3 Claims. (Cl. 72-311)



A fixture for adjusting by spreading and narrowing the nosepad spacing of a pair of spectacles including a base platform on which are mounted a pair of elongated members having tapered grooves of specified configuration therealong. As the spectacles are passed forward and back along in engagement with the members, the nosepad spacing becomes progressively wider and narrower depending upon which of the members the spectacles are positioned and which direction they are being moved.

### 3,408,848

#### RAILROAD CAR STRAIGHTENER FOR BULGED ENDS OF RAILWAY CARS

Francois Lague, Jacques Cartier, Quebec, and Normand Ruel, Lemoyne, Quebec, Canada, assignors to Equipement R. Lague Limitee, Lemoyne, Quebec, Canada

Continuation of application Ser. No. 493,305, Sept. 25, 1965. This application Feb. 6, 1968, Ser. No. 703,481

1 Claim. (Cl. 72-446)

The device is adapted to be inserted between two coupled box cars for straightening the bulging ends thereof and comprises a hydraulic fluid motor mounted between two side plates. The motor is of the piston-cylinder type and is provided with a piston rod movable by the piston of the hydraulic motor. The piston rod has an end tapered



to conform with successive corrugations in the end walls of the box cars. At the opposite end of the device, preferably secured to the end of the cylinder opposite the piston rod, there is a back plate mounted perpendicularly



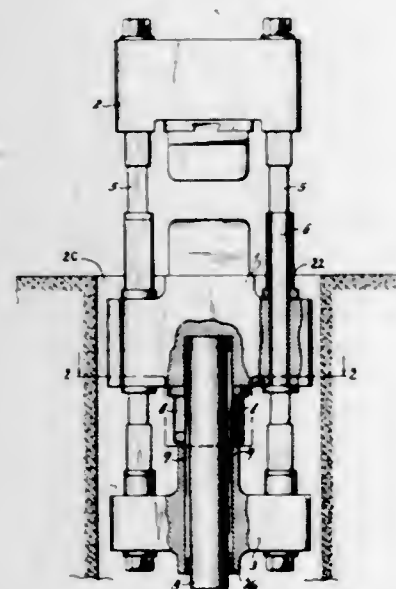
to the axis of the hydraulic motor for resting against the end of a box car facing the bulging end to be straightened. Proper means may be provided for suspending the device in a horizontal position.

3,408,849

**HYDRAULIC FORGING PRESS**

Werner Jetschmann and Wolfgang Richter-Reichhelm, Dulsburg, Germany, assignors to Hydraulik G.m.b.H., Dulsburg, Germany

Filed Nov. 17, 1965, Ser. No. 508,268  
11 Claims. (Cl. 72-453)



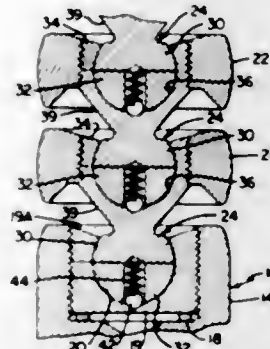
A forging press of a type having less than four tension elements or guiding columns is constructed to have sufficient rigidity for forging but provides a construction with improved sight conditions and easier accessibility. The press is made rigid by using two or three tension elements and in addition a central guide shaft which extends downwardly from the foundation cross member. The guide shaft increases the stability of a two or three tension element press and the construction is made to have optimum stress absorption in a forging direction by employing tension elements with rectangular cross section which are provided with flat guides in the direction of the load or which are inclined in the direction of the load. In addition, the guide shaft is provided with a flat guide and the position of the guide is selected to be at right angles to the position of the guides on the tension elements.

3,408,850

**TUBE BENDING MANDREL**

Dale E. Maier, Evergreen, Frederick A. Nelson, Littleton, Ervin V. Hofman, Englewood, Richard Van Stelle, Denver, and Joseph A. Cwik, Arvada, Colo., assignors to H & H Engineering Company, Denver, Colo., a corporation of Colorado

Filed Mar. 18, 1966, Ser. No. 535,504  
21 Claims. (Cl. 72-466)



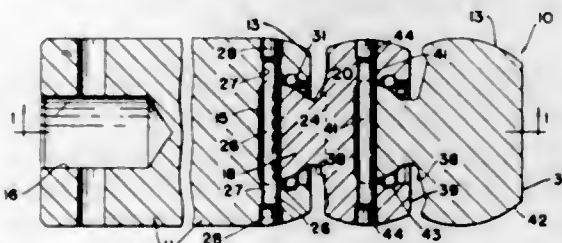
A tube bending mandrel including a series of internally threaded outer members constructed for engaging the inner surface of a tube to be bent and a series of inner link members connected together in end to end relation. The inner link members have a spherically shaped male portion formed on one end thereof and a segmented, externally threaded female portion formed on the other end thereof. The female portion has a major portion of a spherically shaped recess formed therein and includes two longitudinally extending, generally cylindrically shaped portions one of which has a spherically shaped recess formed therein and the other of which is segmented and has an inner surface circumscribing the major portion of a spherically shaped cavity. The cylindrically shaped portions have opposed end surface portions disposed in abutting engagement and lie within a plane which substantially bisects said spherically shaped recess and is disposed substantially perpendicular to the longitudinal axis of the female portion. The female portion is sized for threaded disposition within a corresponding one of the outer members and the male portion is sized for swivel disposition within the spherically shaped recess of the female portion of adjacent inner link member. This invention also relates to a tube bending mandrel comprising a series of links swivelly interconnected in end to end relation wherein each link which interconnects one link to another link comprises a member having a spherically shaped male portion formed on one end thereof and an integrally connected, enlarged portion on the other end thereof, said enlarged portion having a surface portion constructed for engaging the inner surface of a tube to be bent, said enlarged portion having a recess formed therein at least a portion thereof including a semispherically shaped recess, and means for swivelly securing the male portion of an adjacent link within said semispherically shaped recess.

3,408,851

**BALL MANDREL**

Frank Sassak, Dearborn, Mich., assignor to Bend-Rite, Inc., Detroit, Mich., a corporation of Michigan

Filed Apr. 21, 1966, Ser. No. 544,220  
3 Claims. (Cl. 72-466)



A ball mandrel comprising a plurality of pivotally articulated members including a cylindrical body mem-

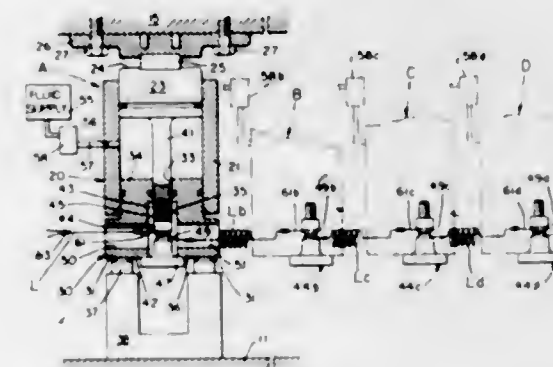
ber having an axial recess, and at least one further member having an integral extension presenting bearing and restraining means disposed within said recess, and bearing and restraining means within said recess consisting of an annular series of rotatable bearing elements in pivotal engagement with the bearing and restraining means of said further member, acting to prevent axial separation while affording a substantial arc of relative swing of said members.

3,408,852

**TIMED IMPACT TESTER**

Richard H. Marvin, Philadelphia, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Aug. 11, 1966, Ser. No. 571,912  
7 Claims. (Cl. 73-12)



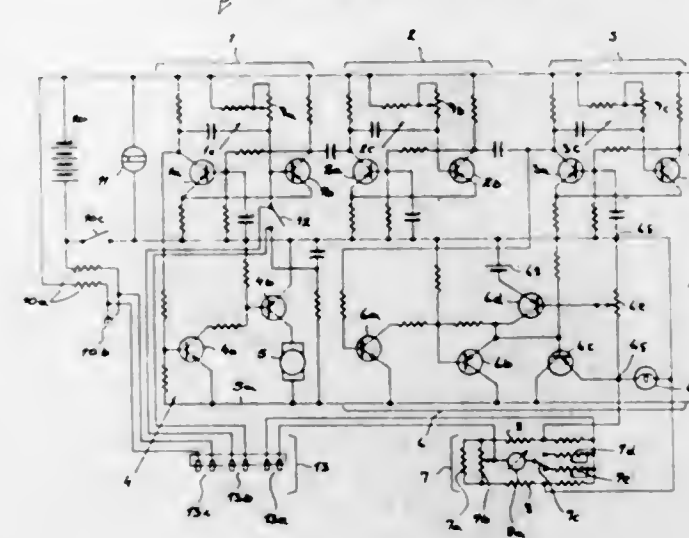
Apparatus for delivering a series of impacts of controlled impulse at accurate time intervals. A stationary piston at one end of a cylinder engages the body to be impacted. A movable piston is secured to the stationary piston through a tension rod having a notched insert. Fluid between the pistons is raised to sufficient pressure to produce the impact force. The tension rod carries this force and the fluid is compressed. Explosive means wrapped about the notched tension rod may be detonated to rupture the rod. The time to actuate an adjacent like apparatus may be controlled by the length of the connecting fuse.

3,408,853

**PORTABLE GAS ANALYSER WITH TIME DELAY**

Rolf Hübner, Westfalendamm 267, Dortmund, Germany  
Filed Jan. 18, 1966, Ser. No. 521,395

Claims priority, application Germany, Jan. 19, 1965  
H 54,894  
7 Claims. (Cl. 73-23)



1. A control circuit for a portable gas analyser having a measuring chamber, electrically operable pump means for inducing a flow of ambient gas into said chamber, an electrically operable measuring circuit for determining the concentration of a component of the gas induced

into said chamber, and indicator means for producing a reading of the concentration of said component, said control circuit comprising:

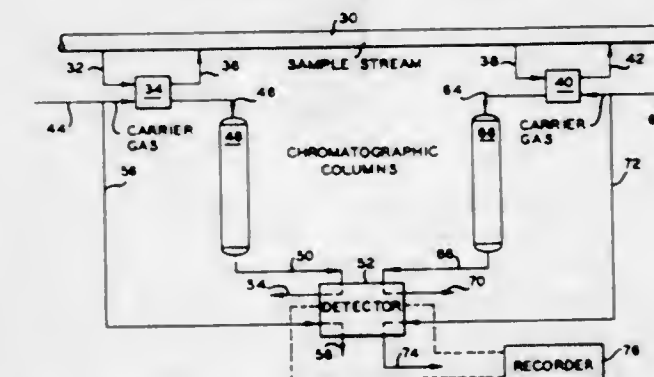
- a source of electric current;
- a first timer network connected between said source and said pump means and energizable for supplying said pump means with electric current from said source for a first predetermined time period;
- a second timer network connected with said first timer network and energizable thereby upon the deactivation of said pump means; and
- a third timer network connected with said second timer network and energizable thereby after the elapse of a predetermined delay period and interposed between said measuring circuit and said source for connecting said measuring circuit with said source for a second predetermined time period.

3,408,854

**GAS CHROMATOGRAPHY SENSING MEANS**

Lewis G. Larson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed June 22, 1966, Ser. No. 559,612  
4 Claims. (Cl. 73-23.1)



A first sample of a fluid to be analyzed is subjected to a first chromatographic separation with a high thermal conductivity carrier gas, and a second sample of the fluid to be analyzed is subjected to a second chromatographic separation with a low thermal conductivity carrier gas. First and third thermistors are positioned as reference detectors in said high thermal conductivity carrier gas and said low thermal conductivity carrier gas, respectively. Second and fourth thermistors are positioned as measuring detectors in the effluent of said first and second chromatographic separations, respectively. The four thermistors are connected in a Wheatstone bridge circuit so that similar changes in the first and second thermistors or in the third and fourth thermistors balance out each other, and so that the detection of a low thermal conductivity component by said second thermistor and the detection of a high thermal conductivity component by the fourth thermistor will produce the same polarity output. The first and fourth thermistors can be separately connected in a first pair of opposite arms of the bridge, with the second and third thermistors being separately connected in the second pair of opposite arms; or the first and fourth thermistors can be connected together in one arm, the second and third thermistors being connected together in an adjacent arm.

3,408,855

**APPARATUS FOR DETERMINING DETONATION VELOCITY OF EXPLOSIVES**

Thomas E. Slykhouse, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Nov. 3, 1965, Ser. No. 506,154  
5 Claims. (Cl. 73-35)

- 1. A detonation velocity measuring gauge comprising: (A) A helical resistance element having spaced apart turns,



- (B) A low resistance rod-like element, the length of said rod-like element being a minor fraction of the length of said helical resistance element,
- (C) A fixed resistance element, said helical resistance element, said rod-like element, and said fixed resistance element being disposed in end to end relationship in that order and electrically connected in series,



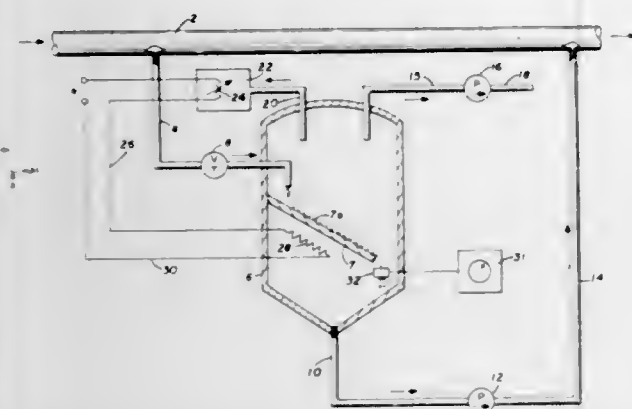
- (D) A hollow, deformable, elongated electrically conductive sleeve, said sleeve having a length and diameter such that it fits closely over but spaced from said helical resistance element, said rod-like element and said resistance element, one end of said resistance element being electrically coupled to said sleeve, and means for electrically connecting said sleeve and one end of said helical resistance element to an external circuit.

### 3,408,856 METHODS AND APPARATUS FOR DETERMINING FLASH POINT

Lewis Gross, 10646 Royal Springs Drive, Dallas, Tex. 75229

Continuation-in-part of application Ser. No. 135,667, Sept. 1, 1961. This application Sept. 14, 1964, Ser. No. 397,671

10 Claims. (Cl. 73-36)



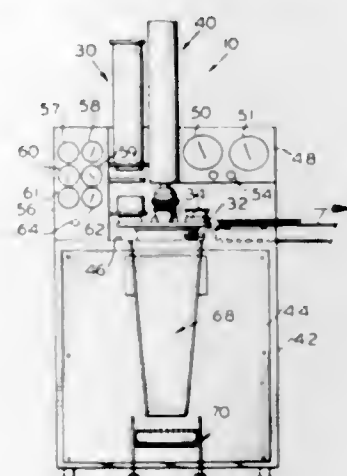
1. A method for determining the flash point of a flammable fluid comprising the steps of passing a stream of said fluid through a vacuum, heating said fluid in the vacuum to a temperature at which vapors are evolved from the fluid and removed at the vacuum pressure maintaining said vacuum at a pressure representative of that partial pressure equivalent to a lower explosive concentration of said fluid in air, and continuously measuring

the temperature of the fluid as it flows through the vacuum at which no change occurs in the vacuum pressure because of the evolved vapors to give the approximate equivalent of the flash point of the fluid.

### 3,408,857 TESTING APPARATUS

Willard C. Phillips, Houston, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Feb. 1, 1966, Ser. No. 524,143  
22 Claims. (Cl. 73-45.2)



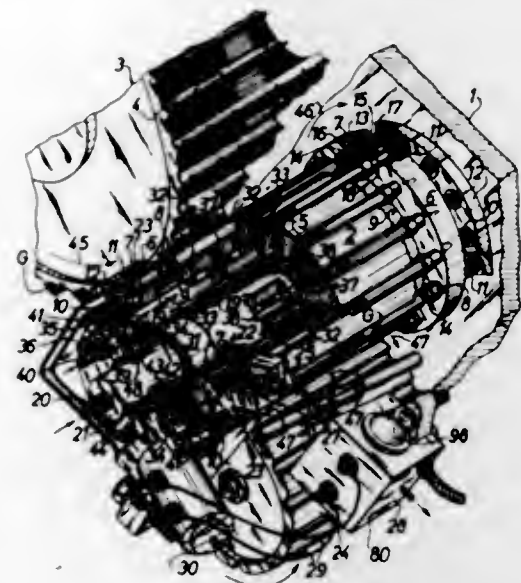
Test method and apparatus for detecting the minimum and maximum acceptable diameters and columnar wall strength of a container, such as a plastic tube, by forcibly inserting a test plug means into the container while correlating the force of insertion to said diameters and wall strength.

### 3,408,858 METHOD AND APPARATUS FOR TESTING CIGARETTES AND THE LIKE

Heinz Kaeding, Hamburg-Bergedorf, and Konrad Schmalz, Wentorf, near Hamburg, Germany, assignors to Hauni-Werke Korber & Co. K.G., Hamburg-Bergedorf, Germany, a German company

Continuation of application Ser. No. 538,098, Mar. 28, 1966, which is a continuation of application Ser. No. 208,189, July 5, 1962. This application Dec. 20, 1967, Ser. No. 692,247

Claims priority, application Great Britain, July 7, 1961, 24,630/61; Nov. 3, 1961, 39,430/61; Nov. 8, 1961, 39,976/61; July 5, 1962, 25,779/62  
52 Claims. (Cl. 73-45.2)

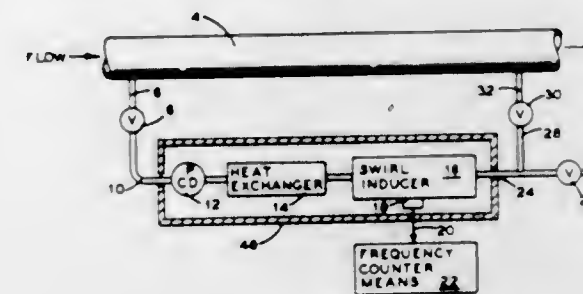


Cigarettes are tested while travelling sideways with a rotary drum past a testing station where the cigarettes receive currents of air. The currents are collected to form

successive increments of an air stream and the characteristics of such increments are compared with a predetermined norm which is indicative of satisfactory cigarettes. Defective cigarettes are segregated from satisfactory cigarettes at a point ahead of that point where the satisfactory cigarettes leave the drum.

### 3,408,859 MEASUREMENT OF KINEMATIC VISCOSITY

Thomas P. Koenen, Somerville, N.J., assignor to American Standard Inc., a corporation of Delaware  
Filed Jan. 25, 1966, Ser. No. 522,887  
10 Claims. (Cl. 73-54)



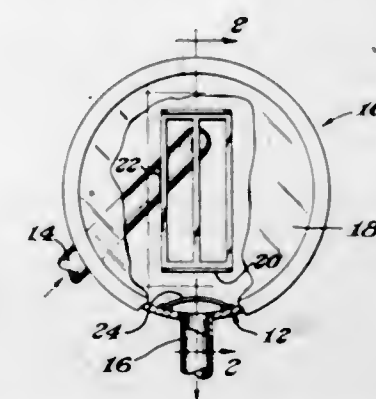
A flowing fluid is induced to assume a swirl component and a low pressure center, and the low pressure center is caused to precess about the central flow axis. Within a range of Reynolds numbers from about 200 to 5,000, the Strouhal ( $fd/V$ ) and Reynolds ( $Vd/\nu$ ) numbers in this system are correlated by the equation:

$$\frac{fd}{V} = k \frac{Vd}{\nu}$$

Accordingly, the kinematic viscosity of the fluid can be determined by measuring the frequency of precession, when the remaining variables  $V$  (the fluid flow velocity) and  $d$  (the diameter of the flowing fluid) are held constant.

### 3,408,860 RELATIVE HUMIDITY APPARATUS

Herman Knieriem, Midland, and Harold D. De Shon, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
Filed Dec. 3, 1965, Ser. No. 511,367  
6 Claims. (Cl. 73-73)

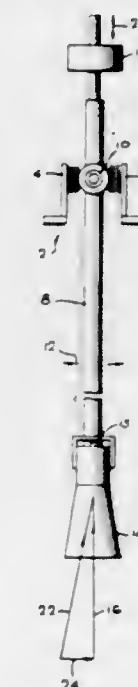


1. Relative humidity measuring apparatus comprising:
  - (A) an enclosed generally cylindrically shaped housing having an end wall, side wall, and a second end wall having a transparent face;
  - (B) a vapor inlet conduit, said vapor inlet conduit extending through said side walls and having an open end facing toward but spaced from said end wall;
  - (C) a vapor outlet conduit, said vapor outlet conduit extending through said side walls remote from said open end of said vapor inlet conduit;
  - (D) a backflow diverter element, said diverter element being disposed over said vapor outlet conduit within said housing;

- (E) a humidity indicator holding bracket fixedly disposed in said housing, and
- (F) a humidity indicator including a card having a plurality of deposits thereon which each change color when exposed to specific amounts of humidity.

### 3,408,861 ROCKET ENGINE THRUST VECTOR DEVIATION MEASUREMENT DEVICE

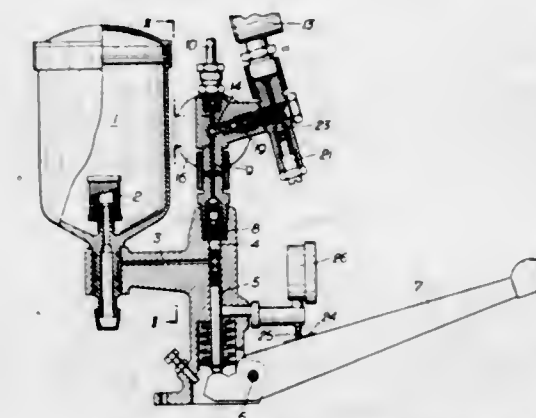
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Herbert Shieber, Beverly Hills, and Kirke Leonard, Palos Verdes Estates, Calif.  
Filed Sept. 9, 1966, Ser. No. 578,927  
6 Claims. (Cl. 73-117.4)



The thrust deviation vector of a rocket engine is determined by supporting an arm vertically on gimbal supports. The rocket engine is attached to the lower end of the arm. The arm is weighted so that the center of gravity is below the gimbal support. The arm moves when the rocket engine is fired until the moment of the support arm equals the moment due to the lateral component of thrust. This can then be measured.

### 3,408,862 DEVICE FOR TESTING INJECTION NOZZLES

Richard Hainz, Salzburg, Austria, assignor to Friedmann & Maier, Salzburg, Austria  
Filed Aug. 23, 1966, Ser. No. 574,361  
5 Claims. (Cl. 73-119)



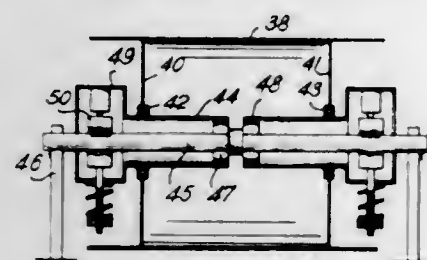
Device for high pressure testing of injection nozzles for fuel combustion engines in which a pump delivers a test liquid to the injection nozzle to be tested. The piston of the pump is actuated by a hand lever, and a check valve is disposed leading to the injection nozzle. The check valve is disposed leading to the injection nozzle. The check valve is disposed leading to the injection nozzle.



limits a high pressure space formed by the conduits leading to the injection nozzle and a pressure space. Means are provided for adjusting the volume of the high pressure space and measuring the volume of the pump output respectively.

### 3,408,863 DEVICES FOR MEASURING FORCES IN A MOVING STRIP

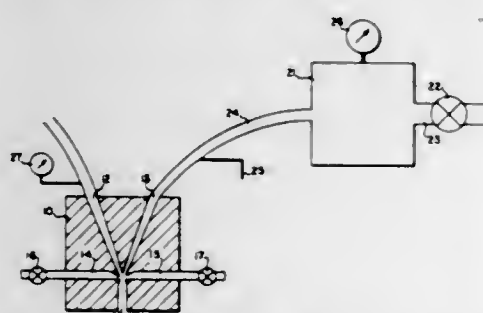
Jean Raymond Guingand, Paris, France, assignor to Societe Anonyme Heurtey, Paris, France  
Filed Aug. 10, 1965, Ser. No. 478,678  
Claims priority, application France, Aug. 17, 1964, 985,343  
5 Claims. (Cl. 73-144)



A device for measuring the tension in a moving strip by passing the strip around a roll which is rotatably mounted on a pair of hollow shafts which in turn are mounted, via ball and socket joints, at the center of an internal stationary shaft. An adjustable force measuring cell is mounted in a guide which is secured between the stationary shaft and each hollow shaft in a plane which bisects the angle of wrap of the strip on the roll such that the cell produces a measurement of force related to the tension in the strip in response to relative displacement of the hollow shafts with respect to the stationary shaft.

### 3,408,864 WAVE HEIGHT MEASURING SYSTEM

Julian Josephson, 4814 Eastern Lane, Apt. 103, Suitland, Md. 20023  
Filed Aug. 18, 1966, Ser. No. 573,767  
3 Claims. (Cl. 73-170)



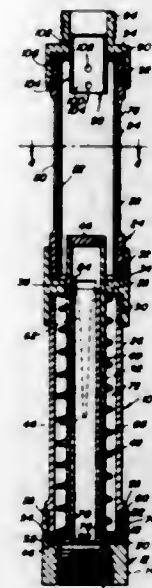
This disclosure is directed to a wave measuring device constructed of pure-fluid logic components. The device includes a non-memory flip-flop fluid amplifier with one of two outputs suitably connected with a pressure tank. Wave pressure applied within the pressure tank operates to control the output of the fluid amplifier. A pressure indicator in the output side of the fluid amplifier indicates the wave height.

### 3,408,865 FLUID FLOW INDICATING METER

Roy L. Chenault, Dallas, Tex.  
(681 NE Broadview Drive, Boca Raton, Fla. 33432)  
Filed Oct. 13, 1966, Ser. No. 586,550  
8 Claims. (Cl. 73-208)

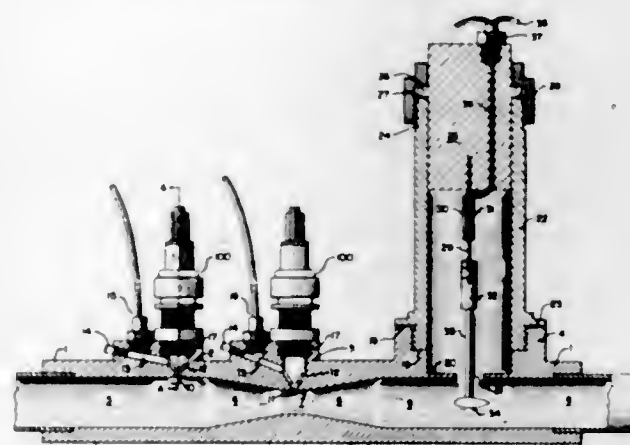
A fluid flow indicating meter having a circular cylindrical closed end tube with an open upstream end and a closed downstream end, such tube being mounted in a housing detachably secured in a fluid flow line and being provided with orifice openings through the side wall adja-

cent the closed end and in which the force resulting from the product of the pressure drop through the orifice openings and the cross-sectional area of the tube is resisted by a spring working within its proportional limit and the



### 3,408,866 FLOWMETER FOR GAS-SOLIDS SUSPENSIONS

Harry G. Gibson, George E. Fasching, and Dean E. Bluman, Morgantown, W. Va., assignors to the United States of America as represented by the Secretary of the Interior  
Filed Oct. 7, 1966, Ser. No. 586,006  
9 Claims. (Cl. 73-228)



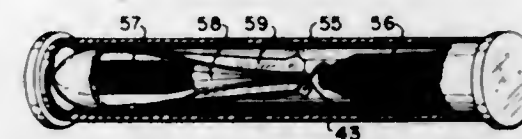
A flowmeter adapted to measure the flowrate of a gas-solids mixture passing through a conduit comprising a construction, in the conduit to produce an area of low pressure and an area of diverging solids, means to measure the pressure differential between said low-pressure area and normal pressure, a target positioned within the area of diverging solids such that essentially all the solids strike the target, and means to measure the pressure exerted by said solids on the target.

### 3,408,867 TEMPERATURE MEASURING SEA WATER PROBE, INSULATED WIRE SUITABLE THEREFOR AND METHOD OF MAKING SAME

Charles G. Henricks and William C. Le Mieux, Muskegon, Mich., assignors to Anaconda Wire and Cable Company, a corporation of Delaware  
Filed Oct. 10, 1966, Ser. No. 585,430  
9 Claims. (Cl. 73-339)

An apparatus for measuring the temperature of sea

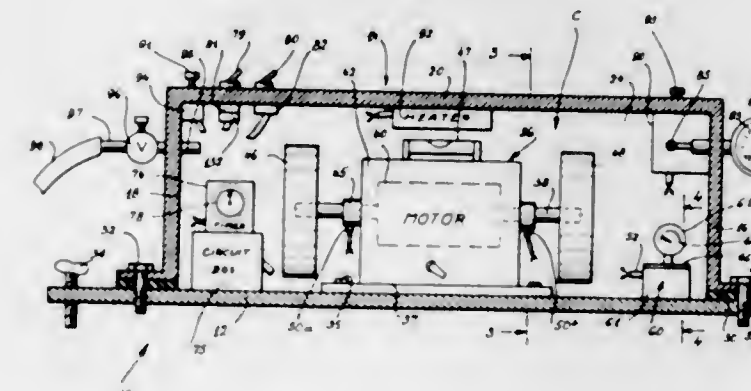
water has two spools encased in a probe. The spools are interconnected with a wire having a number of alternate



insulating layers of epoxy enamel and nylon. Each layer of insulation is formed on the wires by a single pass.

### 3,408,868 ELECTRICAL GRAVITY METER

William S. Shaughnessy, 39 Turner Place, Brooklyn, N.Y. 11218  
Filed Sept. 22, 1965, Ser. No. 489,226  
10 Claims. (Cl. 73-382)



1. A gravitational force measuring device, comprising a support, an electric motor mounted on said support, said motor having an axially horizontal rotor and bearing means rotatably supporting said rotor, means for keeping said rotor rotating at a constant speed at all loads applied frictionally to said bearing means, means at said bearing means for detecting frictional heat pulses generated thereat during each rotation of the rotor, and means for integrating measurements of heat pulses generated at said bearing means over a period of time, whereby the gravitational force exerted on the mass of said rotor is determined by an integrated measurement of said heat pulses over said period of time, and whereby a change in said gravitational force is measured by a change in said integrated measurement of said heat pulses.

### 3,408,869 SAMPLING DEVICE

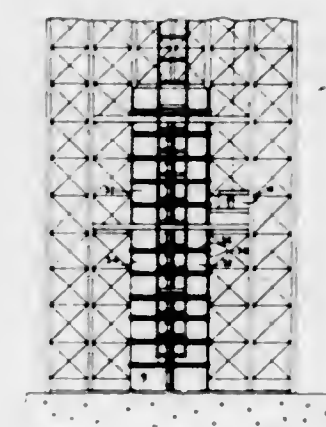
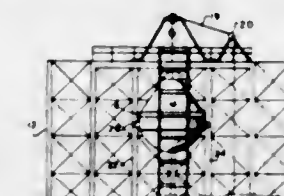
Frank Pawley Auger, Surbiton, Surrey, England, assignor to The Distillers Company Limited, Edinburgh, Scotland, a British company  
Filed Oct. 13, 1966, Ser. No. 586,482  
11 Claims. (Cl. 73-421.5)



1. Apparatus suitable for sampling a stream of fluid, which comprises an elongated vessel having an inlet at one extremity, an outlet at the other extremity, flow restricting devices adjacent the inlet and outlet, ports adjacent the said flow restricting devices and a third port situated between the aforesaid ports.

### 3,408,870 ZERO GRAVITY APPARATUS

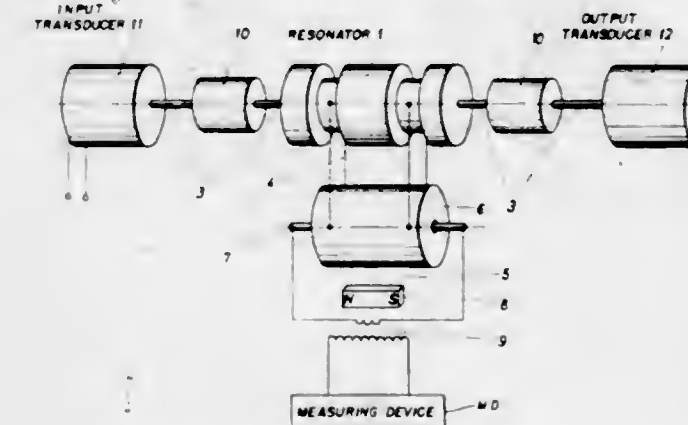
James F. Chumley, Decatur, and Guy D. Perry, Huntsville, Ala., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration  
Filed May 9, 1966, Ser. No. 548,808  
9 Claims. (Cl. 73-432)



The invention is a zero gravity device that includes a drop tower and a vertical deceleration tube having a pair of guide rails extending the length thereof. A capsule is slidably mounted on the guide rails and the capsule is dropped from the top of the drop tower into the deceleration tube and its acceleration is controlled during descent so as to provide a short period of zero gravity. A plurality of spaced annular seals are positioned in the deceleration tube. These seals engage the outer periphery of the dropped capsule and result in a pressure buildup within the deceleration tube that decelerates and stops the capsule. A series of vent orifices in the side of the deceleration tube exhausts pressure built up within the tube so as to prevent rebounding of the capsule.

### 3,408,871 TRANSDUCER FOR ANGULAR MOTION

Manfred Börner, Ulm (Danube), Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany  
Filed June 28, 1965, Ser. No. 467,392  
Claims priority, application Germany, June 27, 1964, T 26,464; Mar. 5, 1965, T 28,109  
10 Claims. (Cl. 73-505)



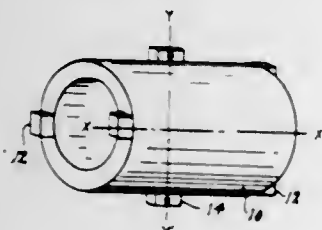
A device for measuring angular velocities by means of a resonant system whose moment of inertia with respect to an axis of rotation is periodically variable with respect to an axis of rotation in order to obtain torsional oscillations.



tions within the system in dependence upon a rotation about the axis of rotation. The system includes a symmetrical resonator excitable to longitudinal oscillations of the  $n\lambda$  resonance in the direction of the axis of rotation. The symmetrical resonator is so constructed that the  $n\lambda/2$  resonance of the torsional oscillation of the resonator is near the resonant frequency of the longitudinal oscillations. The  $n$  above is equal to 1, 2, 3, etc., and  $\lambda$  is the wavelength of a certain frequency within the oscillating body.

### 3,408,872 CIRCUMFERENTIAL FLEXURE VIBRATING GYROSCOPE

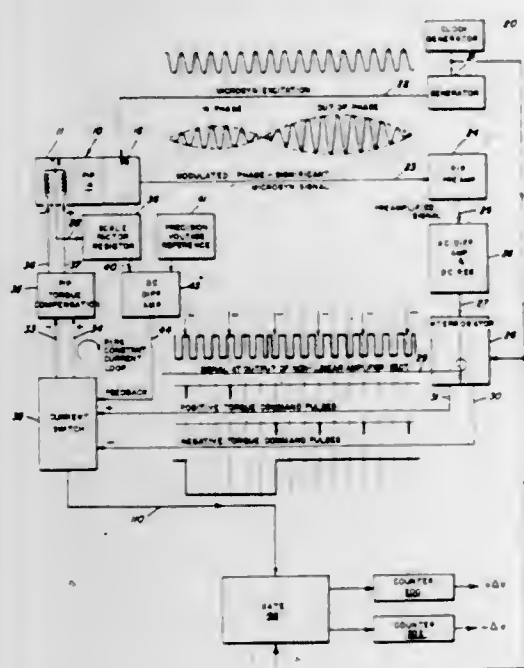
Arthur L. Simmons, Annapolis, and John J. Buckley, Baltimore, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force  
Filed Oct. 14, 1965, Ser. No. 496,196  
4 Claims. (Cl. 73-505)



A vibrating gyroscope including a cylinder of piezoelectric, ferromagnetic or magnetostrictive material, with masses attached symmetrically about the ends thereof and a voltage for longitudinally polarizing and driving the cylinder in the circumferential mode. The cylinder is rotatably mounted at the midpoint of its longitudinal axis so that as a force is applied the cylinder moves about its mounting point and a signal is produced indicative of such movement.

### 3,408,873 PULSED INTEGRATING PENDULUM ACCELEROMETER

John R. McNeil, Weston, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy  
Filed Mar. 29, 1965, Ser. No. 444,516  
9 Claims. (Cl. 73-517)

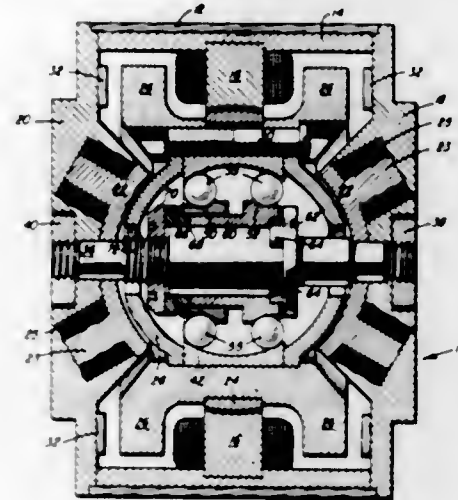


The apparatus is an accelerometer measuring system having a velocity output, quantized to discrete values of velocity and having a direct digital output. The accel-

ometer utilized is of the pulse pendulum type which supplies an electrical signal during times of acceleration indicative of the amount of acceleration.

### 3,408,874 2-AXIS, NONFLOATED BALL BEARING GYROSCOPE

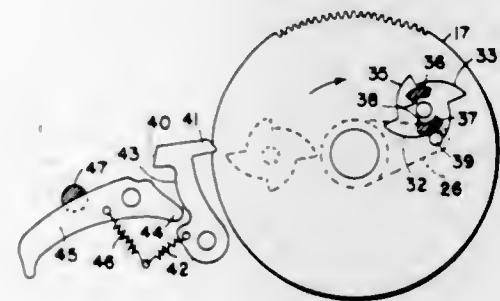
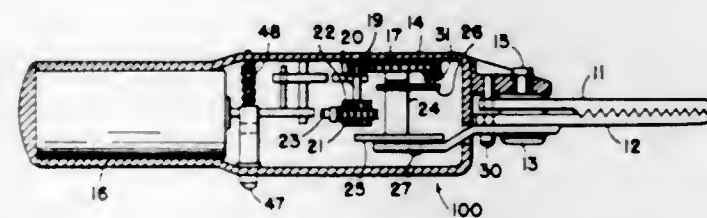
Lloyd A. Iddings, Arlington, Va., assignor to the United States of America as represented by the Secretary of the Navy  
Filed Nov. 18, 1965, Ser. No. 508,602  
10 Claims. (Cl. 74-5)



A self-aligning bearing, especially adapted for use with gyroscopes, in which there is an outer race having a concave surface, and two inner races, each supporting the plurality of ball bearings between the inner and outer races, said inner races being axially movable so as to enable preloading of the bearing races against the balls.

### 3,408,875 POWER-OPERATED TOOL

Arthur Briskman, 102 Prince St., New York, N.Y. 10012, Curt Weldauer, Clinton Corners, N.Y., and Theodore N. Saaty, Newark, N.J.; said Weldauer and said Saaty assignors to said Arthur Briskman, New York, N.Y.  
Filed Mar. 9, 1967, Ser. No. 621,992  
27 Claims. (Cl. 74-48)

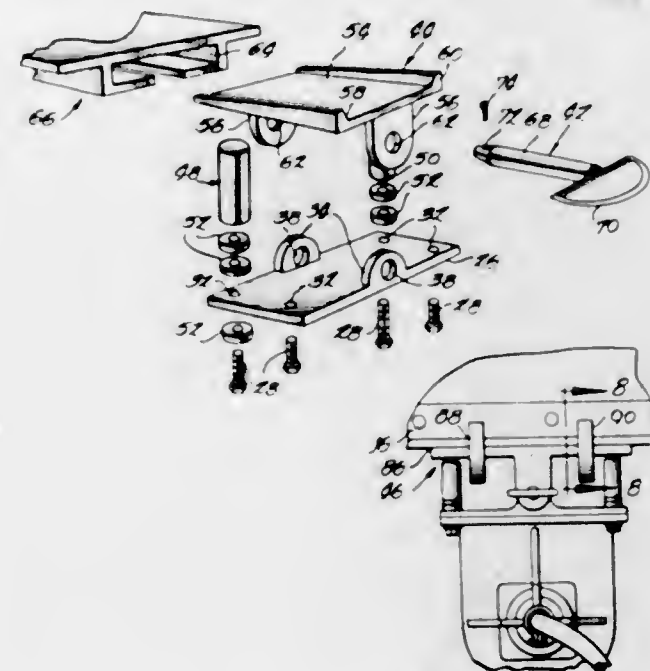


Shears or like implements mechanically driven by an electric motor, a gear drive enclosed with the motor in a housing, which housing is also the handle, and a mechanism in the gear drive which may be set to cause the shear blades to move in a relatively shearing motion, con-

tinuously or intermittently, or cause them to stop temporarily, while the motor keeps running. A switch for reversing the running of the motor may be provided.

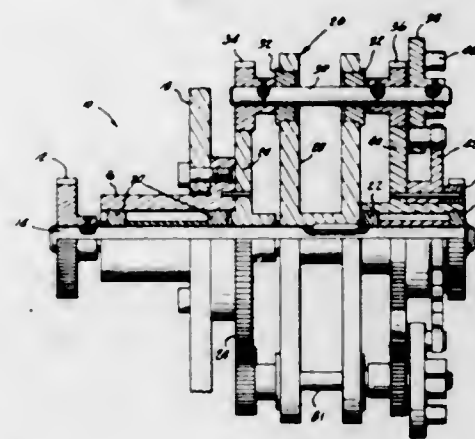
for generating rotary intermittent motion, or in reference to a straight line when the driven member is a rack for generating intermittent linear motion.

### 3,408,876 CAR VIBRATOR Charles C. Andrews, 4 S. Sycamore, Villa Grove, Ill. 61956 Filed Dec. 23, 1966, Ser. No. 604,207 12 Claims. (Cl. 74-61)



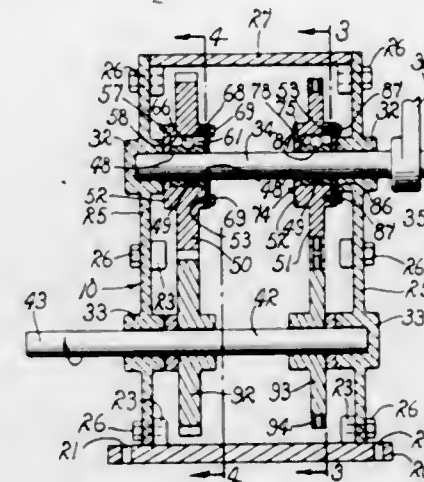
A vibrator having a weighted mass eccentrically affixed to a shaft which is rotated, and a pair of striker pins. The vibrator is pivotally affixed to an object, such as a hopper, by means of an adapter, and when the weighted mass is rotated, the vibrator is caused to oscillate about the pivotal connection to strike the striker pins against the object to induce the flow of materials which do not flow freely from the object. The vibrator also imparts a low frequency vibration to the object which assists in inducing the flow.

### 3,408,877 INTERMITTENT MOTION MECHANISM Herbert H. Olson, Jackson, Mich., assignor to Hayes-Albion Corporation (formerly known as Hayes Industries, Inc.), Jackson, Mich., a corporation of Michigan Filed Oct. 22, 1965, Ser. No. 502,146 19 Claims. (Cl. 74-84)



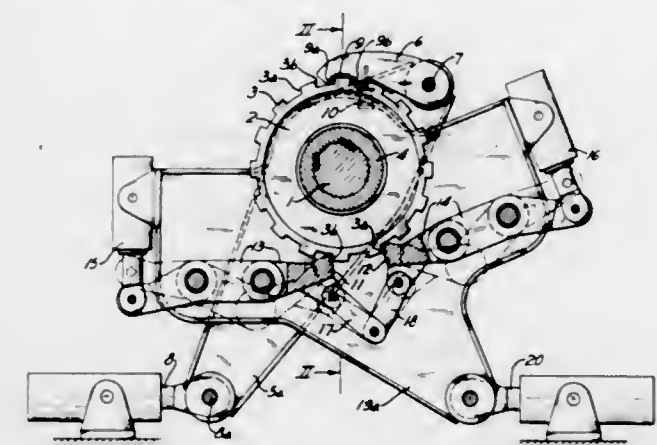
Apparatus having a gear train including a mutilated gear and an associated driving pin which is rotated on a trochoid curve either around the axis of a driven member

### 3,408,878 TRANSMISSION Antonio M. Bertao, 8868 Ave. 280, Visalia, Calif. 93277 Filed Oct. 18, 1965, Ser. No. 497,087 4 Claims. (Cl. 74-126)



A transmission adapted to receive motivating forces of varying magnitude or amplitude, inconsistent direction, periodic or aperiodic frequency, and/or other variable characteristics and to deliver an output motion of continuous direction.

### 3,408,879 RATCHET DRIVE FOR WORKPIECE CONVEYING APPARATUS Otto Mödler, Dahlbruch, Kreis Siegen, Fritz Rotter, Kredenbach, Kreis Siegen, and Willi Brombach, Dahlbruch, Kreis Siegen, Germany, assignors to Siegener Maschinenbau G.m.b.H., a corporation of Germany Filed Feb. 21, 1966, Ser. No. 528,954 Claims priority, application Germany, Feb. 25, 1965, S 95,667 6 Claims. (Cl. 74-129)



The invention relates to a stepping mechanism for an apparatus formed by spoke wheels turning on a common horizontal shaft for the cooling, hardening and/or conveying of rolled stock, in which on the drive shaft a ratchet wheel is fixedly mounted, that is movable step-by-step by means of a driving mechanism through a ratchet pawl and whereby associated with the latter are two tongue-like centering and holding pawls moving against one another and independently of the ratchet pawl into the ratchet wheel and which, alternating with the ratchet pawl, can be engaged with and disengaged from the ratchet wheel.

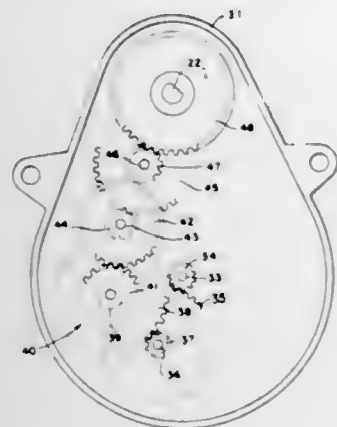


3,408,880

**ROTARY HUMIDIFIER DRIVE**

Walter R. Stiles, Milford, Mich., assignor to Skuttle Mfg. Co., Milford, Mich., a corporation of Michigan  
Continuation-in-part of application Ser. No. 578,364, Sept. 9, 1966. This application May 15, 1967, Ser. No. 638,235

9 Claims. (Cl. 74-405)



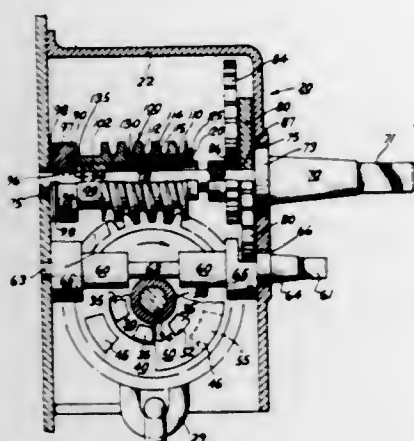
A rotary type humidifier having a water pick-up rotor peripherally carrying a removable sleeve of open pore polyurethane or equivalent is driven by a motor through reduction gearing, and the drive contains friction clutch means which is operative to transmit normal operational torques during operational rotor drive but slips to protect the gearing against injury when excessive torque is applied and resumes torque transmission automatically when the excess torque condition no longer prevails.

3,408,881

**AUTOMATIC TWO-SPEED HAND BRAKE MECHANISM**

William L. Grube, Northbrook, Ill., assignor to MacLean-Fogg Lock Nut Co., Mundelein, Ill., a corporation of Delaware

Filed June 30, 1967, Ser. No. 651,104  
23 Claims. (Cl. 74-505)



A hand brake mechanism for automatic speed interchange by a slidable drive worm having at opposite ends, alternatively, a high and a low speed drive engagement. The low speed end is toward the winding reaction of the worm gear. A compression spring urges the worm against the reaction toward the high speed drive to quickly wind slack. The reaction thereupon increases to overcome the spring and shift the worm to the low speed drive for additional mechanical advantage. The worm has a high speed coupling end that screws axially inward upon initial contact with the high speed drive in an unwinding direction for a smooth interchange by allowing a complete disengagement from the low speed drive. Friction clutch plates, interlocking lugs, teeth and dents, and

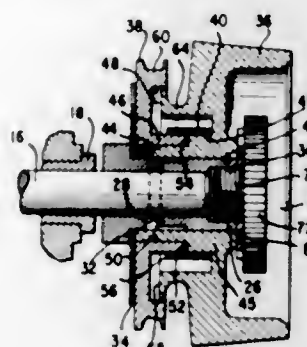
ratchets, are utilized for the low and high speed couplings. The worm gear and winding member are keyed together by a dog which is removable for quick release.

3,408,882

**MOTOR TREADLE HANDWHEEL**

Edward W. Bialy, Hillside, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Oct. 27, 1966, Ser. No. 590,078  
3 Claims. (Cl. 74-625)



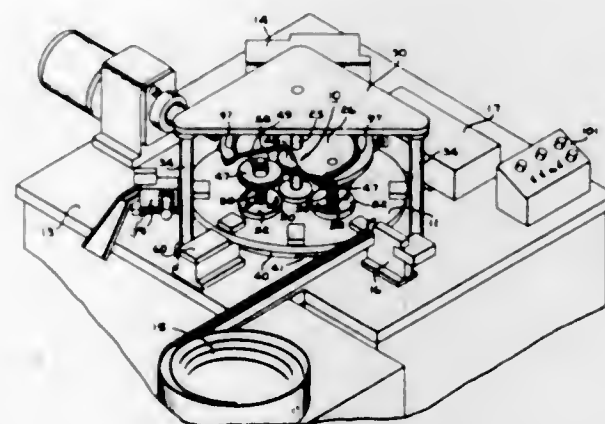
A sewing machine handwheel assembly is disclosed as having two coaxial pulley members for accommodating motor-driven and treadle-driven belts respectively. The treadle-driven pulley is directly secured to the sewing machine arm shaft, while the motor-driven belt is coupled to the arm shaft through a spiral spring that interconnects the pulleys. Thus, when the treadle drive is used, the spring tends to unwind and loosen its grip on the motor-driven pulley, the result being that during such treadle-driving the sewing machine motor is effectively disabled and wear thereof is eliminated.

3,408,883

**ROTARY INDEXING APPARATUS**

John W. Rieck and Arden L. Van Nest, Indianapolis, Ind., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed June 15, 1966, Ser. No. 557,789  
9 Claims. (Cl. 74-822)



A rotary indexing apparatus includes a drive mechanism for rotatable and indexible work members wherein a continuously operated driving gear is coupled to, but only periodically rotates a driven epicyclic type of gear train, the latter also being in continuous engagement with the rotatable work member. Resilient, energy storing members, intercoupled between the driven gear train and the work member, store torsional energy periodically imparted thereto by the driven gear train in response to and during each periodic period in which the rotatable work member is held stationary. The stored energy in the

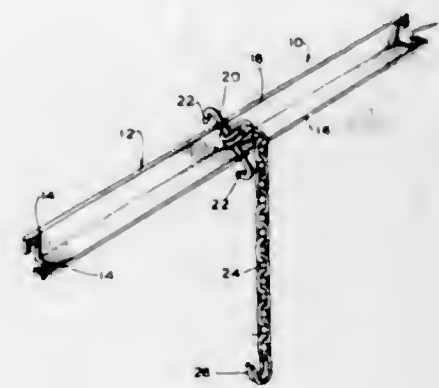
resilient members is, in turn, periodically and rapidly released to the driven gear train each time and in response to the rotatable work member being released for rotation, with the driven gear train thereafter imparting rapid and controllable rotational movement to the work member.

3,408,884

**TIRE CHAIN APPLYING TOOL**

Ray S. Musgrove, 9663 Margo Ann Lane, St. Louis, Mo. 63134

Filed Mar. 24, 1967, Ser. No. 625,649  
7 Claims. (Cl. 81-15.8)



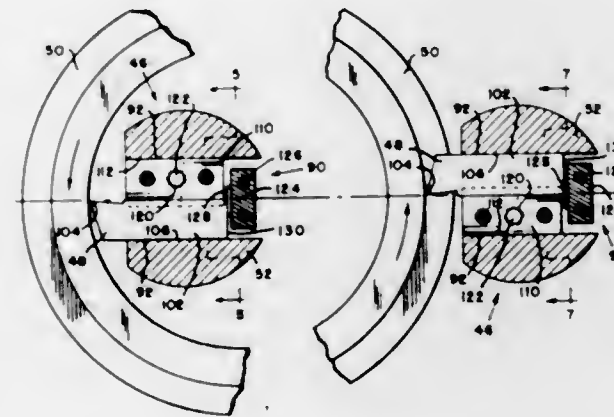
This tire chain applying tool is designed to apply tire chains to dual tires such as are ordinarily used on trucks or buses. It consists of a bar adapted to lie on the outer periphery of the tires and a chain attached to the center of the bar for attaching the bar to the tires. The tire chains are then hooked to the bar and wrap around the tires as the tires are turned.

3,408,885

**TOOL SUPPORT**

Jesse W. Mendenhall, Fairfield, Conn., assignor to The Bullard Company, Bridgeport, Conn., a corporation of Connecticut

Filed Apr. 7, 1966, Ser. No. 540,891  
15 Claims. (Cl. 82-36)



A tool support for a metal turning machine tool in which cutting tools for cutting either to the right or to the left of the center of rotation of a workpiece can be interchangeably mounted. The support has a recess symmetrically formed with respect to a reference plane of the support in which the shank of a cutting tool can be accurately positioned on either side of the plane of reference with the cutting tip positioned in each case on the reference plane. A locking wedge for holding the cutting tool shank in the recess can be attached to the tool support on either side of the plane of reference depending upon the type of cutting tool being employed.

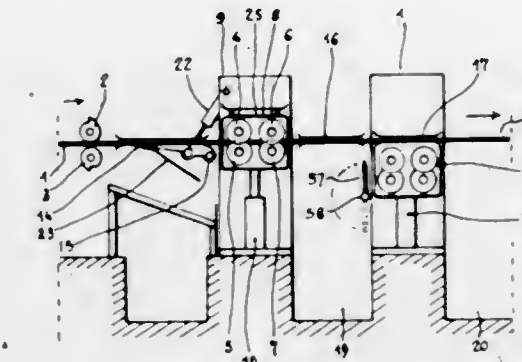
3,408,886

**SLITTING AND CREASING MACHINES, PARTICULARLY THOSE USED IN THE CORRUGATED BOARD INDUSTRY**

Charles Henri Auguste David, Deville-les-Rouen, France, assignor to Parsons & Whittemore, Paris, France, a French company

Filed Sept. 1, 1965, Ser. No. 484,262  
Claims priority, application France, Sept. 1, 1964, 7,064

6 Claims. (Cl. 83-9)



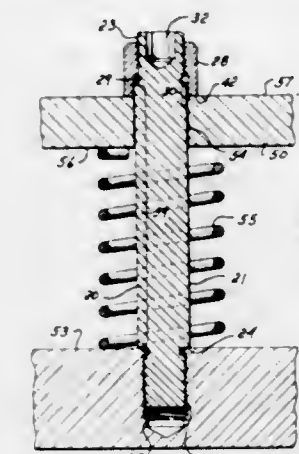
A slitting and creasing machine for either sheets or continuous web with at least two sets of tools in separate frame supports. Each one of the frames can be lowered so that the tools in it can be adjusted for a following production while the other set is in operating position on the running product. A pair of cutting rollers at the infeed end of the machine for transversely cutting sheets off while the shifting of the two sets of tools takes place and movable guides for deflecting these waste sheets into a container.

3,408,887

**ADJUSTABLE SHOULDER BOLT FOR USE IN A STRIPPER MEANS**

Joseph P. Villo, Rydal, Pa., assignor to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania

Filed Nov. 18, 1966, Ser. No. 595,450  
12 Claims. (Cl. 83-140)



12. In combination with a punch press having a top shoe carrying punching means, a stripper plate and an adjustable shoulder bolt including a nut member and stud member of circular cross section, said stud being externally threaded at both of its ends and having a body section of uniform diameter intermediate the threaded ends, the outside diameter of the body section being larger than the major diameter of either of the threaded end sections, the body section at one end terminating in a shoulder that lies in a plane perpendicular to the stud axis, the nut being in threaded engagement with the threaded stud end opposite the shoulder end, said nut having a deep counterbore in the face presented toward the shoulder end, said counterbore having a diameter greater than the stud diameter and wherein the threaded

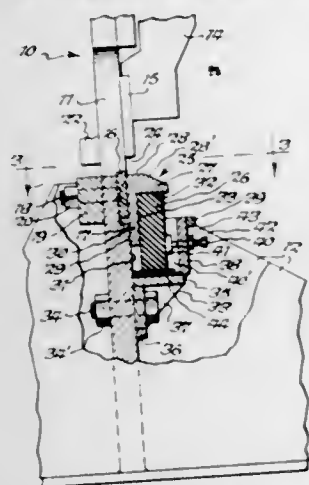


stud end projecting through the nut member has a wrench receiving surface for the application of torquing forces to the stud, the shoulder end of the bolt being seated in the upper face of the stripper plate, the stud body passing through a guide hole in the top shoe, a helical compression spring surrounding the stud body and positioned between the lower shoe face and the upper face of the stripper plate and wherein the end of the stripper bolt nut that is presented toward the shoulder end bears against a flat surface on the upper face of the top shoe.

3,408,888

**SHEARING APPARATUS**

James A. Hitt, Lakeview, N.Y., assignor to Buffalo Forge Company, Buffalo, N.Y., a corporation of New York  
Filed Sept. 17, 1965, Ser. No. 488,122  
6 Claims. (Cl. 83-142)

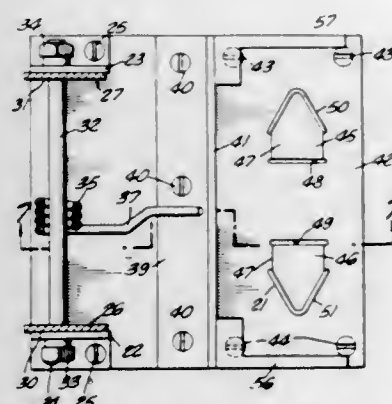


A shearing machine for shearing a workpiece from a member with relatively low power and without attendant curling including a frame, a pair of knives mounted on said frame with one of the knives being relatively movable toward and away from the other and having a rake angle which would normally cause curling of the workpiece but which permits relatively low power to be utilized in effecting the shearing, and a resilient block underlying the movable knife, and having a metal cap and being located in a housing mounted on said frame, said housing including spaced abutments engaging the side of the block which permits it to yield as required during the shearing action but which holds the block with sufficient force to provide sufficient resistance to prevent the curling.

3,408,889

**FILE FOLDER PUNCH**

Raymond S. Murphy, Bakersfield, Calif., assignor to Intex Oil Company, Bakersfield, Calif., a corporation of California  
Filed Aug. 25, 1965, Ser. No. 482,558  
4 Claims. (Cl. 83-599)



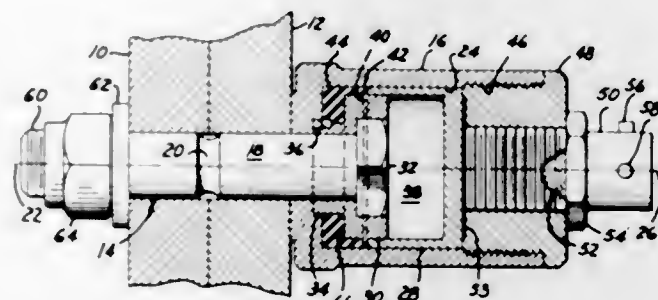
1. A file fastener punch comprising: a lower plate having a pair of parallel straight die slots, and a pair of V-shaped die slots located laterally from said parallel die

slots with their apex ends pointing laterally away from said straight die slots; said die slots defining a pair of five-sided figures, each figure having a first side defined by a straight die slot, sides perpendicular to said first side, between said straight and V-shaped die slots; and an apex end defining two sides and formed by a V-shaped die slot; a top plate; a pair of parallel straight punch blades extending from said top plate for cooperation with said straight die slots; a pair of V-shaped punch blades extending from said top plate for cooperation with said V-shaped die slots; and means mounting said plates for relative movement to effect cooperation of said die slots and punch blades.

3,408,890

**SEPARABLE FASTENER ASSEMBLY**

Harry L. Bochman, Jr., Seal Beach, Calif., assignor to Hi-Shear Corporation, Torrance, Calif., a corporation of California  
Filed Jan. 27, 1967, Ser. No. 612,217  
16 Claims. (Cl. 85-1)

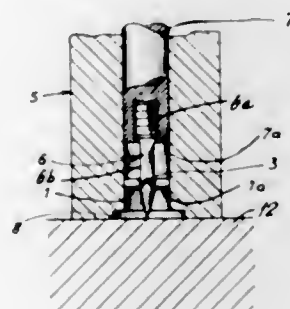


This invention relates to separable fastener assemblies. According to this invention, a body is provided having a cylinder and a piston slidably mounted therein. Explosive means is in fluid communication with the cylinder and is adapted to discharge gas under pressure against the piston to move the piston axially in the cylinder. A separation bolt holds the joined assemblies together and to the body. A holder holds a portion of the separation bolt within the body. The piston has a cavity, and the holder is slidably mounted within that cavity. A non-compressible pliable medium is contained within the cylinder between the piston and the holder so that when the piston is moved by the force of the explosion, a surface on the piston displaces the fluid, forcing it against a surface of the holder. The holder thereby exerts an axial tension force on the separation bolt until the bolt breaks in tension under a predetermined force.

3,408,891

**ANCHOR PIN AND GUIDE DISK CONSTRUCTION**

Manfred Hartmann, Frastanz, Austria, assignor to Hilti Aktiengesellschaft, Schaan, Liechtenstein  
Filed Jan. 19, 1967, Ser. No. 610,372  
Claims priority, application Germany, Jan. 21, 1966, H 58,311  
5 Claims. (Cl. 85-10)



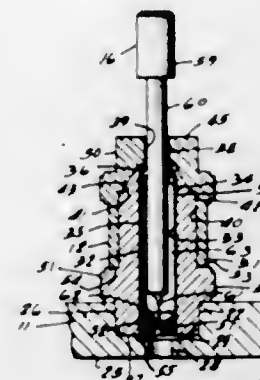
An anchor pin such as a bolt, nail or similar element which is adapted to be driven into a hard receiving mate-

rial is described herein in relation to an improved guide disk which is associated with the pin for aligning the pin in a driving tool.

3,408,892

**CARTRIDGE RELOADER AND SIZER**

Ewing J. Smith, 42 Highland Ave., Piedmont, Calif. 94611, and Leo John Pigozzi, 465 25th St., Oakland, Calif. 94612  
Filed June 28, 1967, Ser. No. 649,710  
11 Claims. (Cl. 86-23)

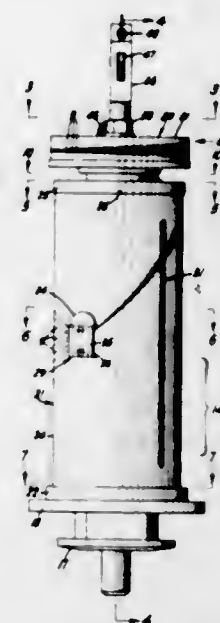


An apparatus for resizing spent cartridge cases and holding the cases while reloading the cartridge case with a primer, powder and bullet. The apparatus includes an anvil base with tool holding recesses coacting especially with a novel cartridge case resizing die and holder.

3,408,893

**BRAIDER CARRIER**

Jagmohan Singh, Reading, Pa., assignor to Textile Machine Works, Wyomissing, Pa., a corporation of Pennsylvania  
Filed May 23, 1966, Ser. No. 552,332  
13 Claims. (Cl. 87-21)



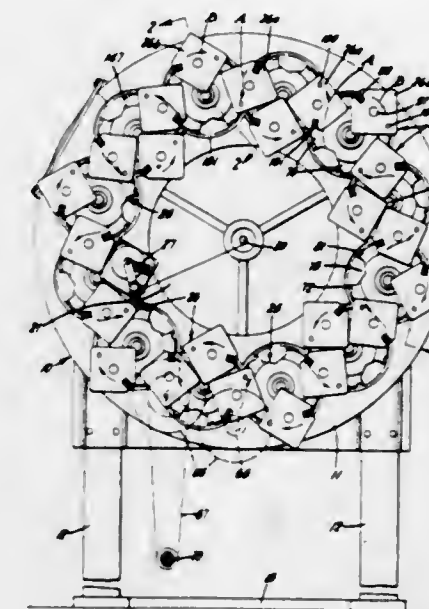
A braider carrier particularly for use in the reinforcement of high pressure hose and the like, the carrier having a support for a plurality of coils of individual wires which when drawn from the coils make up a braiding strand, and a rotatable control unit carrying a wire clamping and tensioning device which serves to clamp the wires to draw them from the coils when the control unit is rotated in one direction and which serves, when the control unit is rotated in the opposite direction, to

first provide an untensioned supply of the wires and thereafter when said rotation reaches a given position to release said clamping action and perform its tensioning function as the wires are drawn therethrough by the braiding action.

3,408,894

**BRAIDING APPARATUS**

Robert H. Kaufmann, Temple, and Jagmohan Singh, Hamburg, Pa., assignors to Textile Machine Works, Wyomissing, Pa., a corporation of Pennsylvania  
Filed Oct. 2, 1967, Ser. No. 672,358  
8 Claims. (Cl. 87-38)

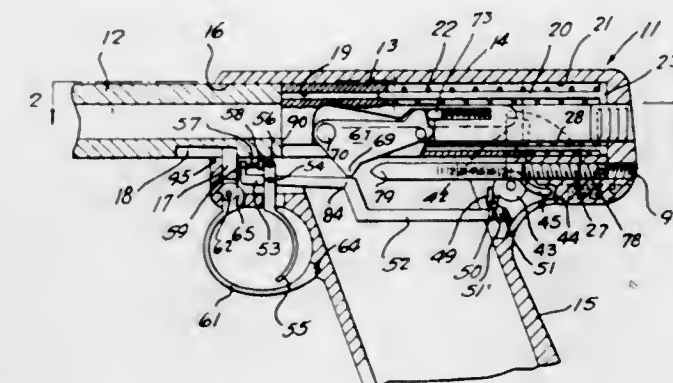


Means for propelling and guiding the strand supply carriers of a braiding machine along sinuous paths in opposite directions about a braiding point including rotors for driving the carriers, and cooperating means on the rotors and carriers for maintaining the carriers in positive driving engagement with the rotors during transfer of the carriers between adjacent rotors.

3,408,895

**FIREARM WITH ADJUSTABLE LOCK-UP TIME DEVICE**

Gilbert A. Lopez, Fort McKavett, Tex. 76841  
Filed Jan. 3, 1967, Ser. No. 606,685  
6 Claims. (Cl. 89-145)



Adjustable means to disengage the sliding breech block or bolt from the barrel extension of a firearm of the automatic or semi-automatic type at a desired time during recoil after firing in order to compensate for different types of ammunition. In the specific embodiment dis-



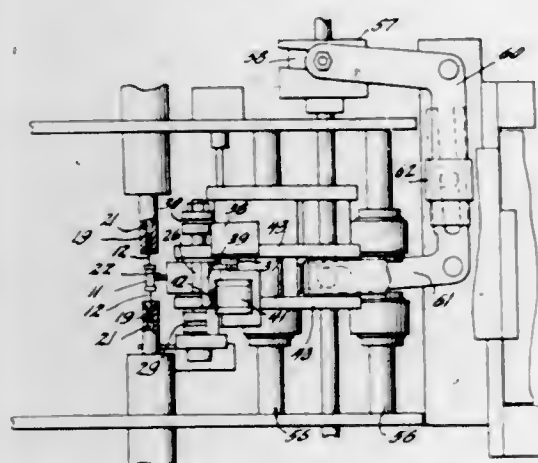
closed, the means employed is an adjustable screw-stop acting to cam a rotatable lock element on the breech block to a release position responsive to recoil.

3,408,896

# APPARATUS FOR HELIXING A PATH IN A CARBON FILM DEPOSITED ON A CERAMIC CORE

Nicholas J. Mandonas, Medford, and Alphonse J. Sevigny, Jr., Amesbury, Mass., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed May 20, 1966, Ser. No. 551,598  
10 Claims. (Cl. 90—11.64)



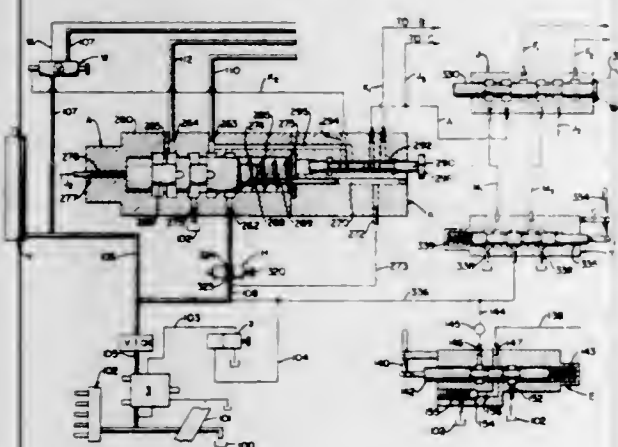
Apparatus uses a pivotally mounted rotary saw to make helical cuts in films on ceramic cores. The saw pivots downwardly into an intermediate position, close to a core, then drops onto the core without rebounding therefrom, as portions of two cams are removed successively from support of the saw. A magnet holds the saw at a desired depth of cut. The saw is mounted for adjustment to follow a desired angle of helix. Preliminary and continuous resistance tests govern the cutting of each helix to bring the film resistance to a desired value.

3,408,897

# FLUID POWER HAMMER HAVING ACCUMULATOR MEANS TO DRIVE THE HAMMER THROUGH ITS WORKING STROKE INDEPENDENT OF THE SYSTEM PUMP

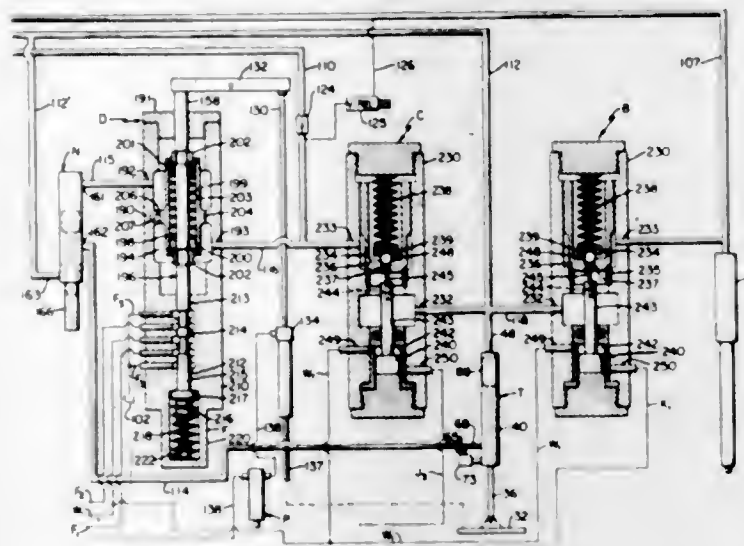
Kenneth H. Hoen, Littleton, Walter J. Chapman, Denver, and Robert W. Jones, Englewood, Colo., assignors to Champion, Inc., Englewood, Colo., a corporation of Colorado

Filed Nov. 18, 1964, Ser. No. 411,978  
24 Claims. (Cl. 91—5)



In a hydraulic hammer mechanism, the hammer weight is reciprocated through its working and return strokes by a ram cylinder circuit, the latter being controlled for automatic or manual operation by a hydraulic control circuit. In either the automatic or manual position, the

length of stroke, speed, power and balance of the ram cylinder may be independently regulated. Moreover the ram cylinder is self-regulating with the necessary built-in safety features to avoid shock or damage to the mechanism or circuitry. Still further, the ram cylinder may be

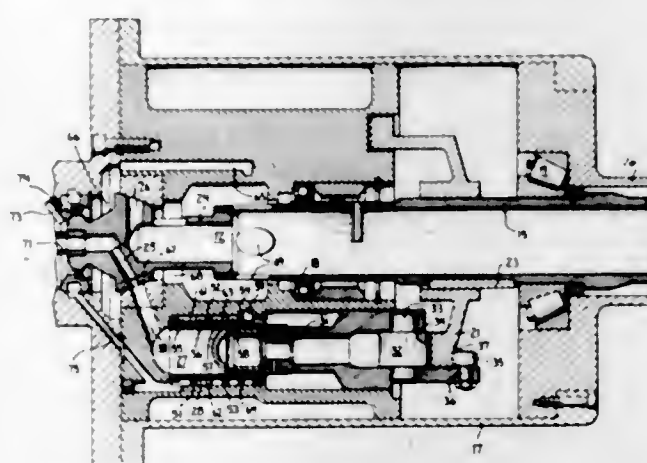


actuated through a power or gravity stroke as desired, and is characterized in that considerably more power and acceleration can be developed in the ram cylinder through each working and return stroke while isolating the cylinder circuit from the hydraulic control circuit.

3,408,898

# BARREL ENGINE HAVING COOLING SYSTEM

Halley H. Hamlin, Lyndhurst, Ohio, assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy  
Continuation of application Ser. No. 546,150, Apr. 26, 1966. This application Feb. 8, 1968, Ser. No. 704,178  
2 Claims. (Cl. 91—175)



A barrel engine having a plurality of cylinders and pistons whose stroke axes are parallel to a power output shaft and having a cooling jacket surrounding each of said cylinders, each said cooling jacket having grooves around the outer periphery that provide for passage of cooling water in both clockwise and counterclockwise direction around the cooling jacket. The cooling water flows from the last groove into the engine exhaust.

3,408,899

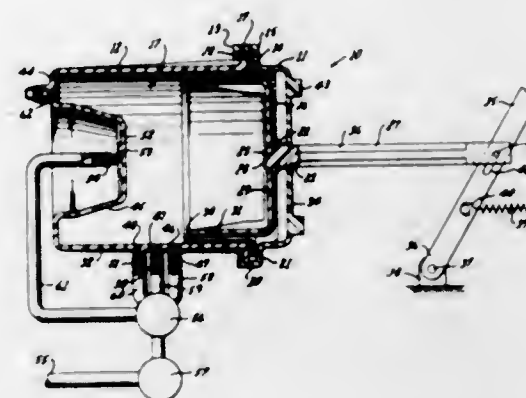
# FLUIDIC OPERATED ROLLING DIAPHRAGM ACTUATOR OR THE LIKE

Robert L. Golden, Greensburg, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed June 20, 1966, Ser. No. 558,884  
10 Claims. (Cl. 91—357)

This disclosure relates to a multi-position vacuum operated actuator having a flexible, rolling diaphragm co-

operating with a cup-shaped housing member to define a chamber therebetween, the diaphragm being backed up by a cup-shaped plate means having the open end facing toward an interior end wall means of the housing with that end wall means having a cup-shaped portion having the closed end thereof projecting into the chamber and



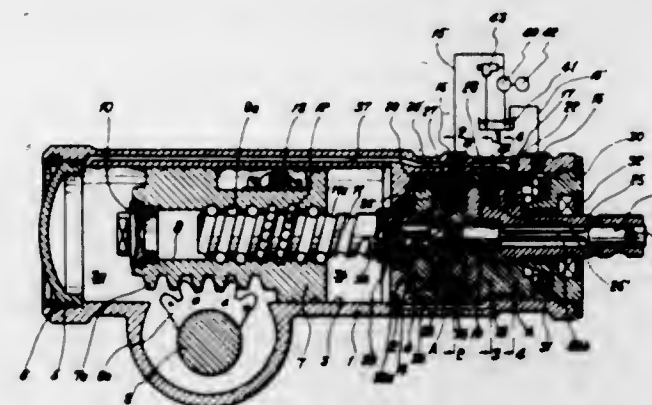
facing toward the diaphragm, the actuator having a plurality of openings in the side wall means thereof and in the end wall means thereof so that the flexible diaphragm will roll against the side wall means to open and close the openings in the side wall means as the diaphragm rolls relatively thereto under the control of a fluidic signal being directed to the chamber of the actuator.

3,408,900

# SERVO VALVE DEVICE IN POWER STEERING GEAR OF AUTOMOBILE

Tamaki Tomita, Okazaki, Japan, assignor to Toyota Machine Works, Ltd., Kariya, Aichi Prefecture, Japan

Filed Aug. 31, 1966, Ser. No. 576,441  
Claims priority, application Japan, Sept. 2, 1965, 40/53,822; Apr. 2, 1966, 41/20,852  
6 Claims. (Cl. 91—372)



A servo valve device in a power steering unit of an automobile having a fluid pressure motor to supplement manual steering and a steering rod member composed of two parts flexibly connected and coupled to the fluid pressure motor. A main valve member is connected with one of the steering rod members and is provided with a pair of opposite located injection ports connected with two operative ports of said fluid pressure motor, and a flap valve member is connected with the other of the two steering rod members and adapted for control of the flow resistance of said injection ports, such that the flow resistance of one of said injection ports is restricted and the other injection port is released to exhaust passage by the rotational phase difference of the two valve members by the action of manual steering effect, and thereby a circulating passage of operative fluid entering into one of the

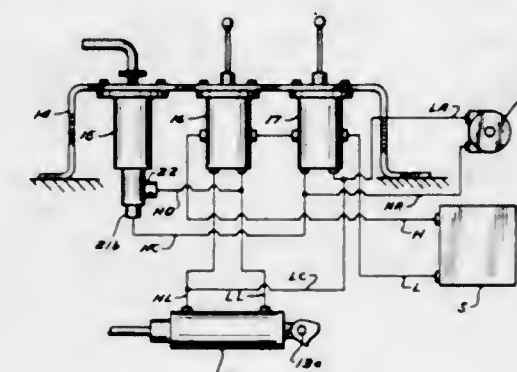
operative ports of said fluid pressure motor and leaving the other operative port thereof to fluid reservoir is completed.

3,408,901

# COORDINATED HYDRAULIC MOTOR CONTROL SYSTEM AND PRESSURE COORDINATING VALVE THEREFOR

Harold G. Inhofer, Eden Prairie, Minn., assignor to Hawk Bilt Mfg. Corp., a corporation of Iowa  
Continuation of application Ser. No. 527,991, Feb. 16, 1966, which is a continuation of application Ser. No. 412,418, Nov. 19, 1964. This application Dec. 18, 1967, Ser. No. 697,547

13 Claims. (Cl. 91—412)



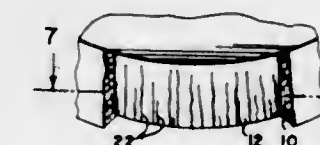
A hydraulic pressure control system which interrelates the actions of a pair of fluid motors by providing the system with a normally closed pressure compensating valve which opens in response to back pressure created by operation of the first motor to permit operation of the second motor, which remains open to operate the second motor through a predetermined range of back pressure, and which closes when the back pressure reaches a predetermined level to interrupt operation of the second motor; and the pressure compensating valve for controlling the system.

3,408,902

# METHOD OF MAKING CLOSURE FOR CONTAINERS

John M. de Voe, Nashville, Tenn., assignor to United States Tobacco Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 12, 1966, Ser. No. 601,136  
5 Claims. (Cl. 93—1.3)



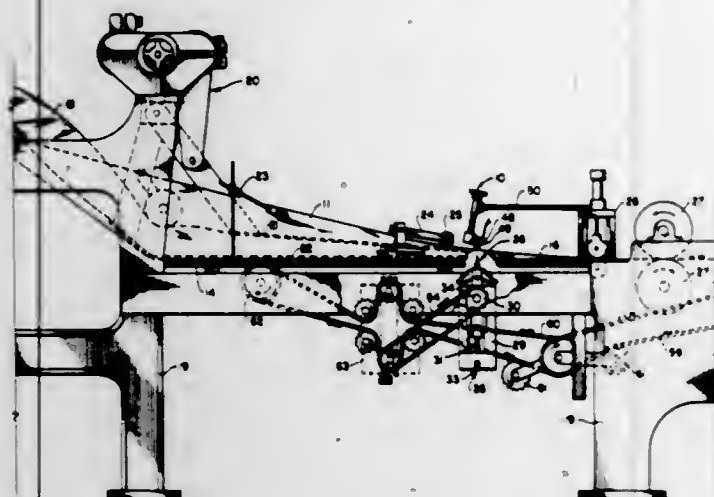
1. In the method of producing container closures of the type having an end wall and a peripheral side wall structure, the steps of, wetting a sheet of kraft-coated paper for a sufficient time to soften it, positioning the sheet in a die assembly with a sheet of metal foil, cutting a blank from each of said sheets, subjecting the sheets to a simultaneous soft forming operation by pushing the peripheral side wall of the paper blank to thereby form the peripheral portions of the paper blank and the foil blank into an integral side wall structure against an inner surface which causes folds in the metal foil to be projected outwardly and to be embedded in the softened paper, and drying the paper to cause it to shrink and harden.



### 3,408,903 BAG MANUFACTURE

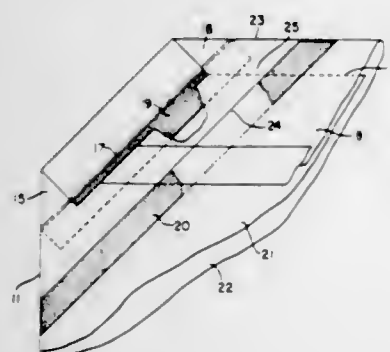
John G. Lepisto and William J. Tilton, Middletown, Ohio, assignors to Albemarle Paper Company, Richmond, Va., a corporation of Virginia

Filed Mar. 30, 1967, Ser. No. 626,998  
10 Claims. (Cl. 93—20)



Apparatus for manufacturing gusseted multi-wall bags having a preformed plastic inner liner. A section of a flexible plastic tube that is moving through a multi-wall bag tuber is inflated to press the tube into the contour of the enveloping outer paper plies to form gussets in the tubing matching those in the paper plies. A rotating air needle periodically punctures the nested tubes and supplies air when needed to the inflated portion of the plastic inner liner. The invention avoids shutting down the tuber in order to reinflate the plastic inner liner when air pressure drops below that necessary to conform the plastic tube to the outer paper plies.

**3,408,904  
METHOD OF MAKING A FABRIC RUBBERIZED CONTAINER AND SAID CONTAINERS**  
Ralph J. Thleken, Goodyear, Ariz., and Ernest Knaus, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio  
Filed Apr. 12, 1967, Ser. No. 630,383  
2 Claims. (Cl. 93—35)



This invention provides a method of constructing elastomeric coated fabric containers wherein the method of sealing the corners and the corner construction is improved by cutting the end flap seam on the bias to give an improved corner construction and reduce its thickness in the corner due to the piling up of the amount of fabric, adhesive and other rubber materials used in making up containers of this construction.

### 3,408,905 CARTON FORMING APPARATUS

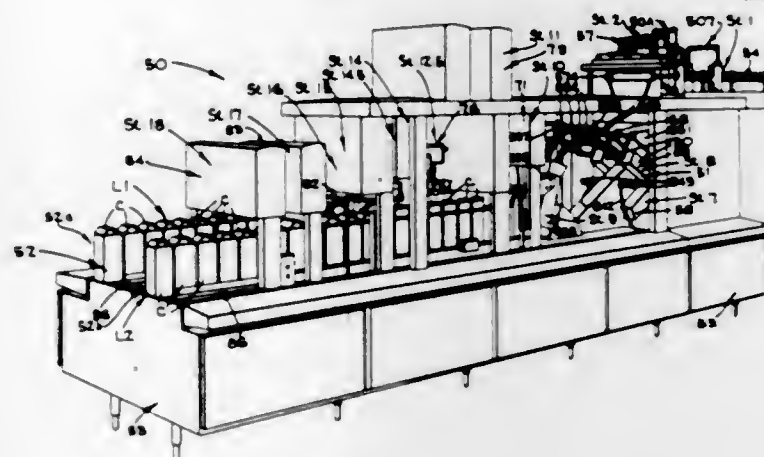
Francis L. Hoff, Santa Clara, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware  
Filed Apr. 11, 1966, Ser. No. 541,813  
3 Claims. (Cl. 93—36.8)



A flap folding apparatus including the combination of a backup member having a circular periphery disposed at score lines within a carton, and a reciprocable head carrying an opposed pair of fixed flap folding means for engaging and assuring that trapezoidal carton flaps are folded inwardly before the flat flaps of the carton are engaged by pivotal flap folding jaws. The pivotal flap folding jaws are carried by the head and are actuated by means connected to the backup member.

### 3,408,906 METHOD OF AND MACHINE FOR FORMING CONTAINERS

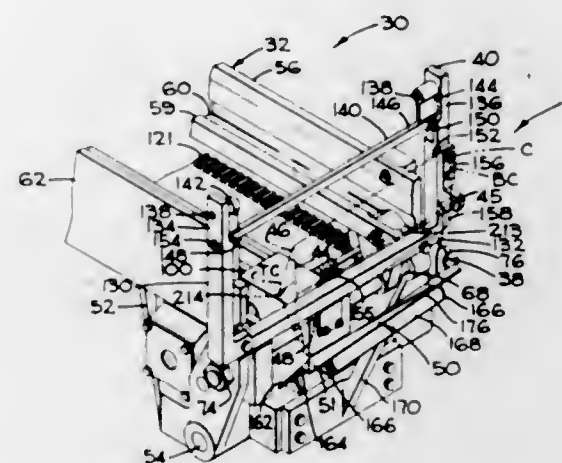
Robert D. Heffelfinger, Saratoga, Calif., John G. Hagerborg, St. Niklaas, Pays de Waas, Belgium, and David S. Bartlett, Wendell S. Thompson, and Robert F. Small, San Jose, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware  
Original application Aug. 10, 1962, Ser. No. 216,248, now Patent No. 3,248,841, dated May 3, 1966. Divided and this application Feb. 11, 1966, Ser. No. 526,874  
21 Claims. (Cl. 93—44.1)



A carton forming machine and method wherein cartons are erected from collapsed carton blanks and are placed on intermittently driven mandrels. The mandrels are mounted on a turret and are past three stations spaced equal distances apart. The mandrels are intermittently indexed at a first station where flaps of each carton are bent inwardly, are indexed at a second station where selected surfaces of the flaps are heated, are moved between the second and a third station during which time the flaps

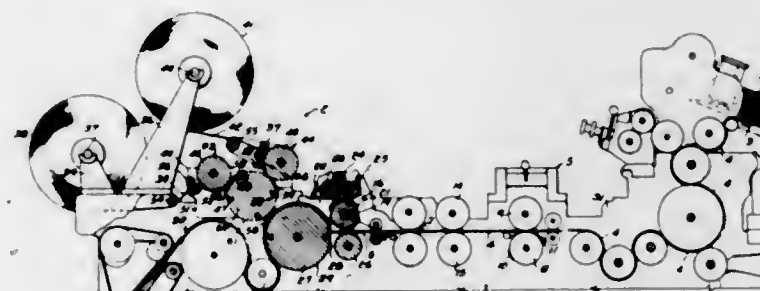
are folded together, and are then sealed together at the third station by applying pressure to the heated flaps to seal the same.

**3,408,907  
CARTON ERECTING APPARATUS**  
Robert K. Gellatly, Santa Clara, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware  
Filed Mar. 9, 1967, Ser. No. 621,810  
17 Claims. (Cl. 93—53)



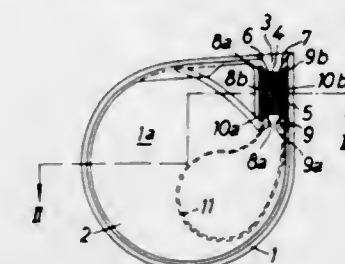
A carton erecting mechanism for overbending and erecting cartons of different sizes from flat folded condition to square tubular condition by resisting movement of the rear carton wall at only one end of each carton after the carton is pulled out of the magazine to partially open said end causing the lower edge to become inclined, and then swinging the carton against a similarly inclined overbend plate to progressively open the carton from said one end to the other end. Thereafter the carton is overbent equal amounts throughout its entire length by being pulled over a horizontal even strip prior to discharging the erected carton. An adjusting device is provided for easily and accurately adjusting the magazine to handle cartons of different sizes.

**3,408,908  
APPARATUS FOR APPLYING A PLURALITY OF PATCHES TO ENVELOPE BLANKS IN AN ENVELOPE MAKING MACHINE**  
Eugene Bertram Berkowitz, deceased, late of Kansas City, Mo., by Caroline Newburger Berkowitz and Abraham E. Margolin, executors, Kansas City, Mo., assignor to Tension Envelope Corporation, Kansas City, Mo., a corporation of Delaware  
Filed July 17, 1967, Ser. No. 654,014  
3 Claims. (Cl. 93—61)



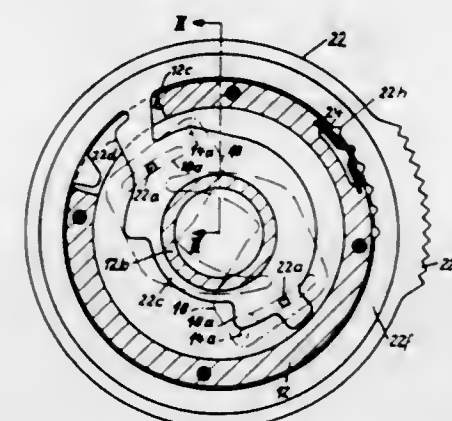
A plurality of patches are applied on an envelope blank in overlapping or partially overlapping relation in the direction of travel through the machine by mounting patch web rolls and feeding the patch webs so that the patch webs overlap as they are fed into the patch cutters

**3,408,909  
FILM CARTRIDGE FOR PHOTOGRAPHIC CAMERA**  
Willy Kisselmann, Grunwald, near Munich, Josef Hofmann, Unterhaching, near Munich, and Rudolf Matthes and Eugen Schmidt, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany  
Filed Sept. 30, 1965, Ser. No. 491,627  
Claims priority, application Germany, Oct. 1, 1964, A 47,222  
4 Claims. (Cl. 95—31)



A film cartridge wherein the light trap comprises a U-shaped carrier for plush bands. The carrier is inserted into the mouth of the cartridge and supports a film coiling loop of elastic material.

**3,408,910  
SETTING DEVICE FOR PHOTOGRAPHIC EQUIPMENT**  
Franz Singer, Munich, Germany, assignor to Compur-Werk Gesellschaft mit beschränkter Haftung & Co., Munich, Germany, a corporation of Germany  
Filed Apr. 2, 1965, Ser. No. 445,212  
Claims priority, application Germany, Apr. 8, 1964, C 32,596  
1 Claim. (Cl. 95—64)



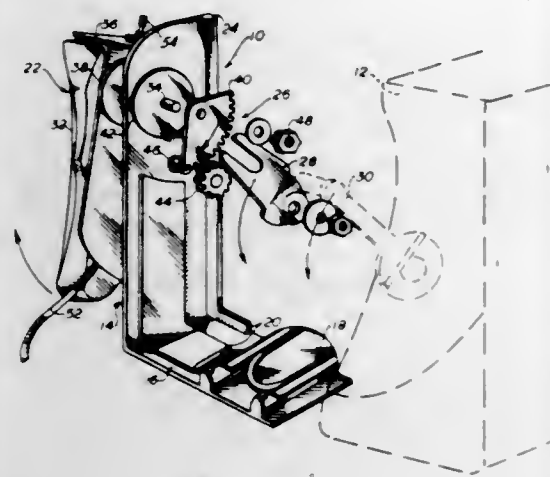
A setting member for an iris diaphragm of a camera. The setting member is formed by an inner ring carrying the iris diaphragm adjusting mechanism, and an outer ring which is provided with a grip to enable the operator to turn the setting member. The outer ring is also provided with notches which cooperate with a releasable coupling to permit retention of the setting member in selective positions.

**3,408,911  
FILM ADVANCE GRIP**  
Arthur L. Ramos, 125 Tamalpais, San Anselmo, Calif. 94960  
Filed July 19, 1965, Ser. No. 472,836  
11 Claims. (Cl. 95—86)

A twin lens reflex camera grip assembly that is designed to rapidly advance the film and actuate the camera shutter without removing the hand from the grip. A hand grip



is rotatably secured to a support member mounted on the camera, and a differential gear mechanism is coupled



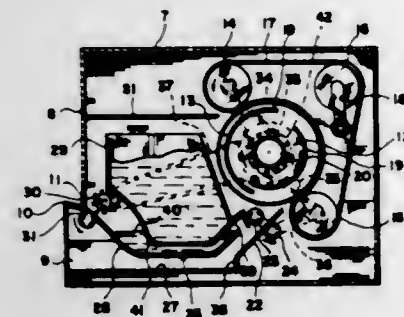
to the hand grip and adapted to engage and actuate the crank handle of the camera.

3,408,912

## COPYING MACHINES

Walter Limberger, Hamburg-Poppenbützel, Germany, assignor to Lumoprint Zindler K.G., Hamburg, Germany  
Original application July 12, 1960, Ser. No. 42,312.  
Divided and this application Oct. 23, 1965, Ser. No. 511,015

Claims priority, application Germany, July 15, 1959, L 33,733  
4 Claims. (Cl. 95—89)



A copying apparatus in which the master sheet is led in superimposed relationship with a negative layer and a positive layer inwardly through a single opening in the wall of the machine housing and is then carried around the exposure drum by a powered transport belt prior to separation of the master sheet (and its divergence to an opening in the housing) from the negative and positive layers. The negative and positive layers are passed between exclusive upper and lower guide members, the former being constituted by the convex bottom of a liquid supply reservoir, while the latter is an upwardly concave trough. At the outlet side the layers are passed between a pair of squeezing rollers.

3,408,913

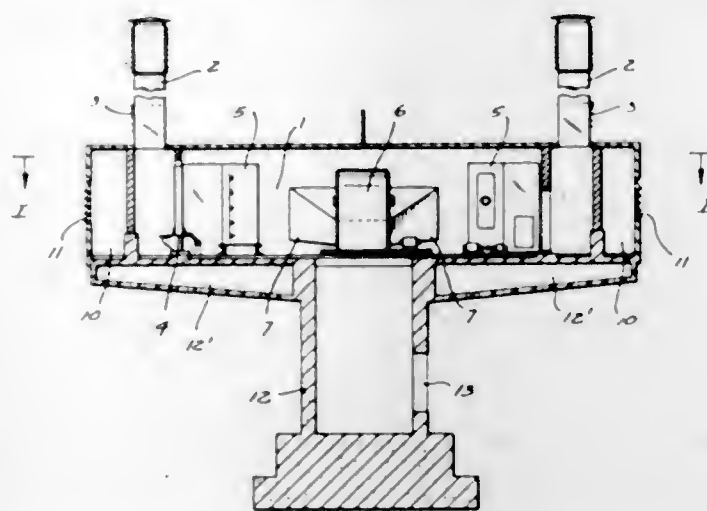
## AIR-CONDITIONING ARRANGEMENT FOR HIGH INDUSTRIAL HALLS OF LARGE OPEN AREA

Herbert Kueffner and Franz Carlsohn, Jena, Thuringia, Germany, assignors to VEB Industrieprojektierung Jena, Jena, Germany

Filed Feb. 20, 1967, Ser. No. 617,241  
11 Claims. (Cl. 98—30)

An air-conditioning arrangement for high industrial halls of large open area including chamber means supported adjacent the roof of the industrial hall, air dis-

tributing passage means extending peripherally about the chamber means, air suction means in the chamber means for sucking air from the outer atmosphere through a suction passage extending through the roof of the hall and communicating with the chamber means and for dis-



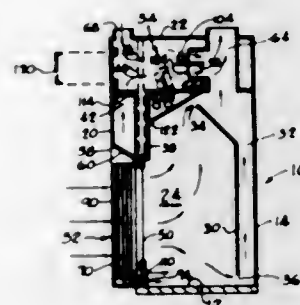
charging the air into the air-distributing passage, air-conditioning means located in the chamber means in the path of air flowing from the suction passage into the air distributing passage, and air flow guide means in openings of the outer wall of the air distributing passage.

3,408,914

## FUMEHOOD WITH AUXILIARY AIR SUPPLY AND BY-PASS CONDUIT MEANS

Joseph Bayern, Hicksville, N.Y., assignor to said Joseph Bayern and Jean A. Bayern as joint-tenants with right of survivorship

Filed Feb. 6, 1967, Ser. No. 614,080  
19 Claims. (Cl. 98—115)



A fumehood comprising a face opening and a supplementary air supply to supply supplementary air to the face opening of the fumehood when it is open, and by-pass conduit means to conduct the supplementary air to exhaust means of the fumehood when the face opening is closed. A face opening and by-pass conduit closure means cooperate with the face opening and the by-pass conduit means to cause the auxiliary air to flow toward the face opening when open and through the by-pass conduit to the exhaust when the face opening is closed.

3,408,915

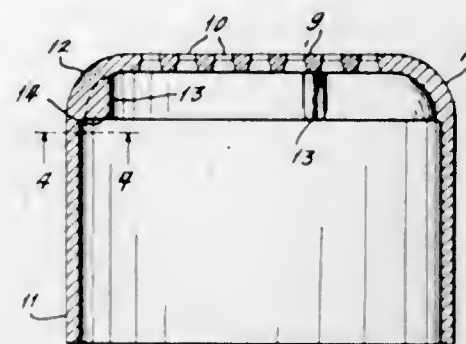
## COWLING DEVICE FOR UNDERGROUND VENT STACK

Edward H. Cunliff, Ladue, Mo., assignor to Spuck Iron & Foundry Company, St. Louis, Mo., a corporation of Missouri

Filed July 25, 1966, Ser. No. 567,770  
2 Claims. (Cl. 98—122)

An assembly encasing and protecting the upper end of the vent stack extending upwardly from an underground

conduit line. An inverted cup-shaped hood which includes a plate member overlies the upper end of the stack substantially flush with the ground and a skirt portion de-



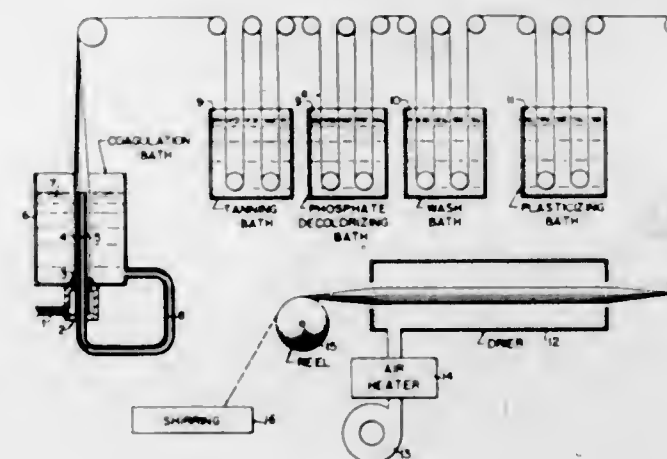
pends from the perimeter of the plate member which externally surrounds the stack. The soil engages the exterior of the skirt portion and serves to maintain the hood in position over the stack.

3,408,916

## EDIBLE COLLAGEN SAUSAGE CASING AND METHOD OF PREPARING SAME

Mauj A. Cohly and Albin F. Turbak, Danville, Ill., assignors to Tee-Pak, Inc., Chicago, Ill., a corporation of Illinois

Filed May 19, 1965, Ser. No. 457,057  
5 Claims. (Cl. 99—176)



An edible collagen sausage casing is prepared by extruding a thin-walled tube of collagen fibrils, contacting the extruded tubular casing with a solution of a ferric salt at a pH of about 2.0—5.0, then contacting the tanned casing with a solution containing an ionic phosphate, such as phytic acid, orthophosphoric acid, polyphosphoric acid and acid salts of orthophosphoric acid, at a pH of 1.0—4.0, and finally washing and drying the casing. The ferric salt is effective to tan the collagen fibrils to produce an edible casing of satisfactory strength and the phosphate solution is effective to prevent the discoloration of the casing by the iron compounds.

3,408,917

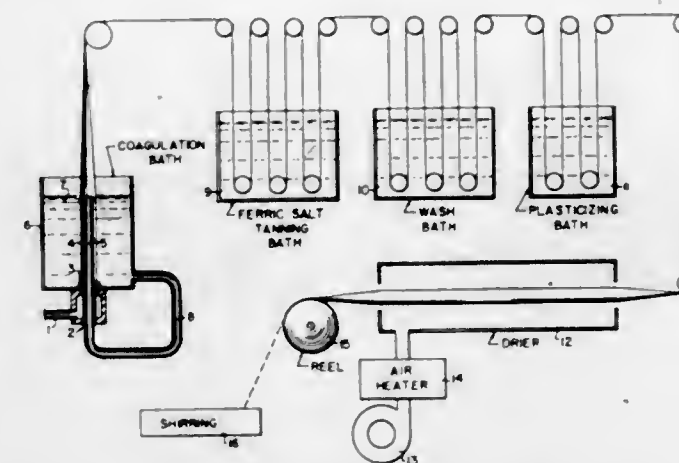
## IRON TANNING OF EDIBLE COLLAGEN CASINGS

Mauj A. Cohly, Danville, Ill., assignor to Tee-Pak, Inc., Chicago, Ill., a corporation of Illinois

Filed May 19, 1965, Ser. No. 457,149  
5 Claims. (Cl. 99—176)

An edible collagen casing is prepared from animal hides by grinding a corium split at a temperature less than about 20° C. to produce a slurry of finely divided collagen in water. The slurry is acid swollen and extruded through

an annular die to form a collagen tube. The extruded tube is coagulated in a concentrated salt bath and tanned



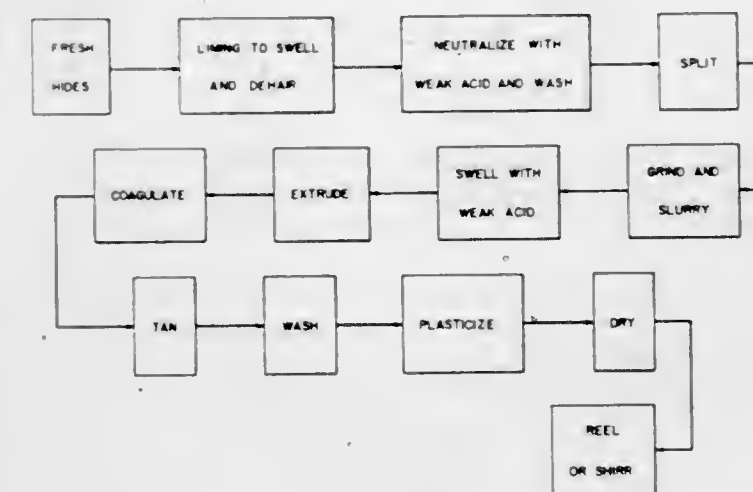
by immersing in a solution of a 10—40% basic ferric compound at a pH of 2—5.

3,408,918

## METHOD OF PREPARING AN EDIBLE TUBULAR COLLAGEN CASING

Robert D. Talty and Mauj A. Cohly, Danville, Ill., assignors to Tee-Pak, Inc., Chicago, Ill., a corporation of Illinois

Filed Mar. 26, 1965, Ser. No. 442,885  
2 Claims. (Cl. 99—176)



An edible tubular collagen casing is prepared from limed animal hides. Animal hides which are either fresh or salt-cured are treated with a lime-containing solution for a period of 3—12 hours to at least partially de-hair the hide. The hide is then mechanically split to remove the epidermal layer and remaining hair and the lime in the corium layer removed by neutralization with a non-toxic acid and washing to remove by-products salts. The neutralized corium layer is ground at a temperature less than 20° C., acid swollen, extruded in tubular form, tanned, washed and dried to produce a translucent non-fibrous edible product.

3,408,919

## METHOD FOR FREEZING COFFEE EXTRACT

Herbert Guggenheim, Tenafly, N.J., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 4, 1965, Ser. No. 430,492  
4 Claims. (Cl. 99—192)

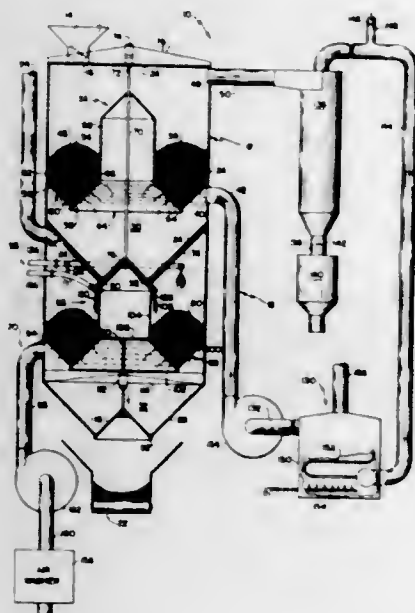
An improved method for obtaining release of coffee extract frozen at relatively mild temperatures (—20° F. or above) from a freezing surface, such as a belt or tray, by sub-cooling the extract to a lower temperature, at



least  $-30^{\circ}$  F. with flexing of said surface or, in the alternative, simply by cooling to below  $-60^{\circ}$  F. without the need for flexing.

### 3,408,920 APPARATUS FOR ROASTING COFFEE AND THE LIKE

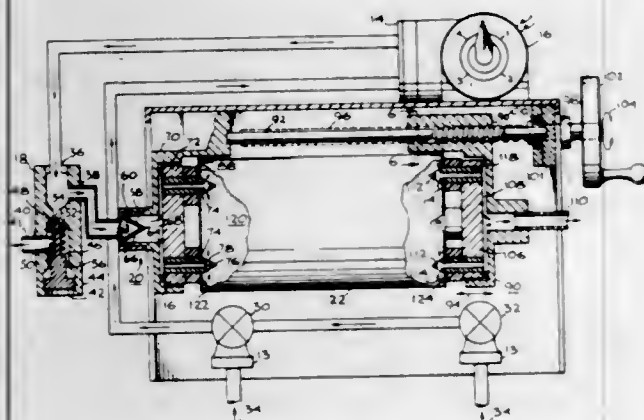
Horace L. Smith, Jr., Richmond, Va., assignor to White Consolidated Industries, Inc., a corporation of Delaware  
Original application Jan. 24, 1966, Ser. No. 522,691, now Patent No. 3,345,181, dated Oct. 3, 1967. Divided and this application Oct. 3, 1967, Ser. No. 672,588  
11 Claims. (Cl. 99-236)



Roasting apparatus including a reaction vessel with an upper roasting compartment and a lower cooling compartment, a system for supplying a heated fluid to the upper compartment and a relatively cool fluid to the lower compartment, and arrangements for admitting solids into the upper compartment, for transferring them from the upper compartment to the lower compartment, and for discharging them from the lower compartment.

### 3,408,921 BEVERAGE MAKING ARRANGEMENT

Donald L. Freese, 813 S. Cyprus,  
Santa Ana, Calif. 92701  
Filed Feb. 14, 1966, Ser. No. 527,127  
10 Claims. (Cl. 99-295)

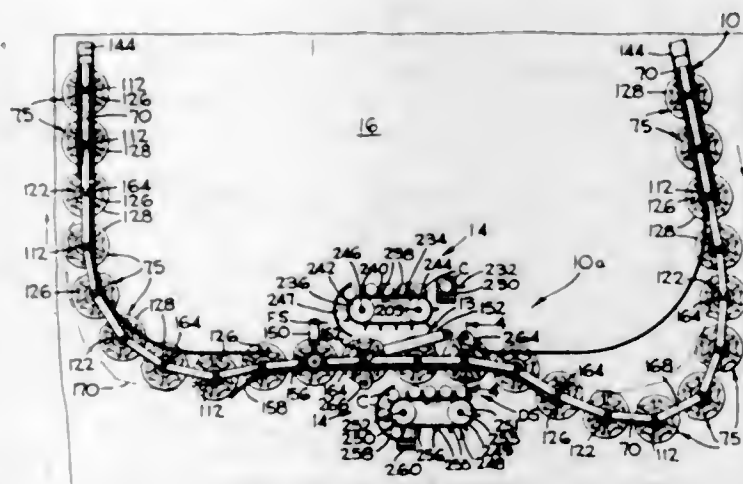


There is described herein an improved beverage making and dispensing arrangement in which the flow of water through a flow control valve and a check valve into a water reactive product, such as coffee, is carefully con-

trolled in response to the characteristics of the water reactive product being made. The flow through the water reactive product which may be utilized in applicant's invention herein in its original container by insertion thereof in applicant's beverage making arrangement is varied in response to the actual pressure existing in the container and consequently applicant provides a bypass flow as well as the flow of water into the container so that as the pressure in the container builds up, for example in brewing coffee, the flow of water to the container is decreased and the bypass flow increased since the greater extraction of the beverage is obtained at higher pressures. The bypass flow and the concentrate flow from the container is then mixed to provide a consistent beverage.

### 3,408,922 HYDROSTATIC COOKER CONVEYOR SYSTEM

Samuel A. Mencacci, Antwerp, and John G. Hagerborg, St. Nikolaas-Waas, Belgium, assignors to International Machinery Corporation S.A., St. Nikolaas-Waas, Belgium, a corporation of Belgium  
Filed Mar. 14, 1967, Ser. No. 623,068  
10 Claims. (Cl. 99-362)



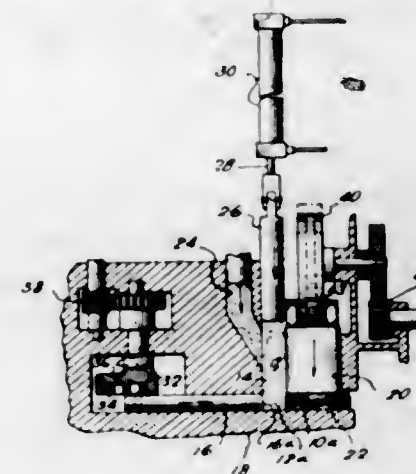
A hydrostatic cooker having a continuously driven processing conveyor provided with a plurality of evenly spaced carriers thereon. A feed and discharge apparatus including a mechanism for intermittently driving a container transfer portion of the processing conveyor whereby containers are fed into and discharged from the carriers at the transfer portion of the conveyor when the transfer portion is stationary. The intermittent driving mechanism of the feed and discharge apparatus being effective to move the transfer portion of the processing conveyor at the same overall linear speed as the continuously driven portion of the conveyor.

### 3,408,923 METHOD FOR PROCESSING HAY WAFERS

Richard W. Bushmeyer, Rockford, Ill., assignor to J. I. Case Company, a corporation of Wisconsin  
Filed July 28, 1966, Ser. No. 568,638  
1 Claim. (Cl. 100-35)

A method for forming hay pellets, and the like, the method comprising using a forming chamber having an end wall with means of access for the hay which is to be compressed and a piston for converting the hay in the chamber into a wafer by pressing it against the end wall. A holding chamber is located adjacent the end wall and extends transversely away therefrom to the exterior of the machine. A transverse piston is present to push the wafers, after they are pressed, from the forming chamber into the holding chamber. One wall of the holding chamber consists of a retractable piston for pressing the wafers in the holding chamber to restrain them during the wafer forming step so as to block entrance to the holding cham-

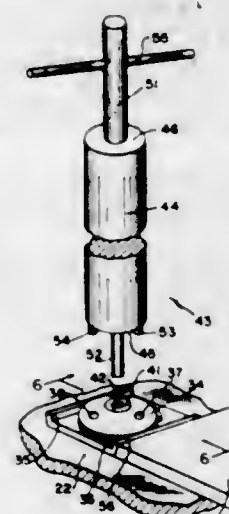
ber. The piston is timed to retract after the wafer has been formed in the forming chamber immediately prior to the time the wafer is moved from the forming chamber



into the holding chamber to allow all wafers to be moved. The piston then extends again to restrain the wafers during the next compression step in the forming chamber.

### 3,408,924 DIE LOCKING

Joseph F. Mueller, Dedham, Mass.  
(490 Centre St., Quincy, Mass. 02169)  
Filed Sept. 30, 1966, Ser. No. 583,216  
12 Claims. (Cl. 100-35)



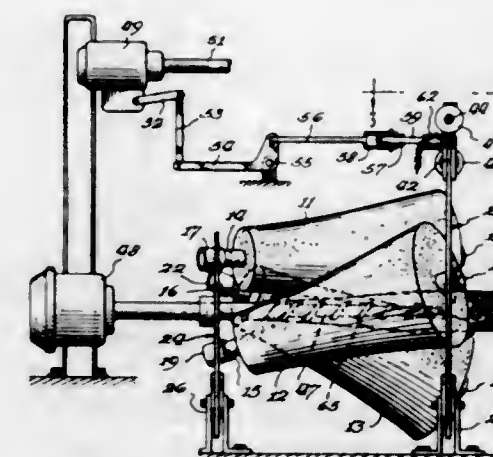
A base has a threaded opening for accommodating a locking screw that passes through an eccentric opening in a generally circular cam formed with two other openings separated from the eccentric opening by a diameter of the cam. A tool is formed with two projections that fit into the latter openings and a rotatable shaft that fits in the locking screw so that rotating the tool with the shaft in the locking screw first causes the cam to lock the die in position as the cam rotates about the eccentric axis against the die and then locks the cam into the locking position as the locking screw is tightened. Reverse rotation of the tool results in rapid release of the die as the locking screw is first loosened and then the cam rotated away from the die about the eccentric axis.

### 3,408,925 APPARATUS FOR FORMING FEED CROP MATERIAL INTO ROLLS OF UNIFORM DENSITY

Richard W. Bushmeyer, Rockford, Ill., assignor to J. I. Case Company, a corporation of Wisconsin  
Filed May 9, 1967, Ser. No. 637,280  
10 Claims. (Cl. 100-45)

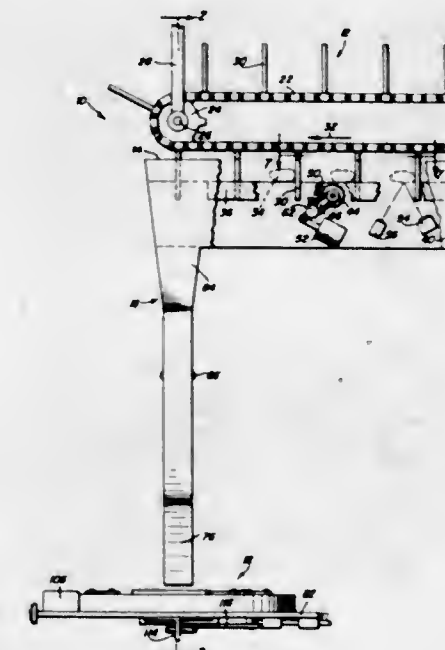
Feed crop material is fed into the apparatus as the apparatus is driven or pulled across a field, and is formed

into an elongated roll of substantially uniform density that is moved axially from the apparatus. The apparatus has speed control means to vary the rate of the axial movement of the roll, and load sensing means to regulate the speed control means. As the apparatus is moved across the field at a uniform speed, the amount of feed crop



### 3,408,926 FISH PACKING MACHINE

John R. Rogerson, P.O. Box 10, Leonardville,  
New Brunswick, Canada  
Filed Oct. 14, 1966, Ser. No. 586,717  
10 Claims. (Cl. 100-49)

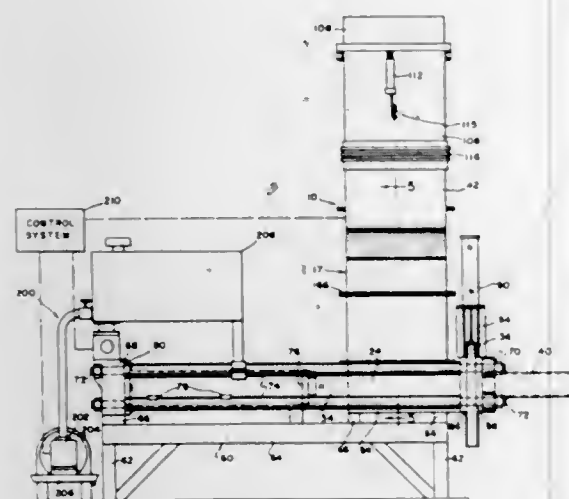


Fish delivered in random orientation to a conveyor are orientated and deposited by the conveyor into a chute from which the fish exit into a molding device. A predetermined number of fish are received in the molding device during its incremental advancement relative to the chute at which point the device is triggered into operation. The same numbers of fish are thereby compressed and transferred to containers moving along a production line.



### 3,408,927 PRESS FOR MAKING BLOCKS FROM LOOSE FIBER MATERIAL

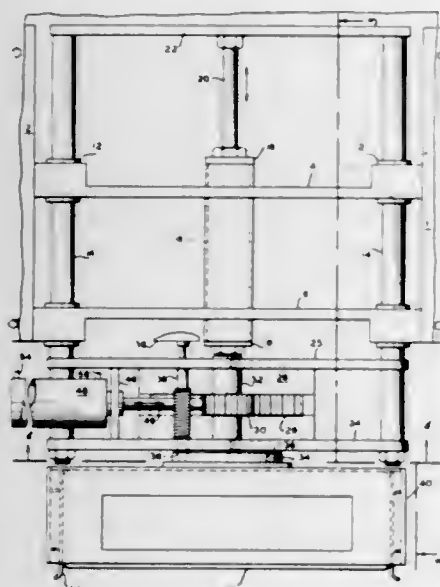
Charles B. Willock, Milwaukie, Oreg., assignor to Portco Corporation, Portland, Oreg., a corporation of Oregon  
Filed Sept. 26, 1966, Ser. No. 581,790  
8 Claims. (Cl. 100—215)



Loose asbestos is inserted into a charging chamber through a charging opening, and a platen is driven downwardly, rapidly at first, by arcuate links and arms forming toggle joint linkages and then slowly and with great force. Then a ram compacts horizontally to form a block.

### 3,408,928 ARTICLE LOADING APPARATUS

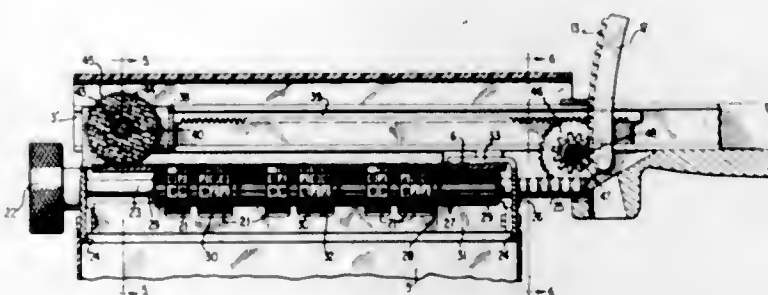
Dan E. Perry, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed Mar. 1, 1966, Ser. No. 531,002  
7 Claims. (Cl. 101—35)



A printing machine having a printing station is provided with means for automatically handling articles to be printed. The handling means comprises an article holding means rotatably mounted on one end of a reciprocating member, means for actuating the member and the article holding means between an extended position and the printing station, and means for selectively rotating the article holding means when in the extended position. Locking means are provided to prevent rotation of the article holding means in the printing station.

### 3,408,929 MERCHANDISING MARKER

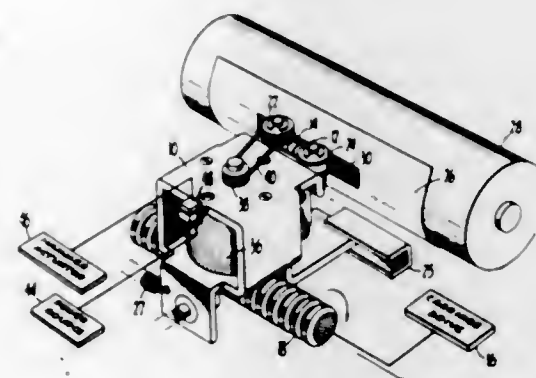
Jacob H. Drillick, Hackensack, N.J., assignor to Oh-Tronics, Montvale, N.J., a corporation of New York  
Filed Aug. 3, 1965, Ser. No. 476,796  
4 Claims. (Cl. 101—69)



This device for marking price tags is designed to print identical prices upon each section of a composite tag and may remove a portion of each section of the tag if it previously displayed an old price which is to be changed. The small and lightweight construction makes it possible to re-mark price tags without their being removed from the merchandise to which they are attached and without removing the merchandise from display racks. Print wheels may be adjusted to the desired position for printing the selected price.

### 3,408,930 HIGH-SPEED PRINTING WITH CONTINUOUSLY MOVING CARRIAGE

Leland D. Chamness, Castro Valley, and Andre F. Marion, Berkeley, Calif., assignors to Friden, Inc., a corporation of Delaware  
Continuation-in-part of application Ser. No. 553,961, May 31, 1966. This application Oct. 2, 1967, Ser. No. 672,137  
9 Claims. (Cl. 101—93)



A high-speed serial printer having a single print hammer and a single continuously rotating endless character belt, both of which are mounted on a single carriage which moves continuously along the print line. The character belt rotates about an axis perpendicular to the direction of travel of the carriage.

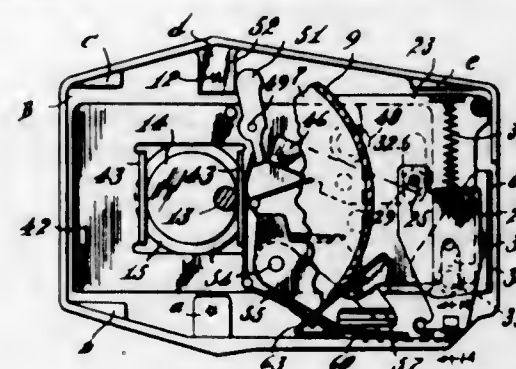
### 3,408,931 PORTABLE TICKET PRINTER

Charles C. Austin, Nashua, N.H., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada  
Continuation-in-part of application Ser. No. 426,153, Jan. 18, 1965. This application June 1, 1965, Ser. No. 460,342  
7 Claims. (Cl. 101—318)

For printing labels, tickets, tags, etc. mounted in succession on a tape by means of pressure-sensitive adhe-

sive, a portable device of the dial-set type comprising a reciprocating printing head which snaps from retracted to printing position, a reciprocating carriage for cocking

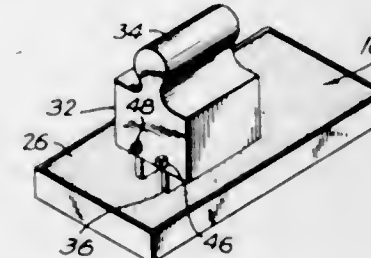
the latter applies a first component normal to the surface and a second component along the surface to take up any slack developing in the blanket under running conditions.



the printing head and feeding the tape and a rotary actuator for reciprocating the carriage when rotated in either direction.

### 3,408,932 GAME

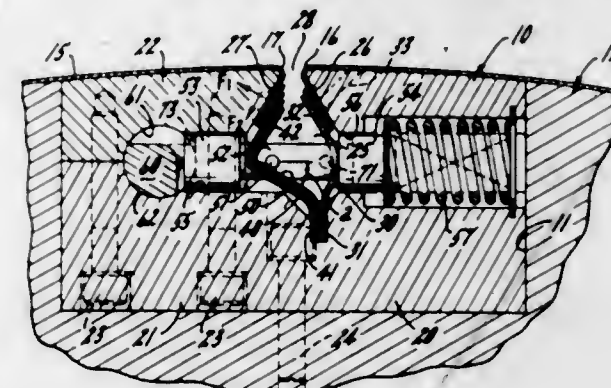
Arthur S. Mucci, 3819 Merritt Ave., Bronx, N.Y. 10466  
Filed Aug. 29, 1966, Ser. No. 575,606  
1 Claim. (Cl. 101—368)



A game including a plurality of stamps each having the form of an outline of one of a group of parts of a jointed body for cooperatively stamping the outline of said body in one of an endless series of combinations for coloring. Each stamp includes a rigid support with a handle and a stamping ridge, at least one ridge of which forms an open ended outline having two ends adjacent the edge of the corresponding support. An ink pad and coloring instruments are also provided.

### 3,408,933 CONTINUOUS TAKE-UP CLAMPING ARRANGEMENT FOR BLANKET IN PRINTING PRESS

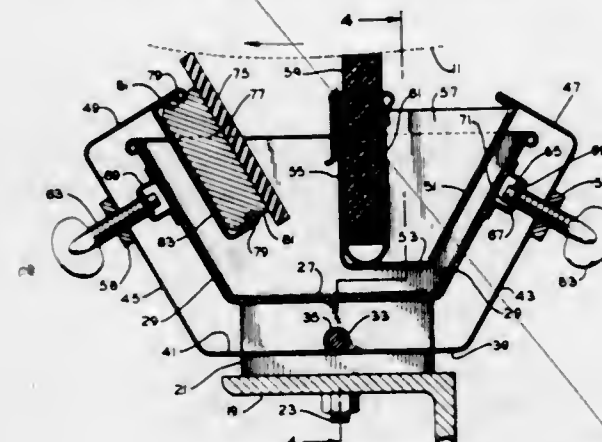
Carl J. Hermach, Westchester, and Leonard I. Tafel, La Grange, Ill., assignors to Miehle-Goss-Dexter Incorporated, Chicago, Ill., a corporation of Delaware  
Filed Mar. 24, 1966, Ser. No. 537,047  
10 Claims. (Cl. 101—415.1)



A cylinder for a blanket in a printing press in which the ends of the blanket are received in a groove having an access slot and an undercut seating surface with a leaf spring for gripping the end of the blanket and a takeup spring for applying force against the leaf spring so that

### 3,408,934 BLANKET CLEANING ATTACHMENT FOR OFFSET PRESSES

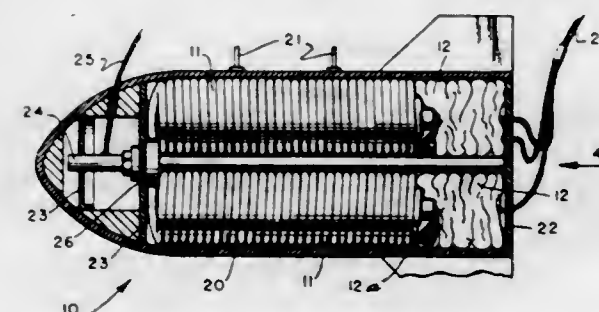
Shelby M. Clausen, 1407 E. Richwood Blvd., Peoria, Ill. 61603  
Continuation-in-part of application Ser. No. 496,567, Oct. 15, 1965. This application Mar. 7, 1967, Ser. No. 634,398  
21 Claims. (Cl. 101—425)



An attachment for cleaning cylindrical surfaces, such as the surface of an offset printing press blanket cylinder, comprising a tray arranged for stationary mounting adjacent the surface, a cleansing fluid pan in the tray, and containing a wick elongated parallel to the axis of the surface and having an edge engageable with the surface for distributing the cleansing fluid thereto, and a similarly elongated wiper blade mounted in the tray and having an edge engageable with the surface for wiping cleansing fluid and accumulated foreign matter from the surface and depositing the same in the tray.

### 3,408,935 FLEXIBLE LINE DELIVERY METHOD AND DEVICE FOR CHEMICAL AND INCAPACITATING AGENTS

Lawrence M. Biggs, Jr., China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy  
Filed Aug. 18, 1964, Ser. No. 390,787  
3 Claims. (Cl. 102—4)



1. A flexible, tubular warhead for delivering and dispersing an incapacitating agent above a given surface, comprising in combination:

- a flexible, tubular container of a first given diameter, formed of a uniformly rupturable fabric, and having opposite ends defining leading and trailing container ends;
- a fluent, non-explosive incapacitating agent uniformly disposed within said container in a manner such as to substantially fill the container;
- an elongated flexible explosive charge of a second given diameter disposed within said agent in co-



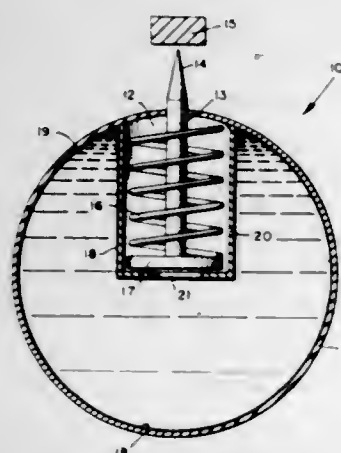
axial alignment with said container adapted to explode and thereby rupture said container and disperse said agent;

a propelling device connected with the leading end of said container adapted to act thereon to propel the container in trailing fashion through an arcuate trajectory;

an aerodynamic drag device connected with the trailing end of said container adapted to create an aerodynamic drag effect acting in opposition to said propelling device at the trailing end of said container, whereby said propelling device and the leading end of said container may be caused to precede the trailing end of said container as the container is propelled along its trajectory; and

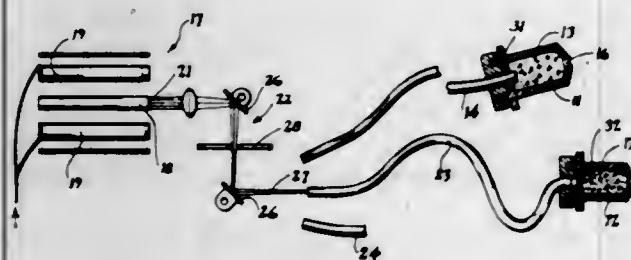
a detonating device arranged in said propelling means and connected with said charge adapted to detonate said charge at a predetermined altitude with respect to said given surface, whereby the charge may be exploded and the incapacitating agent dispersed above the surface.

**3,408,936**  
**ALL-ATTITUDE FUZE**  
 Howell M. Sumrall, 420 Lenore St.,  
 Ridgecrest, Calif. 93555  
 Filed June 20, 1967, Ser. No. 648,192  
 3 Claims. (Cl. 102-70)



An all-attitude sensitive fuze which comprises a spherical hollow housing adapted to contain mercury and provided with an axial bore extending about midway having a firing pin slidably positioned therein. Movement increases the pressure of the mercury within the housing which actuates the firing pin moving it forward into stab position of a primer or detonator.

**3,408,937**  
**LIGHT ENERGIZED EXPLOSIVE DEVICE**  
 Donald J. Lewis, Marina de Rey, and Ivan G. Coombs,  
 Redondo Beach, Calif., assignors to Space Ordnance  
 Systems, Inc., El Segundo, Calif., a corporation of  
 California  
 Filed Aug. 24, 1966, Ser. No. 574,796  
 6 Claims. (Cl. 102-70.2)



This invention relates to apparatus for igniting an explosive device such as a pyrotechnic detonator or initiator.

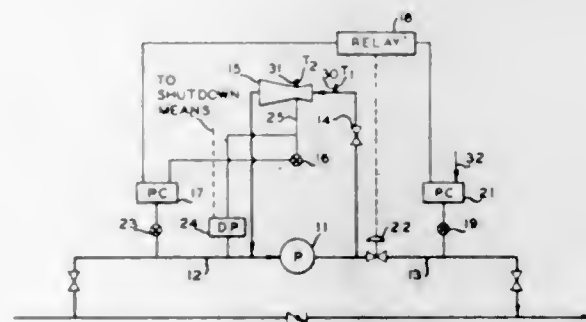
It is characterized by the use of laser energy conveyed to the explosive device by means of a light pipe, sometimes known as fibre optics.

**3,408,938**  
**AIRBORNE TRIGGERING SYSTEM**  
 Roger Pagazani, Fontenay-aux-Roses, and Marcel Palazo,  
 Bourg-la-Reine, France, assignors to Compagnie Fran-  
 caise Thomson-Houston-Hotchkiss Brandt  
 Filed Dec. 28, 1966, Ser. No. 605,291  
 Claims priority, application France, Dec. 30, 1965,  
 44,316  
 10 Claims. (Cl. 102-70.2)



The invention relates to an airborne triggering system with at least one transmitting antenna and one or more receiving antennas aboard a missile or other vehicle, operating on a continuous high-frequency carrier modulated in amplitude by random low-frequency oscillations; a delayed local oscillation derived from the modulated outgoing carrier is mixed with echoes received from a reflecting object so as to produce an output signal which varies in amplitude with the distance of the object and in frequency with the relative velocity thereof. In a preferred embodiment, either or both antenna systems have a pattern of radiation defined by two forwardly diverging coaxial cones centered on the flight path of the vehicle.

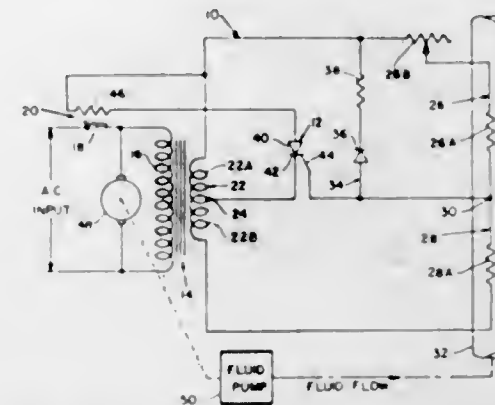
**3,408,939**  
**FLOW CONTROL**  
 Gerald P. Jennings, Bartlesville, Okla., assignor to  
 Phillips Petroleum Company, a corporation of  
 Delaware  
 Filed Nov. 3, 1966, Ser. No. 591,814  
 8 Claims. (Cl. 103-11)



A method for controlling the suction pressure of a pump transporting liquid wherein the vapor pressure of the transported liquid is determined and the suction pressure of the pump is controlled in response to the determined vapor pressure so as to maintain the suction pressure at a value above the determined vapor pressure which will prevent vaporization in the pump. Apparatus for controlling the suction pressure of the pump includes means to determine the vapor pressure of a liquid being trans-

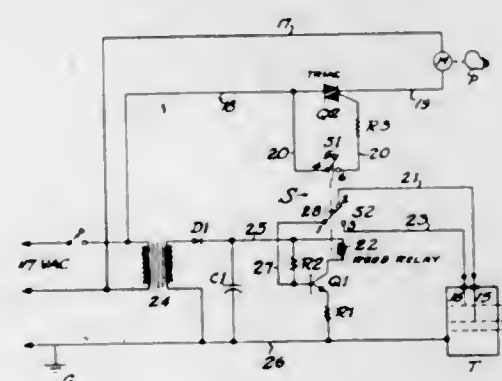
ported through the pump and means to control the suction pressure of the pump in response to the vapor pressure determination.

**3,408,940**  
**FLOW CONTROL CIRCUIT**  
 Robert J. McGrogan, South Bend, Ind., assignor to  
 Robertshaw Controls Company, Richmond, Va.,  
 a corporation of Delaware  
 Filed July 27, 1966, Ser. No. 568,186  
 15 Claims. (Cl. 103-25)



This disclosure relates to an electronic low flow control circuit. An A.C. bridge circuit is used to control conduction of a silicon controlled rectifier. Two temperature sensitive elements are used in adjacent legs of the bridge and are self-heated by the current flow through the elements. One of the legs has a unidirectional circuit connected in parallel with it causing one temperature sensitive element to be self-heated to a greater extent than the other temperature sensitive element. The temperature sensitive elements are positioned to respond to the flow of material in a system such as a water supply system. So long as the flow is above a desired level the thermal energy tending to heat the temperature sensitive elements is carried away causing the output of the bridge circuit to remain below that needed to cause the silicon controlled rectifier to conduct. When the flow drops to an undesired level the bridge circuit provides an output signal sufficient to cause the silicon controlled rectifier to conduct. The current flow through the silicon controlled rectifier is used to operate a thermal delay switch connected to control the flow of material in a system.

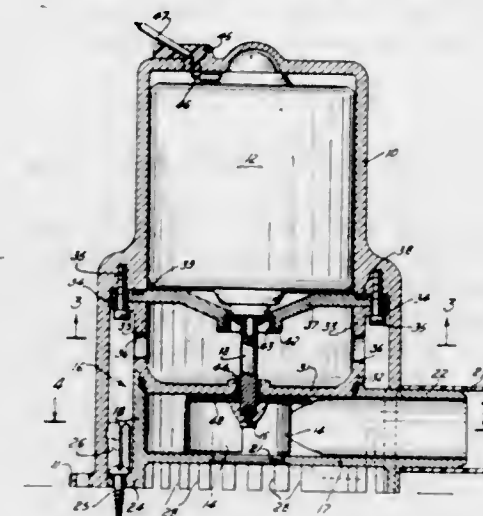
**3,408,941**  
**TANK FILLING CONTROL CIRCUIT**  
 Kenneth G. Sorensen, 12118 Ohio,  
 Los Angeles, Calif. 90025  
 Filed Apr. 13, 1967, Ser. No. 630,736  
 7 Claims. (Cl. 103-25)



Disclosed herein is an electronic control circuit including a liquid level responsive transistorized pilot circuit controlling a sensitive reed relay with a current of only a few milliamperes, which in turn controls a triac switching unit for supplying current to a pump on demand in

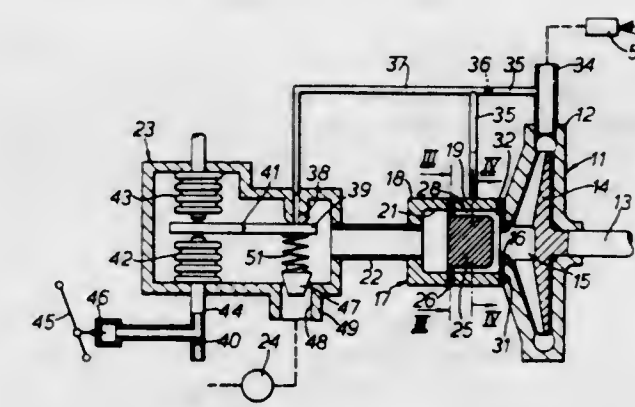
response to low liquid level in a tank, and for turning off the pump when the tank is refilled by operation of the pump.

**3,408,942**  
**BILGE PUMP**  
 William R. Davenport, Bricktown, and Elmer T. Davenport, Point Pleasant, N.J., assignors to Crowell Designs  
 Inc., a corporation of New Jersey  
 Filed May 23, 1967, Ser. No. 640,597  
 8 Claims. (Cl. 103-87)



An air-tight bell-shaped housing accommodates a motor in its closed upper portion, an impeller being mounted on the lower end of the motor shaft. A pump body within open lower end of housing, but unconnected thereto, defines impeller chamber. A pump cover, seated on pump body, is fixed to housing by walls extending upwardly from cover. Walls have holes for escape of liquid accumulating above the cover. Plate fixed to housing below motor supports motor and mechanically seals it, in liquid-tight fashion, from lower part of housing.

**3,408,943**  
**CENTRIFUGAL PUMPS FOR LIQUIDS**  
 Ronald Rimmer, Churchdown, England, assignor to Dowty  
 Fuel Systems Limited, Cheltenham, England, a British  
 company  
 Filed Aug. 22, 1966, Ser. No. 573,992  
 Claims priority, application Great Britain, Aug. 31, 1965,  
 37,123/65, 37,124/65  
 8 Claims. (Cl. 103-97)



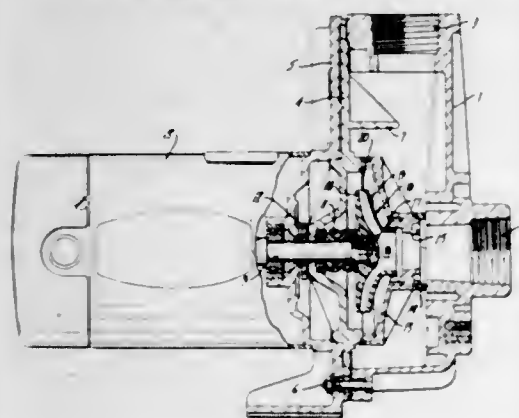
A flow regulating mechanism is disclosed for a liquid supply system of the type wherein a hydraulic load is fed by a centrifugal pump having the inlet and outlet thereof adjacent the axis and the periphery of the pump chamber, respectively, and an operating speed at which its delivery rate exceeds the upper limit of the range of flow rates over which the demand may vary, so that the liquid flow-through in the chamber assumes the form of an annulus in the relatively peripheral portion thereof, the relatively axial portion of the chamber being closed to atmosphere



so that a hollow core is formed centrally of the liquid annulus to enable it to compensate for variation in the load at a particular demand by adjusting its radial depth. The flow regulating mechanism comprises a source of low pressure liquid which communicates with the pump inlet through a connection having a passage therein for regulating the pump inflow. The passage has an orifice opening thereto, at one peripheral boundary of the inflow, and control means are connected to the passage to discharge a variable amount of additional liquid into the inflow, through the orifice, to generate a pressure change in the inflow which is variable over a range corresponding to the range of inflow rates needed to satisfy the demand.

### 3,408,944 IMPELLER CONSTRUCTION FOR A CENTRIFUGAL PUMP

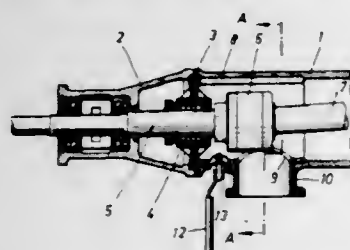
Robert L. Belonger and Donald L. Seuser, Delavan, Wis., assignors to Sta-Rite Industries, Inc., Delavan, Wis., a corporation of Wisconsin  
Filed Dec. 2, 1966, Ser. No. 598,741  
6 Claims. (Cl. 103-114)



An impeller assembly including a plastic impeller having an axial recess and a plastic insert is bonded within the recess. The insert is reinforced with fibrous material and is provided with a threaded axial bore to receive a drive shaft. The inner end portion of the insert has a substantially larger cross-sectional dimension than the outer end to lock the insert against the axial movement and the outer surface of the insert is provided with longitudinal surface deviations which prevent relative rotation between the insert and the impeller.

### 3,408,945 ECCENTRIC WORM PUMP HAVING A ROTARY SLIDE

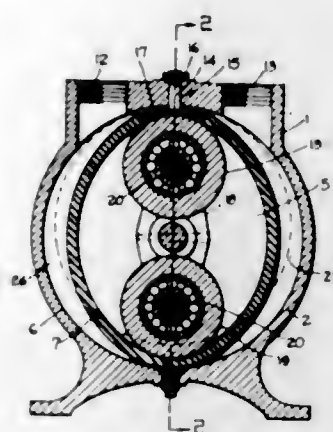
Max Streicher, Wangen, Germany, assignor of one-half to Oskar Seidl, Munich, Germany  
Filed Apr. 3, 1967, Ser. No. 628,097  
Claims priority, application Germany, Apr. 4, 1966, St 19,850  
2 Claims. (Cl. 103-117)



An eccentric worm pump with a rotary slide for removal of the feeding medium comprising a shaft housing receiving a drive shaft rotatably mounted therein. A cover is disposed in a plane perpendicular to the drive shaft and closes the shaft housing in axial direction. A rotary slide, consisting of a hollow cylinder, has at least one control opening and is guided concentrically on the inner wall of the shaft housing.

### 3,408,946 DIAPHRAGM PUMP WITH DOUBLE COMPRESSION ROLLER

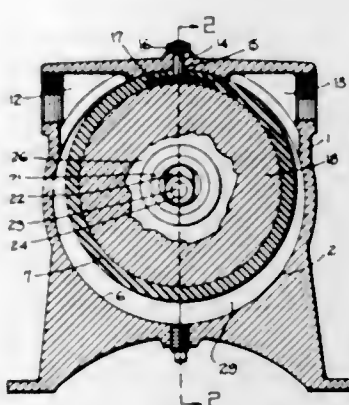
James O. McMillan, Wichita, Kans., assignor to William J. Easton, Jr., Wichita, Kans.  
Continuation of application Ser. No. 28,720, May 12, 1960. This application Mar. 14, 1967, Ser. No. 623,047  
14 Claims. (Cl. 103-149)



A diaphragm pump including a substantially annular pumping chamber defined between a housing and a flexible diaphragm within and sealed to the housing, such diaphragm being disposed about a rotor to engage a plurality of circumferentially spaced circular compression members that are in turn rotatably mounted on the rotor, each of the portions of the diaphragm engaging the rotor being forced thereby into engagement with the housing, whereby rotation of the rotor causes the compression members to force a fluid in the chamber from an inlet to an outlet in communication therewith and on opposite sides of a position of fixed attachment of the diaphragm to the housing.

### 3,408,947 DIAPHRAGM PUMP WITH SINGLE COMPRESSION ROLLER

James O. McMillan, Wichita, Kans., assignor to William J. Easton, Jr., Wichita, Kans.  
Continuation of application Ser. No. 28,722, May 12, 1960. This application Mar. 14, 1967, Ser. No. 623,048  
18 Claims. (Cl. 103-149)

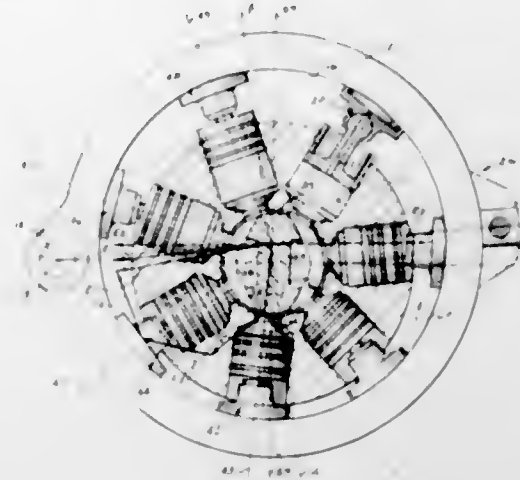


A diaphragm pump having a substantially annular pumping chamber defined between a housing and a flexible diaphragm within and sealed to the housing, such diaphragm being disposed about the periphery of an eccentrically mounted, generally circular compression member whereby the compression member cyclically and in a circumferentially progressive manner urges the diaphragm radially outward into contact with the housing to cause circumferential movement of fluid in the pump chamber from an inlet to an outlet communicating therewith on opposite sides of a fixed position of attachment of the diaphragm to the housing.

### 3,408,948 POSITIONING OF CONTROL RING

Keith A. Boyd, Mount Clemens, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio

Filed Dec. 12, 1966, Ser. No. 600,951  
11 Claims. (Cl. 103-161)



A fluid displacement device having a plurality of cylinders and pistons in a rotatable cylinder block, said cylinder block having fluid inlet and outlet ports and a seal area therebetween. Control means are arranged around the cylinder block for controlling reciprocation of said pistons within said cylinders, said control means being movable from a zero-displacement position in which said pistons are stationary to a driving position causing fluid flow. Restoring means are provided which generates a restoring moment, which is independent of the internal pump pressure and which urges the control means toward its zero-displacement position. Means are also provided for rendering the control means freely movable radially in any direction with respect to the center around which the cylinders rotate, the magnitude of said movement being sufficient to change the reaction against said control means by said pistons as they cross said seal areas to cause same to move toward the zero-displacement position from at least the positions of maximum displacement in either direction of said control means.

### 3,408,949 BOTTOM HOLE GAS-LIQUID SEPARATOR

Walter J. Hart, Jr., Odessa, Tex., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 22, 1966, Ser. No. 596,157  
3 Claims. (Cl. 103-234)

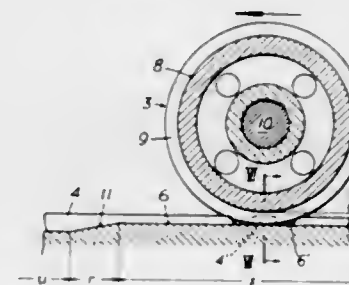


Apparatus for intermittently producing fluids through a well producing gas and liquid under a pressure insufficient to cause flowing of the well in which a float tube encircling the lower end of production tubing is adapted

to move vertically within a housing extending downwardly from the lower end of the production tubing. Ports in the upper end of the housing allow liquid to enter the housing and float the float tube to an upper position to close a valve in the lower end of the production tubing. Filling of the float tube causes the float tube to move to a lower position opening the valve and permitting liquid to enter the production tubing.

### 3,408,950 RAILWAY VEHICLE SUPPORTED ON THE WHEEL FLANGES AT CROSSINGS

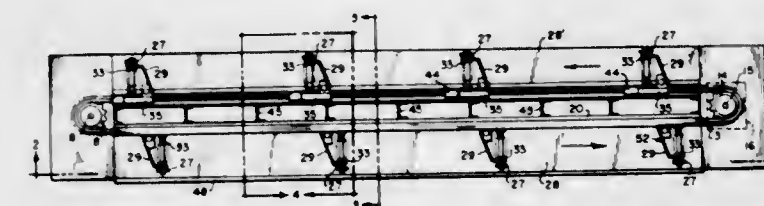
Othmar Puhringer, Linz, Austria, assignor to Vereinigte Österreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria  
Filed Jan. 9, 1967, Ser. No. 608,070  
Claims priority, application Austria, Jan. 28, 1966, A 781  
3 Claims. (Cl. 104-141)



A rail vehicle for use in a metallurgical plant is described. To avoid impact shocks at rail crossings, the rails are provided with grooves on both sides and are disconnected in the region of the intersection. In the region of disconnection, the groove bottoms are sloped to provide ramps. The rail wheels each have two load bearing surfaces, the first being provided by the wheel tread and the second by the peripheries of the wheel flanges which normally act to guide the wheels on the rail. While on the rail, the wheel flanges are out of contact with the groove bottoms and act merely to guide the wheel on the rail. As a wheel approaches an intersection, the wheel flanges contact the ascending ramp portion of the groove bottom and ride up slightly. In the region of disconnection, the wheel flanges support the full load carried by the wheel. After crossing the intersection the wheel rolls down the corresponding descending ramp, transferring the load from the flanges to the wheel tread portion as it rolls into contact with the rail.

### 3,408,951 ROLLER TYPE VEHICLE CONVEYOR

Kurt J. Heinicke, Richard B. Bowser, and Paul K. Shafer, Hollywood, Fla.; said Bowser and said Shafer assignors to Heinicke Instruments Company, Hollywood, Fla., a corporation of Florida  
Filed Aug. 31, 1966, Ser. No. 576,426  
1 Claim. (Cl. 104-172)



An apparatus for moving a vehicle, such as an automobile, through a so-called "car wash," the apparatus comprising a driven endless chain having laterally projecting axles carrying wheels and rollers. The rollers have spiral peripheral surfaces for engagement with one



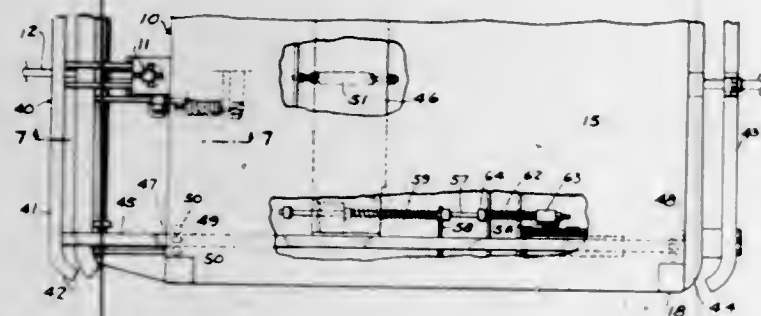
wheel at a time of the car, and preferably one of the front wheels thereof, to thereby move the car. When the limit of movement of the car by the engagement with its front wheel is reached, a following roller engages the rear wheel of the car and moves the car beyond the distance of travel of the rollers so that the car then becomes disengaged from the conveying means.

3,408,952

**TOW TRUCK CONVEYOR SYSTEM**

Karl R. M. Karlstrom, Roseville, Mich., assignor to Mechanical Handling Systems, Inc., Warren, Mich., a corporation of Michigan

Filed Oct. 31, 1966, Ser. No. 590,722  
17 Claims. (Cl. 104—172)



1. In a tow truck conveyor system, the combination comprising at least two trucks adapted to be moved along a slot, a conveyor adjacent said slot, each said truck comprising a truck body adapted to be moved along by the conveyor, means on said truck body movable into and out of engagement with means on the conveyor, a front bumper movably mounted on said truck body and operatively connected with said conveyor engaging means such that when the front bumper is moved rearwardly by contact with an obstacle, said conveyor engaging means is moved out of engagement with said means on the conveyor, a rear bumper movably mounted on said truck body, means interconnecting said front bumper and said rear bumper whereby when said front bumper engages an obstacle, said rear bumper is moved into position for engagement with the front bumper of the successive truck, yielding means urging said front and rear bumpers forwardly, and control means on one of said trucks operable when the rear bumper of a leading truck is moved rearwardly by engagement of the front bumper of a leading truck with an obstacle and the front bumper of a successive truck engages the rear bumper of said leading truck to prevent the forward movement of the front bumper of said succeeding truck when the obstacle is removed and before the leading truck is moved away from the succeeding truck by engagement of the means on the conveyor with the conveyor engaging means on the leading truck.

3,408,953

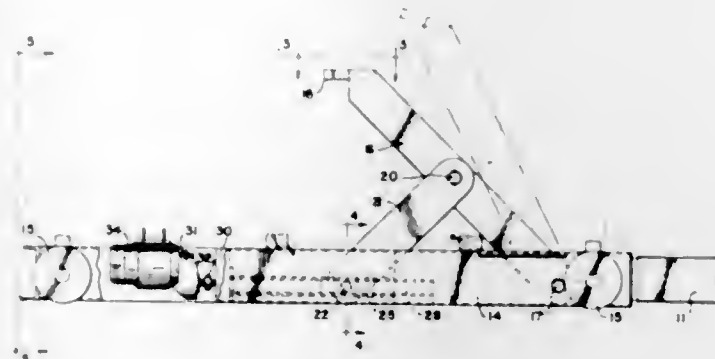
**APPARATUS FOR HANDLING RAILWAY CARS**

Wallace J. Saxonmeyer, Park Forest, Ill., assignor to Whiting Corporation, a corporation of Illinois

Filed May 9, 1966, Ser. No. 548,740  
5 Claims. (Cl. 104—176)

A transfer table carries a robot for movement longitudinally of the table. The robot includes a pair of oppositely disposed couplers each mounted for being erected

and collapsed. In the erected position, the robot coupler is adapted for coupling engagement with a railway car coupler. In the collapsed position, the robot coupler can pass under the axle of a railway car. Cooperating guide-



ways on the transfer table and on track sections adjacent opposite ends of the transfer table permit a portion of the robot to extend beyond either end of the table for coupling engagement with a railway car on the track sections.

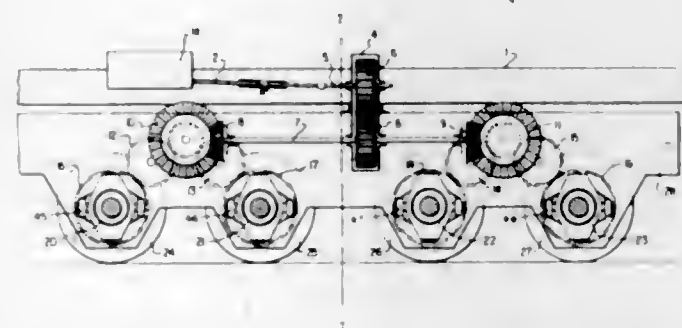
3,408,954

**DRIVING MECHANISM FOR A RAILWAY TRUCK**

Siegfried Kademann, Sandershausen, and Hans Hess, Kassel, Germany, assignors to Rhein Stahl Henschel A.G., Kassel, Germany, a corporation of Germany

Filed Oct. 18, 1965, Ser. No. 497,215  
Claims priority, application Germany, Feb. 16, 1965, H 55,179

8 Claims. (Cl. 105—34)



This invention relates to a driving mechanism for a railway truck and, more particularly, to a driving mechanism for driving a series or group of axles on a railway truck in which power from a source mounted on the bridge girder of a railway vehicle is transmitted to the truck through a shaft having a universal joint therein, which shaft is positioned in the longitudinal direction of the vehicle. The reversal of the rotary movement from a direction of rotation about a longitudinal axis to a direction of rotation about transversely-positioned axles is effected by means of bevel gear drives and the driving axles are coupled with one another by means of spur gear.

3,408,955

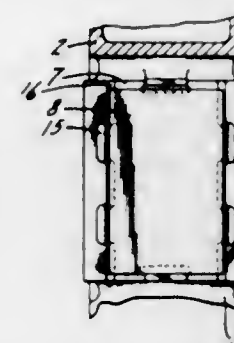
**RAILWAY CAR TRUCK BOLSTER DAMPENER**

Franklin D. Barber, Flossmoor, Ill., assignor to Standard Car Truck Company, Chicago, Ill., a corporation of New Jersey

Filed Apr. 1, 1966, Ser. No. 539,448  
1 Claim. (Cl. 105—197)

Widely laterally extending stop surfaces on both sides of the wear plate on a truck frame and the wedge pocket on the bolster provide widely extended plane mating sur-

faces, the surface on the side frame being co-planar with the wear plate, the clearance between the stop surfaces being substantially less than the clearance between the lugs on the bolster on opposite sides of the frame and the



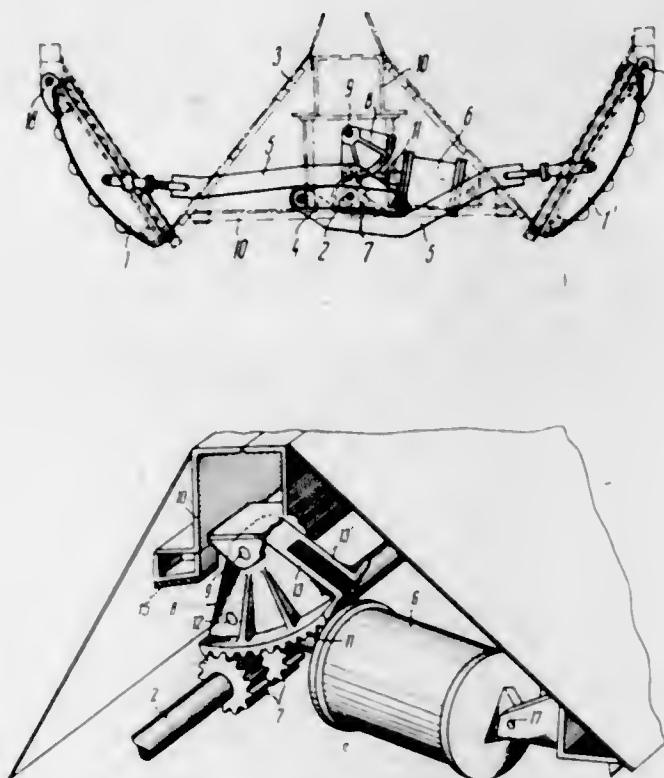
bolster. This arrangement makes it impossible for the usual curved surface on the side frame to be worn away to the point where it no longer effectively resists rotation of the bolster.

3,408,956

**PNEUMATIC MOTOR ACTUATED RAILWAY CAR DISCHARGE DOORS**

Anatoly Georgievich Rebenok, Ul. Shirokaya 1, kv. 24; Valentin Nikolaevich Budenkov, Pionersky per. 9, kv. 2; Jury Grigorovich Mezentsev, Ul. Arsenicheva 74, kv. 40; Lazar Pinkhusovich Valnshteln, Prospekt Lenina 29, kv. 8-a; Mikhail Ivanovich Durachenko, Ul. Lesopillnaya 2/28, kv. 32; and Ivan Timofeevich Kovdrya, Bratskaya ul. 14, kv. 3, all of Dneprodzerzhinsk, Dnepropetrovskaya oblast, U.S.S.R.

Filed Nov. 4, 1966, Ser. No. 592,056  
7 Claims. (Cl. 105—240)



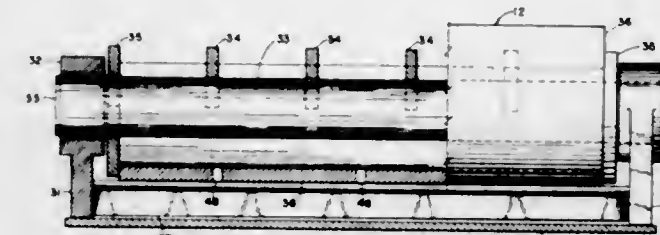
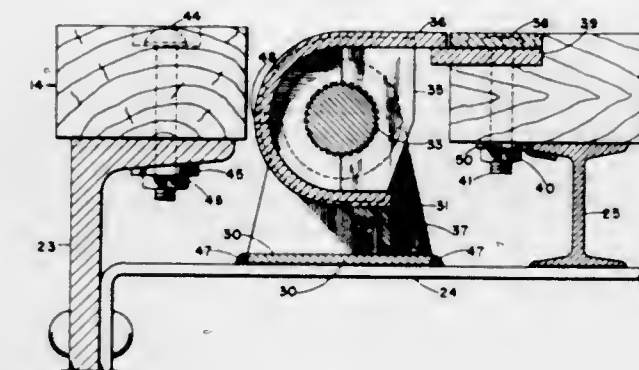
A mechanism for opening and closing the covers of side discharge hatches of a railway car in which a linkage opens and closes the covers in response to rotation of an actuator shaft as produced through a coupling constituted by a gear rigidly mounted on the shaft and having integral, spaced, rim portions with teeth engaged by gear teeth on spaced integral rim portions of a driven segment which is pivotally mounted on the frame of the car.

3,408,957

**LADING BAND ANCHORS**

Orville Ingram, Toledo, Ohio, assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio

Filed May 25, 1967, Ser. No. 641,195  
10 Claims. (Cl. 105—369)



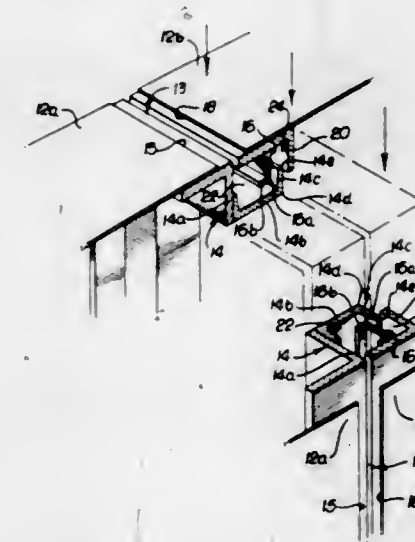
A railway freight car lading band anchor assembly adapted to be manually movable from open to closed position by rotating the anchor structure about its axis which is generally parallel to and forms a part of the load supporting floor, or containing walls of the car

3,408,958

**WEATHERPROOF COVER JOINT**

Kenneth Van De Plasch, Saugus, Calif., assignor to C. L. Stegall Company, Pacoima, Calif., a corporation of California

Filed Aug. 15, 1966, Ser. No. 572,361  
8 Claims. (Cl. 105—377)



A weatherproof joint or water trap between adjacent cover sections utilized on a support structure as, for example, a gondola freight car. The joint is such that after one cover section is in place, which mounts part of the joint, a second section which mounts a cooperating part of the joint may be vertically lowered into place whereby the weatherproof joint is automatically completed.



### 3,408,959 FOLDING STAIRCASE

Alan R. Cripe, Richmond, Va., and Walter C. Caylor, Wethersfield, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed July 24, 1967, Ser. No. 655,357  
6 Claims. (Cl. 105-447)

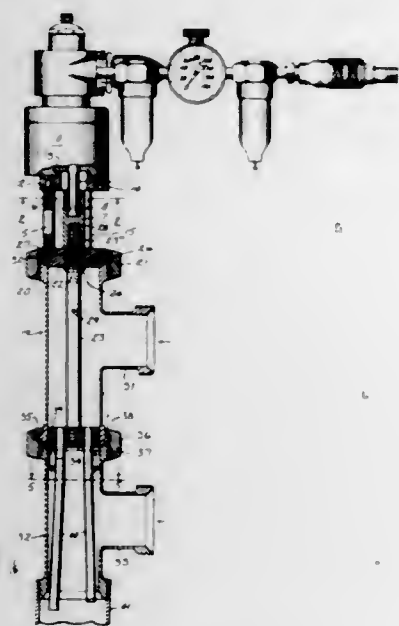


A folding staircase for a passenger vehicle that converts from a platform in the vestibule of the vehicle to a pair of steps extending outwardly from the door of the vestibule and down to a station platform. The convertible staircase pivots 180° around the vehicle's doorsill by means of an arm and link mechanism to fold from the exterior stair position into the interior platform position.

### 3,408,960 POWERED VARIEGATOR FOR FROZEN COMESTIBLE MANUFACTURE

Morris F. Stanley, Oconomowoc, Wis., assignor to Ho-Maid Products Co., Milwaukee, Wis., a corporation of Wisconsin

Filed June 12, 1967, Ser. No. 645,378  
7 Claims. (Cl. 107-1)



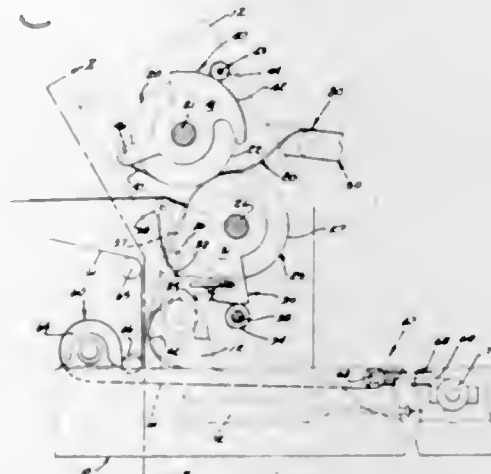
For the manufacture of variegate frozen comestibles such as ice cream and the like, a mechanism is provided which will introduce into a moving mass of semi-frozen ice cream or the like continuous charges or streams of a contrasting fluent flavoring or other comestible in a manner so that the final product is rippled or variegate according to the intended uniform pattern and in a manner so that the variegate material which is thus introduced will not settle or gravitate to the bottom or sides of the container for the final product. The variegate apparatus

includes a driven apertured spinner from which depend a plurality of dispersing tubes which are outwardly, downwardly diverging and differing one from another in respect to angularity and length. Also, the variegate apparatus includes fittings, etc. which satisfy all of the prescribed sanitary requirements and which will prevent "backup" of any of the material progressing through the apparatus.

### 3,408,961 TAKE-OFF KNIFE ARRANGEMENT

Bruce W. Brunson, Grand Rapids, Mich., assignor to Werner Machinery Co., Grand Rapids, Mich., a corporation of Michigan

Filed July 6, 1967, Ser. No. 651,475  
8 Claims. (Cl. 107-12)



A dough sheeting apparatus having a pair of adjustably spaced rolls between which dough is adapted to pass to be flattened. The dough is scraped from the rolls by a takeoff knife adjustable about the periphery of one of the rolls and passes in continuous fashion onto an adjacent conveyor belt. The frame which adjustably carries the take-off knife also carries the idler roller for the conveyor belt. The conveyor belt, thus, always maintains the same position relative to the take-off knife despite the peripheral position of the latter element.

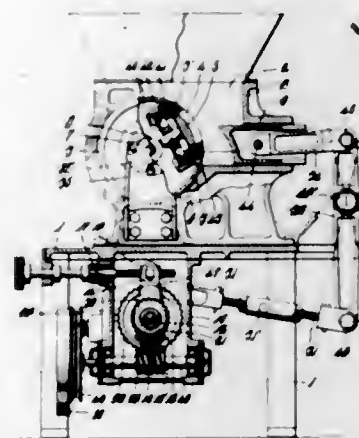
### 3,408,962 MOLDING MACHINE FOR FOODSTUFFS

Hideaki Nishimura, Uji, Japan, assignor to Nantune Tekko Kabushiki Kaisha (Nantune Iron Works Limited), Osaka, Japan

Filed June 23, 1966, Ser. No. 559,945

Claims priority, application Japan, Aug. 19, 1965, 40/50,666

3 Claims. (Cl. 107-15)



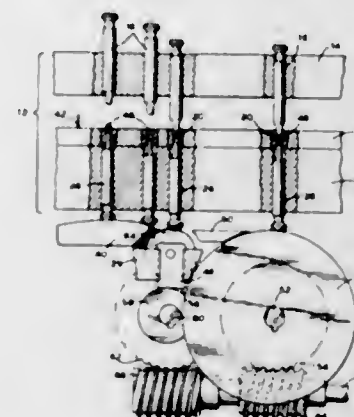
A dough molding or handling machine provided with a mechanism for forming a dough or kneaded material into a desired shape automatically for mass production of various shaped food products and principally croquette and minced meat balls. In addition, a mechanism for varying the thickness of the molded products freely and

a mechanism for varying a timed relationship between the rotational movement of a rotary drum equipped with a concave molding chamber on its surface is provided. The horizontal movement of a co-acting piston member in accordance with the hardness of the dough to be used is present for obtaining products of optimum hardness.

### 3,408,963 TABLET MACHINE

John M. Alexander, Jr., and William H. Hamilton, Philadelphia, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed May 2, 1967, Ser. No. 635,534  
9 Claims. (Cl. 107-17)



A tablet machine has an auxiliary roll, between the lower pressure roll and the ejection cam surface, for actuating the lower punch to dislodge a compressed tablet from the die. The auxiliary roll is carried by mounting means permitting vertical adjustment of the roll simultaneously with, or incident to, vertical adjustment of the lower pressure roll; and the positional relationship of the rolls to each other is maintained in their various vertical positions.

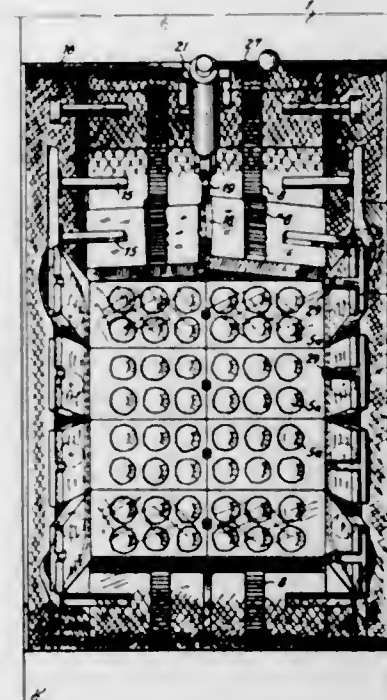
### 3,408,964 AUTOMATIC BAKING APPARATUS

Roland Marie, 83 Rue Rechossiere, Aubervilliers, Seine-St. Denis, France

Filed Oct. 14, 1966, Ser. No. 586,785

Claims priority, application France, Oct. 27, 1965, 36,398

9 Claims. (Cl. 107-58)



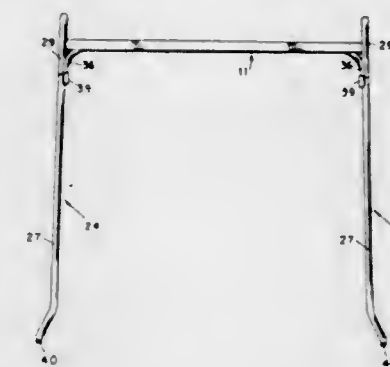
Automatic baking apparatus including a rotating drum the outer periphery of which contains a plurality of circumferentially arranged recesses for receiving dough, and

lid means for closing the recesses during baking of the dough. The invention is characterized in that at least one lid is pivoted at one end adjacent one end of the drum, another lid is pivoted at one end adjacent the other end of the drum, said lids having such a length and being so arranged that their adjacent ends overlap to facilitate closing and locking of the lids.

### 3,408,965 STACK TABLE

John J. Hamilton, Charles E. Schroer, and Michael H. Gill, Columbus, Ind., assignors to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana

Filed Jan. 11, 1967, Ser. No. 608,552  
3 Claims. (Cl. 108-91)



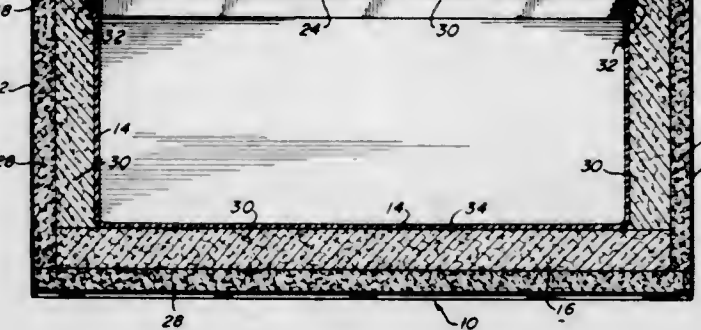
A table formed from a pair of end frames each comprising a pair of opposed generally U-shaped sections with each section having a pair of leg members interconnected by a transverse bight. The leg members in each pair of sections are in abutting engagement and are interconnected to each other to form the end frames. A top extends between the end frames and is connected to the inner faces thereof. A pair of braces also extends between and is interconnected to the end frames at the juncture of their U-shaped sections and engages the lower faces of said top.

### 3,408,966 FIREPROOF CONTAINER

William J. Gartner, Melrose Park, Ill., assignor to De Soto Inc., a corporation of Delaware

Filed Aug. 17, 1966, Ser. No. 573,049

27 Claims. (Cl. 109-74)



A fireproof container assembly having an inner container surrounded by an outer frame. A heat protection liner is provided between the outer frame and the inner container. The liner is formed of fibrous material, the outer portion of which has a high temperature resistance and the inner portion of which has high temperature insulative properties. A jamb having an irregular surface configuration bridges the outer frame and the inner container. A closure member having an irregular undersurface portion, an underframe and fibrous material interposed between the undersurface portion and underframe

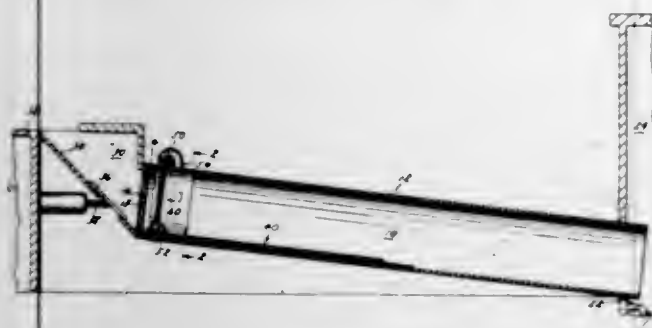


is provided and is adapted for mating relationship with the jamb in a manner so that a narrow, tortuous path resistive to heat flow is provided between the closure and the jamb.

### 3,408,967 PROCESS AND APPARATUS FOR THE INCINERATION OF REFUSE

Anthony J. Maitilasso, Rockaway, N.J., assignor to Dinosauro Reduction Chamber Inc., Newark, N.J., a corporation of New Jersey

Filed July 22, 1966, Ser. No. 567,152  
2 Claims. (Cl. 110—7)

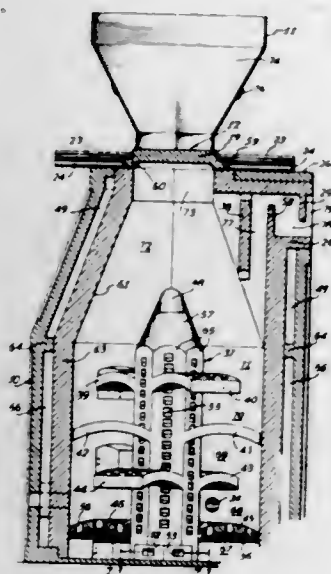


Process and apparatus for the incineration of refuse in which refuse is ignited and subjected to self-combustion at a temperature in the range from about 900° F. to 1150° F. to effect at least about a 50% reduction in the solid volume thereof. The refuse thereafter is discharged into an enclosed secondary incineration zone in which incineration is completed under forced combustion at a temperature above about 1600° F.

### 3,408,968 WASTE INCINERATOR

Ernesto Villarreal Pantoja, Rio Nilo 23-A,  
Mexico City 5, Mexico  
Filed Feb. 13, 1967, Ser. No. 615,520  
Claims priority, application Mexico, Sept. 9, 1966,  
91,032

9 Claims. (Cl. 110—12)



A waste incinerator comprising a radially symmetric double-walled housing, the outer walls of said housing comprising bores adjacent the lower and upper ends to allow circulation of cool air through the gaps between the outer and the inner walls. A plurality of grates are arranged around a vertical post such that all the grates together will span the entire cross section of the housing. The central post has a blunt pointed upper end to distribute the wastes charged from the top, and a plurality of ventilating channels to feed air toward the grates. A

charging system for waste is provided above the upper mouth of the housing and a plurality of tangentially arranged bores accommodate the guns of the necessary burners, said bores being arranged above the first or lowermost grate.

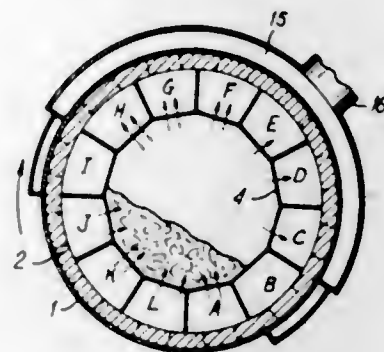
### 3,408,969 CONTINUOUS OPERATION WASTE INCINERATOR

Pierre Maurice, Paris, France, assignor to  
La Soudure Autogene Francaise

Continuation-in-part of application Ser. No. 494,683,  
Oct. 11, 1965. This application Aug. 17, 1967, Ser.  
No. 661,304

Claims priority, application France, Nov. 4, 1964,  
993,805

12 Claims. (Cl. 110—14)

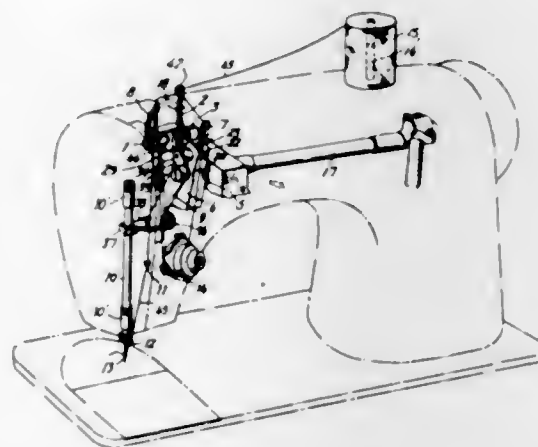


A gas-permeable cylinder affixed to a rotating casing through partitions, receives the wastes to be burned. Air is admitted into those of the compartments which are between certain partitions, flows through cylinder, burns the wastes, flows through another portion of the cylinder, through other compartments and to the chimney. Strips helically affixed to the grates which form cylinder, stir and move the wastes.

### 3,408,970 THREAD TENSIONING ARRANGEMENT FOR SEWING MACHINES

Toshihide Kakinuma, Kita-ku, Tokyo, Japan, assignor to  
Janome Sewing Machine Co., Ltd., Tokyo, Japan

Filed Jan. 14, 1964, Ser. No. 337,685  
13 Claims. (Cl. 112—245)

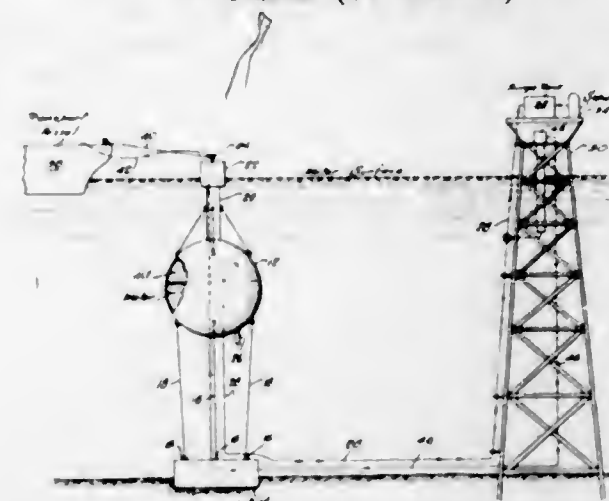


A first reciprocable thread guide of a sewing machine draws thread from a spool and supplies it through a frictional tensioning device to a second reciprocable thread guide which feeds the thread to the needle of the sewing machine. The reciprocation is timed so that the second threaded guide draws thread slackened by the first guide through the tensioning device whereby the thread tension at the needle is held constant by the tensioning device.

### 3,408,971 SUBMERGED OIL STORAGE VESSEL AND OIL LOADING FACILITY FOR OFFSHORE WELLS

George E. Mott, Metairie, La., assignor to Texaco Inc.,  
New York, N.Y., a corporation of Delaware

Filed July 22, 1965, Ser. No. 474,117  
7 Claims. (Cl. 114—5)

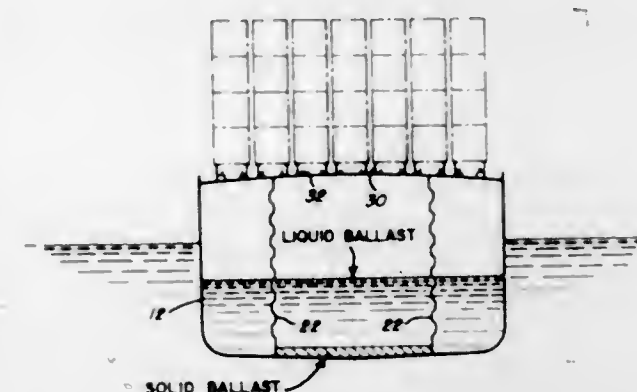


Submerged storage with associated surface oil loading facility for water-immiscible liquids having a lighter density than water comprising a buoyant storage vessel moored at an intermediate depth in the water with discharge means connected to a floating buoy at the surface.

### 3,408,972 CONTAINER SHIP WITH MAIN CARGO ABOVE MAIN DECK

George R. Knight, Jr., Port Washington, N.Y., and  
Roberto J. Slinin, Newark, N.J., assignors to John  
J. McMullen Associates, Inc., a corporation of  
New York

Filed June 15, 1967, Ser. No. 646,236  
10 Claims. (Cl. 114—72)



A tanker converted to a container ship including a main deck provided with container supports throughout the free length of said deck for holding stacks of containers, the former liquid cargo section of the tanker forming ballast compartments which when partially filled lower the center of gravity and permit higher container stacking.

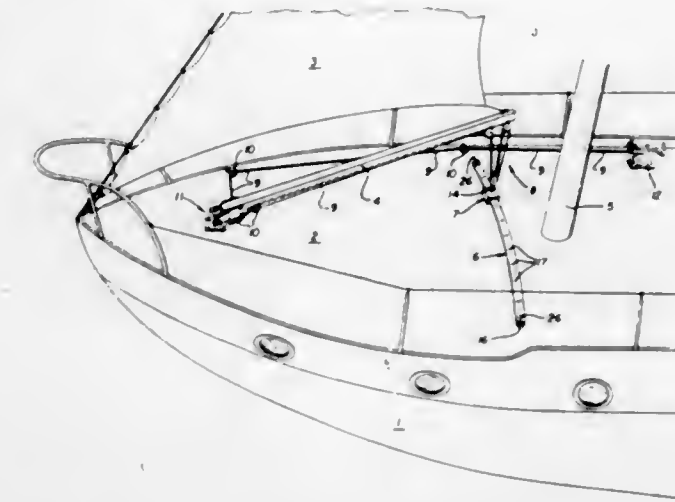
### 3,408,973 PEDESTAL AND PIVOT FOR SAILBOAT JIB

Larry L. Curtis, 303 Olive Ave., Larkspur, Calif. 94939;  
Thomas M. O'Gorman, 21 Echo Ave., Corte Madera,  
Calif. 94925; and Blng A. Cox, 7700 Palma Park-  
way, Sacramento, Calif. 95823

Filed Sept. 11, 1967, Ser. No. 666,742  
4 Claims. (Cl. 114—98)

An improved item of sailboat hardware for mounting a jib boom which facilitates its installation, removal and

operation. A novel combination of pedestal, horizontal and vertical pivots, anti-friction bearings and means of



support which combine to give greatly improved results in sailboat operation.

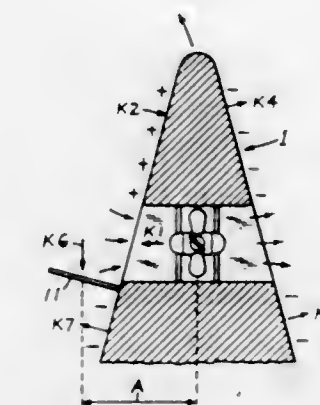
### 3,408,974 SHIP STEERING SYSTEM

Lennart Anders Pehrsson, Kristinehamn, Sweden, as-  
signor to Aktiebolaget Karlstads Mekaniska Werk-  
stad, Karlstad, Sweden, a company of Sweden

Filed May 6, 1966, Ser. No. 548,233

Claims priority, application Sweden, May 7, 1965,  
5,987/65

8 Claims. (Cl. 114—148)



A ship steering system which includes tunnels extending transversely through a ship's hull at the bow or stern or both in which is mounted a reversing or reversible pitch propeller in order to pump water selectively through the tunnel to exert a steering force on the hull and including vanes or screens which can be extended outwardly from and withdrawn into the hull located behind the ends of the tunnel or tunnels in the direction of movement of the ship in order to exert a turning force on the hull and also to direct water selectively into the tunnel during the forward or rearward movement of the ship to enable control of the steering of the ship either at low or high speeds.

### 3,408,975 WATER JET PROPULSION DEVICE

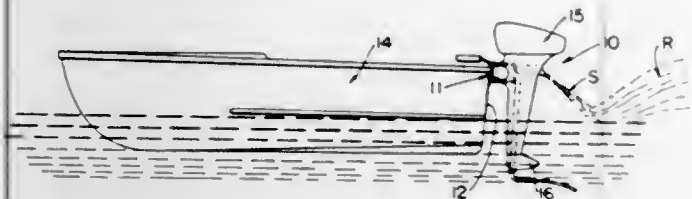
Richard B. Gamble, 7474 Lathers,  
Garden City, Mich. 48135

Continuation of application Ser. No. 556,359, June 9,  
1966. This application Nov. 13, 1967, Ser. No. 682,668  
8 Claims. (Cl. 115—12)

A water jet propulsion device is disclosed which has a housing structure simulating in miniature the appearance of the housing structure of a conventional outboard



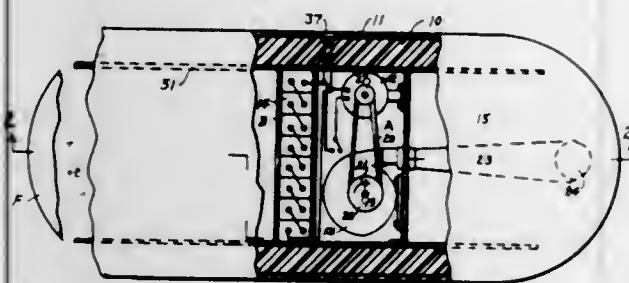
motor. The device has means by which it is pivotally mounted to a stern of a small boat to be manipulated in steering the craft, as is characteristic of an outboard motor. The interior of the housing structure is compartmentized, and at least in part filled with buoyant material.



Said interior receives in an upright position a vertically elongated tube means, a sub-surface end of which projects beneath the structure and is equipped with a fitting affording a dual swivel-type connection to a low pressure water source, such as a garden hose. The upper end of the tube means is a jetting end in fixed location on the housing structure, which end discharges water aft-wise and downwardly toward a buoying surface. The jetting end is above that surface, so as to produce propulsion of the craft by jet-reaction alone, but the jet impinges the buoying surface in a manner to create a "rooster tail" effect.

### 3,408,976 SURFBOARD AND MEANS FOR PROPELLING SAME

Robert Ellis, 350 E. Plaza, Solana Beach, Calif. 92075  
Filed Oct. 31, 1967, Ser. No. 679,395  
2 Claims. (Cl. 115-70)



A surfboard having propelling mechanism providing forward motion by means of reaction created by the rearward water discharge of a centrifugal pump located in the necessarily cramped hollow housing, the impeller of the pump being rotated either by muscular exertion of the surfer on deck or electrically from battery energy. Water enters the pump from the bottom and flows outward through the rear, thus creating the required reaction for forward movement. This mechanism permits the board to be free of all protuberances to prevent scratches and bruises to the surfer and adjacent bathers. The discharged water flows centrally underneath the board through a slightly diverging tunnel to create more torque and incidentally the inner edges of the tunnel being sufficient to supplant the dangerous "skeg" or keel.

### 3,408,977 READING AID

Howard B. Colman, Jr., El Paso, Tex., assignor to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York  
Filed Mar. 14, 1966, Ser. No. 534,001  
2 Claims. (Cl. 116-119)

A reading aid for use in interpreting the significance of data represented by holes punched through some of many indicia printed in a number of identical columns on

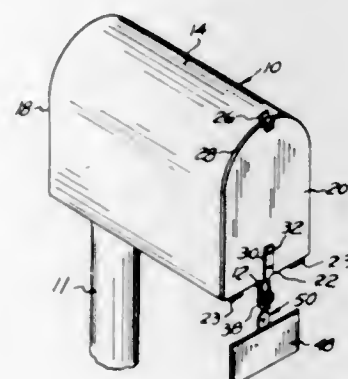
a tabulating card. The reading aid comprises means forming a slotted area extending through the side of the device and having a width and height at least equal respectively to the thickness and width of a tabulating card so that a card can be slidably inserted therein. The reading aid further includes means forming an opening in the front thereof having a width and length approximately equal respectively to the width and height of a column of indicia on the card. Within this opening are means on the interior



surface of the back portion of the reading aid for constituting a replica in a contrasting color of one of the identical columns of indicia on the card. Thus, when a tabulating card is inserted in the slotted area, a column of indicia is isolated by the opening in the reading aid and the contrastingly colored duplicate indicia on the reading aid can be seen through the holes punched in this column of the card. This serves to identify and to replace the indicia that were removed by the holes punched in the card.

### 3,408,978 AUTOMATIC MAIL SIGNAL FOR MAIL BOXES

Murl A. Duffey, 1990 W. Garrison Road, R.F.D. 1, Owosso, Mich. 48867  
Filed Jan. 15, 1968, Ser. No. 698,040  
3 Claims. (Cl. 116-132)

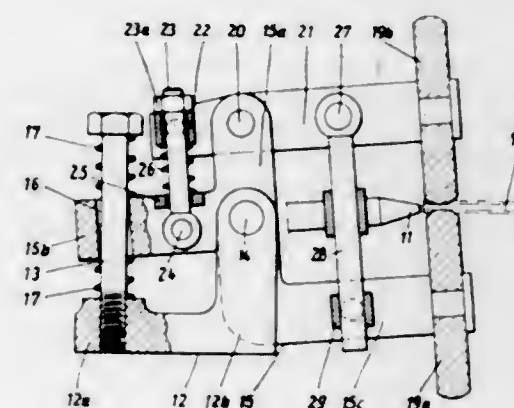


This automatic mail signal for mail boxes consists of a bracket attached to the end door of a conventional mail box near the lower hinged edge thereof and provided near its lower end with a friction joint which pivotally and yieldably supports a signal structure including a signal arm and a signal plate. This signal structure normally is swung rearwardly away from the door hinges beneath the bottom wall of the mail box. When the postman swings the mail box door downward in order to insert mail, the signal structure is initially swung upward against the bottom wall of the mail box where it remains while the door continues to be swung downward. In this manner, the signal structure is swung approximately 90 degrees from a position perpendicular to its bracket and the mail box into a position approximately aligned with the door, depending upon how far downward the

door is swung by the postman. When the postman swings the door upward to close it, the friction joint automatically swings the signal structure downward into the position of FIGURE 1, where by its lowered position it notifies the owner that the mail box has been opened, presumably to insert mail. Upon removing the mail, the owner closes the door and manually pushes the signal structure upward beneath the mail box around its friction joint with the bracket, readying it for signalling the next insertion of mail.

### 3,408,979 DEVICE FOR APPLYING GLUE TO THE EDGES OF PLATE-LIKE WORKPIECES, SUCH AS VENEERS OR THE LIKE

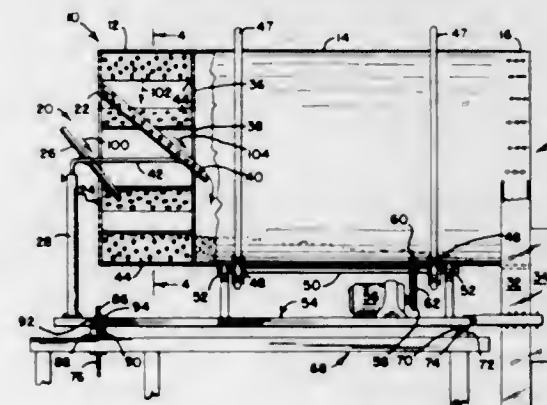
Helmut Torwegge, No. 18 Koblenzer Strasse, Bad Oeynhausen, Germany  
Filed May 12, 1966, Ser. No. 549,651  
Claims priority, application Germany, May 13, 1965, T 28,583  
8 Claims. (Cl. 118-8)



A device for applying glue or the like to the edges of plate-like workpieces of material such as veneer or the like. The device comprises a glue applying means and a sensing means on each side of the material and operatively connected with the glue applying means in such a way as to apply glue evenly to the edge of the said workpieces, even though irregularities exist along the surface of the workpiece.

### 3,408,980 CRUMB COATING MACHINE

John O. Benson, Mayer, Minn., assignor to General Mills, Inc., a corporation of Delaware  
Filed Jan. 25, 1967, Ser. No. 611,758  
10 Claims. (Cl. 118-19)

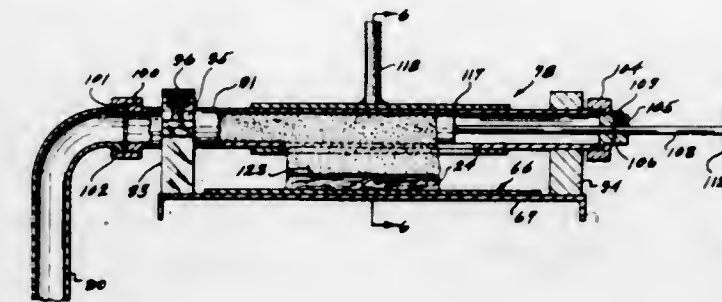


An elongated chamber rotatable about a generally horizontal axis. The chamber is divided into a liquid batter containing section and a crumb containing section. A spout feeds food product to be coated into the liquid batter section. The liquid batter section has perforated lifting plates which, as the chamber rotates, remove the food product from the liquid batter and place it onto an

other feeding spout. This feeding spout directs the food product into the crumb coating section. In the crumb coating section the food product is tumbled in the crumbs as the chamber rotates about its generally horizontal axis.

### 3,408,981 EXTRUDER HEAD USEFUL IN PASTRY-MAKING APPARATUS

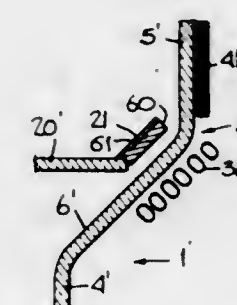
Robert B. Poppe, 15173 Los Altos Drive, Hacienda Heights, Calif. 91745, and Victor F. Gugler, 8920 Helen St., Sun Valley, Calif. 91352  
Original application Nov. 7, 1963, Ser. No. 322,147, now Patent No. 3,276,397, dated Oct. 4, 1966, Divided and this application Sept. 8, 1966, Ser. No. 578,059  
2 Claims. (Cl. 118-25)



The invention is an improved extruder head for extruding plastic material in a film or sheet. A tube is provided having an axial slot. Around the tube is an axially movable sleeve with an axial slot which can be adjusted angularly with respect to the slot in the tube to control the thickness of the film extruded. The sleeve is movable axially in both directions to adjust the lateral position of the film extruded. A piston is provided in the tube which can be adjusted in position to adjust the width; that is, the transverse dimension of the film or sheet extruded through the slot.

### 3,408,982 VAPOR PLATING APPARATUS INCLUDING ROTATABLE SUBSTRATE SUPPORT

Emil R. Capita, 7020 Hudson Blvd., North Bergen, N.J. 07047  
Filed Aug. 25, 1966, Ser. No. 574,969  
3 Claims. (Cl. 118-49.5)



1. Apparatus for vapor plating a plurality of articles comprising the combination of a sealed chamber, a rotatably mounted support having a generally vertical axis, an electrically conductive article susceptor mounted on said support for carrying a plurality of articles in a generally circular path, said chamber having a lower portion connected to a larger upper portion by a frusto-conical portion, said susceptor having an inwardly and upwardly facing frusto-conical article supporting portion including article engaging recesses, whereby said articles are supported in a manner to resist the effects of centrifugal

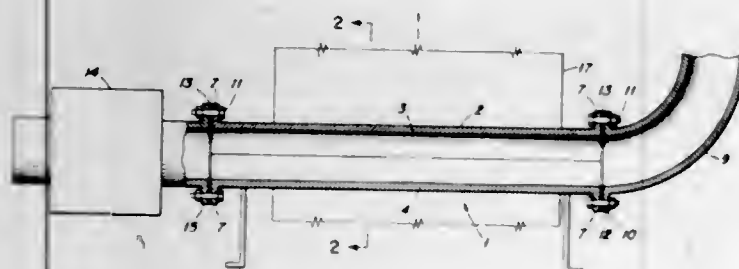


forces developed upon rotation of said susceptor, said frusto-conical portion of the susceptor being positioned adjacent to and generally parallel to the frusto-conical portion of said chamber, an induction heating coil having a plurality of turns arranged in frusto-conical form and positioned outside of said chamber and adjacent to and generally parallel to said frusto-conical portion of said chamber, means for rotating said support, and a vapor outlet in said chamber positioned for directing vapor over articles on said susceptor.

3,408,983

**AIR RELEASE DEVICE ON AIR KNIVES**

Joseph F. Kosalek, Binghamton, N.Y., assignor to GAF Corporation, a corporation of Delaware  
Filed May 26, 1967, Ser. No. 641,838  
2 Claims. (Cl. 118—63)

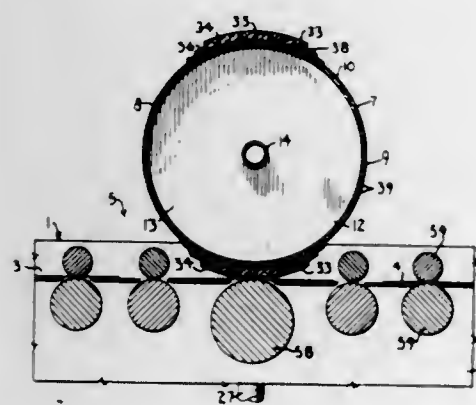


This invention relates to improvements in air knives for paper coating machines. In particular, it refers to an air knife manifold is provided by attaching an air in-let against the surface of a wet coated paper web in order to smooth the coating thereon. Laminar air flow through air knife manifold construction which projects a stream of let conduit at one end thereof, and an air release valve for venting a portion of the air at the other end of the manifold.

3,408,984

**CLOSED SYSTEM ADHESIVE APPLICATOR**

Atwood V. Pullins, Shawnee Mission, Kans., assignor to Tension Envelope Corporation, Kansas City, Mo., a corporation of Missouri  
Filed Oct. 25, 1967, Ser. No. 677,908  
10 Claims. (Cl. 118—259)

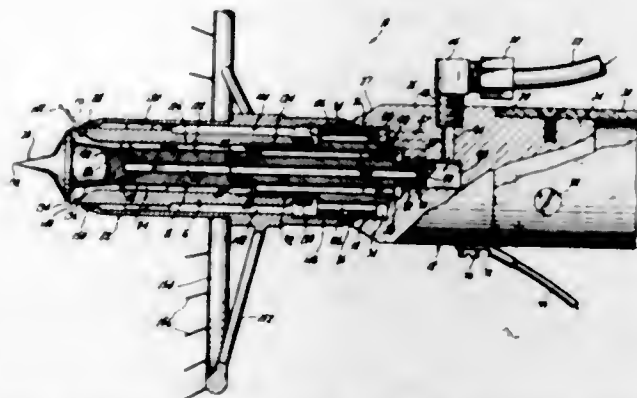


A driven adhesive applicator for use on an envelope making machine comprises a hollow roller receiving adhesive axially thereto through a supporting shaft, the roller having a pattern of closely spaced-apart passageways positioned around the periphery thereof. The passageways are plugged, except for those covered by a porous applicator of a desired shape which is mounted on the roller peripheral surface for rolling contact with correspondingly moving envelope blanks.

3,408,985

**ELECTROSTATIC SPRAY COATING APPARATUS**

John Sedlacsik, Jr., Garfield, N.J., assignor to Interplanetary Research & Development Corp., Garfield, N.J., a corporation of New Jersey  
Filed Nov. 7, 1966, Ser. No. 592,560  
9 Claims. (Cl. 118—629)

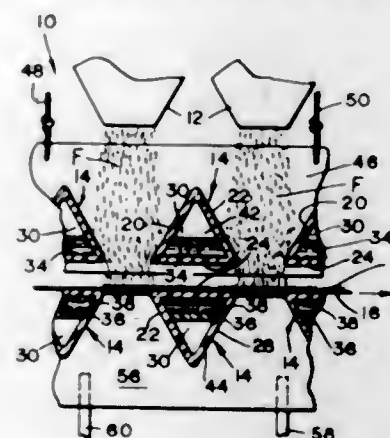


An air spray gun, for use in an electrostatic spray coating system, wherein liquid coating material is fed through the body of the gun to a forward atomizing area and atomizing air under pressure is also fed through the gun body to atomize the coating material at said atomizing area. The atomized coating material is directed to leave the front of the gun in a substantially radial direction and a further supply of air under pressure is fed through the body of the gun and directed to form a shroud about the atomized spray exiting from the gun to control the pattern thereof. Internal vanes within the gun body impart a swirling motion to the atomizing air and shroud air to decrease the forward velocity thereof.

3,408,986

**ELECTROSTATIC GRID**

David I. Walsh, Providence, Kenneth E. Roberts, East Providence, and George E. Corneau, Central Falls, R.I., assignors to Indev, Inc., Pawtucket, R.I., a corporation of Rhode Island  
Filed Mar. 2, 1967, Ser. No. 620,142  
5 Claims. (Cl. 118—636)

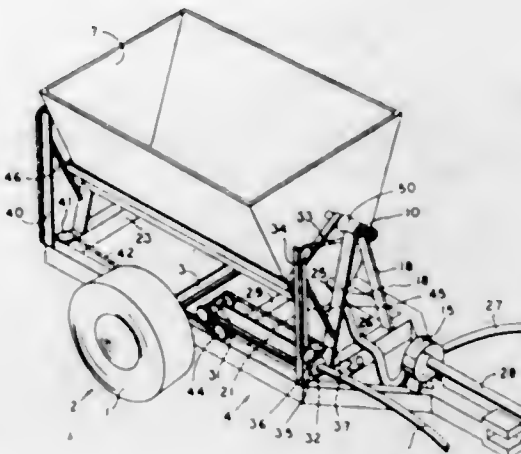


A flocking apparatus for applying fibrous pile to an adhesively coated article moving along a plane through the apparatus, in which a conductor system is positioned on each side of the article; one conductor system is grounded and the other is connected to a source of alternating current. Each conductor system comprises a series of triangular elongated tubular members of a selected electrically non-conductive material having a body of electrically conductive fluid therein adjacent a planar wall section of the tubular member that is positioned parallel to the plane of movement of the article. The body of electrically conductive fluid in each tubular member communicates with a body of electrically conductive fluid in a connecting tube, a wire end, which is connected to an electric circuit, being immersed in the fluid of the connecting tube.

3,408,987

**GRAIN SOAKER AND LIQUID NUTRIENT DISPENSING DEVICE**

Robert Rolfe, Fayette County, Ohio  
Filed Apr. 13, 1966, Ser. No. 544,347  
6 Claims. (Cl. 119—51)

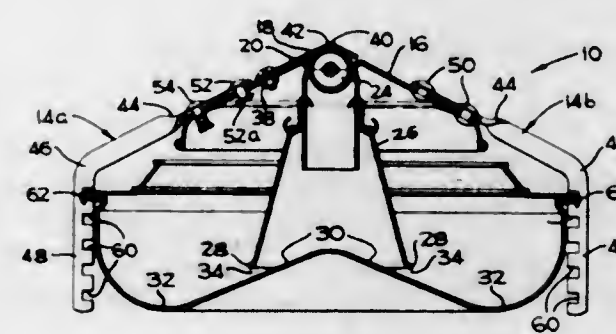


A tiltable hopper mounted on a two-wheel trailer frame is disclosed for use in transporting, soaking, and discharging grain for feeding livestock. The hopper is provided with an outlet to which a pump, powered by a tractor power take off, and hoses are connected for removing water from the hopper. The hopper is tiltable for pouring out the grain by operation of a hydraulic piston and cylinder system connectible to a tractor hydraulic system. Grain is soaked in the hopper, the water and its nutrients are separated from the soaked grain, and each is separately fed to the livestock.

3,408,988

**FEED RECEPTACLE**

Robert J. Lee, Tipton, Ind., assignor to Bramco Inc., Canton, Ga., a corporation of Georgia  
Filed Oct. 31, 1966, Ser. No. 590,947  
5 Claims. (Cl. 119—53)



A feed receptacle having a pan which is adjustable vertically, the pan being supported by a plurality of spaced arms, the arms having notches which receive the pan at various levels.

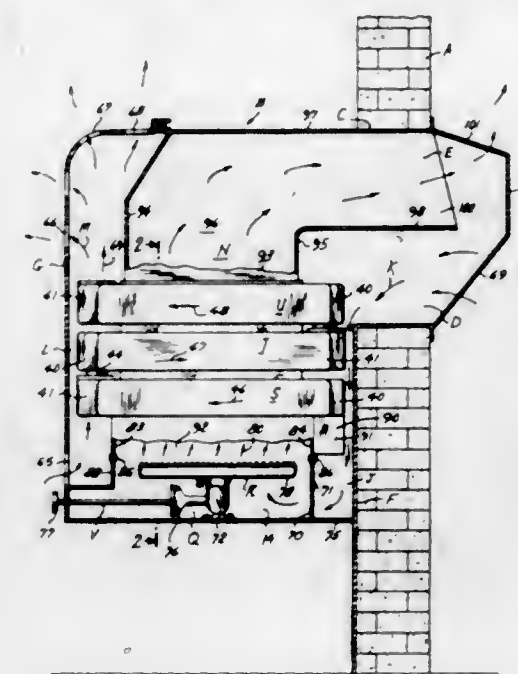
3,408,989

**GAS FIRED HOT WATER BOILER CONSTRUCTION**

John F. Baier, New York, N.Y.  
(411 Clinton St., Northvale, N.J. 07647)  
Filed Apr. 24, 1967, Ser. No. 633,036  
9 Claims. (Cl. 122—214)

The disclosure relates to a gas fired hot water boiler construction with a series of superimposed reversible cast iron sections, each having tubes with sliding sides alternating in position so as to be positioned above the space

or below the space of the next lower or higher section. The boiler is mounted adjacent a wall and external air is received through an opening in the wall. A suitable external insulating casing is provided so that the air enter-

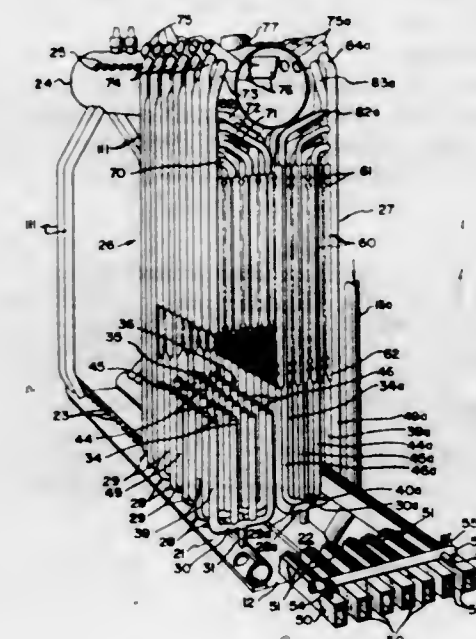


ing for combustion of the gas will be pre-heated by passing downwardly over a side or portion of the hot water sections while the room air may be caused to be heated by being passed over the side of the hot water sections.

3,408,990

**BOILER**

John C. Cleaver, River Hills, Gustav A. Rehm, Milwaukee, Fred G. Wiegatz, New Berlin, and Walter J. Baron, Hubertus, Wis., assignors to Aqua-Chem, Inc., a corporation of Wisconsin  
Filed Nov. 21, 1966, Ser. No. 595,906  
12 Claims. (Cl. 122—328)



The invention relates to a boiler construction wherein the boiler is provided with longitudinally extending drums at its lower portion and connected by a plurality of tubes in panel form to a drum at the upper portion of the boiler. With the particular arrangement of the tubes and drum, superior circulation of water can be achieved and reduction in the amount of refractory material normally found in boiler constructions can be accomplished.

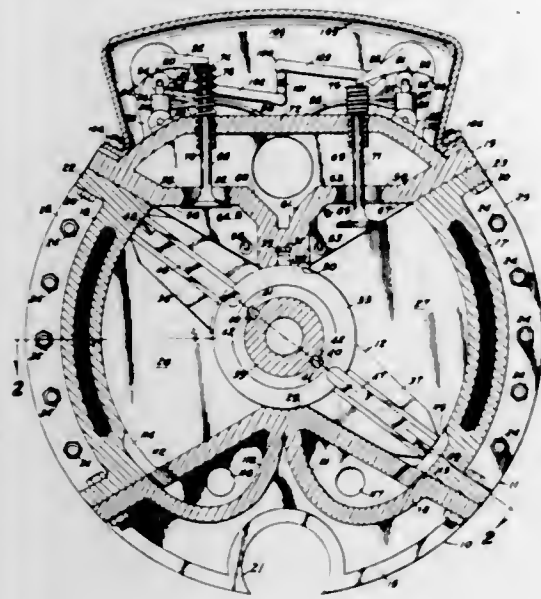


3,408,991

## OSCILLATING MACHINE

Carey L. Davis, Atlanta, Ga., assignor of twenty percent each to William B. Pritchett, Jr., Stone Mountain, and Berthold G. Stumberg, George M. Enbanks, and Richard N. Lester, Atlanta, Ga.

Filed July 12, 1967, Ser. No. 652,813  
16 Claims. (Cl. 123-18)



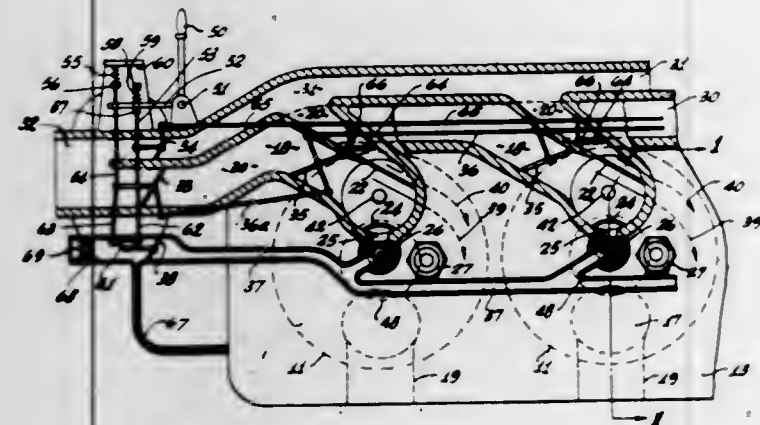
An oscillating engine including an integral, wing-shaped piston enclosed in a housing defining chambers through which the wing portions of the piston reciprocate. The wing portions of the piston can each function as a four-cycle piston or as a two-cycle piston, and each wing portion of the piston is connected to a common drive shaft. Sealing bars extend along the side surfaces and end surfaces of each piston, and are spring-urged away from the wing portions of the piston, into engagement with the chambers of the engine.

3,408,992

## INTERNAL COMBUSTION ENGINE AND PROCESS UTILIZING HEATED AUXILIARY AIR TO OBTAIN COMPLETE COMBUSTION

Ernest A. Von Seggern, 1051 E. Angeleno, Burbank, Calif. 91501, and Henry E. Von Seggern, Rte. 2, Box 1910, Escondido, Calif. 92025

Continuation-in-part of applications Ser. No. 369,091, May 21, 1964; Ser. No. 398,219, Sept. 22, 1964; Ser. No. 494,653, Oct. 11, 1965; and Ser. No. 553,425, May 27, 1966. This application Dec. 13, 1966, Ser. No. 601,480  
8 Claims. (Cl. 123-75)



An engine of the spark ignition type, with throttle and carbureted fuel supply, is provided in which a fuel-air mixture of substantially stoichiometric proportions and auxiliary air are held separately in the engine in stratified and adjoining relationship from the time of induction until at least the time of ignition. The fuel mixture is also stratified with respect to residual exhaust gases. Means for obtaining and maintaining stratification include: variable flow restricting and velocity increasing means in

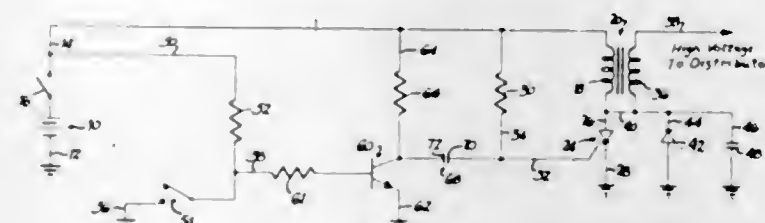
the induction system in close proximity to the intake valve; flow directing means to produce an organized circulation of either the fuel-air mixture or the auxiliary air about the length axis of the cylinder during the intake and compression cycles; and means for introducing the auxiliary air or the fuel-air mixture substantially along the axis of circulation of the other body. Several alternate configurations are shown.

3,408,993

## ELECTRICAL SWITCHING CIRCUIT

Leon A. Chavis, Detroit, Mich., assignor to Mallory Electric Corporation, Detroit, Mich., a corporation of Michigan

Filed Apr. 9, 1965, Ser. No. 447,004  
3 Claims. (Cl. 123-148)



The electrical switching circuit is for use as a vehicle ignition system. The ignition system employs solid state components and an improvement in switching circuits which reduces the necessity for exact control of the dwell time of the points or other timing device utilized in the ignition system.

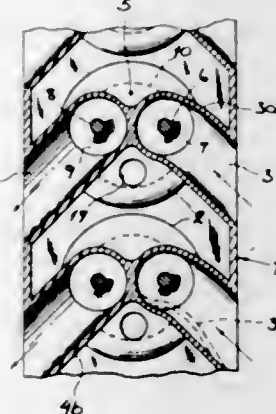
The circuit comprises a step-up transformer which has the usual primary and secondary winding. The anode-cathode circuit of a gate controlled switch is placed in series with the primary winding to permit current flow through this winding when the switch is conducting. The positive side of a D.C. power source is connected to the gate of the switch for making the gate positive with respect to the cathode. A parallel arranged resistor and capacitor are connected between the gate and the power source. Means are provided for repetitively establishing a potential on the power source side of the capacitor which is less than the potential on the opposite side of the capacitor. This results in the step of making the gate negative with respect to the cathode. This causes the switch to cease conducting for a period determined by the R-C time constant of the resistor and capacitor.

3,408,994

## INTERNAL-COMBUSTION ENGINE

Ludwig Kraus, Jahnstrasse 7, Wettstetten, near Ingolstadt, Germany

Filed May 5, 1966, Ser. No. 547,914  
Claims priority, application Germany, May 6, 1965, A 49,125  
5 Claims. (Cl. 123-191)



An internal-combustion engine whose cylinder head is formed with intake and exhaust passages opening

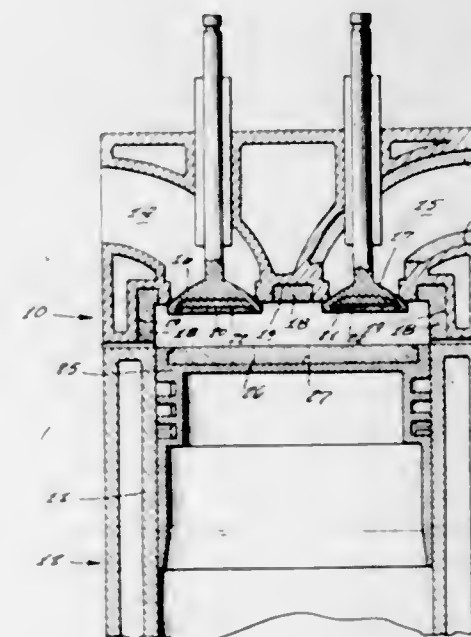
tangentially into the cylinder compression chamber for inducing a vortex movement of fuel-air mixture and exhaust gases therein, the passages being provided with valve plates and being curved away from the compression chamber while having imaginary extensions intersecting at a point within the compression chamber; a spark-plug is mounted in the cylinder head at a location diametrically opposite this point across the compression chamber.

3,408,995

## COMBUSTION CHAMBER DESIGN AND MATERIAL FOR INTERNAL COMBUSTION CYLINDERS AND ENGINES

Thomas A. Johnson, 1316 Emerson Lane, Milford, Ohio 45150

Filed May 22, 1967, Ser. No. 640,000  
1 Claim. (Cl. 123-191)



A ceramic insulating material for engine combustion chamber surfaces, including the surfaces of cylinder heads, piston heads, intake and exhaust valve heads, and exhaust passages for a multitude of advantages.

3,408,996

## RUBBER BAND GUN

Ole J. Lilleoren, Jr., 2840 SE. Woodstock Blvd. 97202; Robert J. Shidek, 441 NE. Graham 97212; and Chris G. Pazeotopoulos, 442 NE. Knott 97212, all of Portland, Oreg.

Filed May 3, 1965, Ser. No. 452,756  
1 Claim. (Cl. 124-19)



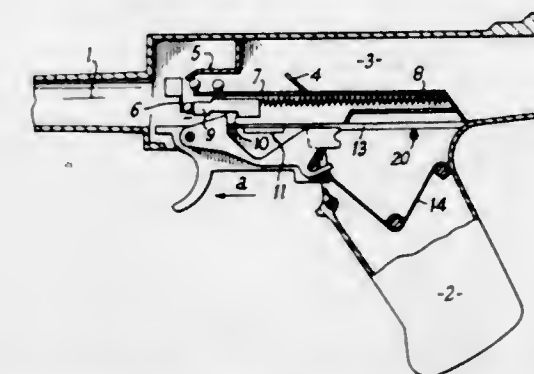
A toy gun for firing rubber band projectiles having removable trigger means and a detachable barrel with one form of the toy gun including main and positionable auxiliary barrels with separate trigger means associated with each.

3,408,997

## TOY REPEATER SPRING ACTUATED PISTOL

Gaston de Ruymbecke and Gérard de Ruymbecke, both of 20 Blvd. Bourre, La Pointe Rouge, Marseille, France

Filed Feb. 10, 1965, Ser. No. 431,530  
Claims priority, application France, Feb. 14, 1964, 20,464, Patent 383,351  
1 Claim. (Cl. 124-27)



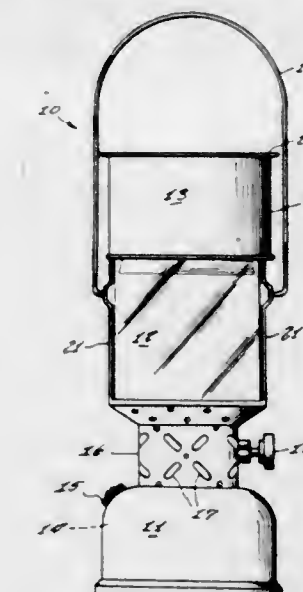
1. A toy repeater pistol comprising a body including a magazine to hold a plurality of shot, means in said body for positioning one shot at a time at a striking position in the body, a resiliently deformable element mounted in the body and positioned to retain a shot in striking position, a spring-loaded striker slidably mounted in the body and positioned to abut against a shot in the striking position, a spring-loaded trigger slidably mounted on the body for movement parallel to the striker, a resiliently deformable catch having a front end and a rear end, a deformable connection joining said front end and said rear end, said front end having means adapted to engage with the striker to cause said striker to be carried along against its spring-loading when the trigger is pulled in the firing direction, means tiltably mounting the front end of said catch on said trigger, and stop means on the body positioned for engagement by said rear end of the catch at the end of said pulling movement on the trigger thereby to cause the resilient catch to be deformed at said deformable connection and to cause said front end to move out of engagement with the striker and permit the striker to be returned by its spring-loading to contact and propel the shot.

3,408,998

## OUTDOOR HEATER

Salvatore Brancato and Salvatore Gambelunghi, both of 13-39 146th Place, Whitestone, N.Y. 11357

Filed Aug. 28, 1967, Ser. No. 663,847  
1 Claim. (Cl. 126-4)



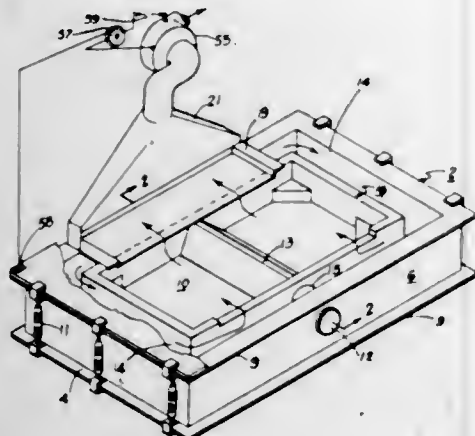
A heater for out-of-doors use, including a base, a reflector, and a cooking adapter so to allow use of the device for heating purposes as well as for cooking foods.



3,408,999

**LIQUID-FIRED COOKING APPARATUS**

Paul A. Mutchler, University City, St. Louis, Mo., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware  
Continuation-in-part of applications Ser. No. 557,493, June 14, 1966, and Ser. No. 620,001, Mar. 2, 1967.  
This application May 4, 1967, Ser. No. 636,170  
7 Claims. (Cl. 126-44)

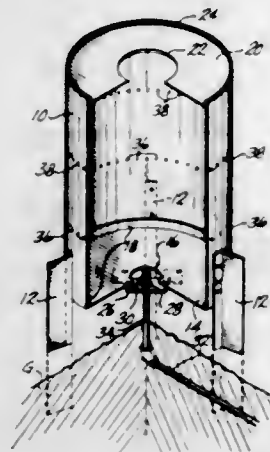


A cooking apparatus adapted to burn liquid fuel including a gas distribution arrangement for a cooking surface which applies heat along the peripheral edges of the surface so that heat flows from such edges toward the center of the surface to enhance the maintenance of a substantially uniform temperature throughout.

3,409,000

**SYSTEM FOR HEATING LARGE VOLUMES OF AIR**

Carl H. Brader, Prosser, and Arthur E. Tanasse, Sunnyside, Wash., assignors to Redi-Fire Heating, Inc., a corporation of Washington  
Filed Sept. 19, 1966, Ser. No. 580,251  
7 Claims. (Cl. 126-59.5)



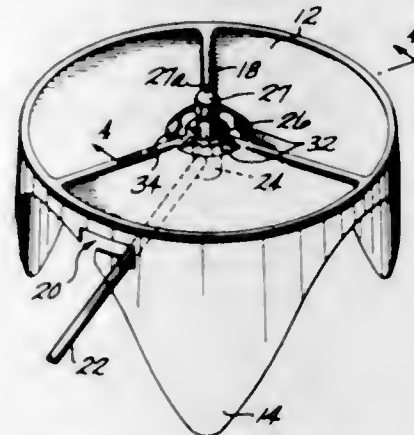
This invention relates to oil-fired systems for heating large volumes of air in the absence of a supply of forced air for effecting mixture of oil and air for burning. For example, the invention is applicable to orchard heating systems, systems for heating greenhouses, or space heaters for use in heating construction site areas or large buildings in cold weather, where a supply of oil is or can be made available under pressure, but where forced air is not sought to be utilized as it is, for example, in a domestic furnace burner. Domestic oil furnace burners utilize an oil nozzle and a forced air nozzle in combination to provide an efficient mixing of air and oil in a burnable mist. Another forced air circulation system is then utilized to distribute the heat from the burner to different areas of the home or building. The present invention is concerned with a heating unit utilizing neither of these auxiliary forced air elements, but utilizes only a special nozzle and convection as means for mixing air

and oil to form a burnable mist, and utilizes convection and radiation to distribute the heat. While the invention is herein described in terms of preferred forms thereof various modifications and changes therein will be recognized within the scope of the principles involved.

3,409,001

**SPACE HEATER BASE PLATE CONSTRUCTION**

Harry Franke, Mercer Island, Wash., assignor to Spot Heaters, Inc., Sunnyside, Wash., a corporation of Washington  
Filed May 11, 1967, Ser. No. 637,672  
5 Claims. (Cl. 126-59.5)

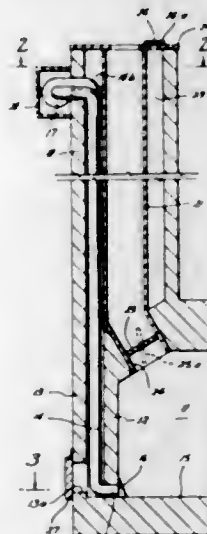


A base plate construction for an outdoor space heater which includes a stack defining a chamber for burning a mixture of fuel and air, a base forming the bottom of the chamber and supporting the stack above the supporting surface, and means including a nozzle for delivering a spray of fuel to the heater. The base comprises a circular base plate having a central opening therein adapted to receive the nozzle in a position to spray a mist of fuel upwardly into the chamber, a plurality of arcuate apertures surrounding the nozzle receiving opening in the immediate proximity thereof, and arcuate fins secured to the base plate along the outer peripheries of the arcuate apertures and inclined convergently toward the head of said nozzle to direct air entering through the apertures toward the nozzle head to cool the same and effect mixture of the air with the fuel mist emanating therefrom.

3,409,002

**FIREPLACE ASH REMOVAL AND DISPOSAL DEVICE**

Willie Vackar, 904 Longley, Houston, Tex. 77024  
Filed Apr. 20, 1967, Ser. No. 632,429  
6 Claims. (Cl. 126-120)



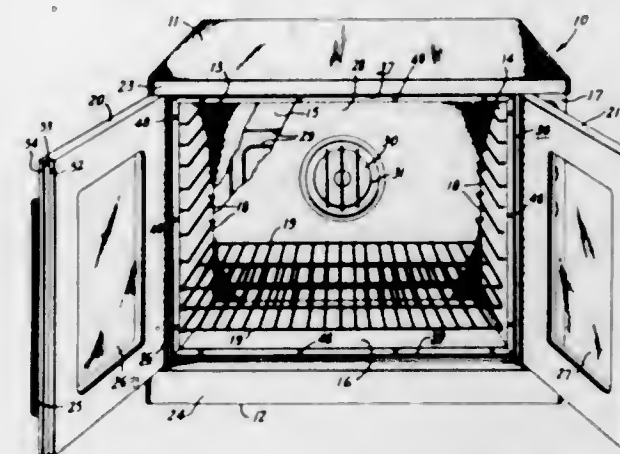
A double wall fireplace with an outer chimney containing a central flue with the inlet end of a suction duct opening into the ash area of the fireplace and the exhaust

end of the duct opening into the disposal space bounded on the inside by the inner fireplace wall and the central flue, respectively, and on the outside by the outer fireplace wall and the chimney.

3,409,003

**OVEN WITH IMPROVED SEALING MEANS**

Thomas R. Rehberg and Norman R. Brown, Chicago Heights, Ill., assignors to General Electric Company, a corporation of New York  
Filed Mar. 30, 1967, Ser. No. 627,035  
9 Claims. (Cl. 126-190)

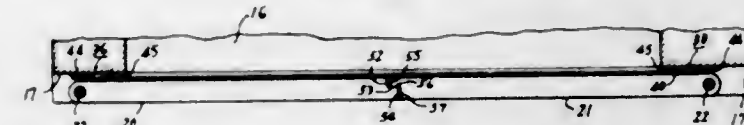


An oven includes an oven chamber opening at the front of the oven and a front peripheral wall on which are mounted four resilient metal strips surrounding the chamber opening. The strips have raised deflectible portions which are engaged and deflected rearwardly by two pivotally mounted doors when the doors are closed to provide a peripheral seal between the chamber and the doors. The doors have inner edges of stepped formation with portions overlapping when the doors are closed to provide an additional seal.

3,409,004

**OVEN WITH IMPROVED SEALING MEANS**

Thomas R. Rehberg, Chicago, Heights, Ill., assignor to General Electric Company, a corporation of New York  
Filed Mar. 30, 1967, Ser. No. 627,036  
7 Claims. (Cl. 126-190)



An oven includes an oven chamber opening at the front of the oven and a front peripheral wall on which are mounted four resilient metal strips surrounding the chamber opening. The strips have raised deflectible portions which are engaged and deflected rearwardly by two pivotally mounted doors when the doors are closed to provide a peripheral seal between the chamber and the doors. The doors have inner edges of stepped formation with portions overlapping when the doors are closed to provide an additional seal.

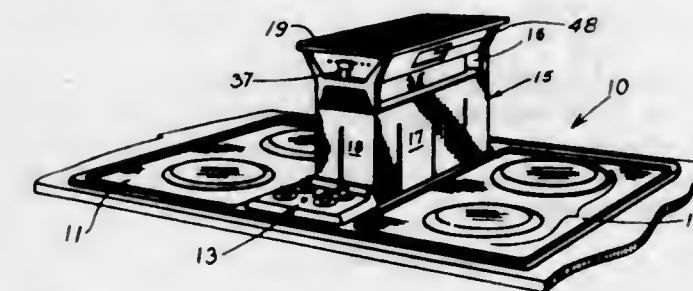
3,409,005

**COOKING RANGE WITH RETRACTABLE VENTILATING FLUE**

Thomas R. Field, Indianapolis, Ind., assignor to Jenn-Air Corporation, Indianapolis, Ind., a corporation of Indiana  
Filed Dec. 19, 1966, Ser. No. 602,957  
7 Claims. (Cl. 126-300)

An apparatus for capturing and exhausting cooking heat and vapors occurring from cooking on a range top. A telescoping flue communicating with an exhaust fan ex-

tends upwardly from the range top with its inlet opening adjacently spanning the airspace immediately above the

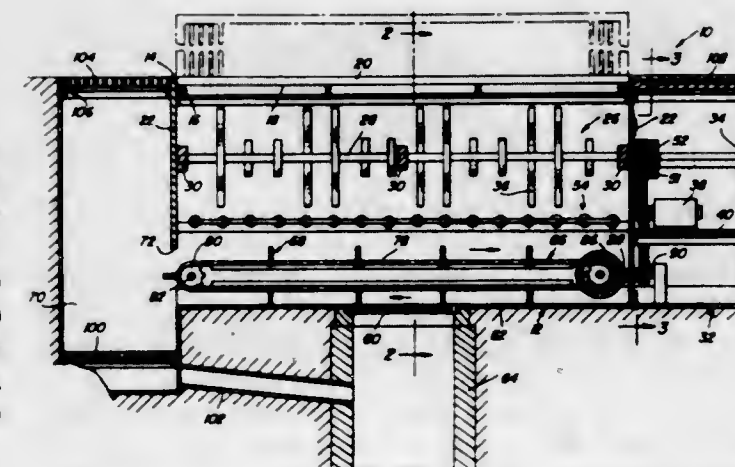


cooking area on the range top and in a close proximity to the point of occurrence of the heat and vapors resulting from cooking taking place on the range.

3,409,006

**SNOW DISPOSAL MACHINE**

Corrado V. Getti, 9 Town and Country Court, Utica, N.Y. 13502  
Filed Mar. 2, 1967, Ser. No. 620,188  
10 Claims. (Cl. 126-343.5)

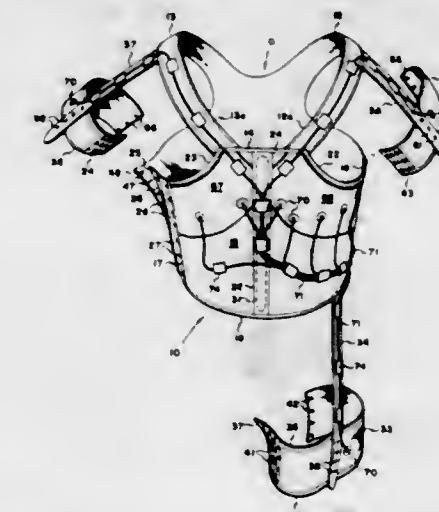


A machine for receiving, pulverizing and melting large amounts of snow for subsequent disposal of the melted snow through a municipal sewer system. The apparatus includes means for separately collecting the debris associated with the load of snow so as not to clog or otherwise interfere with the disposal of the melted snow through the sewer system.

3,409,007

**BODY ELECTRODE SUPPORT GARMENT**

Ernest W. Fuller, Atlanta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.  
Filed Nov. 26, 1965, Ser. No. 509,941  
7 Claims. (Cl. 128-2.06)



A vestlike garment preferably fabricated from elastic cloth and configured to surround snugly at least the upper

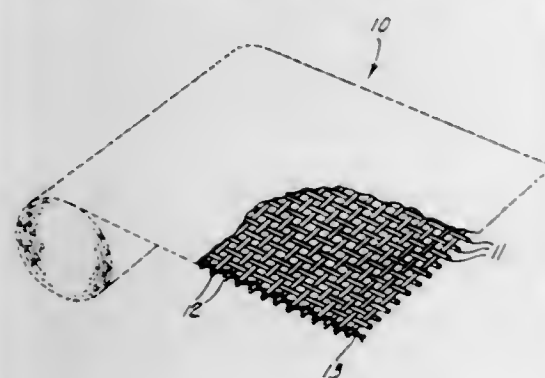


portion of the torso of a wearer. A number of electrodes of a type useful in cardiological examination can be attached to the garment in predetermined locations so that when the garment is worn, these electrodes are respectively properly positioned on the body of the wearer for cardiological examination purposes. A pair of arm bands and a leg band each containing an electrode are attached to the vestlike garment preferably by a substantially inelastic support so that a definite location of these limb electrodes is assured.

3,409,008

**DISPOSABLE ELASTIC BANDAGE**

John A. Mortensen, Bound Brook, and De Witt R. Petterson, North Brunswick, N.J., assignors to Johnson & Johnson, a corporation of New Jersey  
Filed Apr. 20, 1966, Ser. No. 543,872  
11 Claims. (Cl. 128—156)

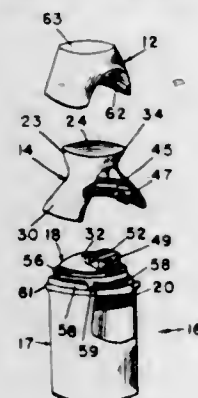


1. A disposable elastic bandage comprising: from about 15 to 25 warp yarns per inch running the length of said bandage, from about 5 to 15 filling yarns per inch running the width of said bandage, said warp and filling yarns being woven in a balanced weave with substantially equal number of ends up as there are ends down, the longitudinal edges of said bandage being sealed to prevent raveling, said warp yarns being stretch yarns selected from the group consisting of core spun yarns and wrapped yarns, and said warp yarns having a yarn size of from about 10's to 30's and an elongation of at least 110%, and said filling yarns being nonstretch yarns of spun staple fiber, said fiber having a denier of from about 5.5 to 15 and a staple length of at least 2.5 inches, and said yarn having a twist multiplier from about 2.8 to 4.5, whereby said bandage has bulkiness, smoothness, good cover factor, conformability and substantially no tendency to curl along its edges.

3,409,009

**LIQUID DISPENSING CONTAINER**

John G. Vasse, 14856 Faust St., Detroit, Mich. 48223  
Continuation of application Ser. No. 380,560, July 6, 1964. This application Sept. 5, 1967, Ser. No. 665,641  
6 Claims. (Cl. 128—249)



A dispensing container for the administration of a medicinal eye wash including a cup part and an adminis-

tering part with alignable liquid passages therebetween for conducting the liquid to be administered.

3,409,010

**HALF-GLOVE MEDICAL APPLICATOR MITT**

Harold Paul Kron, Holcombe, Wis. 54745  
Filed Apr. 25, 1966, Ser. No. 545,095  
5 Claims. (Cl. 128—260)



1. A disposable half-glove medical applicator and cleaning mitt comprising:

- (A) an elongated sheet of flexible, stretchable material having an absorbent surface cut to form
  - (1) a trunk which
  - (2) when folded upon itself, and
  - (3) stitched along its outside edges produces
- (B) an abbreviated palm section;
- (C) an abbreviated back section;
- (D) a sheath adapted to provide a common cover for only the three outermost fingers of the human hand;
- (E) a fingerstall adapted to cover the index finger only;
- (F) an abbreviated cuff section of just sufficient length to reach just back of the knuckles of the user without including the thumb;
- (G) an elastic band so secured in the cuff opening of the mitt as to prevent the device from slipping off over the knuckles during use.

3,409,011

**SANITARY TAMPON APPLICATOR**

Heinz Mittag, Dusseldorf, Germany, assignor to Dr. Carl Hahn KG., Dusseldorf, Germany  
Filed Dec. 27, 1965, Ser. No. 516,229  
Claims priority, application Netherlands, Dec. 31, 1964, 6415304  
9 Claims. (Cl. 128—263)



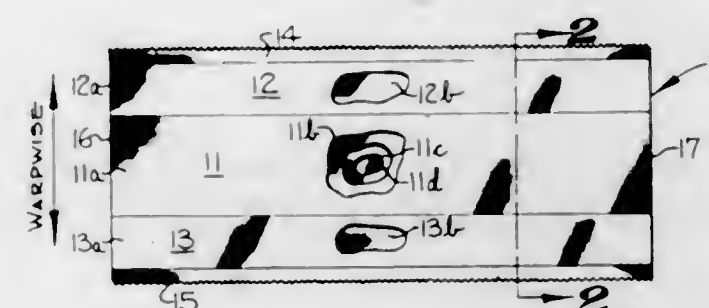
A tampon applicator comprising a housing for the tampon and means, operatively associated with said housing, adapted to eject the tampon therefrom; wherein said housing has a larger internal diameter at the end thereof.

corresponding to the insertion end of the tampon and a smaller internal diameter at the end thereof corresponding to the withdrawal end thereof.

3,409,012

**DIAPER WITH INTERWOVEN HYDROPHOBIC YARNS**

Norman L. Seltzer, Princeton, N.J., assignor, by mesne assignments, to Riegel Textile Corporation, New York, N.Y., a corporation of Delaware  
Filed Jan. 10, 1964, Ser. No. 337,044  
4 Claims. (Cl. 128—284)

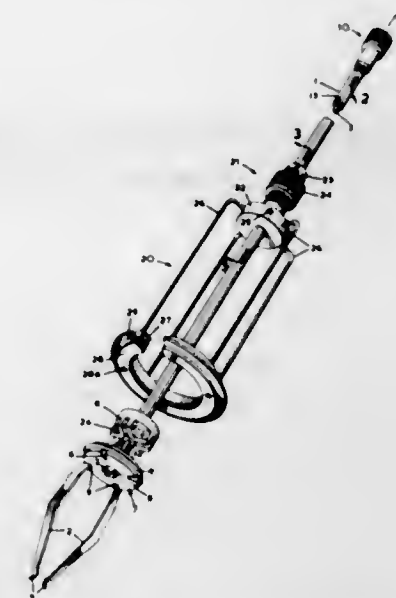


1. A woven diaper adapted to be folded comprising at least two layers of juxtaposed fabric defining opposite sides of at least the central portion of the diaper, each of said fabric layers being formed of interwoven hydrophobic and hydrophilic yarns, the exterior surfaces of each layer being predominantly formed of the hydrophobic yarns to draw moisture away from the skin of a wearer, and the interior surfaces of each layer being predominantly formed of hydrophilic yarns to absorb and retain the moisture.

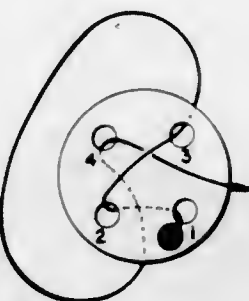
3,409,013

**INSTRUMENT FOR INSERTING ARTIFICIAL HEART VALVES**

Henry Berry, 170 St. George St., Toronto, Ontario, Canada  
Filed Oct. 23, 1965, Ser. No. 503,753  
Claims priority, application Great Britain, Aug. 23, 1965, 36,048/65  
13 Claims. (Cl. 128—303)



A surgical instrument for the suture implantation of a cardiac valve prosthesis comprises a shank, at one end of which are mounted pivotal jaws for gripping the prosthesis, and a suture retaining device mounted on the shank and slidable along the shank to a position where it encompasses the jaws.

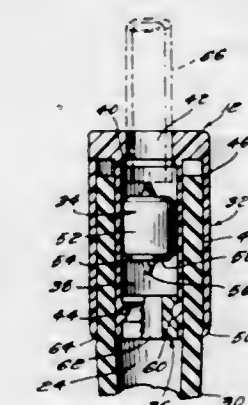


3,409,014  
**SURGICAL LIGATING DISK HAVING A NOOSE FORMING LIGATURE THREADED THERE THROUGH**  
Suel Grant Shannon, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.  
Filed Oct. 8, 1965, Ser. No. 494,103  
11 Claims. (Cl. 128—326)

A ligator is provided consisting of a ligature loop and locking disk. The disk takes various configurations but is designed to threadably receive a length of ligature in a manner to produce a one-way knot. The knot is of the type which becomes tighter as increased pressure is exerted on the ligature loop by an encircled blood vessel.

3,409,015

**BALLOON CATHETER HAVING AN INTEGRAL SELF-SEALING INFLATION VALVE**  
Reinold E. Swanson, Rehoboth, Mass., assignor to Davol Inc., a corporation of Rhode Island  
Filed Apr. 1, 1965, Ser. No. 444,867  
7 Claims. (Cl. 128—349)



A self-sealing valve for catheters and the like having means for securing said valve within and adjacent the open end of the inflating lumen of the catheter, said valve having means permitting fluid flow into the catheter through said inflating lumen, said means automatically preventing backflow of the fluid from the catheter, thus maintaining the catheter inflated.

3,409,016

**DISPOSABLE CARTRIDGE FOR INFLATING BAG CATHETERS**

Frederic E. B. Foley, St. Paul, Minn., assignor to Selflate Corporation, St. Paul, Minn., a corporation of Minnesota  
Filed Apr. 8, 1964, Ser. No. 358,259  
6 Claims. (Cl. 128—349)

A disposable cartridge for inflating bag catheters comprising a flexible pouch having a tubular tip projecting from the open end of the pouch and communicating the interior of the pouch with the surrounding environment, the pouch having a rupturable cartridge therein contain-



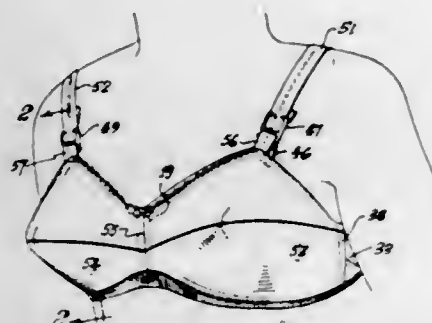
ing a catheter bag inflating fluid under sufficient constrictive pressure to propel the inflating fluid from the



pouch through the pouch tubular tip to cause inflation of a catheter bag.

**3,409,017**  
**BRASSIERE**

Alberta P. Ramsell, Santa Monica, Calif., assignor to Pennyrich International, Inc., Carolina, Puerto Rico  
Filed May 9, 1966, Ser. No. 548,497  
7 Claims. (Cl. 128-486)



**1. In a brassiere:**

- a chest encircling fabric band including means for detachably interconnecting its ends;
- a first vertical fabric strip fixedly secured at its lower end to the central portion of said chest encircling band and extending upwards therefrom for disposition between the breasts;
- second and third vertical fabric strips fixedly secured at their lower ends to spaced apart portions of said chest encircling band on either side of said first fabric strip for disposition at the back of each breast beneath the arms of the wearer;
- a pair of elongate chest engaging strips disposed in end-to-end relationship with their adjacent ends secured to said first vertically extending strip, the bottom edge of each of said chest engaging strips being secured to said chest encircling band and with its outlying end secured to a different one of said second and third vertical strips, each of said chest engaging strips having a substantially straight upper edge surface; and
- a bust supporting band for each of said chest engaging strips, each bust supporting band defining a main body portion overlying a chest engaging strip and extending from said first vertical strip to one of said second and third vertical strips, and an irregularly shaped end portion outlying said second and third vertical strips, each of said main body portions having an inwardly bowed lower edge flexibly interconnected with the upper straight edge of the underlying chest engaging strip, each of said end portions defining a lower edge secured to said chest encircling band and a substantially straight upper edge diagonally extending from an upper point at one of said second and third vertical strips to a lower point joining said lower edge at said chest encircling band, said second and third vertical strips being fixedly secured to said bust supporting bands along a substantially vertical line extending from said upper point downwardly to the lower edge of said end portion of the respective bust supporting band.

**3,409,018**  
**METHOD FOR TREATMENT OF TOBACCO SMOKE**  
Marvin M. Smith, 1010 E. Parkway Drive, Muncie, Ind. 47302

No Drawing. Continuation-in-part of abandoned application Ser. No. 585,712, Oct. 4, 1966, which is a continuation of application Ser. No. 351,531, Mar. 12, 1964. This application Mar. 14, 1968, Ser. No. 712,971  
5 Claims. (Cl. 131-9)

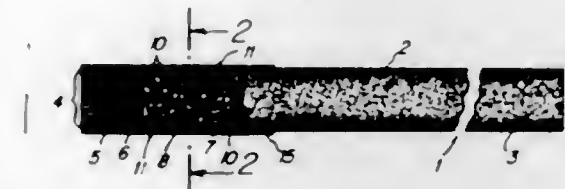
A method for treating the smoke of a burning cigarette to cause the condensate particles of the volatile constituents thereof to increase in size within the body of the cigarette so that a major portion of such particles will be of a size greater than one micron in diameter and be trapped more readily on the mucous membranes of the smoker's mouth whereby the amount of the condensates likely to enter the smoker's lungs is minimized.

**3,409,019**  
**SMOKE CONTROL MEANS FOR CIGARETTES**  
Allen H. K. Chun, 2337 Centinela Ave., Santa Monica, Calif. 90405  
Filed Dec. 8, 1965, Ser. No. 512,337  
10 Claims. (Cl. 131-10.7)



A smoke controlling device in the form of a sleeve which is slidable and rotatable on a cigarette, and provided with a hollow longitudinal rib for the passage of auxiliary air either into the user's mouth or entrained with the smoke. In the latter case, the cigarette is punctured and preferably a cavity is provided within a filler unit contained in the cigarette.

**3,409,020**  
**TOBACCO SMOKE FILTER**  
Claude Eric Westbrook, Jr., Milledgeville, Ga., Jerome Sidney Osmalov and Richard Noble Thomson, Richmond, Va., assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia  
Filed Feb. 24, 1965, Ser. No. 434,791  
4 Claims. (Cl. 131-10.9)



This disclosure relates to a tobacco smoke filter comprising particles of activated carbon which are fused together with polyalkylene oxide particles, such as polyethylene oxide particles.

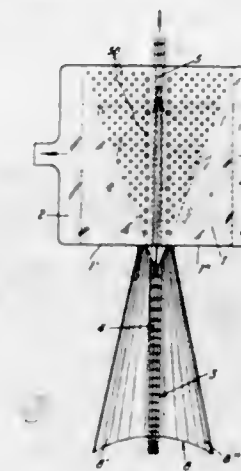
**3,409,021**  
**REDUCED TAR CONTENT CIGARETTE**  
Kenichi Owaki, Fukiai-ku, Kobe, Japan  
(508-4 Hayashishimomizo, Akashi-shi, Hyogo-ken, Japan)  
Continuation-in-part of application Ser. No. 449,447, Apr. 20, 1965. This application Nov. 7, 1967, Ser. No. 681,176  
Claims priority, application Japan, Apr. 28, 1964, 39/24,067  
7 Claims. (Cl. 131-15)

A cigarette of tubular configuration having spaced

bands of fireproof material having high heat conductivity which bands are carried by intervening paper bands



adequate strips, scanning the strip for faulty spots and gluing the ends of the strips into one another, measuring



**3,409,022**  
**PROCESS OF PUFFING TOBACCO STEMS BY RADIANT ENERGY**  
Roger Zygmunt de la Burde, Richmond, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia  
No Drawing. Filed Dec. 17, 1965, Ser. No. 514,667  
1 Claim. (Cl. 131-121)

This disclosure involves the exposure of tobacco stems, containing at least 4% to 23% moisture by weight, to a radiant energy source having a temperature of from 190° C. to 300° C., preferably 140-170° C., at a pressure of from 20 mm. Hg to slightly greater than atmospheric pressure for from 10 seconds to 20 minutes and at a distance from the radiant energy source of from one to 10 inches so as to induce puffing or expansion thereof thereby rendering such stems suitable for use in smoking articles without further treatment.

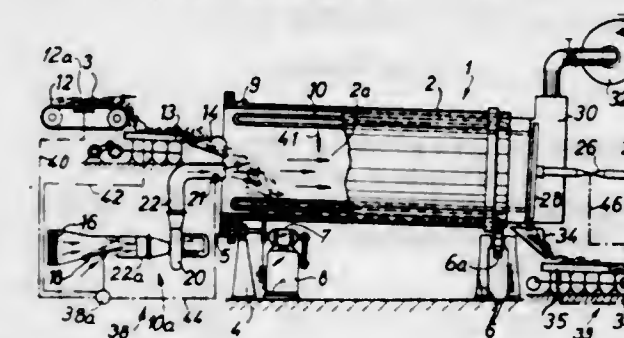
**3,409,023**  
**METHOD OF PUFFING TOBACCO STEMS BY MICROWAVE ENERGY**  
Roger Zygmunt de la Burde, Richmond, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia  
No Drawing. Filed Dec. 17, 1965, Ser. No. 514,699  
3 Claims. (Cl. 131-121)

This disclosure relates to a method for treating tobacco stems having a moisture content of about 4% to 25% by weight whereby the tobacco stems are expanded or puffed to greatly increase their size and decrease their density by subjecting the stem alone or in the leaf to microwave energy for a period of from 7 to 220 seconds while the leaves or stems are resting on a converter belt positioned so that the longitudinal axes of the stems would be parallel to the energy source which belt carries them into proximity with a microwave generator having a power input of about 1/2 kw. to 15 kw. and a frequency of from above 900 mc. to below 5,000 mc. at operation temperatures of 0° C. to 200° C., subatmospheric pressures of 10 to 759 mm. Hg and at a distance from the power source of from about 1/2 inch to about 30 inches.

**3,409,024**  
**APPARATUS FOR PREPARING TOBACCO LEAVES**  
Alain Menguy, 7 Rue de la Krutenav, 67 Strasbourg, France  
Continuation-in-part of application Ser. No. 412,351, Nov. 19, 1964. This application Oct. 30, 1967, Ser. No. 679,023  
Claims priority, application France, Nov. 20, 1963, 954,417; Feb. 14, 1964, 962,640  
14 Claims. (Cl. 131-123)

A machine for forming strips from tobacco leaves for wrapping of cigars by spreading the leaves, cutting the mid-rib out, splitting the parenchyma of the leaves into

**3,409,025**  
**METHOD AND APPARATUS FOR TREATING TOBACCO LEAVES**  
Waldemar Wochowski, Hamburg, Germany, assignor to Hauni-Werke, Koerber & Co. K.G., Hamburg-Bergedorf, Germany  
Filed July 6, 1966, Ser. No. 563,147  
Claims priority, application Great Britain, July 6, 1965, 28,553/65  
18 Claims. (Cl. 131-135)



Raw tobacco leaves are destalked to form a mixture of ribs and laminae, and the laminae are thereupon segregated from ribs and are converted into a stream which is conveyed through a conditioning zone where the laminae are agitated and are simultaneously subjected to a heating action. The moisture content of laminae is measured upstream and/or downstream of the conditioning zone and the heating action is adjusted when the result of measurement deviates from a predetermined value. The thus treated laminae are then stored in the form of bales or in containers.

**3,409,026**  
**METHOD OF PREPARING A RECONSTITUTED TOBACCO COMPOSITION**  
John D. Hind and Robert B. Selgman, Richmond, Va., assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia  
No Drawing. Application June 16, 1966, Ser. No. 557,903, now Patent No. 3,353,541, dated Nov. 21, 1967, which is a continuation-in-part of application Ser. No. 336,009, Jan. 6, 1964. Divided and this application Apr. 24, 1967, Ser. No. 636,567  
1 Claim. (Cl. 131-140)

This disclosure relates to a process for producing a binder composition for use in the manufacture of reconstituted tobacco. The binder for said reconstituted tobacco is made from tobacco plant parts and the process involves the use of the naturally occurring tobacco pectins as said binder, which are obtained by a process in which an alkali



metal carbonate is employed to treat the tobacco plant parts. The treatment involves the destruction of the alkaline earth metal cross-links of the tobacco pectins, the release of the resulting tobacco pectins by a washing action and finally the shaping of the resultant slurry into a tobacco product.

3,409,027

# METHOD OF PREVENTING THE SHRINKAGE OF PUFFED TOBACCO AND PRODUCT OBTAINED THEREBY

Roger Zygmunt de la Burde, Richmond, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 17, 1965, Ser. No. 514,698  
5 Claims. (Cl. 131-140)

This disclosure relates to a method for arresting tobacco stem shrinkage in the mesophyll cells or the tendency of puffed or expanded stems to revert to their normal size, which method involves adjusting to a moisture content of from about 8% to about 16%, then expanding or puffing the stems, moisturizing the outer portion of the stems with water at room temperature or steam by exposure thereto for from 5 to 60 seconds, passing said moistened stems between heated spreading means maintained at a temperature of at least 100° C. and so positioned as to provide a gap of about 0.02 to 0.05 inch and to exert a pressure differential on the stem thus effecting separation of the mesophyll and epidermis from the lignified xylem without collapsing the puffed stem structure of the mesophyll cells but while partly powderizing the dry lignified fractions. Stems so treated are incorporated into tobacco sheet and used as cigarette fillers.

3,409,028

# METHOD OF MAKING A RECONSTITUTED TOBACCO SHEET

Roger Zygmunt de la Burde, Richmond, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 17, 1965, Ser. No. 514,714  
2 Claims. (Cl. 131-140)

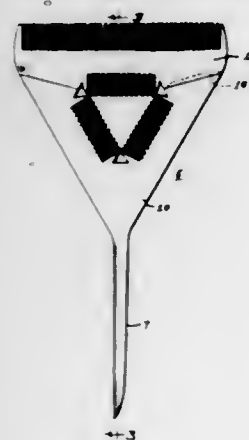
This disclosure relates to method of preparing a reconstituted tobacco sheet which includes tobacco stems, fines and midribs, such method involving the expanding or puffing of the tobacco stems, grinding the stems and mixing them with a liquid vehicle to form a slurry, casting or rolling the slurry into a sheet and evaporating the liquid.

3,409,029

# TEASING COMB

Roland A. Kumpa, 2915 Wood Ave.,  
El Paso County, Colo.

Filed Jan. 20, 1966, Ser. No. 521,977  
2 Claims. (Cl. 132-133)



A hair styling comb having a Y-shaped body with a plurality of teeth in opposing relation on the inside edges

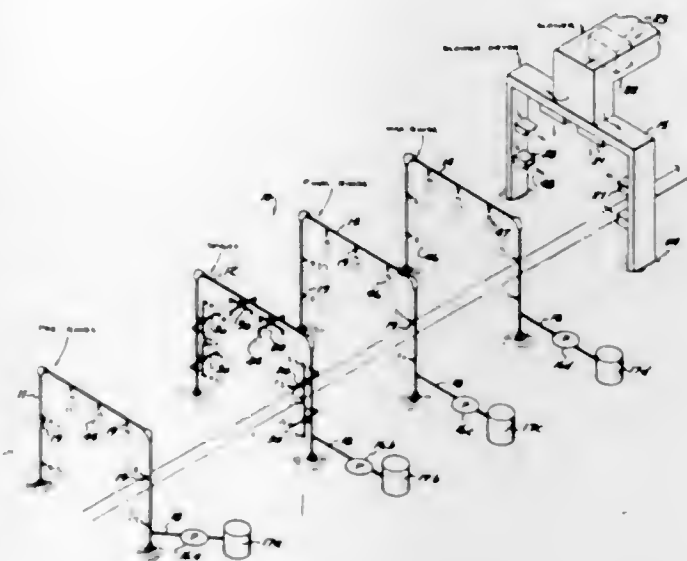
of the divergent legs of the body and having a third leg member with comb teeth on both sides thereof disposed so as to bridge the divergent legs of the Y-shaped body.

3,409,030

# CARWASH REVOLVING SPRAY NOZZLE

Anthony P. Schmidt, 2849 15th Ave.,  
Port Huron, Mich. 48060

Filed Nov. 1, 1966, Ser. No. 591,247  
1 Claim. (Cl. 134-123)



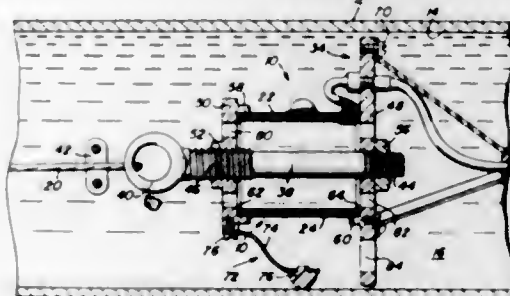
A high pressure wash-spray means for washing automobiles having a sealed bearing member through which liquid passes to a plurality of rotating impulse nozzles.

3,409,031

# SONIC CLEANING APPARATUS FOR PIPES

Fletcher A. Benbow, 613 W. 2nd St., and Elvin H. Ryder, Jr., 4206 Fernwood St., both of Odessa, Tex. 79760

Filed Nov. 18, 1966, Ser. No. 595,493  
8 Claims. (Cl. 134-169)



5. In combination with tubing enclosing a volume completely occupied by a circulated fluent material, apparatus for cleaning the internal surface of said tubing comprising, a remotely located source of electrical energy, crystal means for converting electrical energy into ultrasonic energy having a passage through which the fluent material may flow, a flexible cable connecting said source to the crystal means, means mounting said crystal means in spaced relation to the tubing within said volume enclosed thereby for transmitting ultrasonic energy through the fluent material to the internal surface, towing means connected to the mounting means for displacement of the crystal means through the tubing and centering means secured to the mounting means, and passage means formed by the mounting means for conducting the fluent material

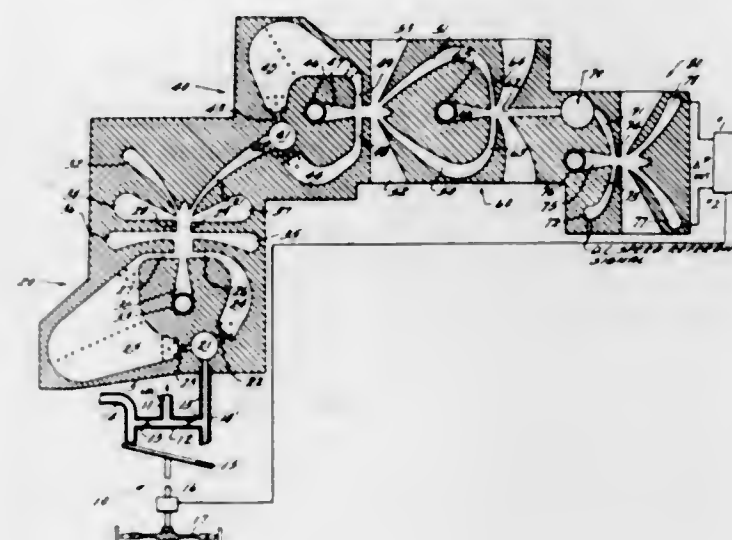
internally and externally in contact with the crystal means to cool the same.

3,409,032

# FLUID-OPERATED FREQUENCY SENSING CONVERTER CIRCUIT

Willis A. Boothe and Carl G. Ringwall, Scotia, Lonny Ray Kelley, Ballston Lake, and Donald L. Rexford, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York  
Continuation-in-part of application Ser. No. 457,074, May 19, 1965. This application Oct. 21, 1965, Ser. No. 499,403

7 Claims. (Cl. 137-36)



The disclosure shows a fluid signal circuit wherein an input signal is first converted to a square wave signal of fixed amplitude. A derivative circuit derives a pulse output for each change in the square wave signal. The pulses have a fixed energy value representative of a half cycle of the square wave. The pulsating output of the derivative circuit is converted to a uniform pressure, the magnitude of which is proportionate to the frequency of the input signal. The circuit may be employed in a control loop with the frequency of the input signal reflecting the rate of operation of a given element and the output signal employed, through transducer means, to maintain a desired rate of operation for that element.

3,409,033

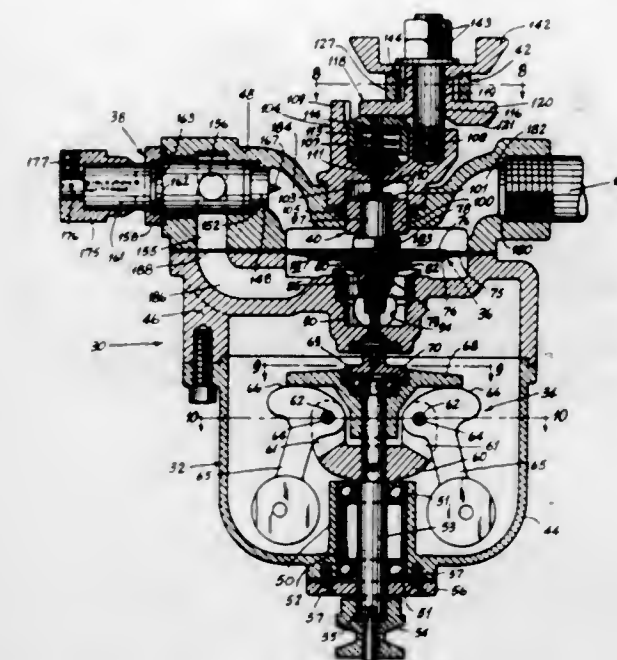
# LIQUID FLOW CONTROL STRUCTURE

Douglas Johnston, Athens, Ala., assignor to Decatur Foundry & Machine Co., Inc., Decatur, Ala., a corporation of Alabama

Filed Dec. 30, 1964, Ser. No. 422,217  
12 Claims. (Cl. 137-51)

A flow control structure adapted to be mounted on a wheeled applicator to receive and discharge anhydrous ammonia, and the like, in predetermined quantities proportional to the speed of the applicator, comprising a housing, a diaphragm in the housing separating a space into an upper chamber and a lower chamber, the upper chamber receiving anhydrous ammonia at substantially tank pressure, a passage communicating the upper and lower chambers having an adjustable calibrated valve therein for controlling the flow, a discharge valve in the lower chamber connected to the diaphragm for movement therewith, and a governor mounted in the housing below the lower chamber operatively connected to the discharge valve and the diaphragm for exerting a force upon the diaphragm proportional to the square of the speed of the applicator on which the structure is mounted, the governor including a pulley adapted to be connected to the wheels of the applicator so that the speed of the

governor is proportional to the speed of the applicator, the governor initially opening the valve in the lower chamber on movement of the applicator, the operating position of the valve thereafter at a given speed of the



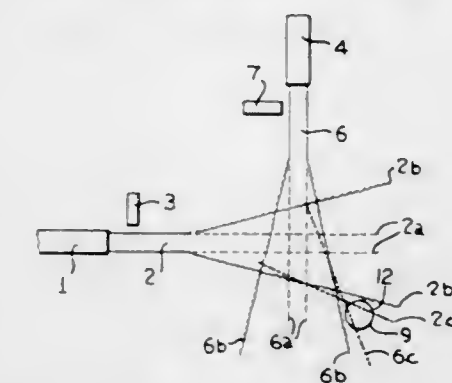
applicator being determined by a balance of the force of the governor on the diaphragm and the pressure drop across the diaphragm through the valved connecting means, the pressure drop depending upon the speed of the governor.

3,409,034

# COMBINED STREAM INTERACTION AND TURBULENT AMPLIFIERS

Howard L. Rose, 8823 Lanier Drive,  
Silver Spring, Md. 20910

Filed Oct. 23, 1965, Ser. No. 503,788  
6 Claims. (Cl. 137-81.5)



A fluid amplifier comprising means for issuing a pair of angularly disposed, normally laminar streams of fluid and means for selectively rendering said streams of fluid turbulent, said streams intersecting one another only when both said streams are turbulent, and means for issuing a third normally laminar fluid stream along a path such that the third stream is rendered turbulent only when said first and second streams are concurrently rendered turbulent.

3,409,035

# VALVE ASSEMBLY WITH RESILIENT ENCAPSULATING NOSE PORTION AND WALL SCRAPING MEANS

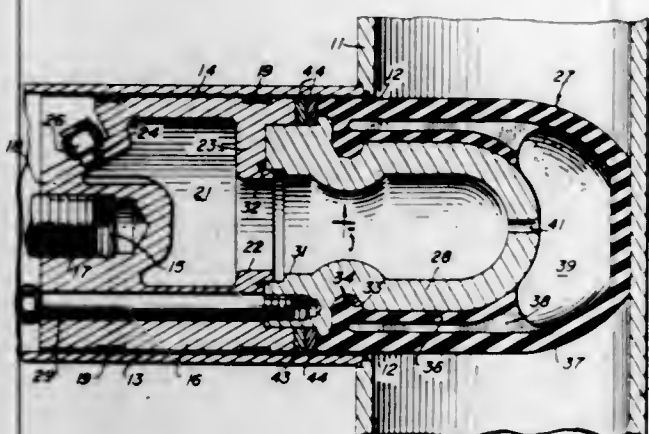
Raymond J. Miller, Racine, Wis., assignor to J. I. Case Company, a corporation of Wisconsin

Filed Apr. 19, 1966, Ser. No. 543,690  
7 Claims. (Cl. 137-242)

A plug valve assembly comprising a resilient nose member detachably secured to a valve body so that it may be replaced when it becomes worn. The nose member is



adapted to be moved transversely into a pipe through which concrete flows. The resiliency of the nose member allows it to encapsulate concrete particles trapped between it and the inner wall surface of the pipe. The nose member has a fluid-filled chamber to facilitate recovery of its initial shape when it is moved out of sealing engagement with the inner wall surface of the pipe. The valve body has scraping means associated with it to scrape the inner wall surface of the housing clean as the valve is moved in the housing.



cover of its initial shape when it is moved out of sealing engagement with the inner wall surface of the pipe. The valve body has scraping means associated with it to scrape the inner wall surface of the housing clean as the valve is moved in the housing.

#### 3,409,036 HYDRAULIC POSITIONER WITH SHOCK SUPPRESSION FEATURES

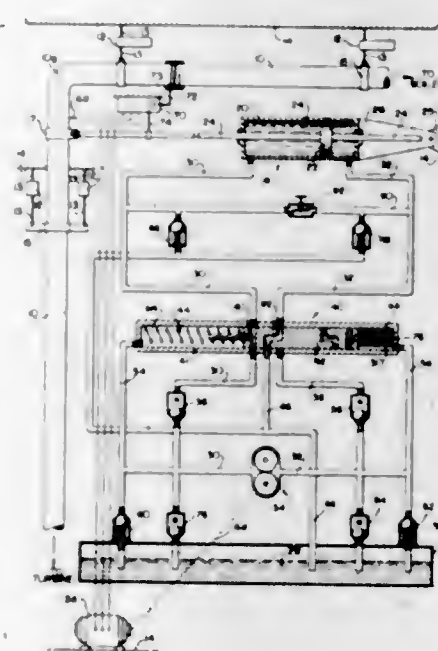
Philip C. Sherburne, East Providence, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware

Filed Apr. 12, 1966, Ser. No. 542,110  
17 Claims. (Cl. 137-343)

1. Apparatus for controlling, with respect to fixed structure, the positions of at least a portion of fluid handling equipment subject to a change in position due to a change in a thermal condition of said equipment, said apparatus comprising:

- (I) a hydraulic cylinder member which has:
  - (A) end walls,
  - (B) a chamber defined in part by said end walls,
- (II) a piston which:
  - (A) is located in said cylinder member chamber,
  - (B) separates said chamber into two portions,
  - (C) is movable with respect to said cylinder member to and from the end walls thereof,
- (III) a piston rod member which:
  - (A) is connected to said piston,
  - (B) extends through:
    - (1) at least one of said cylinder member chamber portions,
    - (2) at least one of said cylinder member end walls,
- (IV) means for connecting one of said members to said fixed structure,
- (V) means for connecting the other of said members to said equipment portion,
- (VI) a source of hydraulic fluid having:
  - (A) means for pressurizing said fluid,
  - (B) at least one discharge opening,
  - (C) at least one intake opening,
- (VII) a first conduit connecting said discharge opening to one of said chamber portions,
- (VIII) a second conduit connecting said other chamber portion to a said intake opening,
- (IX) one valve member part which:
  - (A) is located in said first conduit,
  - (B) has a first position maintaining said first conduit closed,
  - (C) has a second position maintaining said first conduit open,

- (X) another valve member part which:
  - (A) is located in said second conduit,
  - (B) has a first position maintaining said second conduit closed,
  - (C) has a second position maintaining said second conduit open,
- (XI) means responsive to a said change in a thermal condition of said equipment for moving said one valve member part from its first position to its second position,
- (XII) means responsive to a said change in a thermal condition of said equipment for moving said other valve member part from its first position to its second position,
- (XIII) a third conduit which:
  - (A) is connected between said portions of said cylinder member chamber,
  - (B) by-passes said valve member parts,
  - (C) has at least one portion which is more restricted than any part of the first and second conduits when said valve member parts are in their second positions,



whereby fluid under pressure from said source passes substantially unrestricted to one of said cylinder member chamber portions when said valve member parts are in their second positions to thereby move the equipment portion upon a said change in a thermal condition of said equipment, whereby rapid movements of said piston with respect to said cylinder member caused by shock movements of said equipment portion are suppressed when said valve member parts are in their first positions, and whereby slow movements of said piston with respect to said cylinder member caused by temperature expansion movements of said equipment portion are substantially unhindered when said valve member parts are in their second positions.

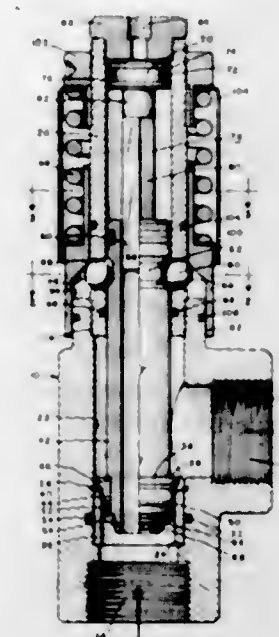
#### 3,409,037 PRESSURE RELIEF OR FLOW CONTROL VALVE

Fred B. Nelson, P.O. Box 51987, Lafayette, La. 70501  
Filed July 30, 1965, Ser. No. 475,928  
2 Claims. (Cl. 137-514.7)

A pressure relief valve mechanism in which the valve is opened by inlet pressure and has means for yieldingly resisting opening movement of the valve until the inlet pressure reaches a predetermined value, after which the valve opens with a snapping action. The invention also embodies means for applying a closing force to the valve by fluid pressure from a source other than the source whose flow is controlled by the valve. The means for

yieldingly resisting opening movement of the valve may include spring means and differential areas of the valve exposed to pressure tending to move the valve toward open position. Means may also be provided, located for

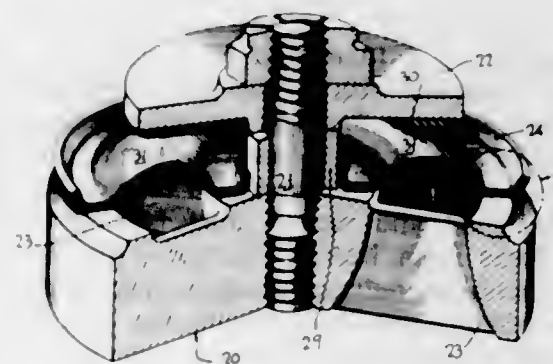
closure of sandwich type including a metal base plate at bottom and a metal pressure plate on top between which a rubber seal ring is retained under pressure. Outer periphery of base plate and lower part of outer periphery



operation exteriorly of the valve housing for varying the resistance of the yieldable means to opening the valve, whereby the opening pressure of the valve may be regulated.

#### 3,409,038 LAMINATED MAGNETIC RUBBER VALVE

Raymond H. Blackford, Hartsdale, N.Y., assignor to Durable Manufacturing Company, New York, N.Y., a corporation of New York  
Filed Apr. 26, 1966, Ser. No. 545,314  
10 Claims. (Cl. 137-516.15)

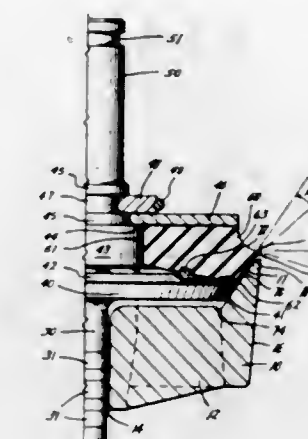


A reciprocating valve structure which slides on a guide stem and is composed of several layers; at least one layer being composed of magnetic rubber which cooperates with magnetic means in the valve housing to repel the valve member onto its seat.

#### 3,409,039 VALVE MEMBER HAVING CONICALLY TAPERED SEATING SURFACE

Claude L. Griffin, South Houston, Tex., assignor, by mesne assignments, to G. W. Murphy Industries, Inc., Houston, Tex., a corporation of Texas  
Continuation of application Ser. No. 74,068, Dec. 6, 1960, which is a continuation of application Ser. No. 707,219, Jan. 6, 1958. This application Apr. 22, 1963, Ser. No. 274,768  
16 Claims. (Cl. 137-516.29)

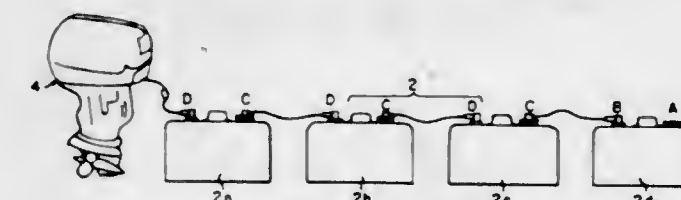
Slush pump valve includes a seat ring having a conically tapered seat with a rounded upper edge and a valve



of seal ring have same taper as seat. Upperpart of seal ring has greater taper than seat and overlies rounded upper edge of seat and contacts rounded edge initially on closure to cushion closure and wipes seat to insure a seal even on a dry seat.

#### 3,409,040 FUEL SUPPLY SYSTEM FOR INTERNAL COMBUSTION ENGINE

Robert L. Weston, 7303 Brennon Lane, Chevy Chase, Md. 20015, and Frederick D. Sisler, 5003 Wapakoneta Road, Bethesda, Md. 20016  
Filed June 2, 1965, Ser. No. 460,664  
2 Claims. (Cl. 137-572)



A portable and expandible fuel supply system for an internal combustion engine comprising a plurality of portable fuel tanks arranged in series, each tank being connected to the next in the direction toward the engine and the last tank being connected to the fuel inlet of the engine. The connection between adjacent tanks permits fuel to be drawn from the tanks in succession, emptying first the tank most remote from the engine and then each successive tank in the direction of the engine.

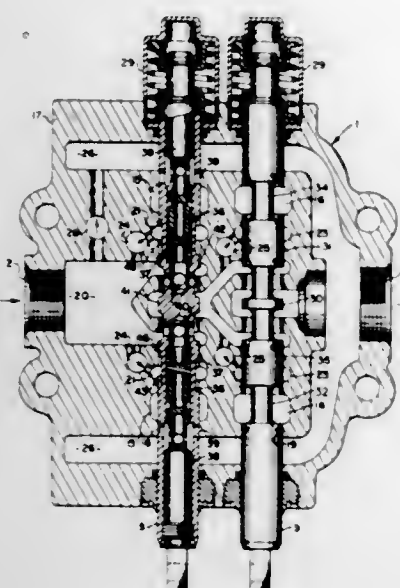
#### 3,409,041 DIRECTIONAL CONTROL VALVE

George J. Martin, Lyndhurst, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio  
Filed Feb. 18, 1966, Ser. No. 528,581  
4 Claims. (Cl. 137-596.2)

A spool valve assembly including upstream and downstream bores for receipt of valve spools therein movable to operating positions blocking the flow through a bypass passage and directing the flow to associated motors. All of the return flow from the motor associated with the upstream valve spool is directed to the bypass passage between the bores for actuation of the motor associated with the downstream valve spool, and there is a check



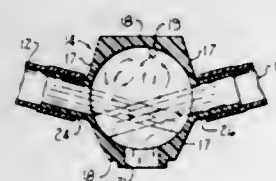
valve in the passage of the upstream valve spool which permits flow of return fluid only in the direction from the associated motor to the bypass passage. Thus, the passage in the upstream valve spool may extend between the



upstream portion of the bypass passage and the return passage when the upstream spool valve is in an operating position without permitting flow in that direction because of the check valve therein.

### 3,409,042 HOT AND COLD WATER MIXER ATTACHMENT

Felix M. Anthony, Oakland, Calif. (2841 Golden Rain Road No. 7, Walnut Creek, Calif. 94529)  
Filed Feb. 9, 1966, Ser. No. 526,307  
1 Claim. (Cl. 137-603)



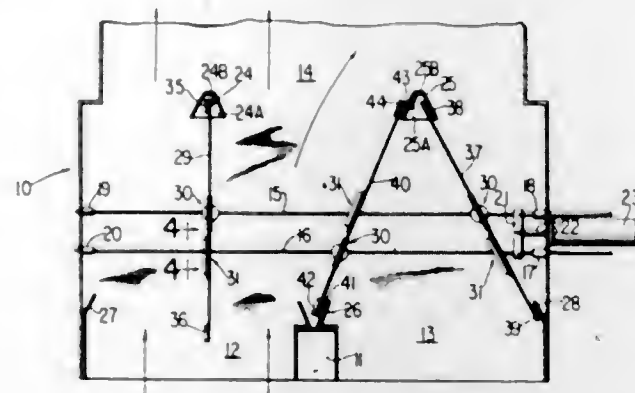
A mixing chamber attachment for independent hot and cold water faucets is described which is free of water traps and effective in providing the thorough mixture of the water from the two faucets. The attachment includes a pair of conduits which may be secured to the faucets and direct water therefrom to the chamber of a mixer. The liquid path through the conduits and through the mixture chamber extends downwardly throughout its length so that no water can be trapped within the attachment, and the conduits are so connected to the chamber that water flowing therefrom into the chamber is directed against an opposed wall of the chamber which deflects the water away from the chamber outlet to assure a long resident time of the water within the chamber for thorough mixing.

### 3,409,043 AIR CONDITIONING

Robert M. Warren, Jr., Lincroft, N.J., assignor to Buensod-Stacey Corporation, New York, N.Y., a corporation of Ohio  
Filed Oct. 19, 1965, Ser. No. 497,865  
10 Claims. (Cl. 137-607)

A multi-vane mixing valve for controlling the flow of

proportioned hot and cold air in an air circulating system including reciprocating rod means operable to orient mul-

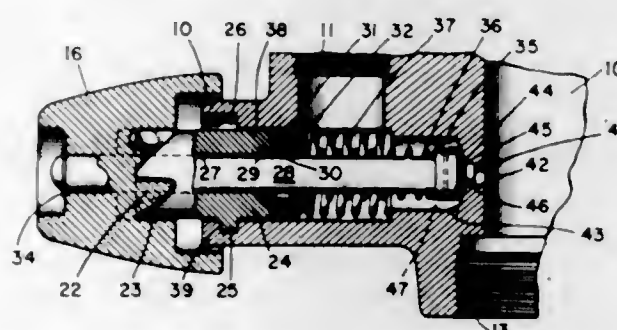


tipple dampers to control the flow of air through two separate ducts into a single chamber.

### 3,409,044 FOAM GUN HEAD

Dale W. Sobek, Oakland, and Angus C. Boltinghouse, Northridge, Calif., assignors, by mesne assignments, to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed Jan. 12, 1965, Ser. No. 424,999  
5 Claims. (Cl. 137-607)



The apparatus is a foam gun head having a central static mixing chamber with a central outlet passage. The gun head body includes first and second side bores preferably extending towards the central chamber from opposite sides of the body and arranged to receive suitable valve means. First and second inlet passages intersect these side bores from lateral directions, the side bores themselves including reduced diameter portions defining valve seats which communicate with the central chamber. First and second valve means are receivable within the side bores and include valve actuators secured to suitable valve stems. The valve stems, in turn, include valve head structures arranged to seat on the valve seats to control communication between the inlet passages and the central chamber. Suitable biasing springs normally hold the valve head structure against the seats. When the actuators are rotated by a trigger means, the valve stems are pulled away from the valve seats to provide communication between the inlet passages and the central chamber.

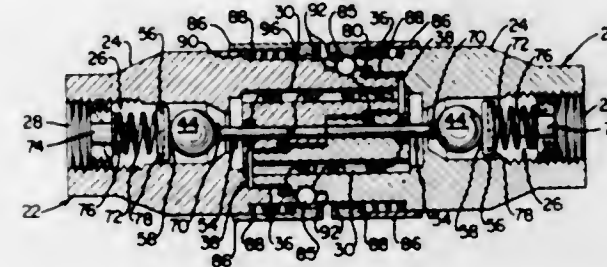
### 3,409,045 COUPLING ASSEMBLY

Wallace Reed Mackey, 3801 20th St., and Thomas C. Brown, 2447 12th Ave. Court, both of Greeley, Colo. 80631, and Gene A. Morghelm, 8827 W. 54th Ave., Arvada, Colo. 80002

Filed Nov. 22, 1965, Ser. No. 509,011  
2 Claims. (Cl. 137-614.04)

A coupling assembly having a pair of substantially identical cooperating units, each unit having complementary male and female portions formed on one end thereof

with the male portion of each unit being disposed within the female portion of the other unit, each unit having a passage formed therethrough and disposed in communication with the passage of the other unit, each unit also having a valve means disposed in the passage formed therein, each unit having complementary male and female portions formed on one end thereof, said male portion having a part of said unit's passage formed therethrough,



each unit having the male portion thereof disposed within the female portion of the other unit, and said assembly having a pair of substantially identical locking means for interlocking each female portion with the male portion of the other unit. The locking means of the coupling assembly includes means for limiting the amount of tensile force transmitted between said units. Each unit also includes a second valve means for opening said valve means.

### 3,409,046 FLUID TRANSFER APPARATUS

Robert E. Means, Tacoma, Wash., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed Nov. 30, 1964, Ser. No. 414,622  
6 Claims. (Cl. 137-615)



The present invention relates to a cargo boom used for loading and unloading liquids from a ship. It is comprised of four pipes mounted parallel to a movable, supporting boom. The pipes are primarily rigid, but also have short sections of flexible tubing. The apparatus is constructed in a manner which permits freedom of movement during loading and unloading such as that experienced with changes in tide, and list of the ship and other movements associated with ships. In addition, the boom, which is normally located on board ship, is capable of rotating 120 degrees. Other features of the boom include hydraulic activation and microswitch relaxation of the hydraulic system.

### 3,409,047 FLUID TRANSFERRING APPARATUS

Neal E. Jameson, Orange, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Jan. 17, 1966, Ser. No. 520,943  
5 Claims. (Cl. 137-615)

A fluid transferring apparatus including a turntable rotatably mounted on a base, an upstanding riser conduit mounted on the turntable and an arm-like conduit piv-

otally connected to the riser, a mast on the turntable, a system of sheaves and cables associated with the base, turntable, and mast to rotate the turntable on the base,

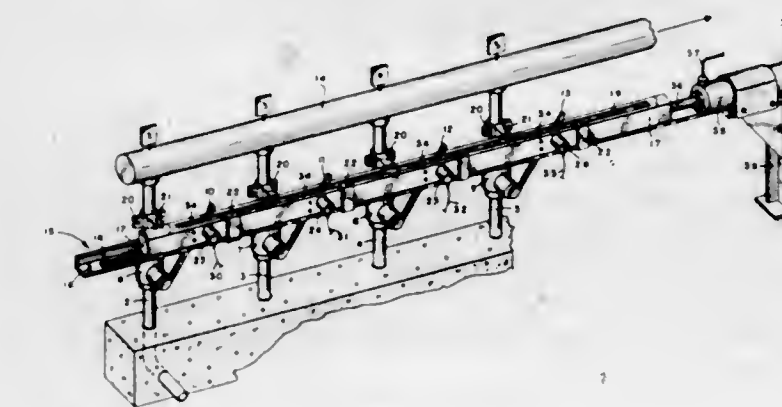


and another sheave and cable system associated with the turntable, mast, and arm-like conduit to pivot this conduit on the riser.

### 3,409,048 MULTIPLE VALVE SELECTOR AND ACTUATOR

Stephen S. Brown, Harris County, Tex., assignor to Esso Production Research Company

Continuation of application Ser. No. 481,841, Aug. 23, 1965. This application Dec. 15, 1967, Ser. No. 691,063  
25 Claims. (Cl. 137-635)



A multiple valve selector and actuator apparatus to be used in controlling the flow of fluid through a plurality of conduits having a valve member arranged on each conduit adapted to control the flow of fluid therethrough. Valve operating means having two positions, a valve-open position and a valve-closed position, is attached to each valve. Slidable means movable between two positions is arranged adjacent the valves. Extendible-retractable means, adapted when extended to actuate and move the valve operating means from one to the other of its positions when the slidable means moves from one to the other of its positions, is mounted on the slidable means adjacent each valve operating means, and means is provided for moving the slidable means between its two positions.

### 3,409,049 THROTTLE DEVICE FOR GASES

Alfred Racek, 59 Zwerngasse, Vienna 17, Austria

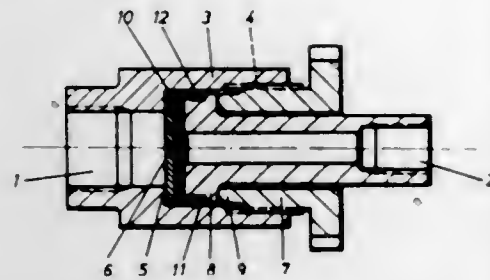
Filed Sept. 3, 1965, Ser. No. 484,842  
Claims priority, application Austria, Sept. 11, 1964, A 7,839/64

1 Claim. (Cl. 138-43)

A device for throttling gases comprising first and second adjacent pipe socket members each of which have, on one end, means for connection to a gas conduit sys-

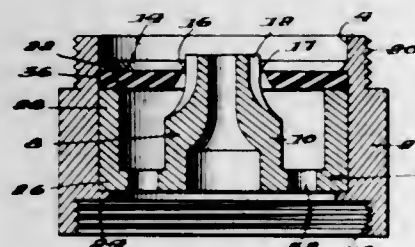


tem. The first socket has a recessed opening in the other end for receiving the other end of the second socket therein. Means are provided for adjustably positioning the second socket within the first socket under pressure.



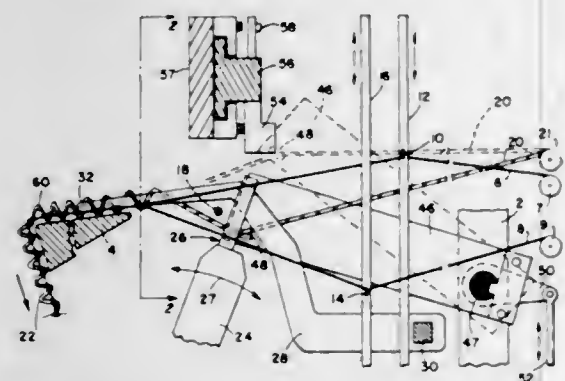
A gas impermeable member and a porous member are disposed in the opening between the first and second sockets with the second socket pressing against the porous member to control the passage of the gas therethrough and thereabout.

**3,409,050**  
**FLOW RESTRICTOR**  
Wilfred W. Weese, Flushing, N.Y., assignor to Harry Swartz, New York, N.Y.  
Filed Oct. 12, 1965, Ser. No. 499,540  
8 Claims. (Cl. 138—45)



A flow restrictor adapted for connection to a source of fluid supply of varying pressure comprising a housing having a central passage divided into a main duct and a bypass duct. A resilient diaphragm mounted within the bypass duct progressively deflects to reduce flow through the bypass duct thereby directing a greater proportion of the flow through the residual duct upon increase of fluid pressure.

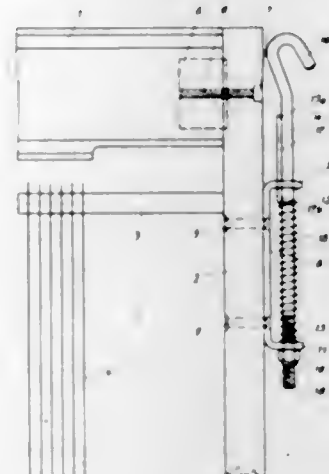
**3,409,051**  
**PILE FABRIC LOOM**  
Raymond J. Carrigan, Thompsonville, Conn., assignor to Bigelow-Sanford, Inc., Thompsonville, Conn., a corporation of Delaware  
Filed May 24, 1966, Ser. No. 552,487  
14 Claims. (Cl. 139—46)



A carpet loom comprising means for shedding ground warps, means for inserting wefts into ground warp sheds, means for supplying pile yarns, warpwise-extending stationary pile wires, a plurality of movable flexible pile yarn positioners for engaging the pile yarns and moving a portion of the pile yarn alternately into a position below

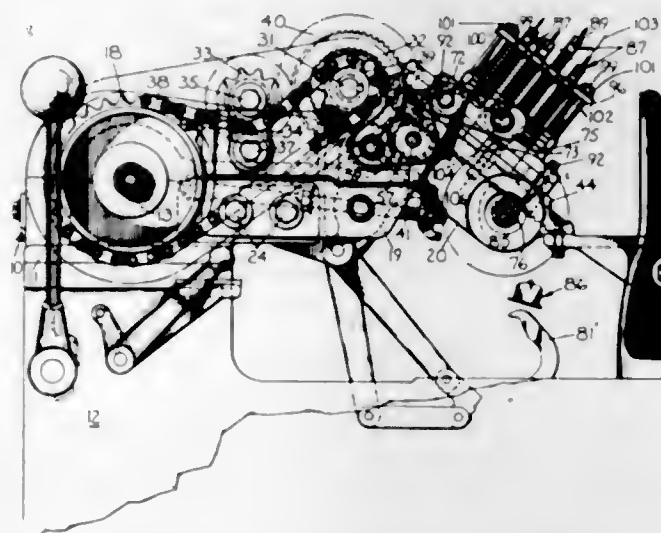
the point at which the wefts are inserted and into a position above a portion of the pile wires, a weftwise movable member for engaging the positioners and flexing them to move their parts in engagement with the pile yarns weftwise alternately from one side to the other of the pile wires to cause the pile yarns to form loops over the pile wires, and a reed for beating the wefts to the fell.

**3,409,052**  
**LOOM HEDDLE FRAME**  
Martin Graf, Horgen, Zurich, Switzerland, assignor to Grob & Co. Aktiengesellschaft, Zurich, Switzerland  
Filed Mar. 1, 1967, Ser. No. 619,808  
Claims priority, application Switzerland, Mar. 2, 1966, 2,969/66  
4 Claims. (Cl. 139—88)



A suspension hook 14 of a heddle frame for a loom is slidable vertically in a bracket 8 attached to the lateral support 2 of the frame. The hook is normally held in a raised position by a spring 15, and a rib 17 engaging in a keyway 12a prevents the hook from rotating, so that the vertical position of the hook can be adjusted simply by turning the nut 19. When the hook is pressed down so that its rib 17 disengages the keyway 12a the hook can be turned about its longitudinal axis (or tilted through a cut-out 25) to expose the head 7 of a fastening screw 6.

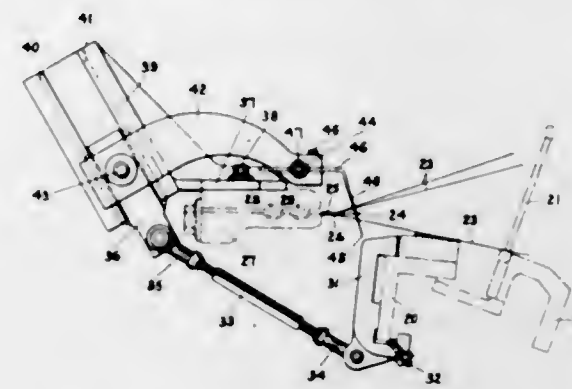
**3,409,053**  
**FILLING MECHANISM FOR LOOMS**  
Theodore S. Higgins, Woonsocket, and Donald J. Lizotte, Smithfield, R.I., assignors, by mesne assignments, to John Donald Marshall and Horace L. Bomar, as trustees of the Carolina Patent Development Trust  
Filed Mar. 7, 1967, Ser. No. 621,168  
13 Claims. (Cl. 139—122)



A filling mechanism for shuttleless looms having a rotatable indexing head for supporting and guiding a plurality of filling yarns at spaced feeding stations about said head,

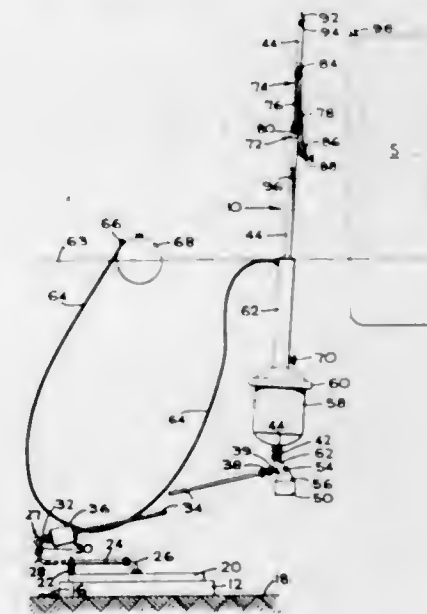
and selectively controllable clutch members for rotating said head to any one of said stations for individual presentation of a filling yarn to the filling carrier element for insertion into the warp shed.

**3,409,054**  
**FILLING POSITIONER FOR TERRY LOOM**  
Bertrand E. Gulndon, Cumberland, R.I., assignor, by mesne assignments, to John Donald Marshall and Horace L. Bomar, as trustees of the Carolina Patent Development Trust  
Filed Oct. 10, 1966, Ser. No. 585,455  
2 Claims. (Cl. 139—195)



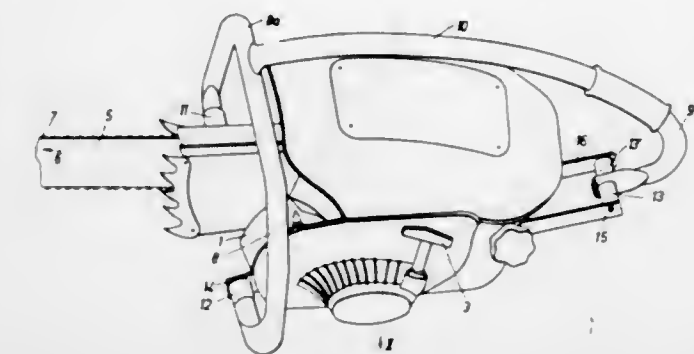
Apparatus for restoring parallelism between the entire length of a loose pick of filling and the fell of a terry fabric. A camming needle is directed into the warp threads to urge the loose pick into position each time a pick is inserted and is removed from the warp threads as the lay advances.

**3,409,055**  
**APPARATUS FOR HANDLING LIQUID CARGO**  
Peter J. Bily, Sunset Beach, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware  
Filed Feb. 25, 1966, Ser. No. 530,121  
12 Claims. (Cl. 141—387)



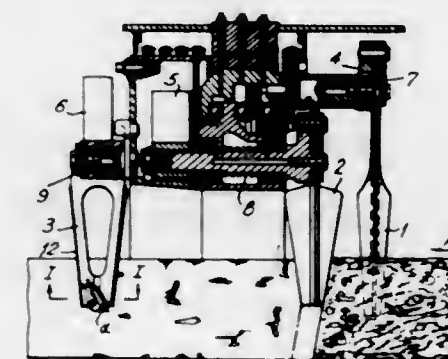
An apparatus for transferring fluid to or from a marine vessel floating offshore, including an elongate mast-like terminal movable between a wholly submerged position and a floating upright position, a buoyancy system for moving the terminal between these positions, an articulated loading arm mounted on the terminal for establishing fluid communication between the terminal and a vessel, a submerged anchor base to which the terminal is attached for universal movement with respect thereto by a system of rigid fluid conduits interconnected by swivel pipe joints, and a fluid conduit system connecting the terminal to a fluid reservoir.

**3,409,056**  
**PORTABLE POWER CHAIN SAW**  
Albrecht Rauh, Im Weinberg, Kleinheppach, Germany, assignor to Andreas Stihl Maschinenfabrik, Waiblingen, Germany  
Filed Sept. 13, 1965, Ser. No. 486,775  
9 Claims. (Cl. 143—32)



Portable chain saw having a drive engine and a support handle unit having a transverse and a longitudinal handle rigidly interconnected with vibration damping bushings at the ends of the transverse handle and the rear end of the longitudinal handle which connect the handle unit to the saw structure and eliminate vibrations.

**3,409,057**  
**ROTARY-TYPE MACHINE FOR STRIPPING BARK FROM ROUND WOOD**  
Anatoly Petrovich Los, Leningradskoe Shosse 17/45, kv. 92, Khimki, Moskovskoi Oblasti, U.S.S.R.  
Filed Feb. 28, 1966, Ser. No. 530,633  
3 Claims. (Cl. 144—208)



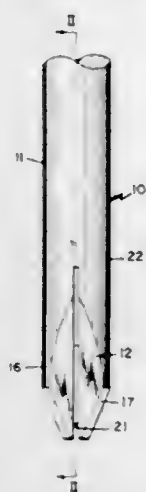
A rotary-type machine for removing bark from round wood having scraper-type bark strippers and cleaning members installed on a rotor mounted on a bed plate. The cleaning members are disposed downstream of the bark strippers relative to the direction of travel of the wood, the cleaning members having supporting surfaces which limit the depth of cut of the cutting edges thereof located downstream of the cutting edges.

**3,409,058**  
**SCREW HOLDER AND DRIVER**  
Gabriel M. La Pointe, Worcester, Mass., assignor to Parker Mfg. Company, Worcester, Mass., a corporation of Massachusetts  
Filed Oct. 19, 1966, Ser. No. 590,166  
5 Claims. (Cl. 145—50)

A screw driver having an elongated shank terminating in a screw holding and driving bit. The bit is of the "Phillips-head" type and is defined by a plurality of recesses arranged symmetrically about the axis thereof to provide a plurality of flutes. A slot extends into the bit



and bisects two opposite recesses to form a bifurcate bit end, the furcations of which are bent in opposite direc-



tions so that they must be sprung inwardly toward one another upon introduction into the socket of a screw.

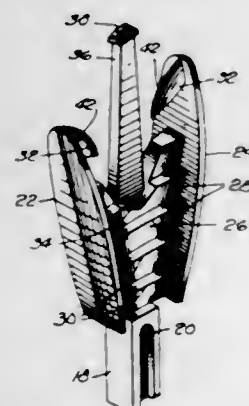
3,409,059

**LEMON WEDGE SERVER**

Thomas S. Gorton, Jr., 82 Larchwood Drive, Cambridge, Mass. 02138

Continuation of abandoned application Ser. No. 351,112, Mar. 11, 1964. This application July 7, 1966, Ser. No. 565,051

5 Claims. (Cl. 146—3)



A pronged implement particularly adapted for piercing and holding a lemon wedge and having sharp cutting surfaces against which the lemon pulp may be pressed to extract the juice.

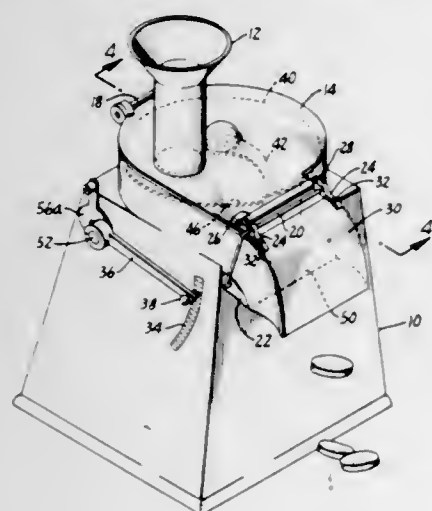
3,409,060

**VEGETABLE SLICING MACHINE**

Frank J. La Mere, Mount Angel Towers, Mount Angel, Ore. 97362

Filed July 13, 1966, Ser. No. 564,824

2 Claims. (Cl. 146—124)



A vegetable slicing machine having an imperforate guide table and cutting knife mounted on a common shaft

for rotation together with adjusting means for moving the table axially of the shaft with respect to the knife to adjust the depth of the cut of the knife. The guide table has a depression starting adjacent to the knife edge and trailing the knife with the depression having a terminal sloped portion extending axially toward the knife which functions to propel vegetable slices off of the guide table.

3,409,061  
**ALL-PLASTIC, NON-RIGID CRYOGENIC CONTAINER**

Arthur D. Struble, Jr., Torrance, Calif.  
(2101 Rosita Place, Palos Verdes, Calif. 90274)  
Continuation of application Ser. No. 397,436, Sept. 18, 1964. This application Mar. 6, 1967, Ser. No. 621,068  
2 Claims. (Cl. 150—5)



Cryogenic vessel formed of an inner reservoir containing the cryogenic material and surrounded by a spaced hollow outer flexible wall filled with a gas under pressure. The space between the inner reservoir and the gas filled outer flexible wall being maintained under conditions which are as near vacuum as possible.

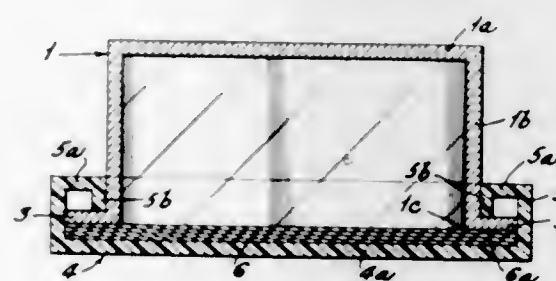
3,409,062

**CONTAINERS**

Francisco de P. Portella Vilanova, Barcelona, Spain, assignor to Envases y Embalajes Ma-Pa, S.L., Barcelona, Spain

Filed May 22, 1967, Ser. No. 639,994  
Claims priority, application Spain, May 21, 1966, 122,423

3 Claims. (Cl. 150—5)

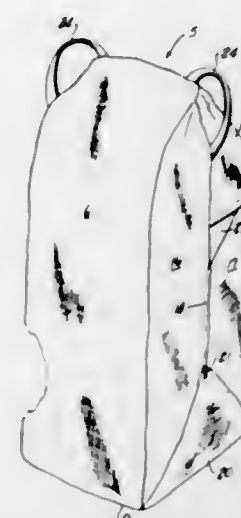


A container of plastic material having an open ended body portion, a closure for closing the open end of the body portion and constituting the bottom of the container, a laminated wall superposed on the inner surface of the bottom of the closure for reinforcing the closure, and complementary means on the body portion in the plane of the open end and on the interior of the closure for providing a detachable connection between the body portion and the closure.

3,409,063

**SELF-CLOSING LAUNDRY BAG**

Adolph Pokras, Mequon, Wis., assignor to Will Ross, Inc., Milwaukee, Wis., a corporation of Wisconsin  
Filed Jan. 4, 1967, Ser. No. 607,223  
6 Claims. (Cl. 150—3)



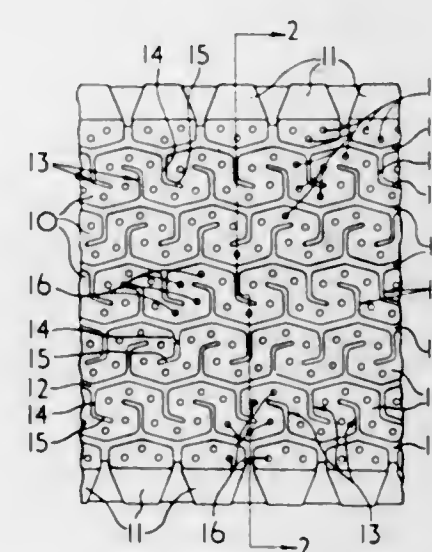
The bag is formed from a plainly rectangular blank, one end portion of which normally flatwise overlies the upper portion of the front wall and front portions of the side walls and which can be flipped over the top of the bag to close it. Integral triangular tab portions at the bottom of each side wall provide grasping loops and promote drying.

3,409,064

**PNEUMATIC TIRES**

Jack Lonsdale Leonard, Sutton Coldfield, England, assignor to The Dunlop Company Limited, London, England, a British company

Filed Mar. 7, 1966, Ser. No. 532,184  
Claims priority, application Great Britain, Mar. 12, 1965, 10,478/65  
9 Claims. (Cl. 152—209)

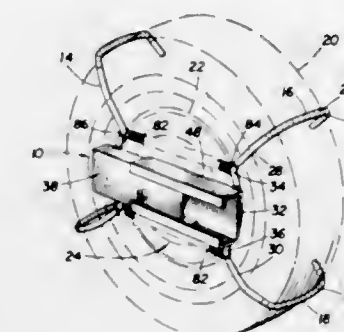


A pneumatic tire adapted especially for use over wet surfaces having a tread portion provided with a circumferential groove defining a circumferential rib which in turn has lateral ribs defined by lateral grooves. Water-absorbing chambers, such as cylinders extending into the tread, are disposed in the ribs for storing water during contact of the tire with the wet surface and throwing clear such stored-water by centrifugal action by the rolling tire clearing the surfaces. Water is carried also in the grooves and thrown clear also by rolling of the tire.

3,409,065

**TRACTION DEVICE**

Richard M. Gooderham, 34 Rosedale Heights Drive, Toronto, Ontario, Canada  
Filed Jan. 24, 1966, Ser. No. 522,475  
4 Claims. (Cl. 152—218)

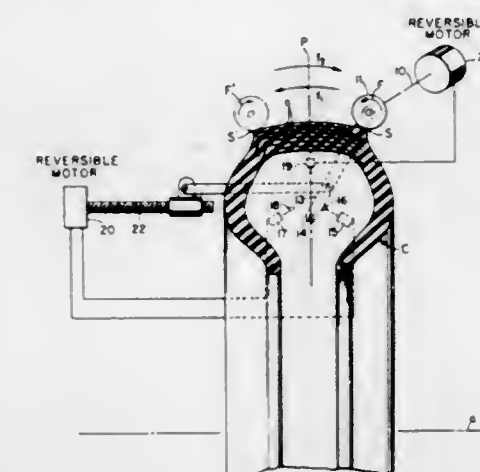


A traction assembly formed of opposed arms, each shaped to fit over a tire with the arms connected across the tire by telescoping channels. The inner telescopic channel has a pivotal plate biased to frictionally engage the outer channel; the telescopic movement outward of the channels is prevented because the frictional binding action is accentuated whereas the inward movement reduces the frictional engagement. Hence, when the arms are secured on the tire the only telescopic movement possible is inward which serves to tighten the assembly.

3,409,066

**SCRAPING DEVICE FOR PNEUMATIC-TIRE CARCASSES**

Roger Antraigue, 202 Quai de Jemmapes, Paris 10°, France  
Filed Sept. 21, 1965, Ser. No. 488,861  
3 Claims. (Cl. 157—13)



Scraping device for the tread surfaces of tire carcasses wherein a scraping disc is rotatably mounted on a swingable arm to sweep across that tread surface, the rotation of this disc being reversed upon each passage through a central plane so that traction due to the scraping action is always exerted outwardly as seen from that plane.

3,409,067

**MODULAR SYSTEM FOR EVAPORATIVE SEPARATION OF SOLIDS FROM LIQUIDS**

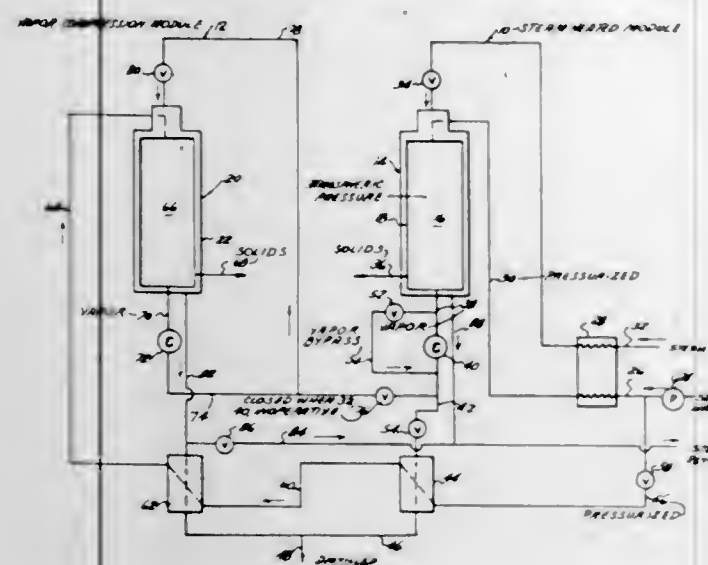
Edward W. Dunklin and Gerald C. Francis, both % Capital City Airport, Lansing, Mich.  
Continuation-in-part of application Ser. No. 516,480, Dec. 27, 1965. This application Oct. 5, 1966, Ser. No. 584,499

8 Claims. (Cl. 159—20)

A separation process including a multi-unit system having in one embodiment a steam operated evaporator-separator unit and a vapor compression unit connected



with the steam operated unit at startup and capable of separate operation thereafter. The second embodiment



operates independently of an outside source of steam by utilizing a compressor to supply the initial heat energy as well as operational heat loss.

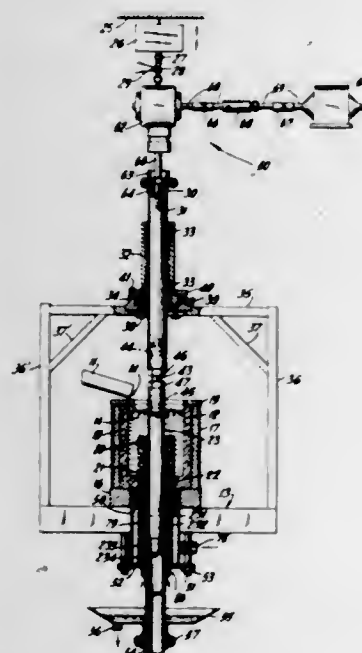
3,409,068

#### METHOD OF CONTINUOUSLY CASTING TUBES USING A ROTATING MANDREL

Douglas C. Yearley, Westfield, and Harry H. Stout, Jr., Plainfield, N.J., assignors to Phelps Dodge Copper Products Corporation, New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 468,771, July 1, 1965. This application Mar. 1, 1966, Ser. No. 530,869

4 Claims. (Cl. 164-85)



Tubing is continuously cast by solidifying molten material as it is withdrawn from a casting zone defined by a rotating central mandrel and a surrounding mold.

3,409,069

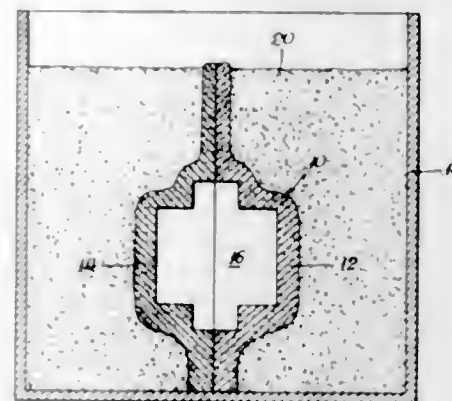
#### METHOD OF CASTING STEEL IN A SHELL MOLD

James T. Baker, Munster, Ind., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey

Filed Feb. 1, 1966, Ser. No. 524,145  
2 Claims. (Cl. 164-138)

Molten steel is poured into a shell mold the external surface of which is in contact with wet sand or is in a

wet condition by water and a wetting agent whereby a water vapor atmosphere is generated at the surface of the mold which contacts the molten steel and said atmosphere

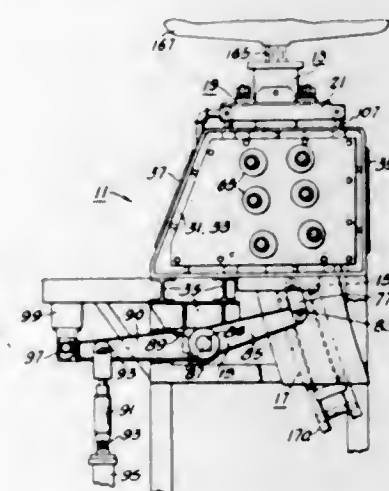


is maintained until the surface of the casting which contacts the mold has permanently solidified thereby affording an improved condition of said casting surface.

3,409,070

#### CONTINUOUS CASTING APPARATUS

Joseph J. Ciochetto, Allison Park, Pa., assignor to Koppers Company, Inc., a corporation of Delaware  
Filed Aug. 5, 1966, Ser. No. 570,630  
10 Claims. (Cl. 164-261)



5. In apparatus for the continuous casting of a metal strand, the improvement comprising:

- (a) an open-end, flow-through mold wherein metal flows and a continuous cast strand is formed;
- (b) a mold table for carrying said mold on an arcuate path comprising:
  - (i) arcuate guide rails connected to said mold table and disposed on opposite sides of said cast strand, and
  - (ii) means cooperating with said guide rails defining arcuate paths along which said rails move; and
- (c) means engaging said rails for reciprocating the same and said mold along said arcuate path.

3,409,071

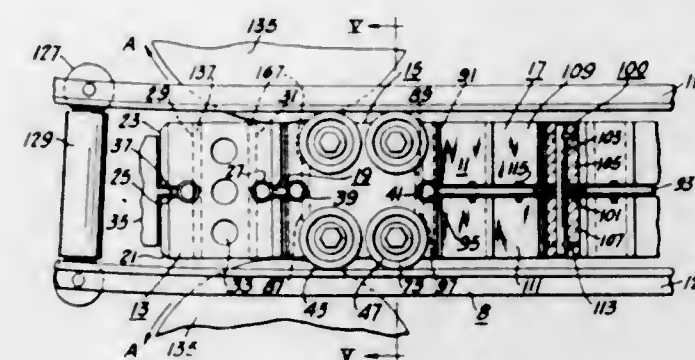
#### APPARATUS FOR USE IN WITHDRAWING AND GUIDING A CONTINUOUS CAST STRAND

Joseph J. Ciochetto, Allison Park, Pa., assignor to Koppers Company, Inc., a corporation of Delaware  
Filed Apr. 25, 1966, Ser. No. 544,908  
16 Claims. (Cl. 164-274)

A starting bar in accordance with the disclosure comprises a first member or dummy plug that coacts with the mold and temporarily closes the bottom thereof while the

casting being formed in the mold adheres to the first member; a second member or adapter head that is removably connected to the first member, and is adapted to coact with a guide structure or apron disposed beneath the mold so as to receive and support the casting after the same leaves the mold; and a third member or guide

rotor with predetermined gaps relative to the end faces of the rotor for sealing the spaces between the rotor end faces of the covers. Sector plates are arranged in guides also rigidly secured to the end covers and located on the border



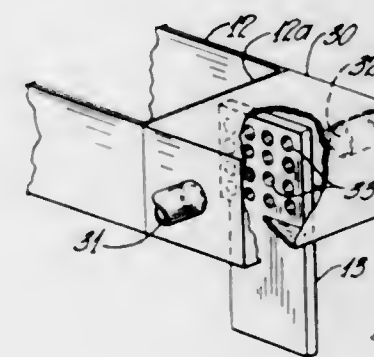
head that is removably connected to the second member, and is adapted to conform substantially to the curvature of the guide structure; and a fourth member or flexible band that cooperates with power means to advance and retract the starting bar apparatus relative to the casting mold.

3,409,072

#### METHOD AND APPARATUS FOR PROCESSING HEAT-SOFTENED MATERIAL

Charles J. Stalego, Newark, Ohio, assignor to Owens-Corning Fiberglass Corporation, a corporation of Delaware

Filed July 21, 1966, Ser. No. 566,956  
18 Claims. (Cl. 165-2)



A system for selectively controlling the heat pattern at the feeder tips of an electrically heated bushing having side walls and electrical terminals attached to the side walls for the connection of an electric current to the bushing. A fluid is passed in direct heat exchange relationship with an area of at least one of the side walls and terminals adjacent the attachment of the terminal to the side wall. Sensors on the feeder tip wall may be utilized to control the amount of heat exchange effected.

3,409,073

#### DEVICE FOR SEALING THE ROTOR OF A REGENERATIVE AIR HEATER

Iosif Azarievich Botkachik, ulitsa Revprospekt 34/29, kv. 18, Podolsk, U.S.S.R.  
Filed July 27, 1965, Ser. No. 475,203  
2 Claims. (Cl. 165-9)

An assemblage for sealing the rotor of a regenerative air heater in which blocks are arranged in guides rigidly secured to the end covers of the housing in proximity to the rotor shaft and the periphery of the end faces of the

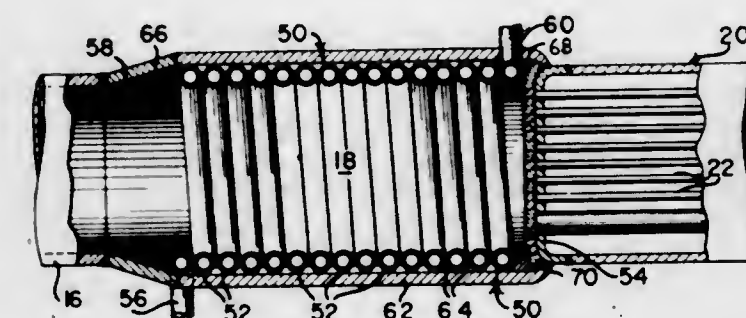


of the media with predetermined gaps relative to the rotor end faces with each sector plate being defined by two jointly interconnected components. Adjusting means are also provided for adjusting the gaps between the rotor end faces and the covers.

3,409,074

#### COMBINED INLET CHANNEL AND HEAT EXCHANGER SHELL WITH HEAT RECOVERY MEANS

Kenneth R. Wagner, Jersey City, and Henry N. Lacroix, Orange, N.J., assignors to Foster Wheeler Corporation, Livingston, N.J., a corporation of New York  
Filed Feb. 28, 1966, Ser. No. 530,581  
8 Claims. (Cl. 165-134)

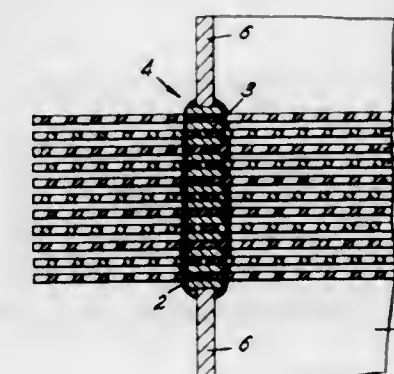


A combined inlet channel and heat exchanger shell in which heat recovery means are disposed in the channel for reducing the gas temperature. A tube sheet is disposed between the inlet channel and the shell such that the tube sheet can withstand the gas temperature after heat has been recovered.

3,409,075

#### MATRIX HEAT EXCHANGE CORES

Hugh M. Long, Tonawanda, N.Y., assignor to Union Carbide Corporation, a corporation of New York  
Filed Aug. 20, 1965, Ser. No. 481,321  
7 Claims. (Cl. 165-154)

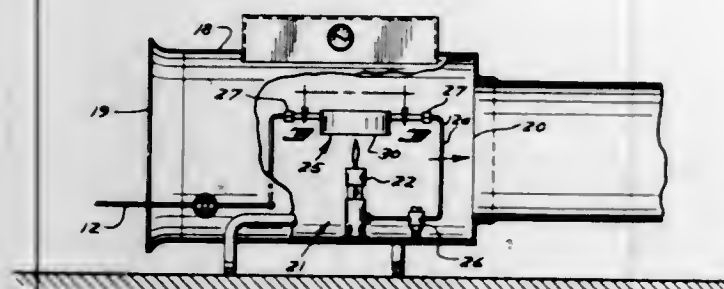


A heat exchange core comprising a plurality of matrix sheets each having a multiplicity of apertures, and at least one fluid impervious wall which extends through and joins each sheet to form at least two discrete sections



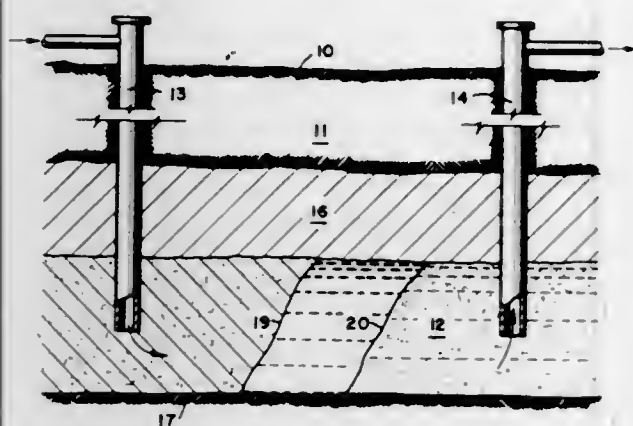
therein defining thereby at least one fluid pass. The wall comprises a portion of each sheet and an adhesive.

**3,409,076**  
**LOW PRESSURE GAS VAPORIZER**  
Alvin Quiring, Windom, Minn. 56101  
Filed Sept. 19, 1966, Ser. No. 580,385  
2 Claims. (Cl. 165—170)



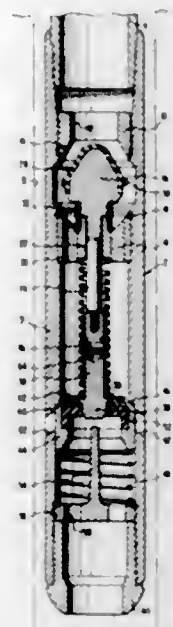
This invention relates to low pressure gas burning equipment and more particularly to a gas vaporizer which is arranged to receive low pressure fluid gases and expose the same to heat for vaporization thereof and thereafter pass the vapor to a burning section. In the construction utilized the vaporizer is arranged in overlying relationship to the burning section such that the vaporized gas will be utilized to vaporize additional gas. The structure of the unit insures that a maximum amount of liquid low pressure gas would be vaporized before being delivered from the vaporizer by directing at least portions thereof downwardly against heated surfaces of the vaporizer. The vaporizer unit itself includes an inlet having a downwardly directed outlet on the inlet section with a vaporized gas outlet arranged to generally opposed relationship to said inlet to insure complete vaporization of the liquid gas admitted thereto.

**3,409,077**  
**THERMAL METHOD OF RECOVERING HYDROCARBONS FROM AN UNDERGROUND HYDROCARBON-CONTAINING FORMATION**  
Robert W. Durie, Ottawa, Ontario, Canada, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware  
Filed Sept. 29, 1966, Ser. No. 582,983  
Claims priority, application Canada, Jan. 17, 1966, 950,057  
4 Claims. (Cl. 166—11)



An improved process of oil recovery comprising injecting into the formation through an injection well a hot fluid followed by injecting through the same well an oxygen-containing gas to establish a combustion front and driving the oil to a production well to recover the oil.

**3,409,078**  
**SELF-FILL AND FLOW CONTROL SAFETY VALVE**  
Lloyd Carter Knox and John W. Woods, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware  
Original application June 29, 1966, Ser. No. 561,588, now Patent No. 3,385,370, dated May 28, 1968. Divided and this application Nov. 13, 1967, Ser. No. 698,084  
2 Claims. (Cl. 166—21)



A method for controlling the flow of fluid into a casing string as the string is being lowered in a well, and including a valve for controlling fluid flow during cementing operations. The valve apparatus is positioned adjacent the lower end of a pipe string and includes a tubular body having a downwardly facing valve seat. A valve element is mounted in the body and biased upwardly for movement into engagement with the valve seat. The tubular body has a plurality of radial ports that are closed by the valve element when it is in engagement with the valve seat. The valve element has a central port that is closed by a second valve element. Above the first valve element there is an upper valve seat and a third valve that is movable upwardly into engagement with the upper valve seat. The second and third valve elements are biased upwardly and downwardly, respectively, but are connected together by a frangible link. While the casing string is being lowered in the bore hole the valve remains closed until a predetermined pressure differential builds up on the outside of the valve. The valve then opens and fluid flows into the casing. If the rate of fluid flow into the casing exceeds a predetermined rate, the third valve element closes against the upper valve seat. The valve assembly is converted to a float valve by pumping fluid down the casing string at a high rate to break the frangible link.

**3,409,079**  
**METHOD FOR CONSOLIDATING INCOMPETENT FORMATIONS**  
Fred W. Burtch, Pittsford, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware  
No Drawing. Filed July 9, 1965, Ser. No. 470,878  
7 Claims. (Cl. 166—25)

An incompetent underground formation is impregnated with a resin-forming material which includes furfuryl alcohol and may include materials that form copolymers with furfuryl alcohol. Then a hot inert gas is displaced through the impregnated formation to cause reaction of the resin-forming material to form a resin permeably bonding together the particles of the formation. A process

is described in which the incompetent sands are first cleaned by in-situ combustion, then cooled to below 200° F., then impregnated with resin-forming material, and thereafter the hot inert gas is passed through the impregnated formation.

**3,409,080**  
**AQUEOUS CEMENTING COMPOSITION ADAPT-ABLE TO HIGH TURBULENT FLOW AND METHOD OF CEMENTING A WELL USING SAME**

Hugh T. Harrison, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Filed Apr. 4, 1967, Ser. No. 628,253  
12 Claims. (Cl. 166—31)

An improved low fluid-loss aqueous cement slurry, comprising (1) bisalkylene pyrophosphate-urea pyrolysis product, (2) hydraulic cement, (3) a polymeric fluid-loss control agent, and (4) water, and method of cementing employing the composition.

**3,409,081**  
**WELL TOOL APPARATUS AND METHOD OF OPERATION**

Cicero C. Brown, % Brown Oil Tools Inc.,  
P.O. Box 19236, Houston, Tex. 77024  
Filed May 18, 1967, Ser. No. 639,451  
11 Claims. (Cl. 166—35)

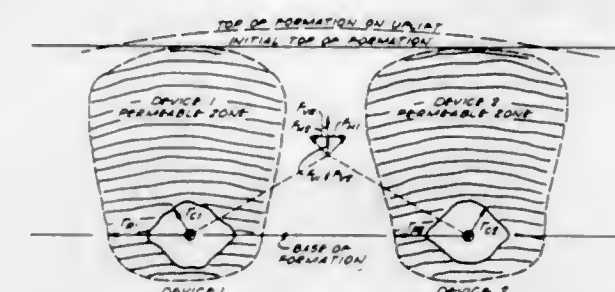


A tool string and its method of operation for enabling a plurality of operations to be performed in a well bore without removing the primary pipe string from the well bore. The tool string includes a drill pipe string carrying a two-part drill bit comprising a tubular main bit, and a pilot bit releasably mounted in the bore of the main bit for removal by other tools insertible through the drill pipe string and the bore of the main bit to enable performance of other operations, such as well perforating, by such other tools, all without requiring removal of the drill pipe string from the well bore.

**3,409,082**  
**PROCESS FOR STIMULATING PETROLIFEROUS SUBTERRANEAN FORMATIONS WITH CONTAINED NUCLEAR EXPLOSIONS**  
Bruce G. Bray, Carroll F. Knutson and Henry F. Coffey, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware  
Filed Apr. 20, 1964, Ser. No. 361,051  
5 Claims. (Cl. 166—36)

2. A process for recovering hydrocarbons from a subterranean formation comprising:  
substantially simultaneously detonating a plurality of

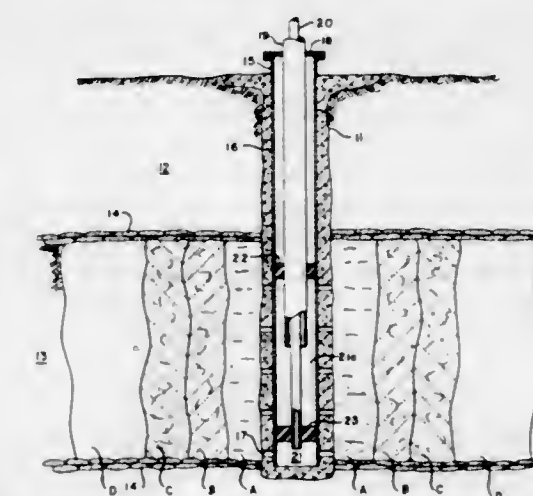
nuclear explosives positioned adjacent the lower portion of said formation, said nuclear explosives being spaced horizontally from each other by a distance greater than the sum of the cavity radii of the two cavities which would be produced by each nuclear explosive when individually detonated; then



drilling a hole into the zone of increased permeability created by the explosion of said devices to remove hydrocarbons from the explosion environment.

**3,409,083**  
**PETROLEUM RECOVERY BY THERMAL BACKFLOW**

Michael Prats, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware  
Continuation-in-part of application Ser. No. 421,294, Dec. 28, 1964. This application June 9, 1967, Ser. No. 645,030  
1 Claim. (Cl. 166—40)



An improved backflow process for recovery of oil from an underground formation that contains both oil and water comprising establishing communication between a well borehole and said formation, thermal soaking the oil in the recovery zone by injecting steam and initiating an underground combustion therein to form non-condensable gas and additional steam and thereafter reducing the pressure within the well borehole to less than the formation pressure to allow fluid inclusive of oil to backflow into the well borehole.

**3,409,084**  
**BLOWOUT CONTROL APPARATUS FOR WELLS**

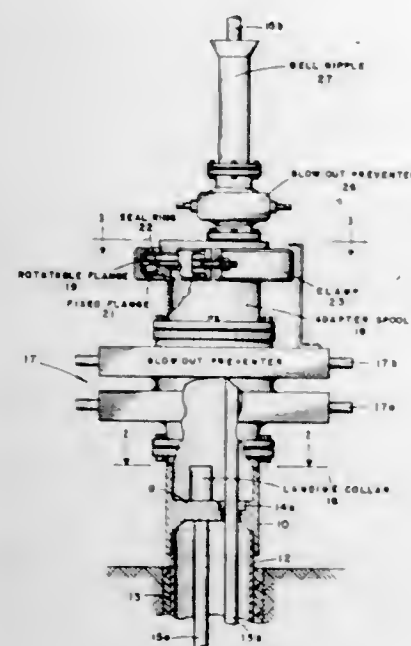
Ernest E. Lawson, Jr., and Terrell V. Miller, Houston, Tex., assignors to Esso Production Research Company  
Filed Mar. 4, 1966, Ser. No. 531,952  
2 Claims. (Cl. 166—86)

1. Blowout control apparatus for use while running multiple pipe strings in a well comprising:  
a wellhead;  
a pipe string hanger containing equally and circumferentially spaced-apart openings through each of which a pipe string is adapted to extend into said well;  
a flanged adapter means mounted on said wellhead;



a flanged plate means containing an opening there-through offset from the center of said plate means and rotatable to align vertically said offset opening and each of said openings in said pipe string hanger, each of said pipe strings being adapted to extend through said offset opening;

visual markers arranged on said plate means and on said adapter means adapted to facilitate vertical alignment of said offset opening and said openings in said pipe string hanger;



a seal ring arranged between said plate means and said adapter means;

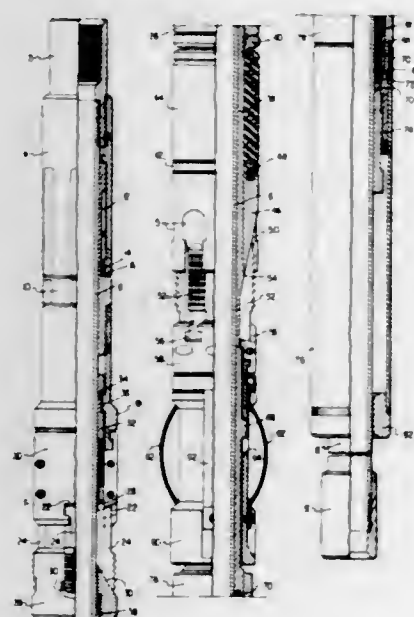
blowout preventer means adapted to close about said pipe string when said pipe string extends therethrough mounted on said plate means; and

additional blowout preventer means adapted to open to permit said pipe strings to be lowered therethrough arranged between said wellhead and said adapter means.

3,409,085

## WELL PACKERS

Owen N. Oliver, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware  
Filed Oct. 15, 1965, Ser. No. 496,275  
8 Claims. (Cl. 166—134)



A well packer having a packer element that expands radially upon being compressed axially. The packer in-

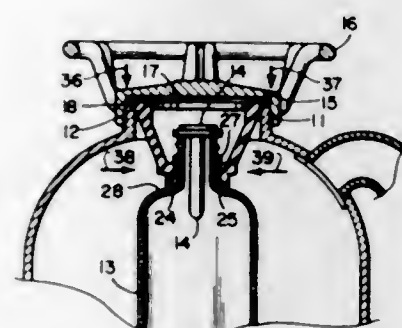
cludes a mandrel on which the packer element is mounted and upper and lower sets of slips mounted on opposite sides of the packer element. Each set of slips has teeth which project outwardly from the mandrel and the teeth on the upper set of slips slope away from the teeth on the lower set of slips. The sloping teeth grip the well casing pipe and resist displacement of the slips away from the packer element. The slips, however, may be displaced axially toward the packer element in order to compress the packer element axially. The packer includes apparatus for selectively moving one of the sets of slips toward the other upon movement of the mandrel in either an upward or downward direction relative to the packer element. This arrangement permits the packer to be set in the well casing by applying either tension or compression to the mandrel through the tubing string to which the mandrel is attached.

3,409,086

## FIRE EXTINGUISHER ACID BOTTLE SUPPORT

Arnold H. Koch, Arlington Heights, Ill., assignor to The General Fire Extinguisher Corporation, a corporation of Delaware

Filed July 5, 1966, Ser. No. 562,727  
5 Claims. (Cl. 169—32)



An acid bottle support for gravity operated fire extinguisher tanks is provided in the form of an integrally molded plastic frame structure having a top annular ring dimensioned to seat on an annular internal ledge in the upper opening of the tank. Elongated supports depend downwardly from the ring to terminate in split collar halves for encircling the neck of the acid bottle. The annular ring is warped slightly to bow in such a manner that when the cap of the extinguisher is pressed down on the inner annular ledge of the upper opening, the annular ring of the support is compressed urging the collar halves closer together to thereby securely grip the neck of the acid bottle and support it within the extinguisher in proper spaced relationship for operation.

3,409,087

## DEPTH-CONTROL DEVICE FOR SOIL-WORKING IMPLEMENTS

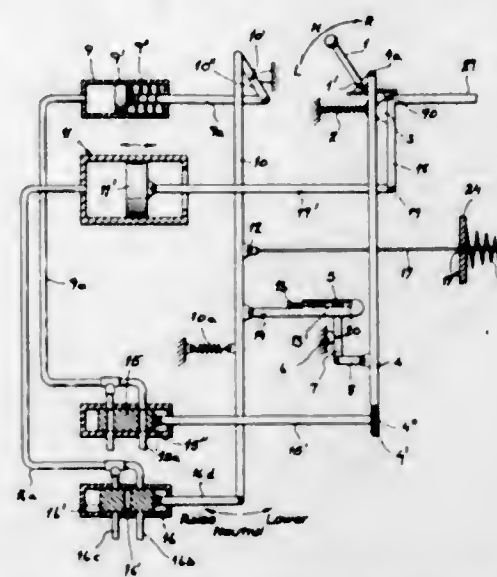
Walter Schneider, Schonebeck (Elbe), Germany, assignor to VEB Traktorenwerk Schonebeck, Schonebeck (Elbe), Germany

Continuation-in-part of application Ser. No. 475,507, July 28, 1965. This application Apr. 5, 1966, Ser. No. 540,347

5 Claims. (Cl. 172—7)

A depth-control device for a tractor-drawn plow or other soil-working implements in which a rod 17 is coupled with the plow and provides a setback of soil resistance to an actuating member 10 connected between a control cylinder 9 and the valve 16 operating the power cylinder 11 which raises and lowers the plow; the oper-

ator shifts the raise and lower lever 1 whose link member 4 cooperates with a cam 3 responsive to plow movement



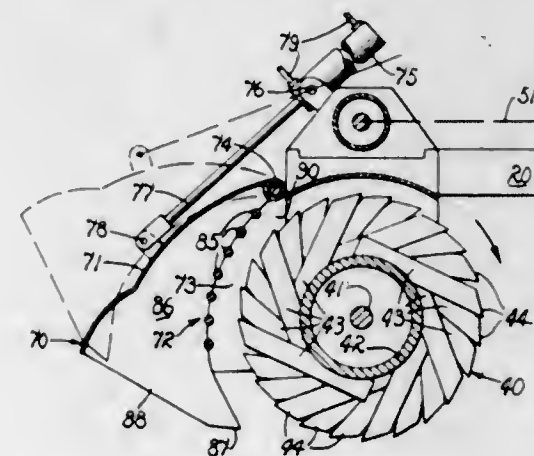
to operate a control valve 15 connected with the control cylinder 9 while a double arm lever arrangement 5-8 connects member 4 with member 10.

3,409,088

## APPARATUS FOR SCARIFYING AND PULVERIZING COMPACTED SOIL AND THE LIKE

Lester R. Lindbeck, 12785 Ave. 18½, and Ronald W. Smith, 511 Alameda St., both of Chowchilla, Calif. 93610

Filed Mar. 1, 1965, Ser. No. 436,055  
4 Claims. (Cl. 172—66)



An apparatus for scarifying and pulverizing frangible materials having a power driven cultivating rotor provided with a plurality of spaced radially extended teeth inclined forwardly in relation to the direction of rotor rotation and a shroud having an arcuate reticulate particle-size control grid mounted in the shroud with the grid formed on a radius greater than said rotor to form a crescent-shaped hammer mill area between the grid and the rotor to force material fragments too large to pass through the grid into the spaces between the teeth for transport over the rotor and their gravitational and centrifugal discharge ahead of the rotor for further engagement by the teeth until sufficiently reduced in size to pass through the grid.

3,409,089

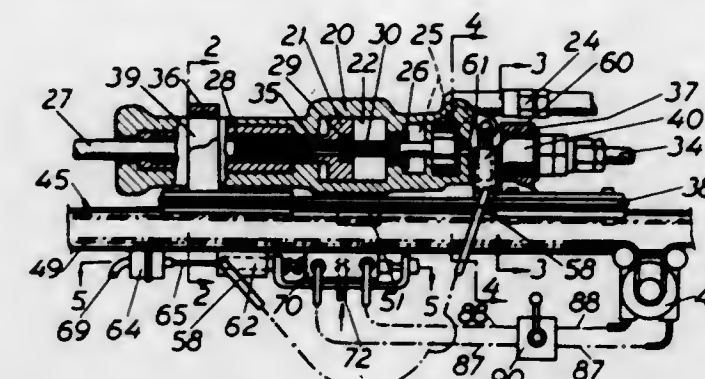
## FEED CONTROL MEANS FOR ROCK DRILLS

Waldemar Meyer, Stockholm, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden

Filed Mar. 2, 1966, Ser. No. 540,437  
15 Claims. (Cl. 173—9)

Feed control apparatus for rock drills and associated feeding apparatus is provided which is disposed between

the rock drill and the feed motor therefor which senses directly any above-normal torque in the rotation mechanism for the drill steel caused by the steel becoming struck for instantaneously actuating the feeding action of the feed motor to stop the feeding action momentarily or to reverse it depending upon the extent and time the above-normal torque is applied to the steel. In addition, the control apparatus has the reversing valve thereof disposed

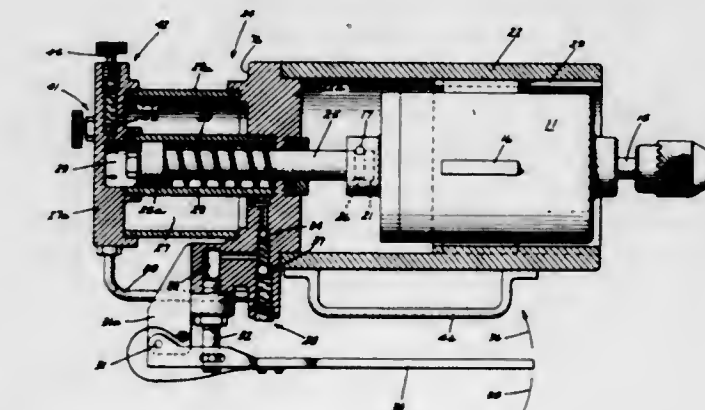


on the supporting frame for the rock drill and associated slide adjacent the feed motor so that the valve is not subject to the impacts of the drill apparatus itself and so that the feeding motor responds immediately to movements of the valve. Further, the actual torque sensing control is disposed adjacent the rifle bar of the rotation mechanism for limiting the load on the ratchet and pawl devices therefor for prolonging the life thereof.

3,409,090

## CONVERTIBLE POWER TOOL APPARATUS

Paul C. Brown, R.R. 2, Waterloo, Ind. 46793  
Filed Dec. 28, 1966, Ser. No. 605,447  
11 Claims. (Cl. 173—29)



The present invention comprises a cylindrically-shaped housing having a tool arranged for axial reciprocation therein. A means is provided for reciprocating the tool in the cylinder, thereby urging the tool toward a work engaging position. The cylinder is either abutted against or supported by a stationary element against which the force required for urging the tool into the work is applied.

3,409,091

## PERCUSSION MULTI-BLOW GRAVITY DRILL

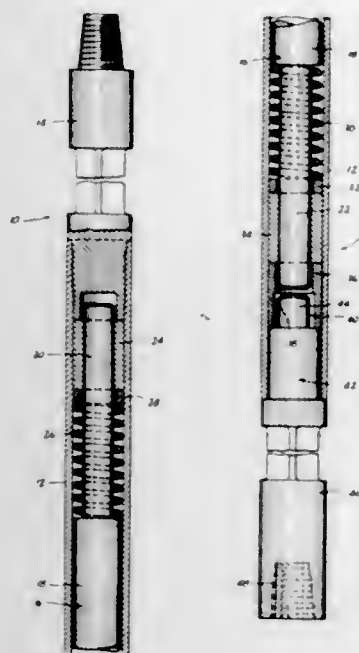
Allen E. Bardwell, Princeton, N.J., assignor to Trident Industries, Inc., Princeton, N.J., a corporation of Delaware

Filed July 26, 1966, Ser. No. 567,927  
5 Claims. (Cl. 173—119)

A novel gravity drop multiblow percussion drill comprising an elongated casing closed at the upper end by a plug adapted to be attached to a cable connector and at the lower end by a stationary anvil adapted to receive a drill bit at its free lower end, an elongated heavy hammer reciprocally mounted in the casing having reduced extremities about each of which is mounted a heavy



compression spring which in rest upright position of said drill maintain said lower end of the hammer spaced a predetermined short distance from the anvil, said springs



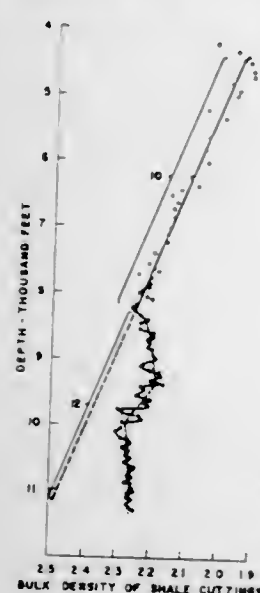
being yieldable to permit initial and subsequent striking of the anvil by the hammer immediately following striking of a drill bit mounted in the anvil.

3,409,092

#### METHOD FOR DETERMINING MUD WEIGHT REQUIREMENTS FROM BULK DENSITY MEASUREMENTS OF SHALE CUTTINGS

Eugene H. Doremus, Morgan City, La., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 17, 1967, Ser. No. 609,884  
8 Claims. (Cl. 175-50)



A method of determining the changes in mud weight required when drilling into or through abnormally high pressured shale which comprises taking bulk density measurements of the cuttings on site and relating the changes in shale bulk density to the required changes in mud weight.

3,409,093

#### METHOD OF DRILLING WELLS

Willis C. Cunningham, Knox A. Slagle, and Dwight K. Smith, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware

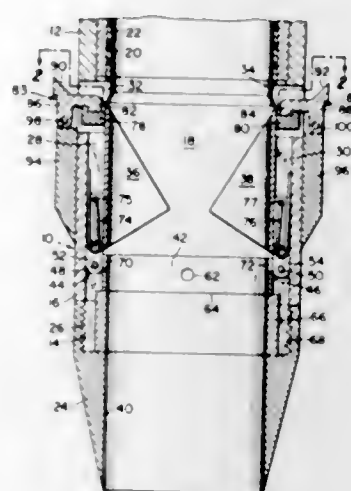
No Drawing, Filed Apr. 17, 1967, Ser. No. 631,126  
8 Claims. (Cl. 175-65)

This patent relates to a method of drilling a well using a well cementing slurry composition as the drilling fluid.

#### 3,409,094 SPRING ACTUATED CORE RETAINER

Theodore R. Kretschmer, Port Hueneme, and Melvin C. Hironaka, Camarillo, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed May 31, 1967, Ser. No. 643,325  
7 Claims. (Cl. 175-242)



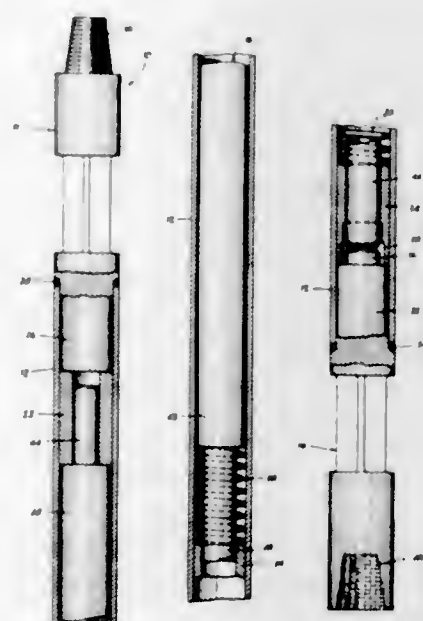
The invention is a spring actuated core retainer comprising a tubular body which is to be attached to the lower end of a core sampling barrel. Within the body are two rotatable closure elements connected to two torsion springs which tend to bias the closure elements so as to close the core barrel after a sample has been taken. Holding means restrain the closure elements during descent and penetration of the core barrel; upon removal of the barrel, pressure from the ocean sediment pivots the holding means from engagement with the closure means allowing the torsion springs to bias the closure elements to a closed position.

3,409,095

#### PERCUSSION CHATTER HAMMER DRILL

Allen E. Bardwell, East Brunswick, N.J., assignor to Trident Industries, Inc., Princeton, N.J., a corporation of Delaware

Filed Aug. 7, 1964, Ser. No. 388,047  
13 Claims. (Cl. 175-299)



1. In combination, a cable drop percussion hammer drill comprising a casing, a stationary anvil extending into

and fixed to said casing, a hammer reciprocally mounted in said casing for engagement with said anvil, compressible means biasing said hammer away from said anvil to hold the hammer from the anvil as the drill is lowered and which is overcome by the hammer upon the drill striking a hole bottom, said compressible means being yieldable to permit said hammer to strike said anvil immediately after the drill strikes the bottom of a hole, means closing the upper end of said casing, and means for lifting said drill.

3,409,096

#### WELL TOOL STRING

Cleero C. Brown, % Brown Oil Tools Inc.,  
P.O. Box 19236, Houston, Tex. 77024

Filed July 12, 1967, Ser. No. 652,817  
3 Claims. (Cl. 175-325)



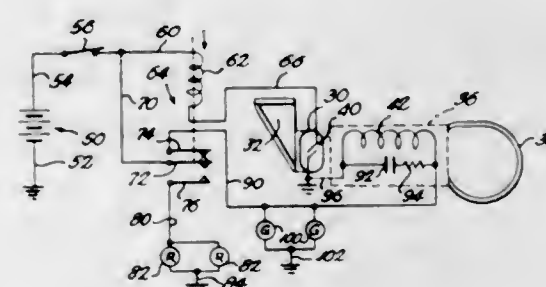
A tool string for enabling a plurality of operations to be performed in a well bore with one primary pipe string without removing the latter from the well bore. The operations include drilling, cementing, packing-off, perforating, "squeezing," and the like.

3,409,097

#### LOAD INDICATING APPARATUS

Lester Gregory, Jr., Yellville, Ark. 72687

Filed Sept. 27, 1967, Ser. No. 670,841  
10 Claims. (Cl. 177-210)



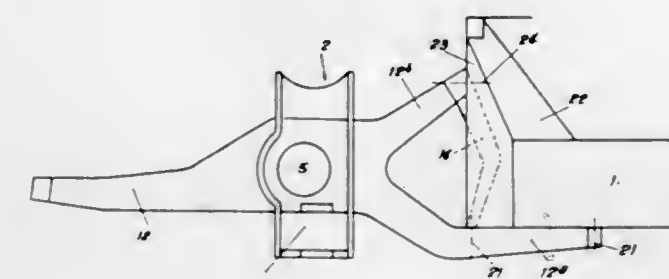
A vehicle such as a truck is provided with operating means and sensing means on relatively movable portions of the vehicle for indicating an overload condition. This operating means and sensing means is connected in an electrical network including lamp means for visually indicating the load condition of the vehicle.

3,409,098

#### VEHICLE CHASSIS

Antoine Brueder, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a French company

Filed Mar. 15, 1966, Ser. No. 534,536  
Claims priority, application France, Mar. 18, 1965,  
9,766  
5 Claims. (Cl. 180-54)



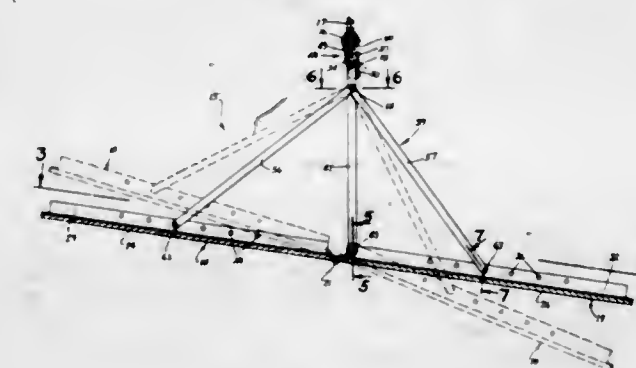
A vehicle chassis having an engine-supporting front frame structure attached to a rear frame extending therefrom to the rear end of the vehicle, the engine-support frame having a pair of transversely spaced longitudinal members attached to the rear frame and spanned at the front end by a cross member, and a cradle between the ends of these members including a pair of spaced-apart uprights affixed to the longitudinal members and upper and lower cross members connecting the uprights which have holes preferably aligned with others in the longitudinal members through which a transmission shaft may pass.

3,409,099

#### SOUND REFLECTING STRUCTURE

Jerry A. Wenger, Owatonna, and Harvey M. Urch, West Concord, Minn., assignors to Wenger Corporation, a corporation of Minnesota

Filed Mar. 17, 1965, Ser. No. 440,501  
8 Claims. (Cl. 181-30)



An articulated acoustical canopy unit in a stage area having an over head batten. The canopy unit has a plurality of panel members with adjacent sides of the panel members hinged together. Hanger assemblies support the panel members from the overhead batten. The hanger assemblies have struts which are releasably connected at one end at selected positions to the panel members so that the relative angular positions of the panel members may be changed.

3,409,100

#### VEHICLE WITH ADDITIONAL LIFTING WHEELS FOR STEERING

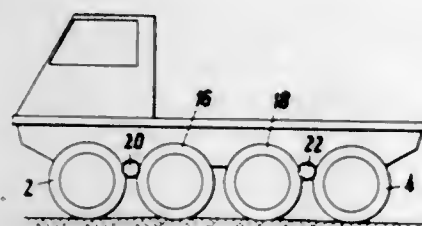
Raimo Mikael Krouqvist, Viherkallio B-16, Viherlaakso, Finland

Filed Apr. 4, 1966, Ser. No. 539,845  
7 Claims. (Cl. 180-6.54)

This invention relates to a running device, especially intended for terrain vehicles. The invention can be

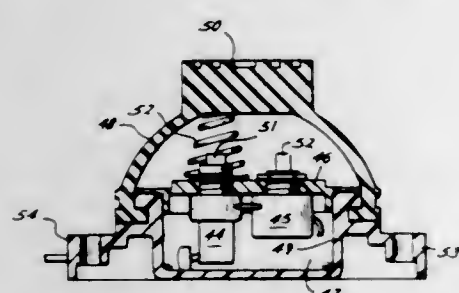


applied as such a running device for terrain vehicles, in which wheels are used as drive means. It includes driving treads or wheels on the chassis, a lifting tread or wheel



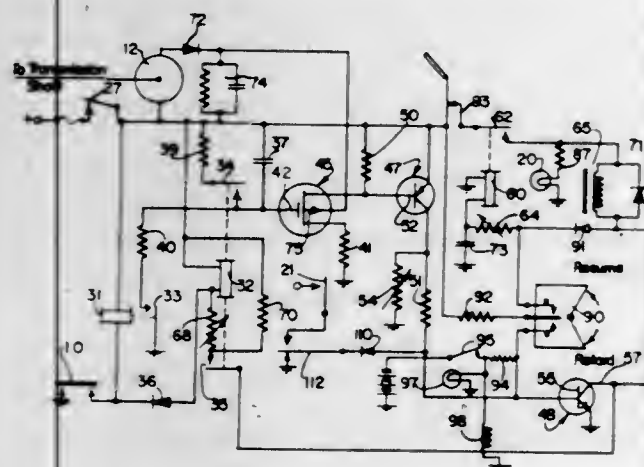
on at least one side and mounted on a lever which is adapted to lower the lifting tread or wheel into engagement with the ground to lift at least one driving tread or wheel off of the ground.

**3,409,101**  
**SAFETY DEVICE FOR MOTOR VEHICLES**  
Howard B. Williams, 3212 Aberdeen Way,  
Houston, Tex. 77025  
Filed May 31, 1966, Ser. No. 553,906  
4 Claims. (Cl. 180—82)



A foot pedal on the floor of the driver's compartment, upon successive depressions, will (1) activate an indicator switch for giving a signal, such as a buzzing sound, when the driver relaxes his pressure on the pedal, as when he begins to drowse, and (2) deactivates the switch to take it out of action. In one form, at least the indicator switch is enclosed in a flexible wall hood to protect the same against floor and foot dirt.

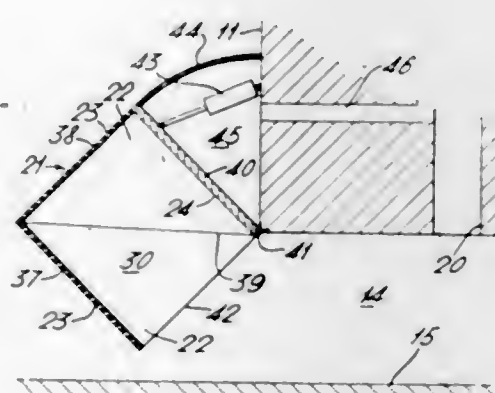
**3,409,102**  
**SPEED CONTROL SYSTEM**  
Nicholas T. Neapolitakis and Elmer E. Prothero, Chicago, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois  
Filed May 5, 1966, Ser. No. 548,012  
11 Claims. (Cl. 180—109)



A speed control system for a vehicle using a field effect transistor to control the current to a solenoid which

operates a regulator valve to control a vacuum operator, which positions the engine throttle. A memory capacitor establishes and maintains a potential representing the desired rate of travel of the vehicle on one control electrode of the field effect transistor. An alternator driven by the transmission shaft generates a potential which is proportional to the rate of travel of the vehicle, which potential is coupled to the second control electrode of the field effect transistor. The difference in potential on the two control electrodes controls the current through the field effect transistor.

**3,409,103**  
**GAS-CUSHION VEHICLES**  
Alan Ritson Tripp, Gurnard, Cowes, Isle of Wight, England, assignor to Hovercraft Development Limited, London, England, a British company  
Filed May 4, 1966, Ser. No. 547,514  
Claims priority, application Great Britain, May 5, 1965, 19,057/65  
8 Claims. (Cl. 180—127)



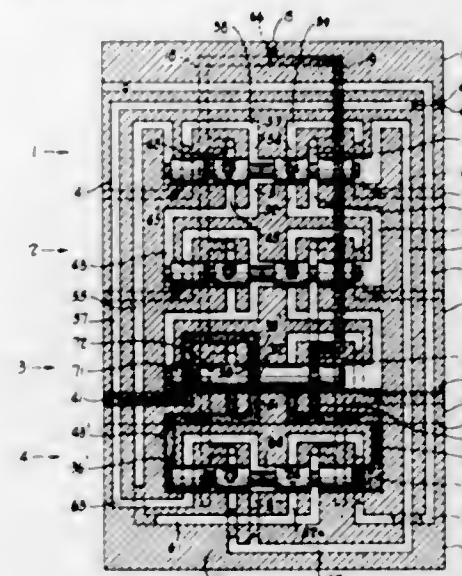
A flexible cushion-containing skirt for a gas-cushion vehicle comprises a row of inflatable wall elements of U-like lateral cross section, the limbs of each element extending inwardly towards the cushion and being attached by their ends to a peripheral part of the vehicle body which slopes upwardly and outwardly from the bottom of the body. The upper margins of the wall members are flexibly sealed to the vehicle body by caps or loops of flexible material.

**ERRATUM**  
For Class 181—30 see:  
Patent No. 3,409,099

**3,409,104**  
**DUAL PRESSURE PROGRESSIVE VALVE STRUCTURE**  
George H. Acker, Shaker Heights, Thomas J. Gruber, Chagrin Falls, and John R. Leber, Cleveland, Ohio, assignors to Eaton Yale & Towne Inc., a corporation of Ohio  
Filed June 11, 1965, Ser. No. 463,401  
8 Claims. (Cl. 184—7)

A divisional feeder in which lubricant is transmitted from a central station to a plurality of lubricated devices distant therefrom such as bearings. The feeder comprises a plurality of valve blocks each having a cylindrical bore and containing a four landed piston dividing the bore into a central chamber, a pair of end chambers, and a pair of valving chambers. A pair of input lines or passageways is provided with ports in each of the valve blocks between the central chamber of the valve block and the ends thereof. Outlet ports are provided in the central chamber of the valve blocks, and interconnecting lines are provided for enabling the position of the pistons to produce succes-

sive opening of inlet ports and connection to outlet ports through the passageways. In this manner, successive out-



put lines deliver lubricant to the lubricating points in succession and a continuous cycle takes place.

**3,409,105**  
**CASTER ASSEMBLY**  
Edwin T. Clinton, Redding Ridge, Conn., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia  
Filed June 21, 1967, Ser. No. 647,707  
10 Claims. (Cl. 188—29)

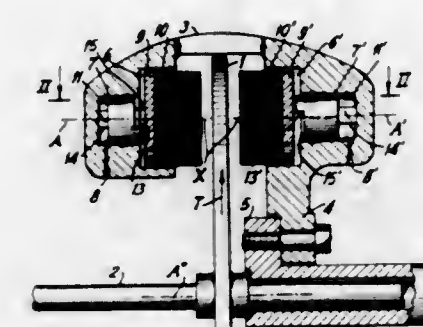


A caster assembly having a caster wheel rotatably mounted on a horizontal axis in a horn rotatably mounted on a vertical swivel axis to an attaching unit, and a vertical rod member in the attaching unit selectively actuatable from a remote location to effect engagement of a swivel locking lever on the horn with the attaching unit and to effect engagement of a brake lever on the horn with the caster wheel.

**3,409,106**  
**ANTI-SQUEAL DISK BRAKE**  
Ernst Meier, Frankfurt am Main-Sindlingen, and Hermann Seip, Bad Vilbel, Germany, assignors to Alfred Teves GmbH, Frankfurt am Main, Germany, a corporation of Germany  
Filed Dec. 12, 1966, Ser. No. 601,013  
Claims priority, application Germany, Mar. 29, 1966, T 30,798  
10 Claims. (Cl. 188—73)

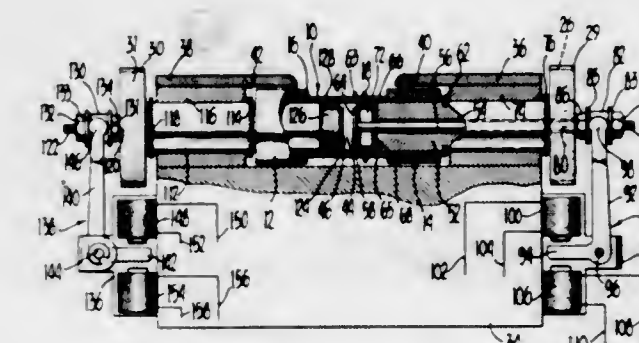
A disk brake having a yoke straddling the brake disk and a pair of axially shiftable pistons bearing upon re-

spective brake shoes in the lobes of the yoke, which shoes have at least limited play in the respective lobes, with the location of contact of the pistons with their respective brake shoes being angularly offset about the axis of rota-



tion of the disk and at different radial distances from the axis so that nonuniform wear of the brake linings are countered by off-center application of force thereto by the brake actuating means and squealing of the brake is prevented.

**3,409,107**  
**COUPLING WITH DEFORMABLE MEMBER**  
Karl E. Shill, Fremont, Calif., assignor to Friden, Inc., a corporation of Delaware  
Filed Aug. 15, 1966, Ser. No. 572,248  
10 Claims. (Cl. 192—17)



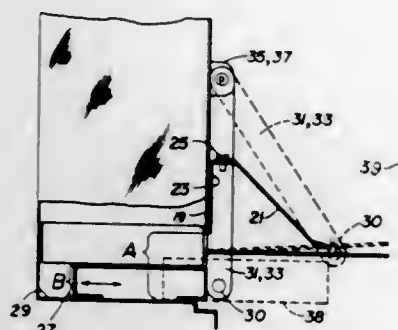
A perforated paper tape capstan drive and/or braking system wherein a hollow capstan has inserted within the bore of the capstan an axially and radially deformable member for selective releasable engagement with the surface of the capstan's bore. The deformable member may be either stationary or constantly rotating, thereby providing a brake or rotative coupling, respectively.

**3,409,108**  
**VENDING MACHINE HAVING A PACKAGE ANTI-JAMMING ASSEMBLY**  
Jimmie W. Tutt and Walton G. Tutt, Abilene, Tex., assignors of one-fifth interest to Bob L. Todd, Abilene, Tex.  
Continuation of application Ser. No. 661,612, Aug. 18, 1967. This application Sept. 5, 1967, Ser. No. 665,411  
10 Claims. (Cl. 194—1)

Following is disclosed a cross bar positioned in front of the openings in a tray arrangement of a vending machine and supported by a pivotable arm. The cross bar engages the end of and helps support a package being discharged by a delivery mechanism from one opening until the package is substantially half way expelled from the tray arrangement. Then the cross bar rides over the upper corner of the package and onto its top surface to forcefully deflect the package downward into a delivery chute, effectively preventing jamming of the package between the tray arrangement and the delivery mechanism.



Additionally, a long actuation lever which eliminates tedious adjustments extends between the cross bar and a mechanism, and wherein electrical means is provided to indicate when a specific merchandise hopper is empty and

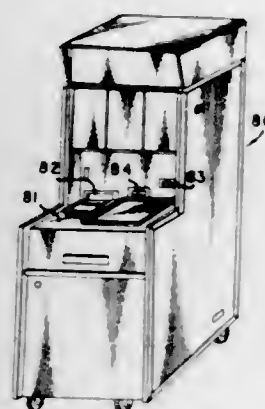


switch means to control an otherwise conventional coin return apparatus.

3,409,109

**AUTOMATIC DOCUMENT ISSUING MACHINE**  
Nobuhiro Iizuka, Yoshihiro Hatanaka, and Shigejiro Inoue, Himeji-shi, Japan, assignors to Kabushiki Kaisha Kokuei Kikai Seisakusho, Hyogo-ken, and Kabushiki Kaisha Heiwa Sogo Ginko, Tokyo-to, Japan

Filed Apr. 3, 1967, Ser. No. 628,130  
Claims priority, application Japan, Apr. 6, 1966, 41/21,631  
8 Claims. (Cl. 194-4)



A currency discriminating mechanism having an endless belt device for receiving and holding a currency bill inserted into the machine and a number of photo-conductive elements with respective light sources for examining the bill and generating a recognition signal or negation signal depending on whether or not the bill is properly genuine is combined, within a single cabinet, with a device for receiving a paper slip inserted into the machine and generating a receipt signal and a mechanism which issues a document in response to each recognition signal and a corresponding receipt signal, each paper slip and document being automatically printed at the time of operation with information such as dates, and all operations being controlled automatically through a control system.

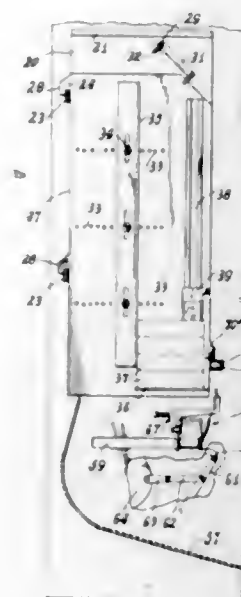
3,409,110

**ELECTRICALLY CONTROLLED ARTICLE VENDING MACHINE**

Harold D. Baum, Skokie, Ill.  
(6610 N. Clark St., Chicago, Ill. 60626)  
Continuation-in-part of application Ser. No. 481,188, Aug. 20, 1965. This application Dec. 26, 1967, Ser. No. 693,587

10 Claims. (Cl. 194-10)

Merchandise vending apparatus of a kind having electrically controlled merchandise ejector mechanisms and manual push buttons controlling the selection of a specific

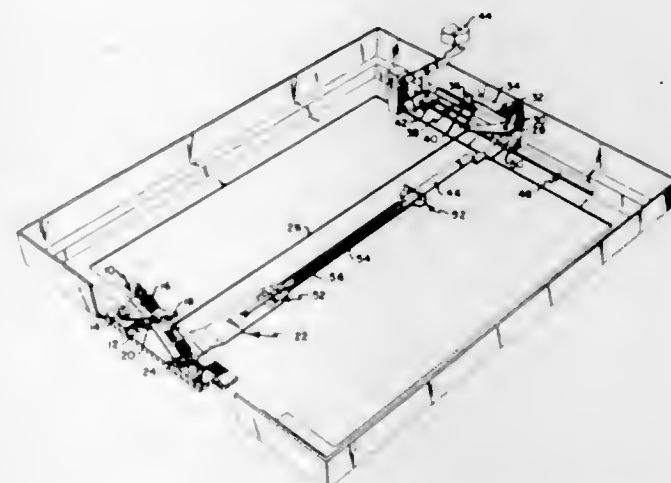


to cut off the supply of electric current to the related ejector mechanism.

3,409,111

**KEYLEVER TOUCH CONTROL WITH COMPENSATING MEANS DIRECTLY PROPORTIONAL TO KEYLEVER TOUCH**

Samuel D. Cappotto, Syracuse, N.Y., assignor to SCM Corporation, a corporation of New York  
Filed June 7, 1967, Ser. No. 644,361  
6 Claims. (Cl. 197-33)



An adjustable touch control mechanism for varying the force required to depress keylevers in a business machine. The mechanism includes a key operable linkage adjustably connected to a spring means which effects the key depression touch and a spring biased equalizing member operable on the key linkage to reduce the effort required to add tension in the spring means when increasing the key depression touch.

3,409,112

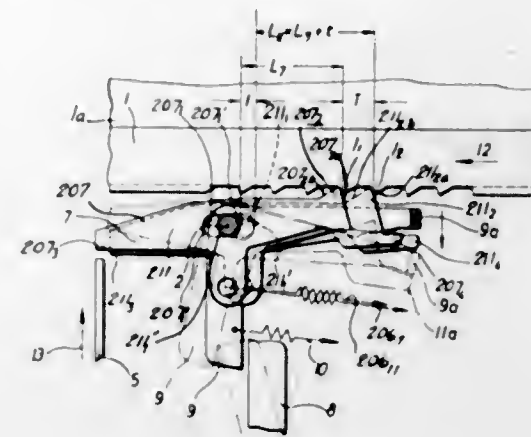
**DOUBLE SPACING ESCAPEMENT MECHANISM HAVING TWO PAWLS**

Helmut Ressel, Wilhelmshaven, Germany, assignor to Olympia Werke A.G., Wilhelmshaven, Germany  
Filed Oct. 23, 1965, Ser. No. 504,252  
Claims priority, application Germany, Nov. 17, 1964, O 10,518

20 Claims. (Cl. 197-84)

Two escapement pawls alternately assume leading and trailing positions to cooperate with the rack of a car-

riage whose teeth are spaced a certain distance. The trailing pawl normally stops the carriage after a step of half



the distance, but when the trailing pawl is held in an inoperative position, the leading pawl stops the carriage after the same has moved the full distance.

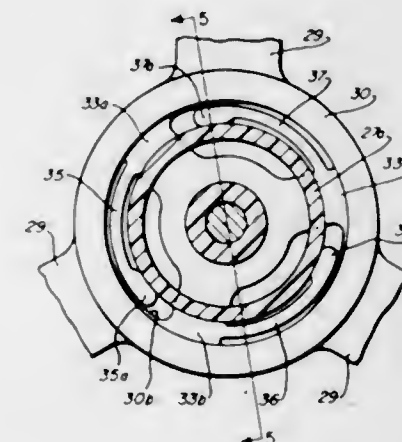
3,409,113

**RIBBON FEEDING MECHANISM**

Ronald H. McLean, Newington, Conn., assignor to Litton Business Systems, Inc., a corporation of New York

Filed Mar. 16, 1966, Ser. No. 534,808

2 Claims. (Cl. 197-151)



In a typewriter ribbon feed mechanism, a slip drive having a plurality of cantilever mounted arcuately shaped fingers extending radially in the same circular plane from hands symmetrically disposed around the circumference of a first hub which is positively driven, to frictionally engage a second hub, the fingers rotating the second hub with the first hub and slipping in response to load on the second hub.

3,409,114

**RIBBON FEEDING MECHANISM**

Makoto Okuda, Osaka, Japan, assignor to Maruzen Sewing Machine Co. Ltd., Osaka, Japan

Filed Apr. 26, 1966, Ser. No. 545,429

9 Claims. (Cl. 197-151)

Frictional drive means for an ink ribbon spool including a stud, a plate fixed on a ratchet mounted for rotation on the stud, a disc having an annular flange and mounted for rotation on the stud, and a pair of U-shaped



3,409,115

**METHOD AND APPARATUS FOR ORIENTING PAD-LIKE ARTICLES**

Louis F. Porcaro, Chicago, Ill., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

Filed Apr. 28, 1967, Ser. No. 634,540

7 Claims. (Cl. 198-24)



A machine and method for unscrambling a continuous stream of pad-like articles and orienting these articles into two columns of spaced rows moving at the same speed by the use of a pair of flanking conveyers which extend parallel to one another. The individual articles in these rows are upstanding and laterally aligned in their smallest dimension due to transverse open receptacles separated by closed receptacles in said conveyers, the conveyers being sufficiently offset so that the rows in each column are in lateral alignment with the spaces between the rows in the other column. The closed receptacles are then opened to form empty receptacles and the spaced rows from one column are moved laterally into the spaces in the remaining column as the conveyers move at constant speed.

3,409,116

**ORIENTING DEVICE WITH ANTI-JAM MEANS**  
James R. O'Malley, Essex Junction, Vt., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

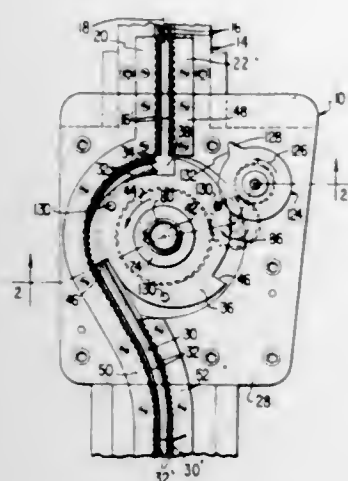
Filed Dec. 28, 1966, Ser. No. 605,301

6 Claims. (Cl. 198-33)

A positive acting anti-jamming device for a driven rotary transport mechanism in the form of a positively driven auxiliary movable member which is moved in synchronism with the driven rotary transport means but



out of contact therewith and means carried by the auxiliary member and responsive to jamming of the rotary



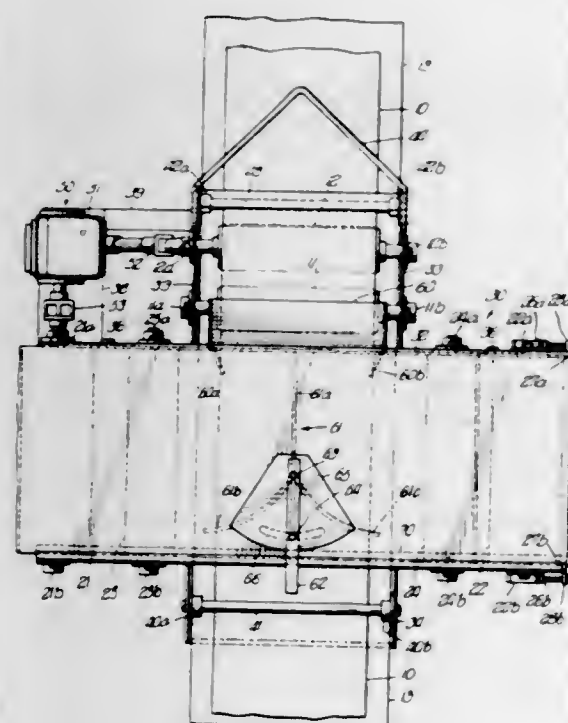
3,409,117

# CONVEYOR SYSTEM

Richard J. Bogner, Dodge City, and Ralph N. Massey, Ensign, Kans., assignors to Speed King Manufacturing Company, Incorporated, Dodge City, Kans., a corporation of Kansas

Filed Aug. 30, 1966, Ser. No. 576,031

3 Claims. (Cl. 198-76)

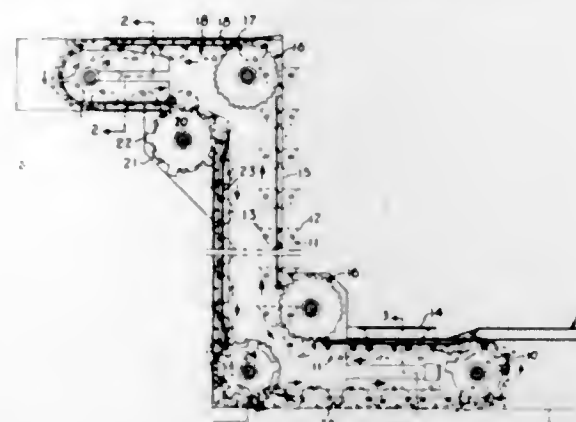


A conveyor system, wherein a discharge assembly is mounted on a main conveyor structure for movement therealong. The discharge assembly defines a transfer enclosure, through which passes a reversibly driven slinger belt transversely to the main conveyor belt. Material entering the transfer enclosure on the main belt is tripped off onto the slinger belt, and is forcefully ejected from the transfer enclosure at right angles to the main belt. Deflector means and means for varying the slinger belt speed may be provided to control the lateral range of discharge.

## 3,409,118 CAM CONTROLLED ENDLESS LOOP BUCKET CONVEYOR

Leo J. Meyer, San Antonio, Tex., assignor to Meyer Machine Company, a division of Ramo, Inc., San Antonio, Tex.

Filed Feb. 13, 1967, Ser. No. 615,436  
7 Claims. (Cl. 198-145)

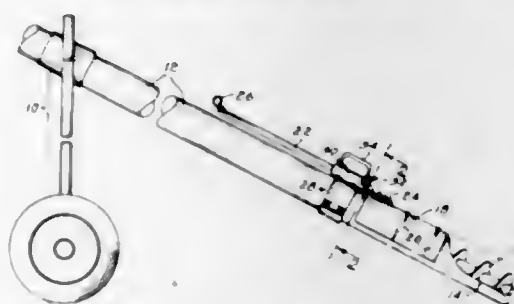


An endless loop bucket conveyor utilizing pins with rollers projecting from the ends of the buckets. The buckets are suspended from a looped chain mounted on and driven by sprockets. Substantially circular cams are concentrically mounted on a common shaft with the sprockets. The cams engage multiple pins on the ends of the buckets thereby placing the buckets at the desired series of positions as they traverse a turn and travel an established linear course. The bucket pins and rollers are also utilized for selectively tilting and dumping the buckets.

## 3,409,119 CLAMP-ON SLIDING INLET COVER CONTROL ASSEMBLY FOR AUGER CONVEYORS

Martin Mayrath, 10707 Lennox Lane, Dallas, Tex. 75229

Filed Oct. 17, 1966, Ser. No. 587,097  
2 Claims. (Cl. 198-213)



An auger conveyor has the top portion of the lower end thereof open for the supply of granular and similar material to be conveyed through the tube by the auger; a sliding cover is movable downwardly, when desired, to partially close the open top of the conveyor tube to control the rate of supply of material to the conveyor tube, the sliding cover being carried by a bar at one end thereof slidable in a tubular member fixed to the conveyor tube by a surrounding clamp, and a handle is carried by the tubular member to assist in maneuvering the lower end of the conveyor, and a screw clamp adjacent the handle engages the rod extending through the tubular member to hold it fixed in any adjusted covering position.

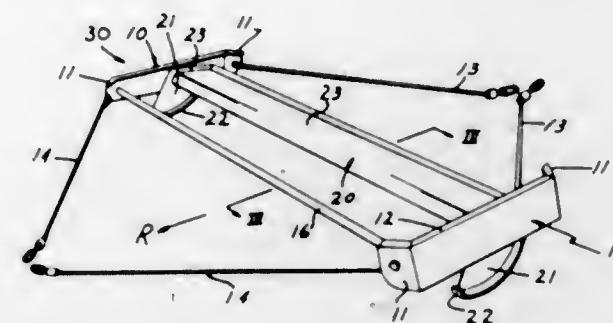
## 3,409,120 MANURE SCRAPER

Robert L. Van Huis, Zeeland, Mich., assignor, by mesne assignments, to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 4, 1966, Ser. No. 525,259  
8 Claims. (Cl. 198-224)

1. A manure scraper comprising:  
a pair of spaced support frames;

scraper blade means pivotally mounted between said support frames; and

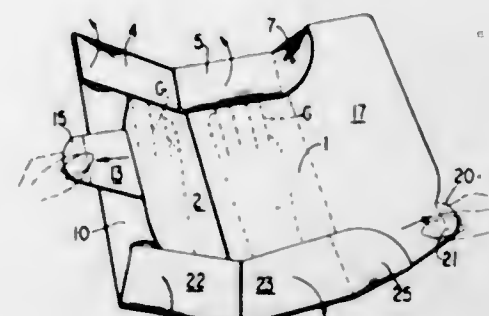


rigid means positioned along said blade means and pivotable about an axis, said means having a periphery with sections thereof radially spaced about said axis, said sections successively engaging the surface being scraped thereby causing rotation of said means about said axis, said means being operatively connected to said blade for controlling the position of said blade means in response to the direction in which said frames are being moved.

## 3,409,121 SANITARY PACKAGE FOR SURGEONS' GLOVES

Michael Taterka, Glendale, Calif., assignor to C. R. Bard, Inc., Murray Hill, N.J., a corporation of New York

Filed Jan. 3, 1967, Ser. No. 606,878  
9 Claims. (Cl. 206-7)

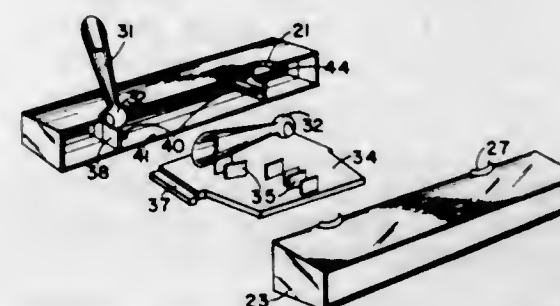


A stamped, cut and scored sheet of cardboard adapted to be folded to enclose surgeons' gloves completely in sterilized condition and to be unfolded by pulling an exposed tab to expose the gloves for use while providing a large sterile surface which prevents contamination by contact from nearby unsterile areas.

## 3,409,122 PEN AND PENCIL DESK SET

Thomas H. Hayes, Roanoke, Va., and Michael D. Thomas, Elmhurst, Ill., assignors to Creative Packaging Incorporated

Filed June 8, 1966, Ser. No. 556,234  
7 Claims. (Cl. 206-17.1)



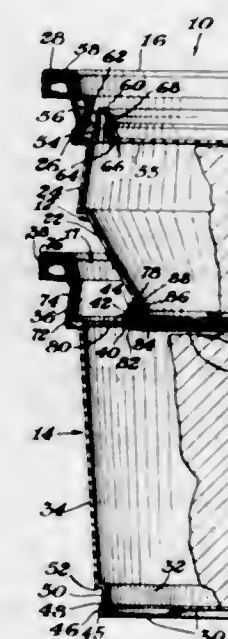
A container for a writing instrument receptacle in which a socket member is mounted within the container

and in spaced alignment with an aperture having a predetermined diameter for capturing a ball portion of the writing instrument receptacle in a swivel relationship.

## 3,409,123 INTERLOCKING CONTAINER AND LID

Robert J. McCormick, Findlay, Ohio, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Nov. 18, 1966, Ser. No. 595,459  
8 Claims. (Cl. 206-47)



A multi-unit package comprised of tubs and lids containing separate related or supplemental products. A locking ridge extending from the lid of a lowermost container matingly snaps together with a locking ring adjacent the bottom of another container which is placed on the top of the lid to form the multi-unit package.

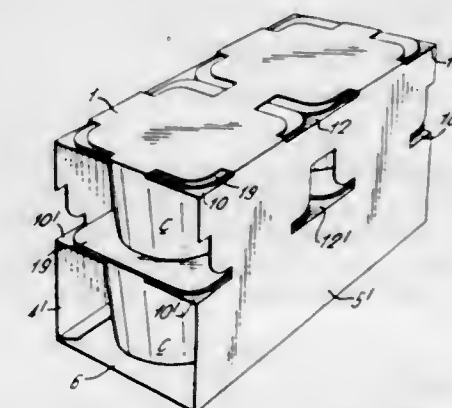
## 3,409,124 CARRIER CARTON FOR TUB-LIKE CONTAINERS

Arne Jorgensen, Kastanievej 6, Korsor, Denmark

Filed Jan. 4, 1966, Ser. No. 518,582

Claims priority, application Great Britain, Jan. 11, 1965, 1,188/65

8 Claims. (Cl. 206-65)



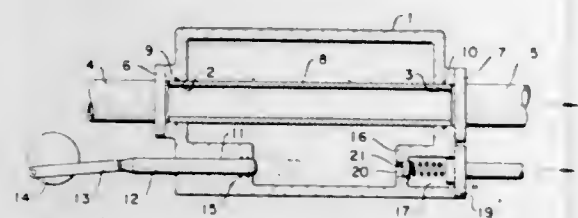
An improvement in carrier cartons for flanged tub-like containers in which the carton is a tubular, open-ended sleeve having L-shaped tabs at its corners defined by cuts and fold lines in the top and side walls of the sleeve and depressed out of the plane of the top of the tubular member to engage beneath the flanges on the containers, the sleeve further including T-shaped tabs between its ends similarly depressed below the plane of the top to engage beneath the flanges of containers in the carrier.



3,409,125

**APPARATUS FOR SIEVING SUSPENSIONS**  
Cornelis Bezemer and Petrus J. de Waal, Rijswijk, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Oct. 18, 1965, Ser. No. 496,998  
Claims priority, application Great Britain, Oct. 21, 1964, 43,031/64  
6 Claims. (Cl. 209—2)



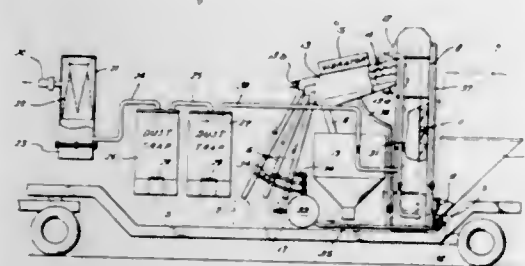
Apparatus for sieving from a suspension containing particles of various sizes which flows under pressure along one side of a permeable wall, a second suspension consisting only of particles of relatively small size suspended in a liquid, by creating an alternating pressure difference along said wall, whereby the second suspension is collected in a space at the other side of the wall and drained from said space.

3,409,126

**DRY PRODUCT RECLAIMING APPARATUS**

Alvin B. Kennedy, Jr., 1802 Meadowview, Alvin, Tex. 77511

Filed Mar. 14, 1966, Ser. No. 533,966  
2 Claims. (Cl. 209—12)



A machine for salvaging, particulate material including agitator and fluid flow means for classifying the material according to particle size and dust fine particle collection means at various points in the apparatus.

3,409,127

**METHOD AND APPARATUS FOR TESTING ELECTRICAL CIRCUIT BREAKERS**

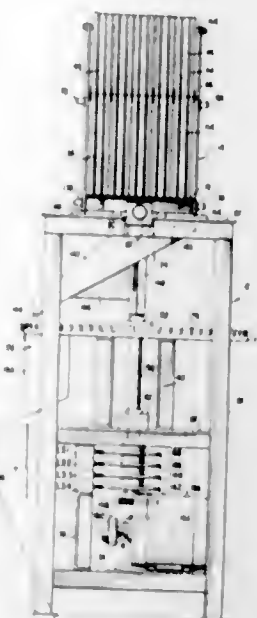
Howard H. Aiken, Fort Lauderdale, Fla., James T. Marsh, Leonardtown, Md., and Allan I. Parvin, Clifton, N.J., assignors to Aiken Industries, Inc., a corporation of Delaware

Filed Dec. 20, 1966, Ser. No. 603,209  
16 Claims. (Cl. 209—74)

16. A method of testing devices and sorting the tested devices in accordance to the elapsed time the devices take to respond to the test, the method comprising;

- positioning a device in a test position,
- testing the device at a constant rate so that the time of response to the test by the device is indicative of a tested characteristic of the device,
- distributing the tested devices into separated sorted groups in accordance with the tested characteristic,
- accomplishing the distributing by moving a distributor at a constant rate over a group of separate sorted device areas,

(e) synchronizing the start of the testing with movement of the distributor from a reference position, and



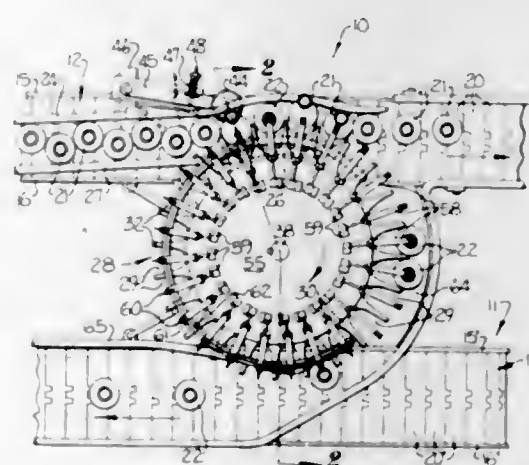
(f) moving the tested device from the test position into the distributor at the moment the device responds to the test so that the sorted device area into which the tested device is distributed has a direct relation to the elapsed time of the test.

3,409,128

**BOTTLE SORTING APPARATUS**

Julian Browne Hutaft, 114 Highland Ave., Fayetteville, N.C. 28305

Filed May 31, 1966, Ser. No. 553,959  
5 Claims. (Cl. 209—80)



An apparatus for sorting bottles of varying bottle configurations. Sorting results from the operation of a bottle conveying means which positions bottles of a selected configuration in a predetermined manner. Bottles having a given configuration are engaged by a retaining device, whereas other bottles of a different configuration are not engaged. The conveyor then causes the two groups to move in separate paths.

3,409,129

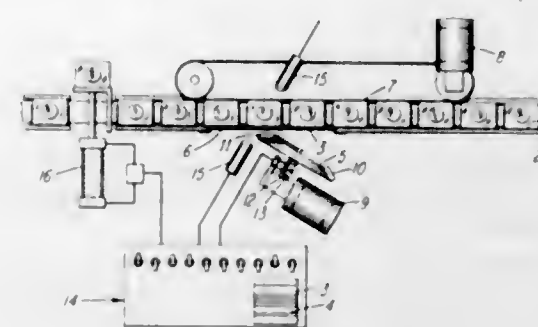
**LABEL SCANNING DEVICE AND PROCESS**

Chester C. Sperry, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

Continuation of application Ser. No. 622,005, Oct. 5, 1966. This application Jan. 15, 1968, Ser. No. 705,878  
32 Claims. (Cl. 209—111.8)

A method and apparatus for sensing the presence of an improper label on an object in a line of successively

presented labeled objects, in which apparatus a code pattern is applied to the label. The code pattern is unique to the particular type of label to which it is applied, and



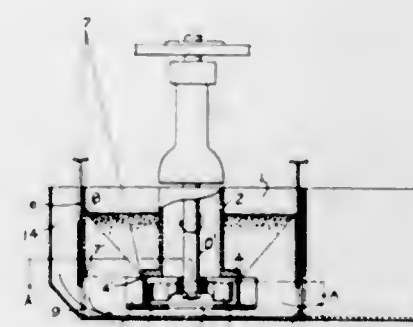
3,409,130

**FLOTATION APPARATUS**

Koichi Nakamura, 6-28-2 Minamimachi, Kichishoji, Musashino, Tokyo, Japan

Continuation-in-part of application Ser. No. 571,808, Aug. 11, 1966. This application Sept. 14, 1967, Ser. No. 667,691

6 Claims. (Cl. 209—169)



Ore separating apparatus including a cell which is filled with ore pulp to be treated and an air-feed pipe extending into the pulp in the center of the cell. A rotor at the bottom of the air-feed pipe mixes air and pulp and forces the mixture outward through a plurality of vanes. The vanes direct the mixture in the initial stages of a locus of minimum length paths to the discharge while producing minimum turbulence in the mixture.

3,409,131

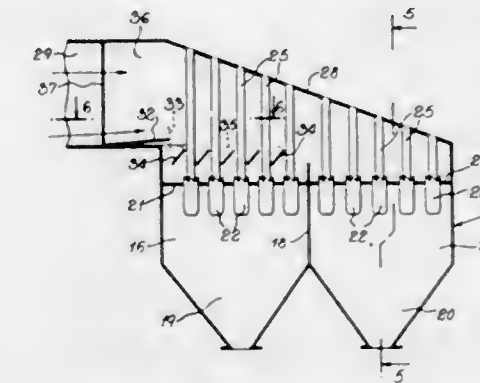
**INERTIAL TYPE PNEUMATIC SEPARATOR**

Alfred Arnold Petersen, Byram, Conn., and David William Gibbs, Port Chester, N.Y., assignors, by mesne assignments, to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Nov. 24, 1964, Ser. No. 413,520  
5 Claims. (Cl. 209—143)

A particle classifier for separating from a gas in which particles of different inertia relative to their superficial areas are separated and classified. The classifier is a container divided into a plenum chamber and particle-receiving chamber. The receiving chamber is arranged in the gas flow direction to receive by selective separation, first the fines after passage through centrifugal separating tubes; and, second downstream thereof, the relatively heavy particles by passage directly into a separate compartment or after passage through a second set of centrifugal separating tubes then into the separate compartment. The centrifugal separating tubes receive particle-

laden gas from the plenum chamber and pass cleaned gas to the atmosphere and separated particles into the receiving chamber. A deflector located up-stream of the particle receiving compartment deflects the gas stream

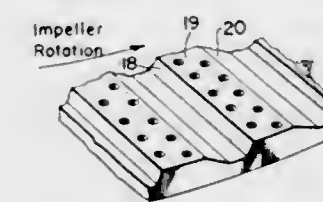


3,409,132

**SCREEN PLATE FOR CENTRIFUGAL PULP SCREENS**

Ewell B. Meadows, Memphis, Tenn., assignor to The Buckeye Cellulose Corporation, Cincinnati, Ohio, a corporation of Ohio

Filed Jan. 3, 1966, Ser. No. 518,197  
3 Claims. (Cl. 209—273)



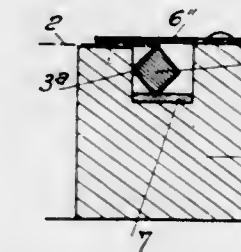
An improved, non-blinding screen plate for use in apparatus for the centrifugal screening of fibrous slurries. The improved, non-binding screen plate is provided with raised longitudinal bars having fiber passing orifices disposed between leading and trailing edges on the raised interior surfaces thereof. The raised longitudinal bars derive their non-blinding characteristics from the hydro-foil surfaces presented to rotary fiber slurry motion within the centrifugal screening apparatus.

3,409,133

**SCREENS**

Rémy Malfroy, Pantin, France, assignor to Societe Anonyme dite: Tripette & Renaud, a French company

Filed May 23, 1966, Ser. No. 558,163  
Claims priority, application France, May 26, 1965, 18,499  
3 Claims. (Cl. 209—404)

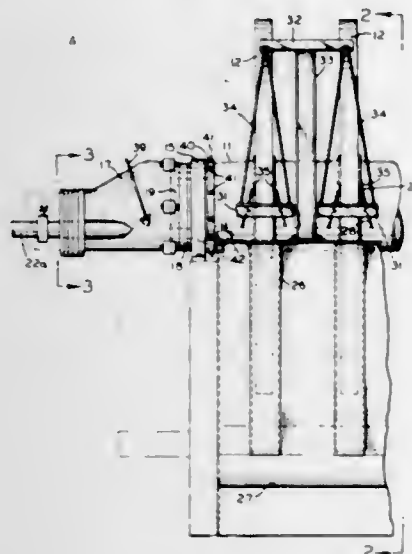


Rectangular screen whose frame is provided at each edge with a rotatable rod anchored to a respective edge of a perforate sheet which is stretched across the frame, rotation of any rod serving to tension the sheet in a direction perpendicular to the rod axis.



3,409,134

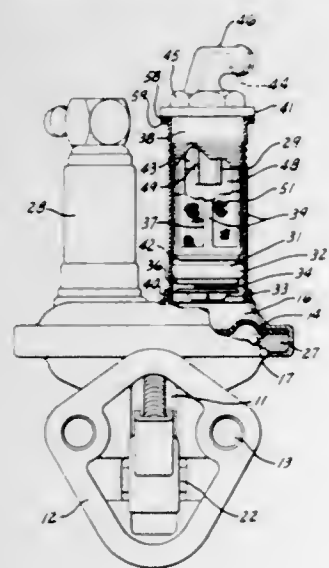
**FILTRATION PROCESS WITH SCRAPING AND BLOW-BACK CAKE REMOVAL**  
Gordon C. Wallace, Westport, Conn., and Leon D. Keller, Virginia, Minn., assignors to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware  
Filed Oct. 22, 1965, Ser. No. 500,605  
10 Claims. (Cl. 210—77)



1. The method of continuously filtering an aqueous slurry of finely divided mineral particles by means of a filter having a tank holding a pool of slurry and a rotating filter having circularly arranged hollow filter sections, the lower portion of which filter passes through said pool and has vacuum and blow means operatively connected to said sections, which comprises the steps of continuously rotating said filter through said tank under suction to apply  $\frac{1}{2}$  to  $1\frac{1}{2}$  inches of filter cake on said filter sections of which there is a comparatively wet layer next to the surface of the section and a comparatively dry layer above said wet layer, scraping off all except  $\frac{1}{16}$ — $\frac{1}{4}$  inch of the filter cake while maintaining suction thereon and thereafter blowing and separately discharging the wet layer, whereby the scraped material constitutes a filter cake of increased dryness.

3,409,135

**REPLACEABLE FILTER LIQUID PUMP**  
William A. Bradley, Kirkwood, and Russell F. Smith, Ferguson, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey  
Filed Nov. 4, 1966, Ser. No. 592,170  
4 Claims. (Cl. 210—136)



An automotive diaphragm type fuel pump is provided with a replaceable filter element in the form of an insert-

able screen held by extensions on a body member which is inserted into a cavity in the pump. The body member includes a fitting for receiving a fuel line and also has provisions for an air dome to reduce pulsations generated by the pump.

3,409,136

### SEPARATION PLATE FOR THIN-LAYER CHROMATOGRAPHY

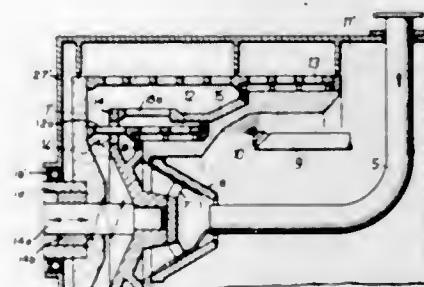
Jan Simonides, Vlt Nadvornik, and Jiri Pliml, Prague, Czechoslovakia, assignors to Ceskoslovenska akademie ved, Prague, Czechoslovakia  
No Drawing. Filed July 6, 1967, Ser. No. 651,395  
Claims priority, application Czechoslovakia, July 7, 1966, 4,599/66; July 28, 1966, 5,076/66; Dec. 23, 1966, 8,267/66; Jan. 31, 1967, 736/67  
8 Claims. (Cl. 210—198)

The plate-shaped carrier of an otherwise conventional separation plate for thin-layer chromatography includes a non-metallic base layer of cardboard, plastic, fiberboard, or fabric, and a much thinner metal foil, preferably aluminum or tin, superimposed on at least one face of the base layer and fixedly attached thereto. The thin layer of static phase of the plate is separated from the base layer by the metal foil.

3,409,137

### PUSHER TYPE CENTRIFUGE WITH A WASHING DEVICE FOR THE CENTRIFUGED MATERIAL

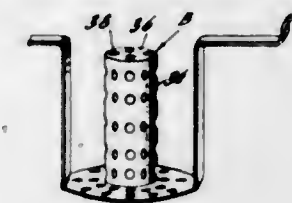
Fritz W. Schneider, Dortmund, Germany, assignor to Beteiligungs- und Patentverwaltungsgesellschaft mit beschränkter Haftung, Essen, Germany, a corporation of Germany  
Continuation of application Ser. No. 133,664, Aug. 24, 1961. This application Oct. 4, 1966, Ser. No. 611,184  
Claims priority, application Germany, Aug. 31, 1960, K 41,585  
2 Claims. (Cl. 210—213)



A pusher type centrifuge with a washing device for the centrifuged material, which comprises a housing and a centrifugal drum rotatably mounted in the housing to constitute a first member. Two cylindrical screen portions, having different diameters, extend axially from the centrifugal drum. A pusher plate is disposed within the housing and rotates coaxially with, as well as reciprocates relative to the centrifugal drum, the pusher plate constituting a second member. A conically outwardly widening solid-walled portion is secured to one of the members and is disposed at a greater radial range relative to the rotating axis than the outermost radius of the pusher plate, as well as extending from one of the cylindrical screen portions to the other of the cylindrical screen portions. An inwardly widening acceleration funnel is secured to one of the members for joint rotation therewith. A feeding pipe leads into the acceleration funnel and a washing pipe is arranged for feeding washing liquid toward the solid-walled portion.

3,409,138

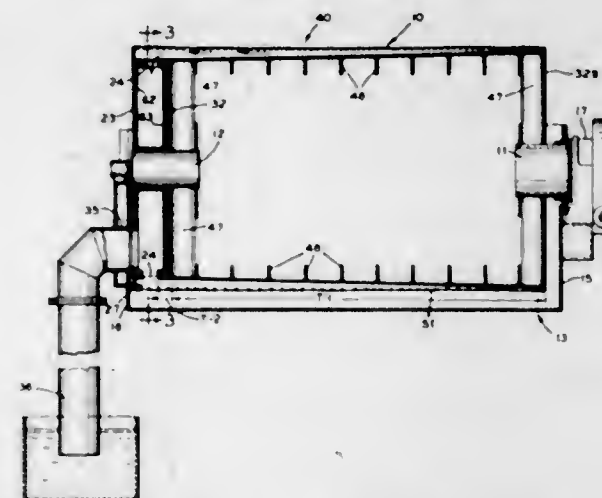
**EAVES-BOX STRAINER**  
Robert Lawrence, 2035 W. Montgomery Ave., Philadelphia, Pa. 19121  
Filed Sept. 15, 1967, Ser. No. 668,136  
2 Claims. (Cl. 210—238)



An eaves-box strainer insertable into the top of a downspout including a flat, circular, perforated pan, an optional perforated cylinder projecting axially and upwardly from the pan and offset lateral brackets for supporting the strainer at the top of the downspout.

3,409,139

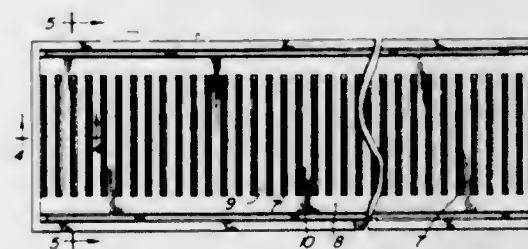
**ROTARY-VACUUM FILTER DRUM AND SUCTION BOX ARRANGEMENT**  
Clifford E. Jackson and Ferdinand Kristoff, Orillia, Ontario, Canada, assignors to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware  
Filed Sept. 3, 1965, Ser. No. 484,803  
21 Claims. (Cl. 210—404)



A rotary drum filter which has a filter drum provided externally with axially directed drainage channels adjoining one another, and terminating in radially inwardly directed filtrate drainage openings cooperating with the arcuate suction opening of a stationary vacuum box in a vacuum filtration zone. A vacuum filtrate discharge conduit extends from a submerged discharge opening in the outer wall of the vacuum box through the adjacent end wall of the vat, so located as to provide cascading flow of the vacuum filtrate liquid downward from a low point of the filter drum.

3,409,140

**PACKAGE DISPLAY RACK**  
Irving W. Woolf, 510 N. Dearborn, St., Chicago, Ill. 60610  
Filed Oct. 6, 1966, Ser. No. 584,758  
2 Claims. (Cl. 211—13)

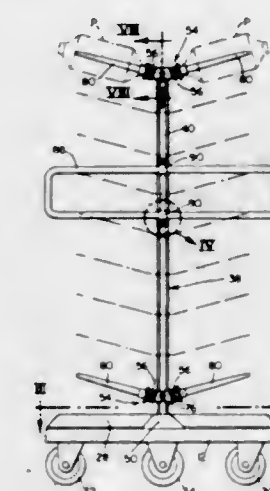


A package display rack which includes a series of spaced, parallel ridges and a pair of upwardly narrow-

ing, hollow, continuous ribs disposed along both sides of said series in a spaced, perpendicular relationship with respect to said ridges.

3,409,141

**TEXTILE YARN PACKAGE TRUCK**  
Hoyt Cunningham, Jr., and William L. Schmidt, Gastonia, N.C., assignors to Cocker Machine & Foundry Company, Gastonia, N.C., a corporation of North Carolina  
Continuation-in-part of application Ser. No. 565,595, July 15, 1966. This application Jan. 17, 1967, Ser. No. 609,934  
10 Claims. (Cl. 211—13)



A mobile base carries a pair of laterally spaced posts. Pin rail assemblies span the posts. Each pin rail assembly includes a pair of pin rails permanently interconnected at each end of the assembly by a plate. The pin rail assembly may be assembled with the posts by being lowered thereonto as a unit and may be removed from the posts by being raised therefrom as a unit.

3,409,142

**STAND FOR DRYING GLOVES**  
Mary Mechaneck, 705 Dunne Court, Brooklyn, N.Y. 11235  
Filed Feb. 28, 1967, Ser. No. 619,311  
2 Claims. (Cl. 211—13)



This invention relates to a stand for drying rubber gloves used in washing dishes. Such gloves are dripping wet after the process of washing dishes. The stand provides for upright support of a pair of gloves, a catch basin for the dripping water and means for securing the stand to a kitchen cabinet wall disposed below the kitchen sink.

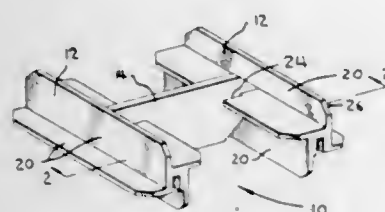
3,409,143

**INSTRUMENT HOLDER**  
Norwood Claude Graeff, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.  
Filed Sept. 27, 1966, Ser. No. 582,392  
5 Claims. (Cl. 211—59)

A holder is provided for retaining a surgical instrument

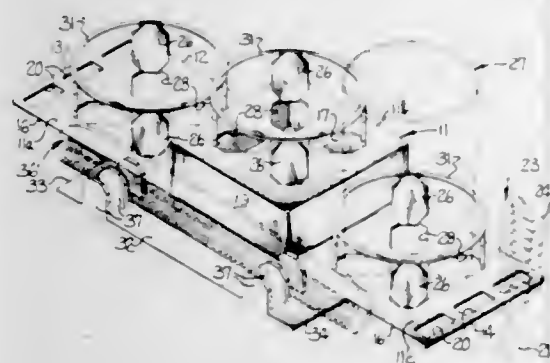


or the like in position during shipping of the instruments and also for holding the instruments just prior to use. The holder comprises a pair of parallel elongated members which cooperate with the finger-receiving portions



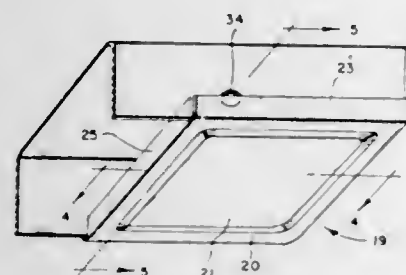
of the instrument handles and frictionally engage such portions. Various forms of resilient fingers are disclosed for extending from the parallel members to engage the instruments.

**3,409,144**  
**RACK FOR TOILET ARTICLES**  
Maggie B. Bridgman, Rains, S.C. 29589  
Filed Aug. 29, 1966, Ser. No. 575,758  
3 Claims. (Cl. 211-65)



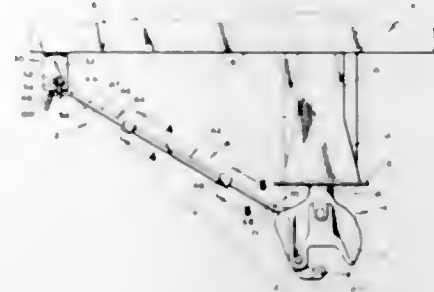
A rack for toilet articles comprising a wall supported base panel provided with sockets for supporting receptacles on its upper surface and toothbrush supporting openings along each panel side edge together with a front extension on the panel with upstanding parallel wall members for supporting combs.

**3,409,145**  
**SUPPORTING BASE FOR A WARDROBE RACK**  
Carl E. Gingher, 304-328 Depot St.,  
Scranton, Pa. 18509  
Filed July 18, 1966, Ser. No. 566,113  
6 Claims. (Cl. 211-177)



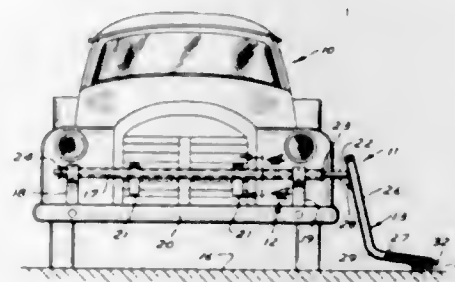
A quadrangular supporting foot for the base of a wardrobe rack and the like having upstanding side walls with openings on the ends of one of the side walls to receive the edges of the opposed sides of a hollow base member when the foot is fitted thereon.

**3,409,146**  
**UNCOUPLING ASSEMBLIES FOR RAILWAY CARS**  
Steadmon O. Taylor, Fort Lauderdale, Fla., assignor to  
Inventions and Invention Consultants, Inc., Chicago,  
Ill., a corporation of Illinois  
Filed June 16, 1966, Ser. No. 558,116  
10 Claims. (Cl. 213-166)



A railway car uncoupling lever assembly including inner and outer slide members having flat shank portions which slidably abut against one another. Guide tabs project beyond each shank portion and are bent over against the back of the opposite shank portion so that the shank portions slide longitudinally but not laterally with respect to one another. The inner slide member includes a hooked end portion for engaging the lock lifter on a coupler, while the outer slide member includes a handle and a connecting portion interposed between the handle and its shank portion. The connecting portion is journaled in a bracket on the car frame.

**3,409,147**  
**BALE TURNER ATTACHMENT**  
Lynn Alden McCracken, Box 703, Turner, Mont. 59542  
Filed Mar. 7, 1966, Ser. No. 532,138  
9 Claims. (Cl. 214-1)

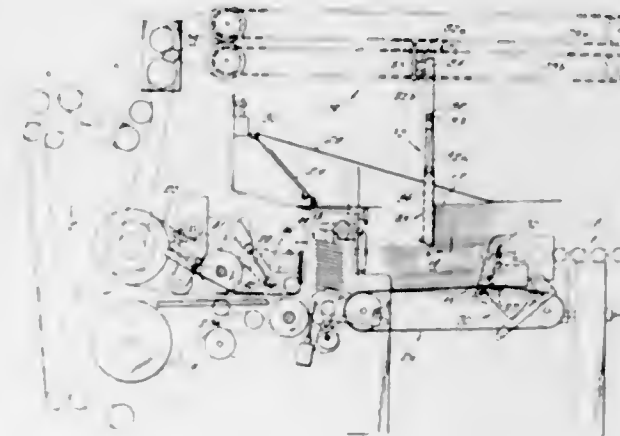


A bale turner rotatably mounted on the front of a truck operable to roll bales lying on the ground. The turner has a rearwardly and an outwardly projected arm mounted for movement about an axis generally transverse to the forward movement of the truck. The arm has an outwardly projected longitudinal rib and is held above the ground by a downwardly curved skid.

**3,409,148**  
**STACKING DEVICE**  
Albert F. Shields, 43 Exeter St.,  
Forest Hills, N.Y. 11375  
Filed Dec. 27, 1965, Ser. No. 516,421  
13 Claims. (Cl. 214-6)

Box folding, stacking and straightening apparatus is provided with independently adjustable upper conveyor belts to positively control feeding of folded boxes to a point along the feed path as close to the stacking section

as practical without interfering with entry of folded boxes to the bottom of a rising stack. Upper conveyor belts are selectively pivoted between two discrete positions in one of which the upper belt remains in engagement with the folded box until a point very close to the stacking section to retain positive control of relatively short boxes. In the other position the upper belt releases engagement with the folded box at a point considerably to the rear of the stacking section so that the lifting of relatively long boxes in the stacking section will not be impeded by the horizontal conveyor means. Boxes of irregular shape at the leading edge are handled without skewing by placing different sections of the upper belt in different positions. The barrier in the stacking section to arrest forward movement of the blanks is stepped in a forward direction and



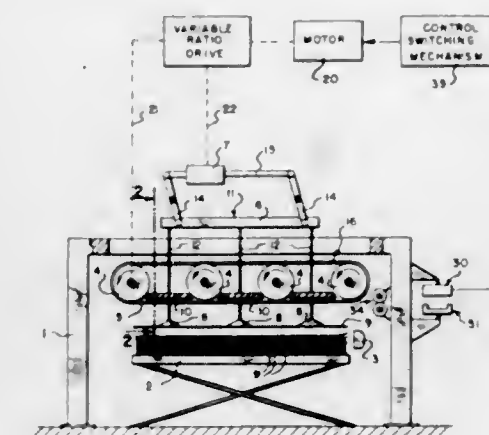
is provided with a transition region including a roller rotating on a horizontal axis so as to lift the leading edges of the folded boxes and in this way minimize the weight applied to folded boxes as they enter the stacking section. Periodically, a delivery device engages the upper end of the stack to remove a pile of boxes therefrom. Such delivery device is provided with independently adjustable stop means for a plurality of vertically movable pusher arms so that the irregular shape of the folded box at the top of the stack will not prevent the delivery of a pile having a predetermined number of folded boxes therein. At the end of a run, the last few folded boxes are raised to a position at the top of the barrier by a manually operated lift means to clear the top of the barrier means and be removed by the pusher arms.

**3,409,149**  
**APPARATUS FOR REMOVING FERROMAGNETIC SHEETS SINGLY FROM A STACK**  
Pierre Graux, Paris, France, assignor to Compagnie du Filage des Metaux et des Joints Curty (Cefilac), Paris, France, a French company  
Filed Aug. 24, 1966, Ser. No. 574,631  
Claims priority, application France, Aug. 25, 1965, 29,375

**5 Claims. (Cl. 214-8.5)**  
1. Apparatus for transferring magnetic sheets from a first location to a second location comprising:  
(a) an elevator table for support of a stack of sheets,  
(b) means to control automatically the rise of said table to maintain the uppermost sheet of a stack thereon between upper and lower limits of height,  
(c) means to separate the uppermost sheet in the stack from the next lower sheet along at least part of the edge thereof,  
(d) means to grasp a sheet,  
(e) means to move said grasping means between an upper position and a lower position, said lower position being above said table and vertically adjacent

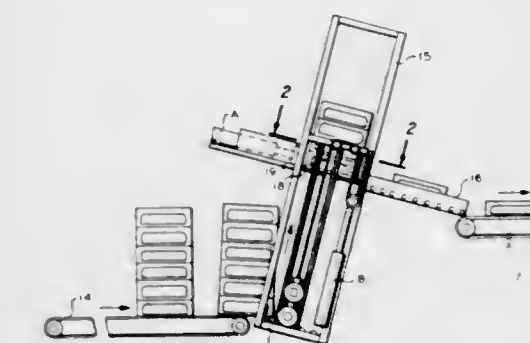
said lower limit, said moving means having during upward travel a low vertical speed at said lower position and a higher vertical speed at higher vertical positions,

(f) a magnetic sheet transporting means including a plurality of rows of horizontal rollers extending transversely of their respective rows, the lower surface of said rollers lying between said upper and lower positions,



(g) drive means coupled to said transporting means and to said moving means,  
(h) a variable ratio coupling interposed between said drive means and at least one of said transporting means and moving means,  
(i) means to develop a signal in response to the simultaneous delivery of more than one sheet by said transporting means, and  
(j) means responsive to said signal to stop said drive means.

**3,409,150**  
**APPARATUS FOR HANDLING STACKED MEMBERS**  
Raymond G. Voss, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed Dec. 19, 1966, Ser. No. 602,620  
4 Claims. (Cl. 214-8.5)



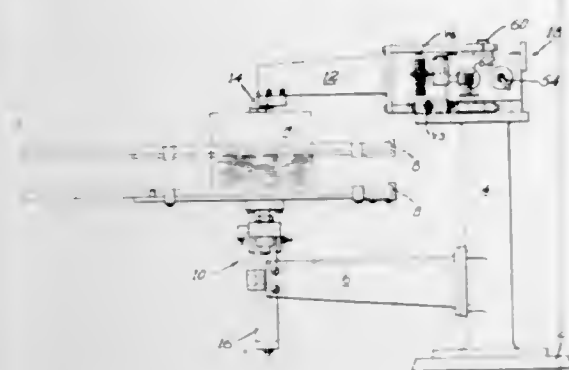
Apparatus capable of receiving rows of stacked articles and unstacking these articles as single units.

**3,409,151**  
**AUTOMATIC FEEDING MECHANISM**  
Robert W. Ottaway, South Hamilton, and Paul G. Rumball, Beverly, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of Massachusetts  
Filed Jan. 12, 1967, Ser. No. 608,869  
12 Claims. (Cl. 214-8.5)

An automatic feeding mechanism for a stack of flat workpieces which in combination includes a vertically reciprocable table and a horizontally oscillatable arm

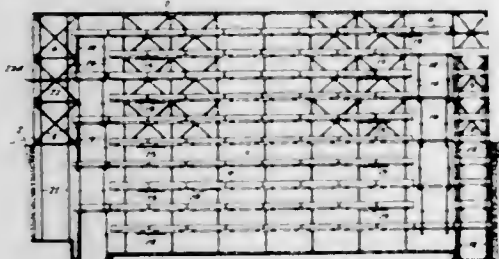


having a pickup head mounted upon its outermost end. The various elements are interconnected so that when the arm and attached head are located above the table, the table will move upwardly until the uppermost workpiece



contacts the pickup head, whereupon the workpiece is picked up by the head and the table returned to its lower position. The arm now swings to feed the workpiece to a recipient device and then returns to complete the cycle.

**3,409,152**  
**APPARATUS FOR THE STORAGE OF ARTICLES**  
Arthur Reginald Edwards, 18 Portway,  
Frome, Somerset, England  
Filed Dec. 2, 1964, Ser. No. 415,359  
3 Claims. (Cl. 214-16.4)

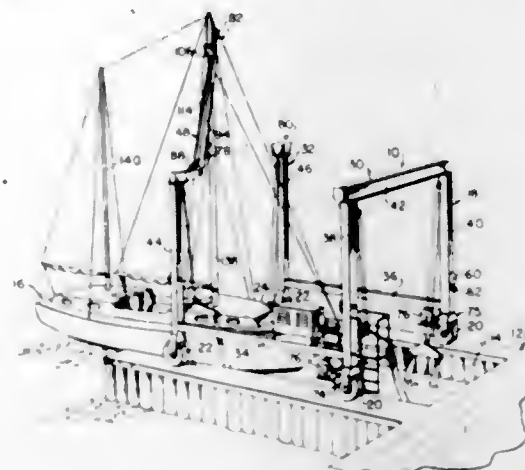


Apparatus for the storage of articles, such as cars, is formed by a vertical stack of horizontal trackways and a plurality of platforms, on which the articles are placed, are movable on the trackways. Lifts are at the ends of the stack to move platforms from one trackway to another, and puller devices are adapted to move the platforms along the respective trackways and on and off the lifts so that the platforms may be moved in sequence through the apparatus. Articles are placed on the platforms when successive platforms are at an input position. For removing selected articles a transport device having prongs extending therefrom is adapted to move vertically parallel to one of the lifts and is movable horizontally to be projected into and retracted from the path of that lift so that the prongs pick an article off a selected platform on that lift. An inclined ramp across the vertical path of the transport device has fingers extending in the plane of the ramp and offset in a vertical direction to be in an interfingering relationship with the prongs of the transfer device so that the transfer device can descend through the ramp and thereby transfer an article, which is on the prongs, onto the ramp.

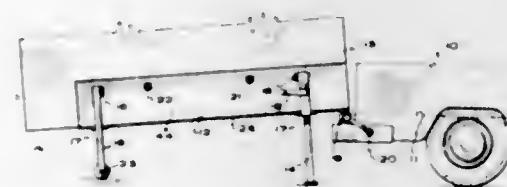
**3,409,153**  
**BOAT HOIST**  
Richard A. Stearn, Arnold Petersen, and Norbert Lenius,  
Sturgeon Bay, Wis., assignors to Marine Travelift, Inc.,  
Sturgeon Bay, Wis., a corporation of Wisconsin  
Filed Dec. 22, 1966, Ser. No. 603,952  
9 Claims. (Cl. 214-396)

This invention relates to a boat hoist which has a frame, a boat sling connected to the frame for supporting a boat and a plurality of wheels movably supporting the frame.

The frame includes a pair of columns and a catch is mounted on one of the columns. An elongated arm has one end pivotally mounted on the other of the columns. The elongated arm has a lock mounted on the free end

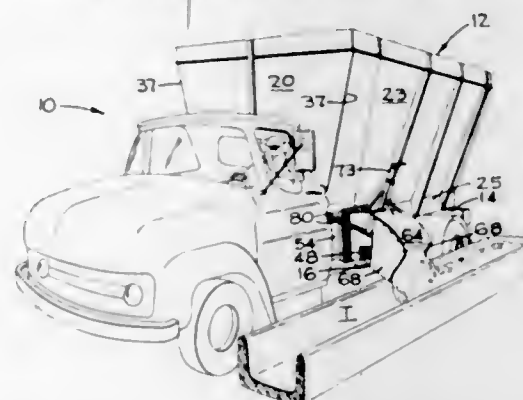


**3,409,154**  
**LOADING AND UNLOADING DEVICE**  
Reed Rasmussen, 168 W. Gentile,  
Layton City, Utah 84041  
Filed Feb. 8, 1967, Ser. No. 614,662  
9 Claims. (Cl. 214-515)



A camper loading and unloading device having sprockets, journaled to the rear end of a truck bed, positioned to coact with racks secured to the bottom of the camper along each of the opposite sides of the camper, and means for driving the sprockets individually and simultaneously. Guides may be secured to the device for aligning the racks with the sprockets and for locking the camper to the bed.

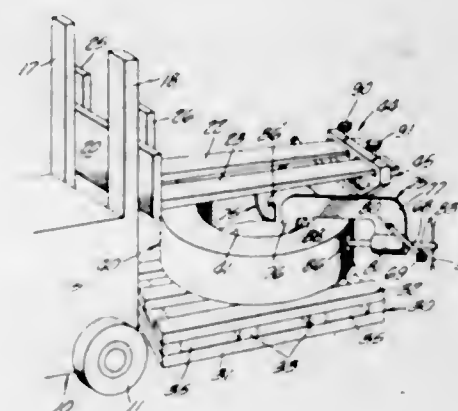
**3,409,155**  
**SELF-DISCHARGING BULK FEED VEHICLE**  
Buck C. Hamlet, Brea, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware  
Filed July 22, 1966, Ser. No. 567,233  
3 Claims. (Cl. 214-519)



An open-topped vehicle with inwardly inclined side sections for carrying bulk feed for cattle and for distributing the same along a cattle feed trough. The vehicle

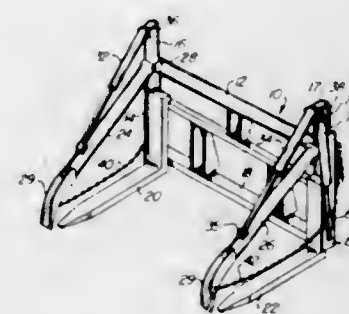
includes a centrally located, longitudinally extending first drag conveyor for moving the feed forwardly and a second drag conveyor positioned transversely of the vehicle body at the forward end thereof for receiving the material from the first conveyor and transporting it into a delivery chute extending outwardly from the vehicle body. The chute is removable along with an outer portion of the second conveyor when the vehicle is to be transported over the public highways.

**3,409,156**  
**COIL LIFTER**  
Sam Mills, 20141 Allentown Drive,  
Woodland Hills, Calif. 91364  
Filed Oct. 5, 1966, Ser. No. 584,454  
10 Claims. (Cl. 214-620)



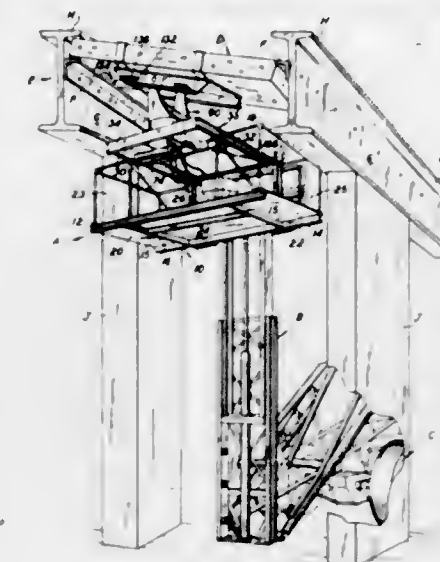
The invention is an improved device for lifting coils or rolls of strip material, such as metal, having a relatively large center opening. The device comprises a pair of C clamps which clamp to the coil in spaced relationship. The clamps are carried by a member in such a way that the coil and the clamps can swing about a horizontal axis when the clamps and coil are lifted. The member to which the clamps are attached has a position such that the said horizontal axis about which the coil swings when lifted is in a position so that merely by lifting the coil by means of a fork lift or the like, it swings from a position in which its axis is vertical to a position in which its axis is horizontal and in which it can be maneuvered and then mounted on a mandrel. The said member is configured to directly receive the forks of a fork lift.

**3,409,157**  
**HOLD DOWN APPARATUS FOR MATERIAL HANDLING CARRIAGES**  
Le Grand H. Lull, 5501 Woodlawn Blvd.,  
Minneapolis, Minn. 55417  
Filed Mar. 9, 1965, Ser. No. 438,427  
10 Claims. (Cl. 214-654)



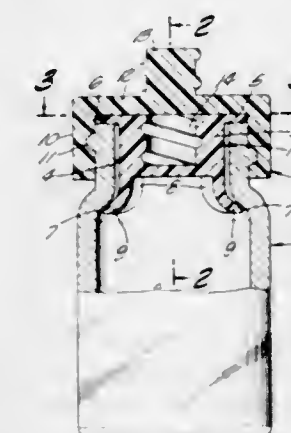
A forklift load handling carriage provided with flexible cable or chain hold down means which can be tightened down over irregularly sized and shaped loads such as logs or poles or the like to hold them securely in place.

**3,409,158**  
**APPARATUS FOR POSITIONING STRUCTURAL MEMBERS**  
Le Grand H. Lull, 5501 Woodlawn Blvd.,  
Minneapolis, Minn. 55417  
Filed June 1, 1965, Ser. No. 460,166  
11 Claims. (Cl. 214-700)



An apparatus for mounting on the lift mechanism of a mobile loader for positioning structural members from below during the construction of bridges, buildings, etc. The apparatus includes means for moving a slab or similar structural member vertically and horizontally and for tilting and rotating it as necessary to locate it in place. The apparatus desirably includes a platform for carrying workmen adjacent the structural member being placed and also an independent power and control system operated by the workmen.

**3,409,159**  
**STOPPER AND CAP COMBINATION**  
Evert D. Velt, 6182 Roy St., Los Angeles, Calif. 90042  
Filed Aug. 1, 1966, Ser. No. 569,235  
8 Claims. (Cl. 215-9)



1. A combined bottle stopper and closure cap, comprising: a stopper having a body adapted to be disposed within the mouth of a bottle; said stopper having an inner end provided with resiliently deformable means thereon normally projecting outwardly for engagement with the bottle beneath an internal shoulder therein; said stopper having an outer end provided with an outwardly extended portion engageable with the outer end of the bottle neck; an outer cap having a side wall provided with an internal thread engageable with the thread on the bottle neck; said cap having an end wall; said end wall and said outer end of said stopper having cooperatively coengageable means for interconnecting the same upon removal of said cap from said bottle neck whereby said



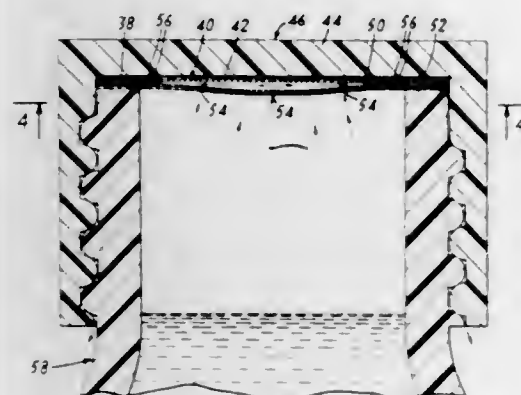
cap constitutes a knob to enable the application of axial outward force to said stopper to cause resilient deformation of said means at said inner end of said stopper.

3,409,160

## VENTING CLOSURE

Douglas C. Scott, West Hartford, Conn., assignor to Scott Plastics Corporation, Hartford, Conn., a corporation of Connecticut

Filed Oct. 3, 1966, Ser. No. 583,593  
3 Claims. (Cl. 215-56)



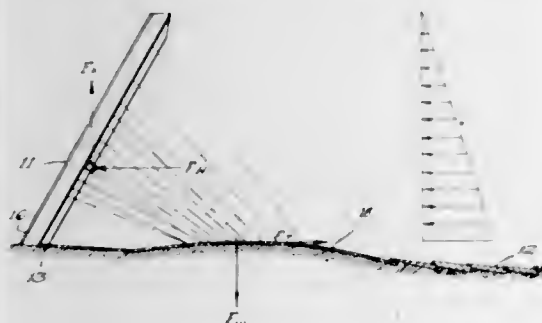
A venting liner for containers comprising a first flexible paper disk having a layer of liquid impervious material disposed adjacent to the inside of the cap member for the container and substantially coextensive therewith and a second flexible paper disk having a layer of liquid impervious material having a plurality of punctures there-through engages the rim of the container in liquid tight relation.

3,409,161

## DIKE TANK

Christian Arne, Chicago, Ill., assignor to Chicago Bridge & Iron Company, Oak Brook, Ill., a corporation of Illinois

Filed Apr. 10, 1967, Ser. No. 629,642  
7 Claims. (Cl. 220-1)



A storage tank capable of storing large quantities of liquid having a sidewall consisting of a plurality of curved elongated elements which are tilted inwardly towards the center of the tank and are secured to the tank bottom by means of a series of tie-down members.

3,409,162

## HOUSING FOR SMALL APPLIANCES, PARTICULARLY FOR LIGHTERS

Gotthard Mahlich, Hofheim, Taunus, Reinhold Weiss, Frankfurt am Main, and Hans Schindler, Egelsbach, Offenbach, Germany, assignors to Braun Aktiengesellschaft

Filed Aug. 18, 1966, Ser. No. 573,261  
Claims priority, application Germany, Aug. 25, 1965, B 63,107  
4 Claims. (Cl. 220-4)

A housing for appliances such as lighters for smokers, comprising as separate component parts: a bottom plate;

a pair of two opposite side walls; a bracket-shaped U-frame with legs forming integrally two opposite end walls and the bar connecting the legs forming a cap-shaped cover end means to permit snap-joining of said parts and positively pressure locking them into a unitary housing



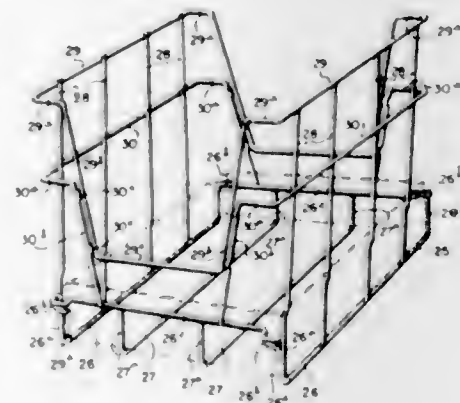
body; said means including longitudinal edges angled inwardly from the periphery of said side walls and corresponding edges of said frame to mate with each other on compression assembly from the inside of said housing into locking prestressed engagement.

3,409,163

## EGG AND MILK CRATE CONSTRUCTION

Warren H. Lockwood, 1329 Granvia Altamira, Palos Verdes Estates, Calif. 90274

Filed Nov. 13, 1967, Ser. No. 682,157  
18 Claims. (Cl. 220-19)



A crate for the handling of egg and milk cartons and the like and adapted to stack and nest without the use of moving parts has a generally rectangular bottom with rigidly attached side walls and end walls upstanding therefrom. The walls have a height at least about equal to a dimension across the bottom. At least one end wall has a central through opening or recess open at the top and having lateral sides downwardly converging to a zone about one-half to two-thirds of the crate height. Each of the side walls has a plurality of parallel wires extending in the plane of the wall from top to bottom to permit nesting of two like receptacles. These wires are so inclined and so spaced that an upper receptacle may be tested in a lower like receptacle by tilting the upper part of the upper receptacle outwardly through said end wall opening of the lower receptacle sufficiently to permit the bottom of said other end wall of the upper receptacle to clear the other end wall of the lower receptacle down to a nested position. During the tilting operation, the side wall wires of both receptacles lie in a common plane. Extending endwise from the bottom are projections acting as lower stacking supports when an upper crate is stacked on a lower like crate by placing such stacking supports on the upper edge of a lower crate; or, alternatively, on in-

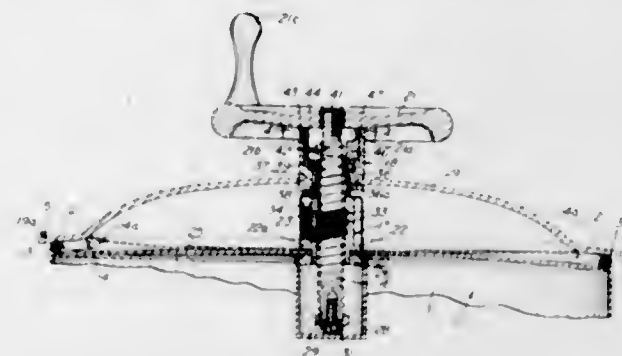
intermediate stacking points or supports provided by a reinforcing wire parallel to and below the top. The angles of tilt of an upper crate is such that its lower stacking supports will clear the upper edges and also any intermediate upper stacking points of the lower crate, whereupon the upper crate will nest down into a lower crate with the side wall wires and the lateral sides of their end openings lying parallel to like elements and vertically related thereto. The two end walls may have similar openings or one end wall may be closed.

3,409,164

## FORCE-PRODUCING MECHANISM FOR CONTROLLING THE RELATIVE POSITION OF TWO MEMBERS

Alfred Vischer, Jr., Park Ridge, Ill., assignor of two-thirds each to William Vischer, Alfred Vischer III, and Peter Vischer; four-thirds each to Walter W. Zitzewitz and Elmer K. Zitzewitz; one-third each to Gertrude J. Zitzewitz and Barbara O. Zitzewitz; and two-thirds to Gertrude V. Bouton

Filed Sept. 21, 1967, Ser. No. 669,472  
12 Claims. (Cl. 220-25)

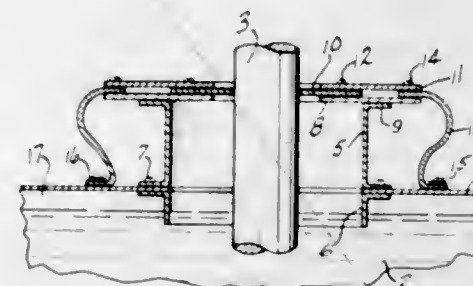


A mechanism for flexing an unstressed cover into a stressed condition to seal a pressurizable vessel. The mechanism includes a manually-rotatable worm to move a ball nut fixedly mounted on the cover toward and away from an externally mounted brace. The mechanism includes a one-way brake in the form of a spring finger that resiliently bears against the inner wall of a housing to prevent the flexed cover from snapping open, and the brake further includes a separate finger which engages an irregularity in the housing to prevent manual rotation of the worm in a door opening direction when the vessel is pressurized.

3,409,165

## FLOATING DECK

Lou C. Creith, Allentown, Pa., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia  
Continuation of application Ser. No. 407,372, Oct. 29, 1964. This application Apr. 3, 1967, Ser. No. 628,162  
15 Claims. (Cl. 220-26)



A floating deck is provided having an opening therein. One sleeve member projects from the lower side of the deck at the opening and a second sleeve member projects upwardly from the deck at the opening. A diaphragm hav-

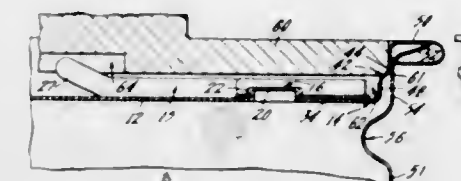
ing one or more supporting rings rests upon the upper portion of the upper sleeve to allow for the passage of a vertical pole through the opening.

3,409,166

## SELF-OPENING CANS

Leonard Thomas La Croce, Paramus, and Raymond Luscombe Batchelar, Westwood, N.J., assignors to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Mar. 17, 1967, Ser. No. 624,051  
7 Claims. (Cl. 220-54)



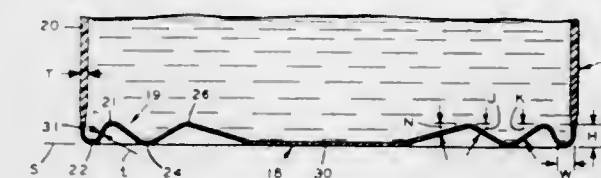
An end closure with a large removable area defined by a score line close to the periphery of the central panel and an opening tab riveted to the removable section at a point proximate to the score line has a countersink wall with an inwardly extending step the shoulder of which is level with or above the top of the portion of the tab lying close to the score line to obviate interference between a seaming chuck and the tab during an end seaming operation to thereby preclude the necessity of using a thin walled chuck to seam the end closure to a can body and to make for a more durable and shock-resistant container.

3,409,167

## CONTAINER WITH FLEXIBLE BOTTOM

Richard Lewis Blanchard, Barrington, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Mar. 24, 1967, Ser. No. 625,645  
1 Claim. (Cl. 220-66)



A container constructed to compensate against the effects resulting from a reduction in internal pressure after sealing of the container. The container is provided with a flexible base which flexes inward when the internal pressure of the container is reduced due to chemical reactions, temperature changes and/or other causes. Through the flexure of the container base, deformation or paneling of the sidewalls of the container is prevented. In this manner, the stacking characteristics and appearance of the container are retained.

3,409,168

## CONTAINER

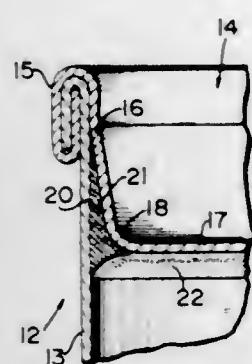
Louis J. Chmielowiec, South Holland, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Oct. 24, 1965, Ser. No. 504,530  
11 Claims. (Cl. 220-67)

This invention relates to a container having a body closed by an end secured thereto by a folded seam. The end includes a panel and a chuck wall with a lower portion of the latter converging downwardly and radially



inwardly toward the end panel. Adhesive means having appreciable tensile strength characteristics is disposed in the space between the chuck wall and the body for bond-



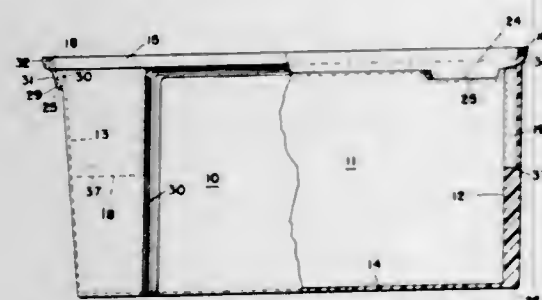
ing the same to each other and for additionally reinforcing the chuck wall against radial inward deflection thereof due to the influence of pressure within the can reacting on the end panel.

3,409,169

**NESTING AND STACKING TRAY**

Alvin W. Levenhagen, Linesville, Pa., assignor to Molded Fiber Glass Body Company, Ashtabula, Ohio, a corporation of Ohio  
Continuation-in-part of application Ser. No. 480,606, Aug. 18, 1965. This application Oct. 12, 1967, Ser. No. 683,058

4 Claims. (Cl. 220-97)



The container is made up of four planar walls made of relatively thin material and has four long legs that are integrally attached to the walls and extend from the top to the very bottom thereof. These long legs have an upwardly facing shoulder about midway between the top and the bottom of the container. Four short legs are attached to the sides of the box, likewise adjacent corners, and these short legs terminate at the bottom in a downwardly facing shoulder approximately midway between top and bottom of the container and an upwardly facing shoulder is formed at the upper end of the leg adjacent the rim of the box; thus, the long leg will rest on the upper end of the short legs during stacking and the long legs will nest in the pockets formed at the upper end of the long legs during nesting.

3,409,170

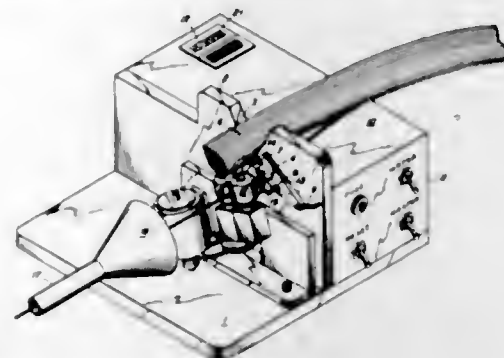
**STRAND SEPARATION, COUNTING AND FEEDING**

Donald Eugene Orcutt, New Fairfield, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine  
Filed Dec. 8, 1966, Ser. No. 600,077

7 Claims. (Cl. 221-7)

Individual strands, from a bundle of strands, are independently separated, and optionally counted or fed to a subsequent process, by placing the bundle in a notch

above a revolving or reciprocating wheel having grooves of a size to receive the major part of one individual strand, whereby one strand drops into a groove, and is



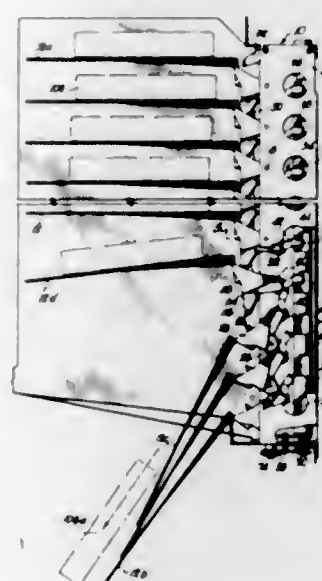
passed under a spring-loaded resilient block, which holds back all other strands. The separated strand is photoelectrically counted, or discharged into the edge of the nip of revolving feed rolls.

3,409,171

**REAR-HINGED DROP SHELF MECHANISM FOR VENDING MACHINE**

Elmer Bradley Offutt, Independence, Mo., assignor to The Vendo Company, Kansas City, Mo., a corporation of Missouri

Filed Sept. 7, 1967, Ser. No. 666,125  
6 Claims. (Cl. 221-90)



A drop shelf vending machine having a series of vertically spaced shelves swingable about horizontal, vertically aligned axes at the rearmost ends of the shelves. Each shelf has a swingable, spring-loaded latch cooperable with a corresponding keeper of a common control tube which is oscillated about a vertical axis and located behind the stack of shelves. A locking lug on all but the top shelf cooperates with a latch extension on the shelf next above to normally hold the shelves horizontal. Each keeper has two stops and a camming surface which operate sequentially to release the shelves successively from bottom to top when the control tube is actuated.

3,409,172

**TABLET DISPENSERS**

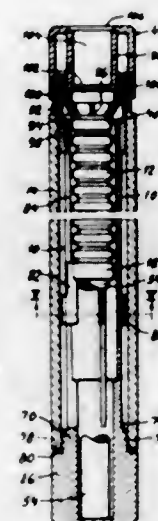
Erik Fuglsang-Madsen, Casa Bernado, Hidalgo Calle, Bajamar de Tenerife, Tenerife, Spain, and Sven Egon Stocklund, 23 Kildevej, Rungsted Kyst, Denmark

Filed Mar. 20, 1967, Ser. No. 624,399  
Claims priority, application Denmark, Mar. 28, 1966, 1,592/66

13 Claims. (Cl. 221-229)

An article dispenser for dispensing tablets or other articles in definite increments. The dispenser comprises a

tubular container, open at one end to receive a single pile of articles to be dispensed, a removable cap closing the open end of the container, and projections radially extending within the container, thereby defining among them an opening smaller than the greatest dimension of the



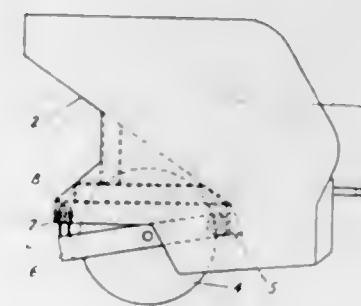
article to be dispensed at right angles to the long axis of the tubular container. The projections are adapted, by operation of a dispenser operating member from the outside, to be displaced in such a manner that the opening they define will be widened and thereby permit the dispensing of an article or tablet therethrough.

3,409,173

**WHEELED MACHINES FOR SPREADING GRANULAR PARTICLES**

Karl David Ejnarsson, Stragatan 20, Vadstena, Sweden  
Filed Apr. 18, 1966, Ser. No. 543,233

2 Claims. (Cl. 222-58)



A wheeled vehicle for spreading granular particles comprises a hopper having an inclined bottom and a frame pivotally connected to the hopper at one end of the frame and connected by a pressure spring to the hopper at the other end of the frame. The vehicle wheels are mounted on the frame between the pivot and the spring, so that the spring urges the hopper upwardly about the pivot. As the load in the hopper decreases, the spring raises the hopper higher to increase the inclination of the bottom of the hopper.

3,409,174

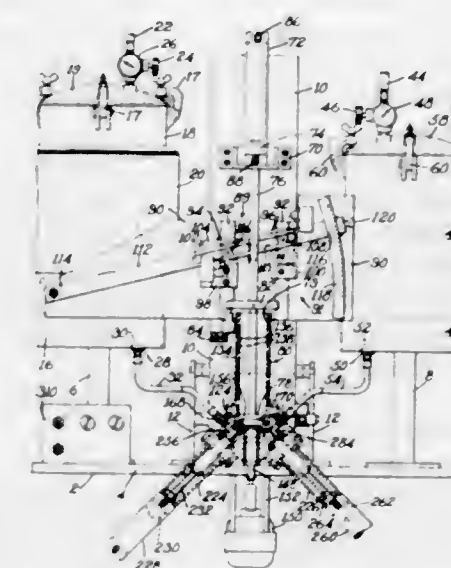
**URETHANE MIXERS AND DISPENSERS**

Milton R. Radcliffe, Marblehead, Robert C. Simmonds, Jr., Topsfield, and Andrew J. Gilbride, Swampscott, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey  
Filed Sept. 1, 1966, Ser. No. 576,686

20 Claims. (Cl. 222-70)

7. Apparatus for mixing and dispensing multiple component mixtures comprising a mixing chamber having a

plurality of inlets and an outlet, an injection cylinder inline with said chamber, a piston rod extending from said cylinder and having a piston on the free end thereof slidably disposed in said chamber, cam means attached to said rod, component supply means respectively interconnected with said chamber inlets, valve means for opening



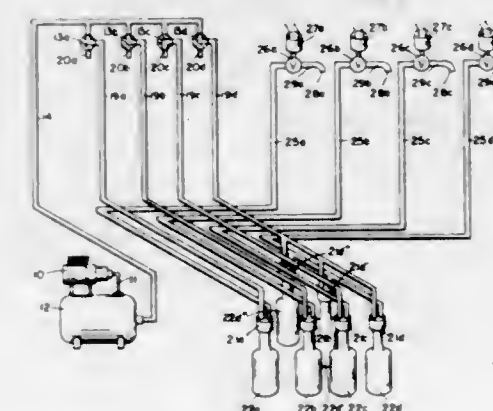
and closing said inlets, sprue valve means for opening and closing said outlet, and means mounted in the path of travel of said cam means and engageable by said cam means for sequentially operating said inlet valve means and said outlet valve means and said injection cylinder at preselected time intervals.

3,409,175

**LIQUID DISPENSING DEVICE**

Thomas M. Byrne, 1602 Wicklow Way, Madison, Wis. 53711  
Filed Nov. 10, 1966, Ser. No. 593,464

10 Claims. (Cl. 222-70)



1. Dispensing means to dispense a plurality of different liquids comprising:

a plurality of receptacles, each of which contains one of said liquids, each receptacle provided with duct means to introduce air to the interior of the receptacle and with first tubular means to dispense liquid from the receptacle, reservoir tank means to contain compressed air, means to compress air and deliver such compressed air to said tank means, a plurality of two-position three-way valves, each of said valves providing in one position for introduction of air to said receptacle and in the other position providing for exhausting said receptacle to at-





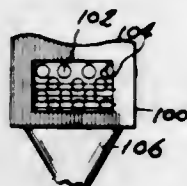


3,409,183

## DISPENSER CARTON

Lyman Charles Gish, Rittman, Ohio, assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware

Continuation of application Ser. No. 520,161, Jan. 12, 1966. This application July 27, 1967, Ser. No. 656,600  
2 Claims. (Cl. 222-308)



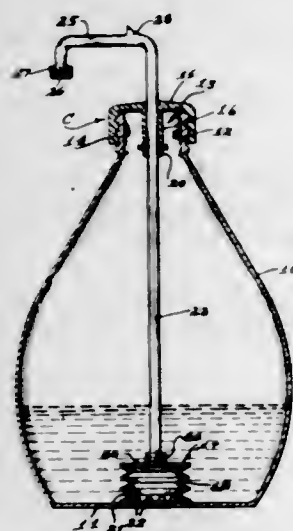
This invention relates to a novel package containing dispensable items, and more particularly pertains to a dispenser carton for paper cups, ice cream cones, and other similar items.

3,409,184

## LIQUID DISPENSING DEVICE

Edward J. Stengle, Jr., Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed Dec. 15, 1966, Ser. No. 601,915  
1 Claim. (Cl. 222-321)



A pump-type liquid dispenser positionable in a bottle and comprising a bellows-like cylindrical side-wall which is collapsible axially, such cylinder having one end open in the main and formed with a plurality of transverse ports adjacent said end, the opposed end being closed by a rigid wall carrying an axial dispensing tube opening through the latter into the cylinder, such tube intended to project through the bottle neck and manually actuated the collapse of the cylindrical side-wall only, against the bottom of the bottle, thus entrapping a measured amount of liquid in the cylinder for discharge through the tube when the cylinder is collapsed.

3,409,185

## GREASE GUN PLUNGER ASSEMBLY

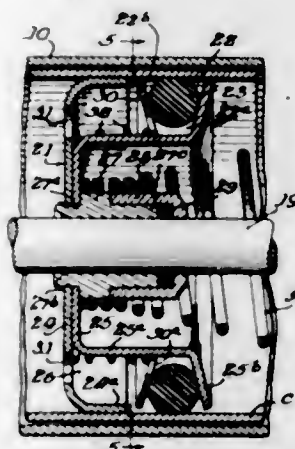
Edwin P. Sundholm, Albert City, Iowa 50510

Filed Apr. 20, 1965, Ser. No. 449,538  
4 Claims. (Cl. 222-326)

1. In combination with a hand grease gun having a cylindrical grease container adapted for both bulk-filled greases and cartridge-packaged greases, and an axially-extending rod within said container, a plunger assembly comprising:

(a) piston means slidably received on said rod for urging grease toward the forward end of said container,

the outer peripheral portion of said piston being spaced inwardly from the inner surface of said container to permit the insertion of a grease cartridge wall therebetween, said outer peripheral portion providing an annular recess facing said inner container surface; (b) a sealing ring received in said recess for inward and outward movement therein, said ring being formed of a resilient compressible material and having an expanded diameter at least as great as the internal diameter of said container for sealing engagement therewith, said ring defining an arcuate peripheral portion and being compressibly contractable to reduce the external diameter thereof while moving inwardly in said recess for alternative sealing engagement with the inner surface of said grease cartridge wall; and



(c) grease passage means extending from the front face of said piston to the bottom portion of said recess beneath said ring,

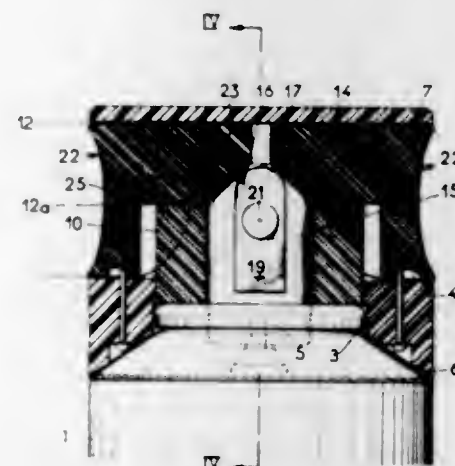
whereby grease pressure within said container is transmitted to the inside to assist in urging said ring to said expanded diameter.

3,409,186

## CAP FOR AN AEROSOL CONTAINER

Mario Melocchi, Via Buonarroti 41, Milan, Italy

Filed Apr. 21, 1967, Ser. No. 632,736  
Claims priority, application France, Apr. 25, 1966, 58,956  
4 Claims. (Cl. 222-402.13)

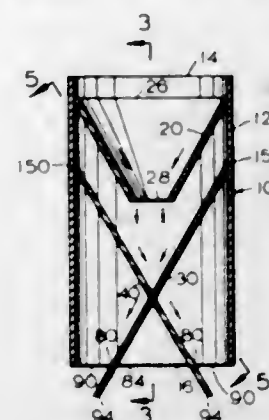


A cap for an aerosol container comprising opposed push-buttons which, when squeezed, depress or swing an intermediate member, thereby causing it to actuate the outlet valve of the container.

3,409,187

## DISTRIBUTING SPOUT

Emil C. Socha, 3145 N. 47th Ave.,  
Omaha, Nebr. 68104  
Filed Oct. 11, 1965, Ser. No. 494,730  
6 Claims. (Cl. 222-459)



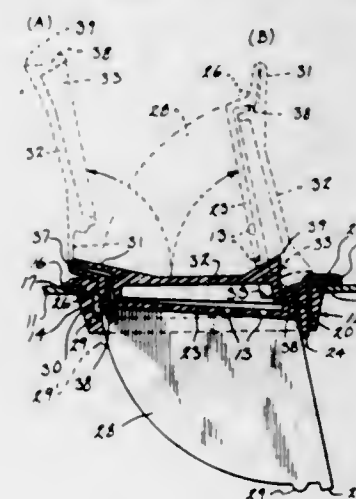
1. A distributing spout for granular material having in combination a tubular housing having an upper entry end and a lower outlet end, a pair of elongated baffles disposed alongside each other in said housing, said baffles being disposed on opposite sides of said housing whereby said baffles have inner edges adjacent each other and have outer edges adjacent said housing, said baffles extending inclinedly with respect to the vertical and horizontal and transversely of each other, said baffles crisscrossing at a point as seen in a vertical section taken through said spout, means attaching each of said baffles to said housing, said baffles each extending horizontally substantially less than completely across said housing to allow substantial flow from said inlet to be deflected by the other baffle, that portion of each baffle which is at the same horizontal level with the lower end of said housing being spaced from the lower end of said housing sufficiently so that outlet openings are provided between the lower end of the housing and each of said baffles for the flow of material therethrough, the lower ends of said baffles extending downwardly in said housing at least substantially to the lower end of said housing for substantially and effectively distributing granular material out of the housing in two flow paths each inclined with respect to the vertical and the horizontal and each of which extends downwardly out of said housing and partially horizontally away from the respective outer side of said housing in general alignment with the upper side of the baffle from which the flow was delivered.

3,409,188

## DISPENSING CLOSURES FOR CONTAINERS

Robert H. Wright, 190 Warren Ave.,  
Hartland, Wis. 53029

Filed Apr. 13, 1967, Ser. No. 630,690  
2 Claims. (Cl. 222-480)



A one-piece, double-hinged dispensing closure in the

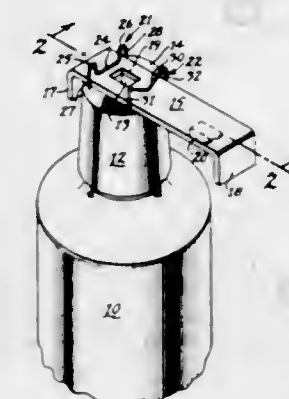
top of a salt carton, or other container for granular or powdered materials, which device can be swung open one way to form a pouring spout, and which can be opened the opposite way to expose a number of small sifting openings for use when it is desired to shake a limited quantity of material from said container.

3,409,189

## CONTAINER CLOSURE

Robert C. McKeand, Jr., 414 Barrett Road,  
Nashville, Tenn. 37211

Filed Feb. 13, 1967, Ser. No. 615,831  
4 Claims. (Cl. 222-561)



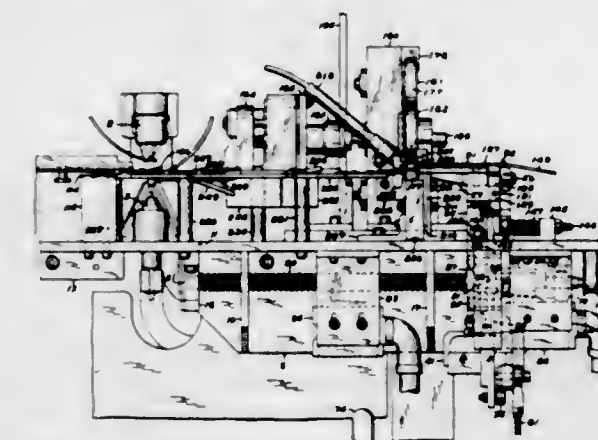
A slidable closure member having an opening adjacent one end and a sealing member adjacent the other end, and a pair of transverse closure guides fixed to the outlet end of a container for slidably receiving and holding the closure member against the outlet end alternately in open and closed positions.

3,409,190

## BOWMAKING MACHINE

Walter S. Bachman, South Acton, and Edward V. Surprenant, North Tewksbury, Mass., assignors to United-Carr Incorporated, Boston, Mass., a corporation of Delaware

Filed Mar. 4, 1965, Ser. No. 437,091  
18 Claims. (Cl. 223-46)

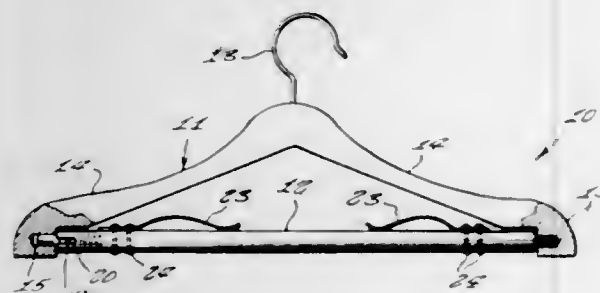


A bow forming apparatus has a stationary housing and a ribbon holding and transporting carriage mounted on the housing for linear, reciprocating travel with respect to the housing between first and second stop positions. The housing and carriage have interacting, generally planar facing surfaces which cooperate to fold the ribbon into a bow configuration as the carriage travels from the first to the second stop position. A ribbon feeding device located adjacent the first stop position feeds a predetermined length of ribbon across the path of travel of the carriage. The ribbon feeding device is actuated by the carriage as it travels toward the second stop position. Thus another length of ribbon is in position to



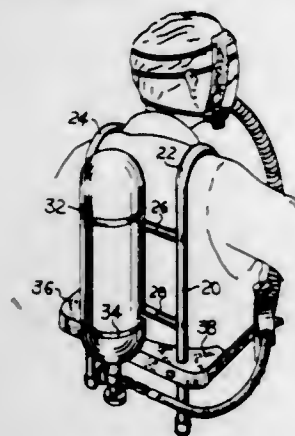
be picked up by the carriage on its return to the first stop position. A fastener attaching device is located adjacent the second stop position for securing the folded ribbon in a bow configuration. The apparatus also includes a carriage driving means, a first control means actuated by an operator for initiating movement of the carriage from the first to the second stop position, and a second control means actuated by the fastener attaching means for initiating return movement of the carriage to the first stop position.

**3,409,191**  
**COAT HANGER**  
Edward Gary Fuss, 535 Grove,  
Mayville, Wis. 53050  
Filed Jan. 19, 1967, Ser. No. 610,333  
1 Claim. (Cl. 223-91)



An improved garment hanger of A shaped configuration and having a removable bar supported at its opposite ends in a frame, thereby making it convenient to place garments such as trousers upon the bar before the bar is fitted into the frame.

**3,409,192**  
**FIRE FIGHTING EQUIPMENT**  
Henry H. Scott, 7444 Joshua View,  
Yucca Valley, Calif. 92284  
Filed Mar. 6, 1967, Ser. No. 620,732  
1 Claim. (Cl. 224-25)

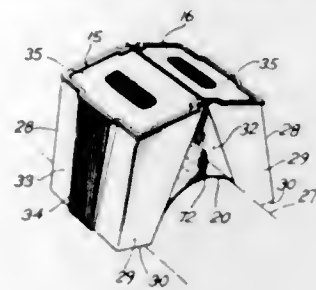


An apparatus for fire fighting as constituted by a tubular framework readily detachable from the back and shoulders of the operator and including spacer bars with vertical support for the oxygen bottle. The framework has a solid conforming back and waist supporting member adjustably secured thereto.

**3,409,193**  
**UTILITY RECEPTACLE STRUCTURE**  
Derek N. G. Metcalf, La Grange Park, Ill., assignor to Athena Industries, Inc., La Grange, Ill., a corporation of Illinois  
Filed June 20, 1967, Ser. No. 647,382  
9 Claims. (Cl. 224-29)

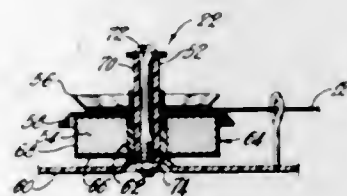
A utility receptacle structure for mounting on an upwardly projecting support having receding side walls and wherein two relatively rigid receptacles are hinged together at the top for relative movement about a longitu-

dinal axis and connected together at their lower regions by a flexible web, the length of which may be varied to suit the thickness of the support between its receding side walls and the height at which the receptacles are to be maintained when the flexible web is engaged with the support.



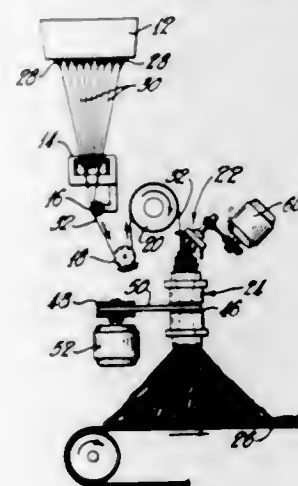
The centers of gravity of the receptacles are lowered with respect to the support by the extent thereof downwardly along the support side walls, and increased weight of the receptacle contents increases the gripping action of the structure on the support.

**3,409,194**  
**YARN TENSIONING APPARATUS**  
Louie H. Whitehead, Alken, S.C., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware  
Filed May 26, 1966, Ser. No. 553,247  
5 Claims. (Cl. 226-3)



A method for handling alignment of yarn advancing through a tensioning device including a squeezing zone of opposing members wherein the yarn advances with the members urged together followed by a subsequent interval during which the members are not urged together and the alignment of the yarn occurs and finally re-establishing the urged together relationship of the members with the yarn aligned between them.

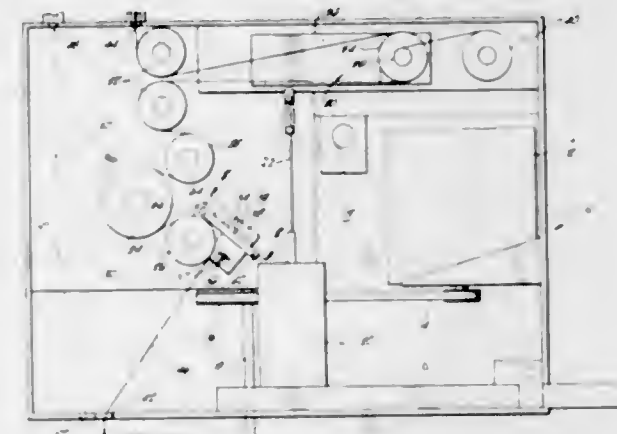
**3,409,195**  
**METHOD AND APPARATUS FOR HANDLING STRAND**  
Gustav E. Benson, Greenville, R.I., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware  
Filed May 31, 1966, Ser. No. 554,057  
6 Claims. (Cl. 226-7)



Apparatus for producing spun roving from glass strands includes a rotatable conical member, means for directing

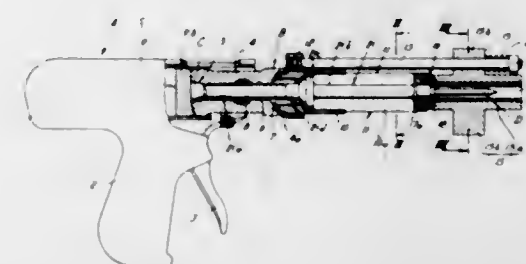
the strand thereto, and means for intercepting the strand periodically to form loops. At the exit end of the conical member is an outwardly diverging portion which facilitates formation of the roving and helps to cause movement of the looped strand through the member. By employing the flared exit portion, there also is less chance for producing entanglement of the strand and damage thereto.

**3,409,196**  
**FILM TRANSPORT CONTROL APPARATUS**  
Richard P. Brown, Monrovia, and Arthur Rak, Altadena, Calif., assignors to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California  
Filed Dec. 3, 1965, Ser. No. 511,501  
5 Claims. (Cl. 226-11)



Apparatus for automatically controlling the operation of a motion picture film entertainment system. The system comprises a plurality of motion picture projectors and a single strand of film extending serially through the projectors. The apparatus provides, in combination, a drive motor, supply and take-up reels, a spring biased film looping mechanism and means for sensing a discontinuity in the film. Upon a change in film tension or occurrence of a discontinuity, the apparatus deenergizes the system to prevent further damage to the film and/or the overall system.

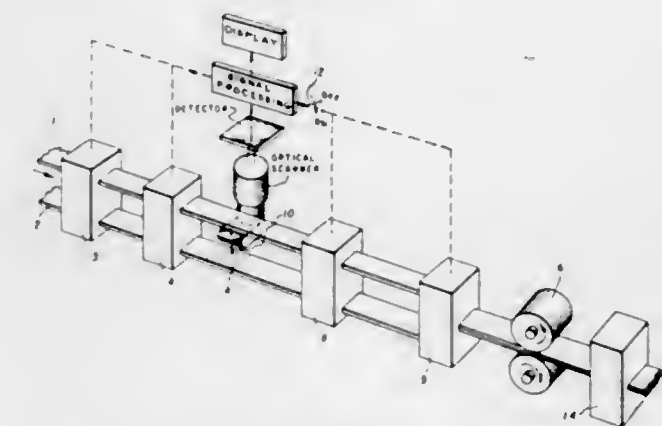
**3,409,197**  
**EXPLOSIVELY ACTUATED PUSHER POWER TOOL**  
Jacques Brack, Nyon, Switzerland, assignor to ETEM, Etablissement de Techniques Modernes, Vaduz, Liechtenstein, a company of Liechtenstein  
Filed Mar. 4, 1966, Ser. No. 531,965  
Claims priority, application Switzerland, Mar. 8, 1965, 3,149/65; Aug. 9, 1965, 11,150/65  
17 Claims. (Cl. 227-10)



An explosively actuated power tool for driving fastening elements such as bolts, plugs, spikes, and nails, into a hard and compact material. The tool includes a barrel having a loading chamber for receiving a cartridge and means for closing the chamber and guide means disposed forwardly of the barrel and a guide piece having a bore to receive and guide the fastening element. A piston slides in said barrel and in guide means and in said guide piece and is

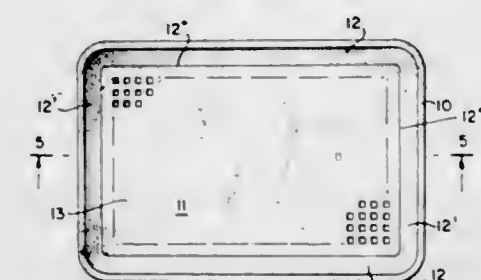
driven forwardly when the cartridge is fired to drive the fastening element. The rear assembly and the guide piece are displaceable relative to each other and relative to the axis of the tool so as to permit access to the loading chamber and to the guide piece for the introduction of a cartridge and the introduction of a fastening element.

**3,409,198**  
**BONDING APPARATUS WHICH ASSURES BONDABILITY**  
David A. Peterman, Sr., Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware  
Filed Apr. 30, 1965, Ser. No. 452,138  
2 Claims. (Cl. 228-9)



2. Apparatus for bonding at least two members, comprising:  
(a) means for cleaning the mating surfaces of said members to be bonded,  
(b) means for scanning the mating surfaces of said members to be bonded for variations in reflectance of electromagnetic energy from said mating surfaces, thereby to detect the presence of bond deterrent contaminants upon said mating surfaces,  
(c) means for further cleaning the mating surfaces of said members to be bonded,  
(d) control means responsive to said detection by said second mentioned means to cause said mating surfaces to be further cleaned by said third mentioned means to remove said detected bond detected bond deterrent contaminants, and  
(e) means for effecting a bond between said members.

**3,409,199**  
**PACKAGING TRAY**  
Connie Lake, Pittsford, N.Y., assignor to Mobil Oil Corporation, a corporation of New York  
Filed Sept. 29, 1966, Ser. No. 583,029  
2 Claims. (Cl. 229-2.5)

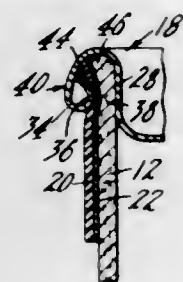


A molded tray of thermoplastic foam material comprising a bottom wall and upstanding side and end walls integral with the bottom wall, the side and end walls terminating in arcuate corners. The bottom wall of the tray structure is characterized in that it is relatively thicker and of a lesser density than the side and end walls of the tray.



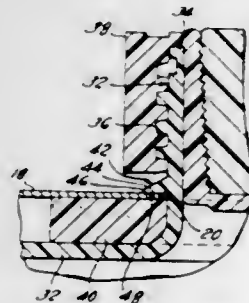
### 3,409,200 CONTAINER AND METHOD OF FORMING THE SAME

Alfred Edward Balocca, Wheaton, and Charles William Schild, Cary, Ill., assignors to American Can Company, New York, N.Y., a corporation of New Jersey  
Filed Aug. 26, 1966, Ser. No. 575,388  
7 Claims. (Cl. 229-5.6)



A container having an end closure which may be removed by removing a plastic strip which is incorporated in the top end seam. The plastic strip is adhered to the container body at the top end and is pressed inwardly against the body by a smoothly rounded hollow curl at the lower end of the closure flange, which thins the strip so that there are thicker portions thereof above and below it to thereby provide a clinched seam, the seam release strip being indented into the body to create a somewhat loose snap fit engagement between the end and the body and permit the end to be used as a reclosure.

**3,409,201  
PLASTIC LINED DRUMS**  
Herbert L. Carpenter, Jr., Babylon, N.Y., assignor to The Greif Bros. Cooperage Corporation, Delaware, Ohio, a corporation of Delaware  
Filed Dec. 28, 1966, Ser. No. 605,488  
4 Claims. (Cl. 229-14)

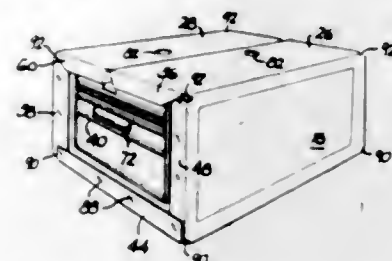


A plastic liner having a neck projecting outwardly through an opening in the top of a drum. The neck has a series of circumferentially disposed lugs about the neck for engaging the top of the drum. The lugs have a top camming surface arcuate in both the horizontal and vertical planes to permit progressive flexing of the lugs during assembly when the neck is inserted through the drum opening.

**3,409,202  
PLASTIC BEVERAGE BOTTLE CASE**  
Samuel L. Belcher, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio  
Filed Feb. 4, 1966, Ser. No. 525,187  
13 Claims. (Cl. 229-23)

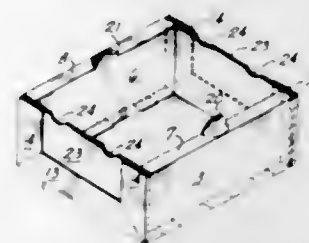
The beverage bottle case of the present invention consists of three plastic pieces, two of which are molded end panels for the case and one of which is a piece of sheet plastic material which is folded to provide a bottom section, two side sections adjoining the bottom section, and two top sections, each of which makes up one half of the top panel of the case. The bottom section and the two side sections have flaps which overlap the two

molded end panels and are secured thereto to complete the case. The case also includes a latching device including a pair of projections located on opposite sides of a recess at the top center portion of each end panel, and openings in the top panels positioned to register with and receive the projections when the top panels are closed.



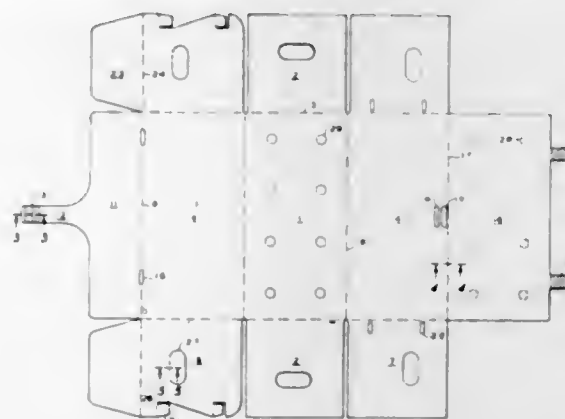
The case also has raised portions in the bottom section on which bottles are seated and which acts as cushions when bottles are loaded into the case. The bottom also has drainage openings, and there are handle openings in the end panel providing handles by which the case may be lifted.

**3,409,203  
CONTAINER**  
Adrian P. Du Barry, Jr., Alameda, Calif., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington  
Filed Jan. 19, 1967, Ser. No. 610,316  
1 Claim. (Cl. 229-23)



A container for shipping commodities having a bottom panel and outer side panels integrally connected to the bottom panel and folded at right angles with respect to the bottom panel. End panels of double thickness are adhered to each end of the outer side and bottom panels, a top panel and inner side wall panel are integrally connected to each outer side panel. The end panels are the exact height of the outer side panels and exact width of the bottom panel with the ends of the inner side panels abutting the inner surface of the end panels.

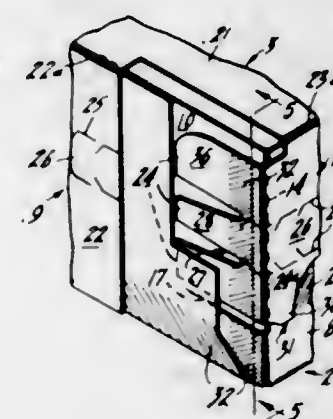
**3,409,204  
CARTON BLANK**  
Robert A. Carle, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed Aug. 1, 1966, Ser. No. 569,410  
11 Claims. (Cl. 229-36)



A carton blank formed from a single sheet of material adapted to be folded into a self-supporting box without

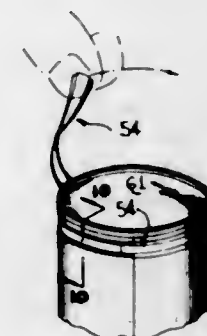
the use of external fasteners comprises a bottom panel, side panels, interior, middle and exterior end panels, and a top panel provided with a tab for maintaining the top panel in closed position.

**3,409,205  
CARTON WITH ATTACHED COVER**  
George Leroy Meyers, Menasha, Wis., assignor to American Can Company, New York, N.Y., a corporation of New Jersey  
Filed Sept. 21, 1966, Ser. No. 581,107  
12 Claims. (Cl. 229-51)



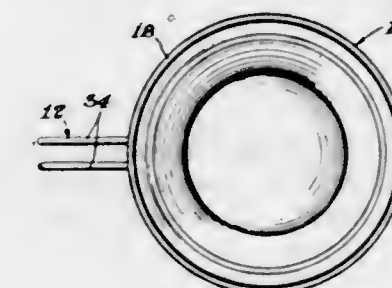
A blank of sheet material preferably paperboard for forming a carton having a receptacle portion and a cover portion. The carton (when formed from the blank) has a cover with a depending skirt portion which telescopes over the upper portion of the receptacle walls. Each end of the carton has an end closure comprising end closure flaps connected to the front, bottom and rear receptacle walls and to the cover top panel. The end closure flaps are arranged so that adhesive zones in the end closure will lie in common planes.

**3,409,206  
CONTAINER BLANK, BODY, AND METHOD OF FORMING**  
Donald G. Slouka, Glen Ellyn, and Robert T. Elias, Downers Grove, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York  
Filed Mar. 17, 1967, Ser. No. 623,927  
14 Claims. (Cl. 229-51)



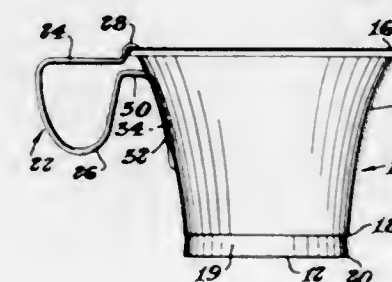
This disclosure relates to a container blank and its manufacture wherein the blank is provided with a pair of weakening lines in inner and outer surfaces thereof with one of the pair of weakening lines being wholly confined within the area between the other pair of the weakening lines and defining therewith a removable tear strip portion, the blank being formed from fibrous material, and the fibers of the material being in overlapping relationship and primarily oriented in alignment with the longitudinal axis of the tear strip portion.

**3,409,207  
DISPOSABLE CUPS AND HANDLES**  
Clara Virginia Eicholtz, Midland, Edgar F. Trombley, Grosse Pointe Farms, and Bertrand N. Trombley, Bloomfield Hills, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
Filed May 2, 1967, Ser. No. 635,449  
3 Claims. (Cl. 229-52)



The invention concerns a plastic throw-away cup having a peripheral groove about its upper portion, which groove securely receives a split ring of a separate wire handle. The contour of the finger gripping portion of the handle is such that adequate support for the cup can be had by holding the handle alone even when the cup is filled with a heavy liquid. It is the intent that the handle as well as the cup be thrown away after a single use.

**3,409,208  
DISPOSABLE CUPS AND HANDLES**  
Clara Virginia Eicholtz, Midland, Edgar F. Trombley, Grosse Pointe Farms, and Bertrand N. Trombley, Bloomfield Hills, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
Filed May 2, 1967, Ser. No. 635,450  
2 Claims. (Cl. 229-52)



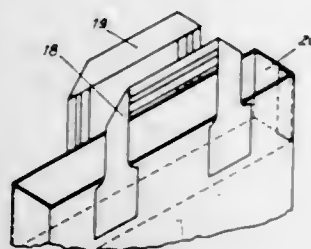
This invention concerns a plastic throw-away cup and handle wherein the handle is attached over the rim of the cup by the ultimate user. The handle is preferably of wire or plastic and includes a hook portion overriding the rim and a downwardly extending outwardly biasing leg which securely mates with an inverted channel along the side wall of the cup. Preferably a stack shoulder is included on the base of the cup for nesting of a plurality of the cups together.

**3,409,209  
CARRYING BAG COMPRISING ADHERED, U-SHAPED FOLDED CARRYING HANDLES OF PAPER**  
Arno Finke, Lengerich, Germany, assignor to Windmoller & Holscher  
Filed Dec. 20, 1966, Ser. No. 603,198  
Claims priority, application Germany, Jan. 3, 1966, W 40,639  
6 Claims. (Cl. 229-54)

This application relates to a carrying bag of paper, plastic material sheeting or the like. Adhered to the bag are



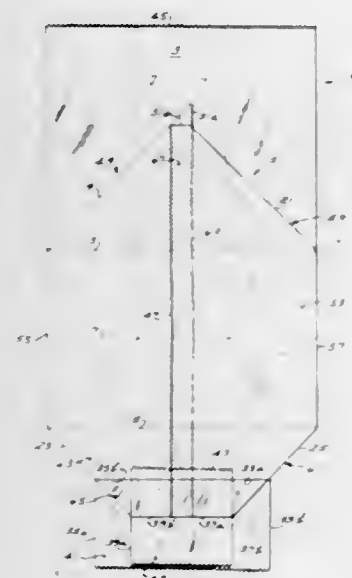
strip-like carrying handles folded in U shape. The carrying handles are provided throughout their length with a



woven fabric layer. This layer is bonded to the paper and has a width which is at least as large as the width of the hand-engaging surfaces of the grip portion.

3,409,210  
BAG

Arthur R. Barris, West Chelmsford, and Edward V. Riehl, Littleton, Mass., assignors to Bemis Company, Inc., Minneapolis, Minn., a corporation of Missouri  
Filed Aug. 23, 1967, Ser. No. 662,676  
16 Claims. (Cl. 229-55)



A two-ply SOS bag with a siftproof bottom in which the outside closure flap is formed with a tab on the inner ply portion thereof, this tab being folded in underneath the side sections of the bottom closure formation. The inner margins of the side sections of the closure formation overlap, and a slit is provided in both plies for the overlapping of these margins without bunching of the plies. An E-shaped paste pattern is provided for the pasting of the inside and outside closure flaps, the center stripe of this pattern being along the overlap of the side sections.

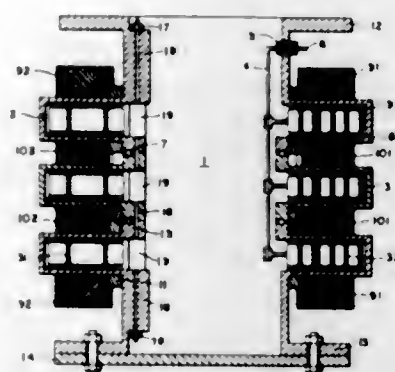
3,409,211  
HIGH VACUUM PUMPS

Werner Bachler, Cologne, Germany, assignor to Leybold Holding A.G., Zug, Switzerland  
Continuation-in-part of application Ser. No. 573,057, Aug. 17, 1966. This application May 2, 1967, Ser. No. 641,100  
Claims priority, application Germany, Aug. 17, 1965, L 51,403

7 Claims. (Cl. 230-69)

An all-dry high-vacuum pump having at least one electrode system consisting of a cold cathode and an anode

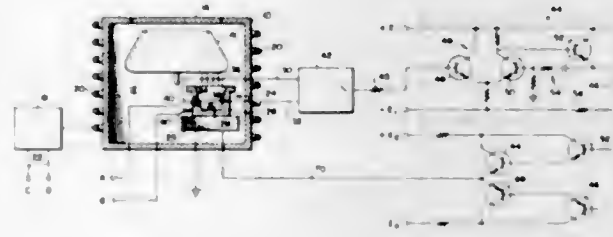
for producing an electric field which ionizes atoms and molecules of the gas to be pumped, the electrode system being composed of a plurality of cells of at least two



different types, each type having a different suction characteristic and the combined effect of the two types of cells resulting in optimized pumping action.

3,409,212  
APPARATUS FOR CONTROLLING CENTRIFUGE ROTOR TEMPERATURE

Douglas H. Durland, Palo Alto, and Robert J. Ehret, Los Altos, Calif., assignors to Beckman Instruments, Inc., a corporation of California  
Filed July 14, 1966, Ser. No. 565,138  
11 Claims. (Cl. 233-11)



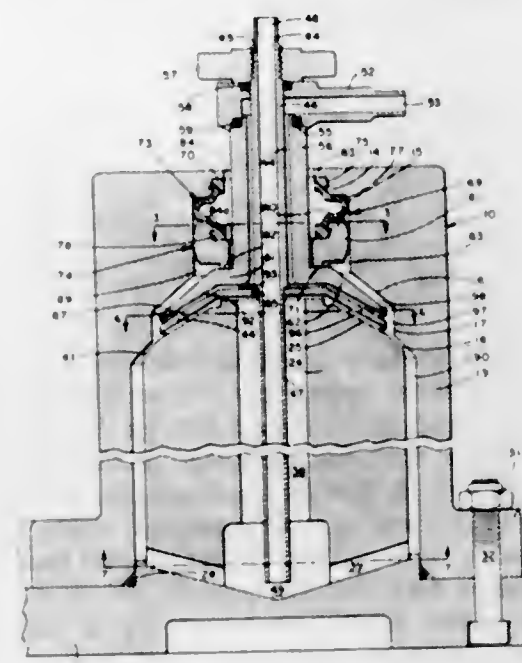
A system for maintaining the temperature of a rotor in an ultracentrifuge at a predetermined level including a radiometer for continuously monitoring the temperature of the rotor, a refrigeration unit thermally coupled to the rotor for maintaining the rotor at a predetermined temperature level, and a switching means connected between the radiometer and the refrigeration unit for actuating the refrigeration unit when the rotor temperature deviates from the predetermined temperature level. An anticipation signal source is also actuated by the switching circuit to provide an error or offset signal which is coupled to the switching circuit to cause it to turn off the refrigeration unit before the rotor temperature is actually at the desired predetermined level. In this manner the system compensates for the rotor temperature lagging the instantaneous temperature of the refrigeration unit.

3,409,213  
ROTARY SEAL AND CENTRIFUGE INCORPORATION

Allen Latham, Jr., Jamaica Plain, Mass., assignor, by mesne assignments, to 500 Incorporated, Cambridge, Mass., a corporation of Delaware  
Filed Jan. 23, 1967, Ser. No. 611,073  
14 Claims. (Cl. 233-21)

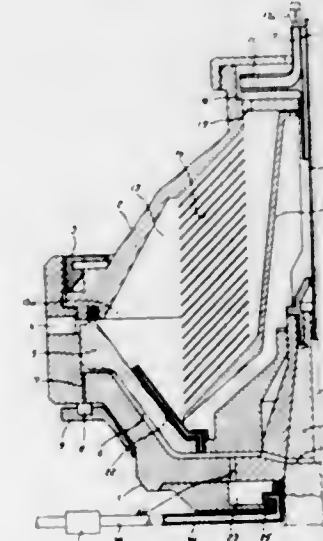
A rotary seal formed of a first rigid, low-friction member which contacts a moving rigid member with minimal friction to make the dynamic seal, and a second elastomeric member which provides a resilient static seal and

a spring action force between the surfaces of the dynamic seal. The seal is particularly suitable for centri-



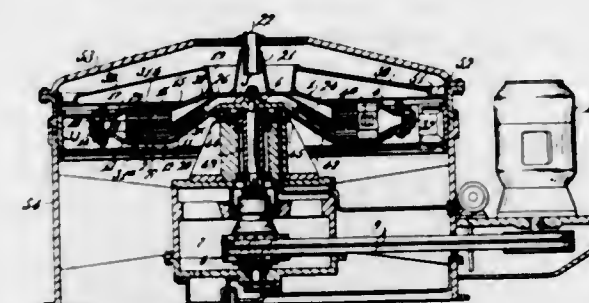
3,409,214  
DEVICE FOR INDICATING THE SLUDGE LEVEL IN SLUDGE CENTRIFUGES  
Henric Wilhelm Thylefors, Stockholm, Sweden, assignor to Alfa-Laval AB, Tumba, Sweden, a corporation of Sweden  
Filed Oct. 18, 1966, Ser. No. 587,594  
Claims priority, application Sweden, Oct. 26, 1965, 13,779/65

4 Claims. (Cl. 233-19)



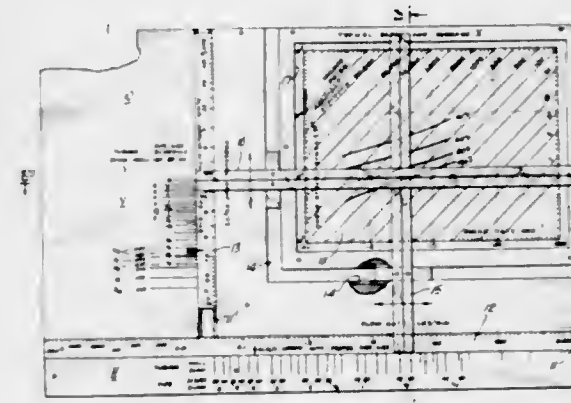
A paring member forms an outlet for separated liquid and has an edge for paring such liquid from the centrifugal rotor; and there is a device for indicating the level of sludge in the sludge-collecting space of the rotor, this device comprising a liquid level sensing means positioned to sense a liquid level located nearer the rotation axis than is said paring edge, the rotor having a channel extending radially inward from said sludge space to said liquid level sensing means, the rotor also having a liquid inlet leading to the radially inner end portion of said channel, and an adjustable throttle in said outlet of the paring member.

3,409,215  
CONTINUOUS CENTRIFUGE  
Adolf K. O. A. Reuter, Marburg an der Lahn, Germany, assignor to Beloit Corporation, Jones Division, Beloit, Wis., a corporation of Wisconsin  
Filed June 20, 1966, Ser. No. 558,809  
14 Claims. (Cl. 233-20)



A continuous centrifuge for separating solids and liquid of close specific gravities in a biological sludge has a dish-shaped rotating unit in which are formed a plurality of pairs of upper and lower passages. Each pair of passages forms a passage from a fluid inlet extending outwardly through the lower passage to a solid settling space, thence inwardly through the upper passage to a fluid outlet. Solids are allowed to settle and accumulate centrifugally, then are discharged at a controlled rate from the settling space by an hydraulically actuated gating bucket wheel. Turbulence is avoided by longitudinal walls in the passages which promote laminar flow and settling of the solids.

3,409,216  
GREASE FLOW PREDICTOR  
Charles R. Oliver, Hopewell Junction, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware  
Filed Apr. 18, 1967, Ser. No. 631,626  
4 Claims. (Cl. 235-61)



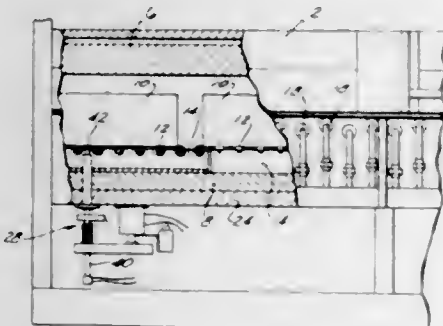
A device for predicting the flow behavior of grease when pumped through pipe or tubing, utilizing an insert data grid with flow curves (shear stress vs. shear rate at constant temperatures) for particular greases, with sliding scales of flow rate and pressure drop for use in setting against the size of pipe or tubing to be used, and with cursors having indicating crosshairs for relating the flow curves to the sliding scales.

3,409,217  
BILLET HEATING AND CONTROL THEREFOR  
Charles B. Gentry, Grand Rapids, Mich., assignor to Granco Equipment, Inc., Grand Rapids, Mich., a corporation of Delaware  
Filed Nov. 29, 1967, Ser. No. 686,648  
10 Claims. (Cl. 236-15)

This disclosure relates to a billet heating system in which a plurality of billets are passed through a heat treating furnace wherein they are heated by impingement

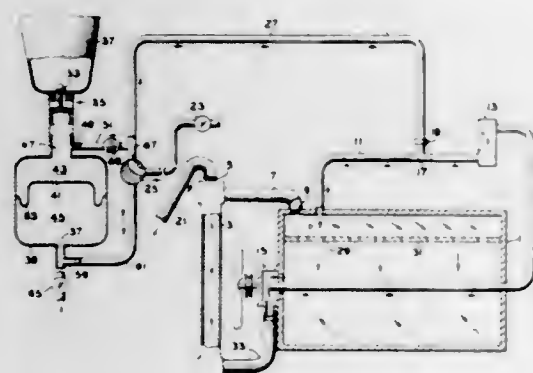


of a flame on the billets. The billets are supported in the furnace by rollers positioned in a U-shaped track. Temperature sensing elements such as thermocouples are positioned in the furnace floor and extend through the bottom of the U-shaped track and contact the billets. The upstanding flanges of the track provide a shield for the temperature sensing elements. The amount of heat supplied to the billets can be regulated in accordance with the sensed temperature of the billets.



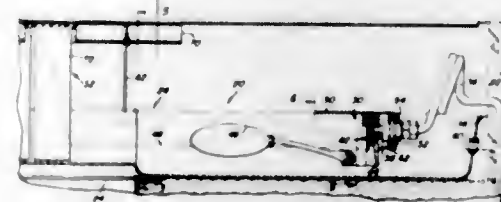
The temperature sensing elements can be reciprocated to permit the billets to move to different zones in the furnace. The means for reciprocating the temperature sensing elements is itself removable from the temperature sensing elements to allow the same to be replaced from time to time. Air can also be supplied to the space surrounding the temperature sensing elements to prevent overheating of the elements.

**3,409,218**  
**APPARATUS FOR CLEANING AND FILLING AUTOMOTIVE ENGINE COOLING SYSTEMS**  
Robert G. Moyer, Ridgefield, Conn., assignor to Union Carbide Corporation, a corporation of New York  
Filed Mar. 21, 1967, Ser. No. 624,820  
10 Claims. (Cl. 237-12.3)



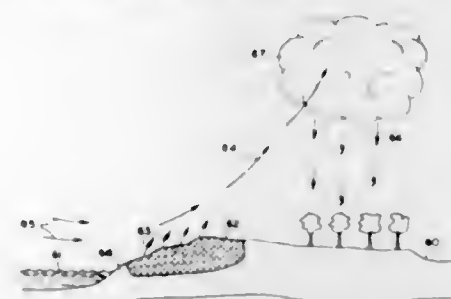
Apparatus for cleaning an automotive engine cooling system and for introducing new coolant into the system is provided. Fresh water from a convenient source of pressurized water supply, e.g., normal city water, is fed through a control valve to the heater hose of the cooling system. When the cooling system is sufficiently cleaned with fresh water, the control valve is changed to supply pressurized water to a hydraulic operated coolant distributor. This distributor consists of a distribution tank having a rolling diaphragm which divides its interior into an upper coolant reservoir and a lower water chamber to which the pressurized water is fed. The new coolant is placed within a coolant receptacle located above the distribution tank and is allowed to flow by gravity past a float valve and into the coolant reservoir of the tank. Hydraulic pressure within the water chamber of the tank causes the diaphragm to move upward and to force the new coolant from the coolant reservoir and into the automotive cooling system.

**3,409,219**  
**HUMIDIFIER**  
Robert C. Behnke, Oshkosh, Wis., assignor to Springaire Corporation, a corporation of Wisconsin  
Filed Feb. 1, 1967, Ser. No. 613,360  
9 Claims. (Cl. 237-78)



A humidifier to be utilized in conjunction with base-board heat registers operatively connected to either hot water radiant heating or forced hot air heating systems which humidifier includes elongated trough means constructed so as to be directly positionable in the path of convection or forced hot air currents rising vertically from the source of heat. The cross-sectional configuration of the trough is such that the velocity of air passing upwardly thereabout is accelerated so as to enhance the evaporation of water from absorbent pads suspended above the trough with the lower ends thereof immersed in the trough.

**3,409,220**  
**CLOUD FORMATION AND SUBSEQUENT MOISTURE PRECIPITATION**  
James F. Black, Convent, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware  
Continuation-in-part of applications Ser. No. 129,107, Aug. 2, 1965, and Ser. No. 233,377, Oct. 26, 1965.  
This application Mar. 26, 1965, Ser. No. 443,059  
3 Claims. (Cl. 239-2)



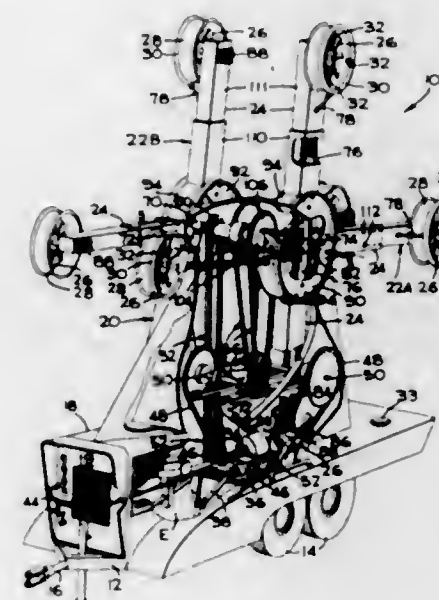
1. A method of causing cloud formation and moisture precipitation over a relatively arid land mass which comprises coating an area of land for a distance of at least several miles in a direction substantially parallel to the direction of the prevailing winds and at least one mile in a direction perpendicular to the prevailing winds with a material of high absorptivity to solar radiation to cause an updraft such as to lift large masses of relatively humid air over said arid land mass wherein said coating is located within at least ten miles of a body of water and between said body of water and said arid land mass and wherein said coating is substantially continuous.

**3,409,221**  
**METHOD OF AND APPARATUS FOR DISTRIBUTING AGRICULTURAL CHEMICALS**  
Joseph M. Patterson, Winter Park, Fla., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware  
Filed May 23, 1966, Ser. No. 552,105  
8 Claims. (Cl. 239-8)

An apparatus directs an air blast towards a row of trees to carry spray, prevent frost damage or shake for harvesting and includes a vehicle upon which a rotor is mounted having a radial arm that carries at its free end means for discharging an air blast. Upon rotation of the rotor, the means for discharging an air blast is carried

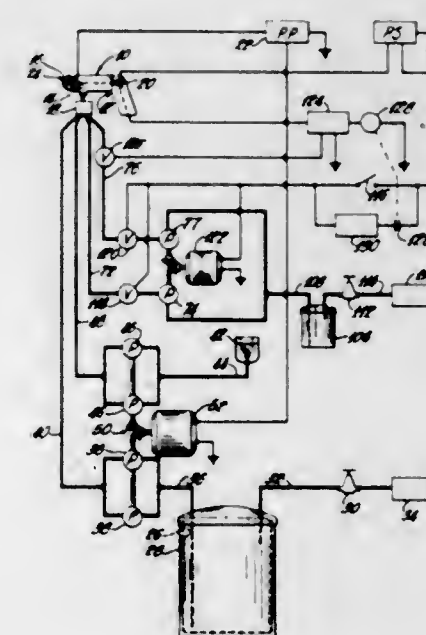
to the trees, thus reducing the flight distance therebetween. A spray pattern resulting covers a substantial area as represented by a series of circular paths, traced by the free end of the rotor arm, with each circle being offset

In mixing the resin catalyst, a stream of each is subdivided into a plurality of individual streams which are combined, and then subsequently re-combined into a main stream.



by the amount of linear movement of the vehicle between each revolution. Oscillation of the tree branches is provided by the reverse direction of motion on opposite sides of the circular path and this results in improved penetration of the spray.

**3,409,222**  
**METHOD AND APPARATUS FOR MIXING AND SPRAYING TWO DIFFERENT LIQUIDS AND MEANS FOR FLUSHING AFTER USE**  
Robert J. Gelin, Newark, Ohio, assignor to Owens-Corning Fiberglass Corporation, a corporation of Delaware  
Filed Dec. 21, 1965, Ser. No. 515,422  
8 Claims. (Cl. 239-10)



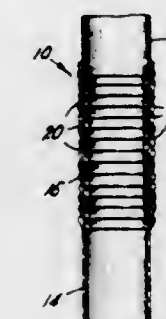
A resin and catalyst system is provided having a unique flushing system and a unique mixing system for the resin and catalyst. In the flushing system, a flushing liquid is supplied to the mixing head and spray gun if this is not done by the operator within a predetermined period of time after the spray gun is shut off. The period of time usually is long enough to span normal delays so that flushing will not occur if spraying is commenced again.

**3,409,223**  
**METHOD OF ASSEMBLING AN ARTIFICIAL WATERFALL**  
Duane E. Gosh, 4645 Beechnut, Houston, Tex. 77035  
Filed Sept. 29, 1966, Ser. No. 582,935  
3 Claims. (Cl. 239-12)



A method of assembling an artificial waterfall without mortar and the like is accomplished by positioning a pool liner in the ground. Boulder members and flat members are then placed in a definite, positive intentional relationship to form the waterfall area. A circulation pump then circulates water on the flat members to form the artificial waterfall.

**3,409,224**  
**FLEXIBLE DRINKING TUBE**  
Harry J. Harp, Jenkintown, Walter T. Leible, Conshohocken, and William M. McCort, Warminster, Pa., assignors to Union Carbide Corporation, a corporation of New York  
Filed Mar. 13, 1967, Ser. No. 622,594  
10 Claims. (Cl. 239-33)



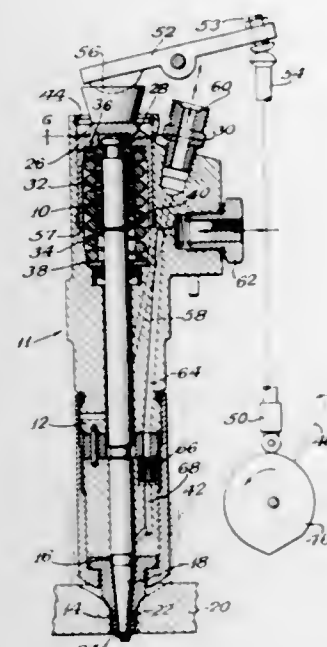
A drinking tube made from thermoplastic material with a flexible zone intermediate its ends which is formed by providing a plurality of circumferential grooves having sides of unequal length and then contracting the tube lengthwise with the grooves forming reentrant overlapping folds.

**3,409,225**  
**MECHANICAL INJECTOR HAVING NEEDLE-SEATING SPRING**  
Raymond J. Maddalozzo, Chicago, and Edward A. Slindee, Elmhurst, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware  
Filed June 14, 1966, Ser. No. 557,460  
17 Claims. (Cl. 239-89)

Mechanical fuel injector in which a lost motion joint is provided in the train between a mechanically reciprocated, fuel-pumping, pump-plunger needle, and pumping-power-supplying injector drive cam, and in which an overtravel spring is provided for constantly biasing the plunger needle in a direction to open up an overtravel gap in the lost motion joint enabling the pump-plunger needle always to seat on a seat above a sac hole provided which receives the tip of the pump-plunger needle. The tip of



the injector is thus structurally isolated to prevent receiving direct drive cam force from the pump-plunger needle



tip, enabling the sac hole size to be reduced to an inconsequential amount.

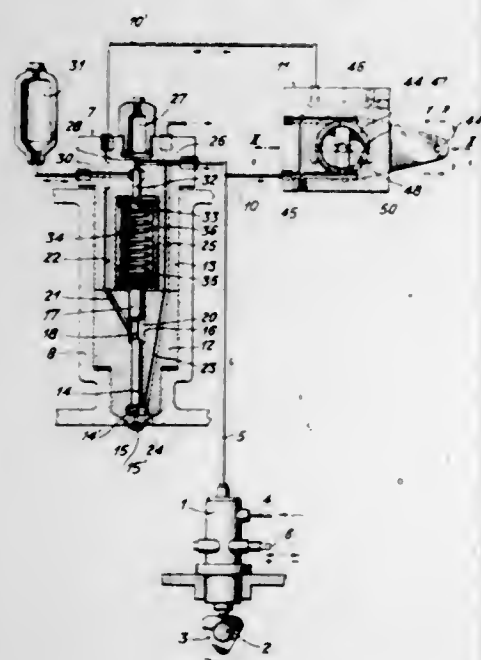
### 3,409,226 FUEL INJECTION APPARATUS FOR PISTON-TYPE INTERNAL COMBUSTION ENGINES

Anton Steiger, Zurich, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company

Filed May 5, 1966, Ser. No. 547,876

Claims priority, application Switzerland, June 11, 1965, 8,163/65

1 Claim. (Cl. 239-94)



There is disclosed a fuel injection device for diesel engines in which a fuel pump delivers fuel at high pressure into a first storage chamber and also, for large pump strokes, into a second storage chamber communicating with the first through a valve which opens for pressure in the first chamber above a threshold value attained only on pump strokes greater than those corresponding to an idling setting of the engine. The valve is biased toward closing position by a spring which sets the threshold and which also bears against a piston exposed at its other end to the pressure in a control chamber. This piston in turn bears, through an extension passing through the control chamber, against a valve stem

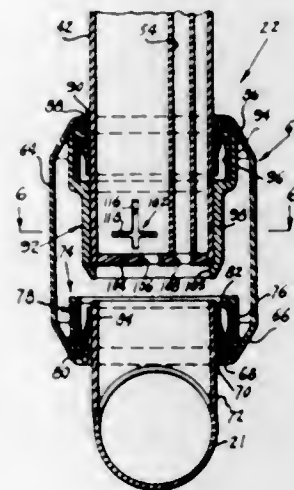
controlling the injection orifice between the engine cylinder and a nozzle chamber which is connected to the first storage chamber. The control chamber is connected through a timing device successively to the pump discharge and to a low pressure pump return line. When the control chamber is connected to the pump discharge, the valve stem is held on its seat to prevent passage of fuel from the nozzle chamber into the engine cylinder, and at the same time the piston compresses the spring, providing a clearance between the extension and piston. When the control chamber is connected to the return line, the pressure in the control chamber falls and the valve stem is lifted off its seat by the pressure in the nozzle chamber, as allowed by the clearance just mentioned. This permits injection of fuel from the nozzle chamber into the engine cylinder until the valve stem is returned to its seat by action of the piston under influence of the spring.

### 3,409,227 SPRINKLER

Richard M. Smith, Rte. 1, Box 7, Seilo, Oreg. 97374

Filed Feb. 21, 1966, Ser. No. 528,895

4 Claims. (Cl. 239-97)



Irrigation apparatus comprising an upright hollow conduit mounted for rotation about its longitudinal axis on support means, a plurality of water discharge arms connected on and in open communication with the upper end of the conduit, the mounting including means for connection to a source of water under pressure, valve means controlled by the rotation of the conduit for supplying the conduit with an additional volume of water at predetermined intervals of conduit rotation, and means for effecting rotation of the conduit and consequently of the water discharge arms.

### 3,409,228 EJECTOR NOZZLE

Hans P. Mehr, Mason, Ohio, assignor to General Electric Company, a corporation of New York

Filed Feb. 10, 1966, Ser. No. 526,420

8 Claims. (Cl. 239-127.3)



1. A tertiary inlet ejector nozzle for a reaction engine having spaced outer and inner casings forming a cooling flow passage around the engine,

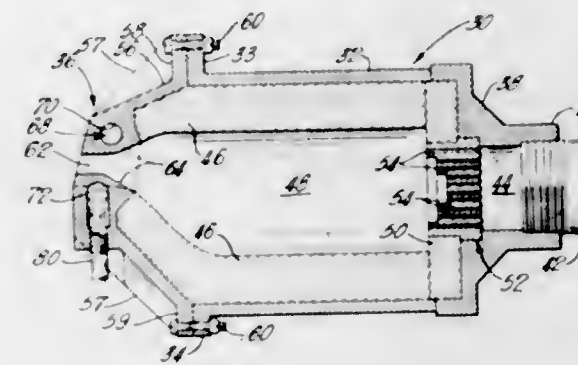
a converging member connected to the inner casing to form a nozzle for the primary gas flow,  
a fixed nozzle portion spaced downstream to form an inlet around said outer casing to said primary flow, an ejector flap spaced substantially parallel with and supported on said converging member outwardly thereof, and  
a ramp means operable to open inwardly of said cooling passage, said ramp means substantially contacting the forward end of said ejector in said open position.

### 3,409,229 INTERNAL COMBUSTION BURNER-NOZZLE CONSTRUCTION

Charles J. Stalego, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

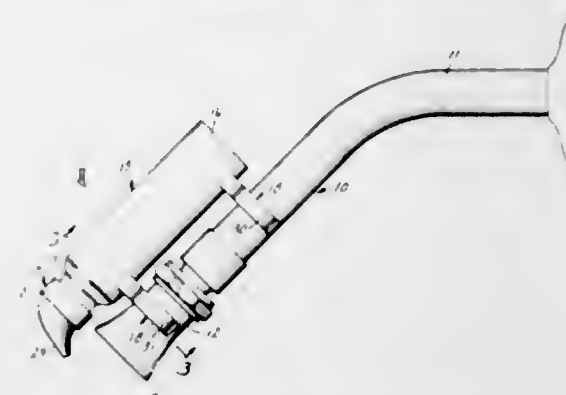
Continuation of application Ser. No. 515,922, Dec. 23, 1965. This application Aug. 9, 1967, Ser. No. 659,537

3 Claims. (Cl. 239-132.3)



This invention relates to a nozzle construction for an internal combustion burner of a character providing a high temperature gaseous blast for attenuating glass to fibers, the nozzle construction being of nonferrous metal, such as aluminum or aluminum alloys, fashioned with an elongated blast-delivery orifice with a cooling channel surrounding the orifice and accommodating cooling fluid to rapidly dissipate heat from the nozzle construction.

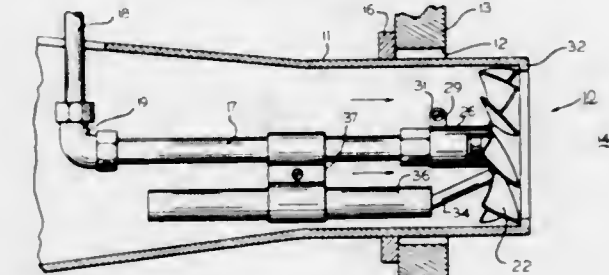
### 3,409,230 DISPENSER FOR SHOWER HEADS Herman H. Eelkema, 2121 Iglehart Ave., St. Paul, Minn. 55104 Filed Sept. 9, 1966, Ser. No. 578,289 3 Claims. (Cl. 239-314)



A disposable dispenser for use with shower heads including a plastic container having a plurality of pairs of plastic resilient legs integrally attached thereto and adapted to partially encompass a portion of a shower head and associated inlet pipe to maintain the container in a fixed position relative to said shower head, and adjustable plastic outlet means attached to said container for metering said material therefrom into the shower

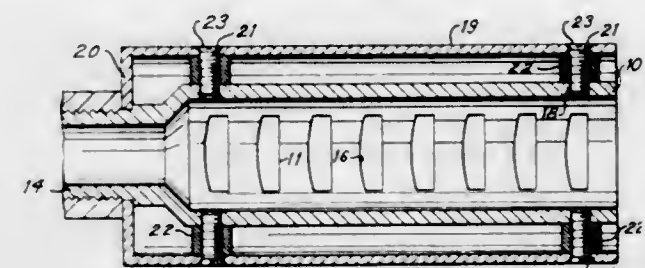
stream. The container and legs are formed integrally and the entire apparatus is formed of plastic to make it extremely inexpensive and disposable to eliminate the normal fixtures which become extremely unsanitary after long periods of use.

### 3,409,231 SWIRLER FOR USE WITH BURNERS OF THE GUN TYPE Erwin L. Oehlerking, 9798 Oak, Des Plaines, Ill. 60016 Filed Jan. 23, 1967, Ser. No. 611,038 1 Claim. (Cl. 239-406)



1. A swirler for use with a burner of the gun type wherein air blows forwardly in a burner tube to a combustion chamber and past a fuel discharge nozzle, said swirler being adapted to be supported transversely in said burner tube adjacent said discharge nozzle, said swirler being circular in configuration and comprising an inner flat ring having a central opening therein for said discharge nozzle, a plurality of fan-like blades formed integrally with said inner flat ring and extending radially therefrom, each of said fan-like blades being defined by a pair of identical arcs having the center of each lying on a ray which is equiangularly spaced from an adjacent ray, each of said arcs extending from the periphery of said swirler to a point at its inner end substantially tangent to said inner flat ring, each of said fan-like blades being twisted along another ray passing substantially through the point defining said arc at its inner end, the area of air flow between adjacent blades decreasing from a maximum at the periphery to substantially zero area of flow at the periphery of the flat ring to supply minimum air to the flame emerging at the center of said flat ring to prevent "dancing" of the flame pattern toward and away from said nozzle.

### 3,409,232 COUNTER RECOIL MECHANISM Roger R. Cholin, Westchester, N.Y. (175 Saw Mill River Road, Elmsford, N.Y. 10461) Filed Jan. 6, 1966, Ser. No. 519,079 1 Claim. (Cl. 239-499)



1. A tubular counter recoil mechanism for securing to a threaded nozzle of a high gas pressure discharge hose comprising a tubular cylindrical body having a linear pair of opposed rows of slot apertures down the length thereof, said apertures being in substantially transverse relationship to the direction of the gas stream and having a front wall perpendicular to the gas stream and a rear wall sloped away from the movement of said gas stream,



said body having a front discharge orifice and a rear conical tubular portion, said conical portion being integral to a threaded tubular nipple portion for attachment to said nozzle and a cylindrical shield of suitably larger diameter than said body, said shield having a rear wall having an opening therein to receive said nipple portion, and securing means for securing said shield to said body in a uniform rigid spaced-apart relationship, whereby a gas stream issuing through said nipple expands in said conical portion and is forced through said body with uniform loss of recoil pressure until said stream reaches said orifice.

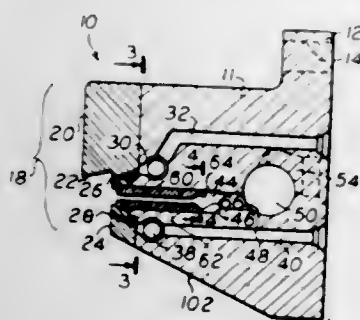
3,409,233

**SLOTTED SCARFING BURNER**

Joseph F. Kiernan, Dunellen, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Filed June 28, 1966, Ser. No. 561,199

14 Claims. (Cl. 239—556)



Cutting oxygen is supplied through several passages through the back face of the burner into a header that extends the width of the burner. On both sides of the points of entry of the supply passages into the header the header opens forwardly into jet passages elongated in the direction of the width of the burner, the jet passages jointly forming a nearly continuous but subdivided jet. The jet passages open into a rectangular slot cut into the front face of the burner, the height of the slot being a little greater than the height of the jet passage. Beginning a short distance from the forward opening of the jet passages and extending substantially to the front face of the burner, are upper and lower inserts extending the entire width of the burner and restricting the oxygen to a relatively thin sheet between them. The faces of the inserts toward the jets are shaped to promote turbulence in the sheet of oxygen. The combination of features promotes a uniform distribution of oxygen flow across the entire width of the burner. Preheat orifices in the face of the burner extend in a row above and a row below the oxygen slot.

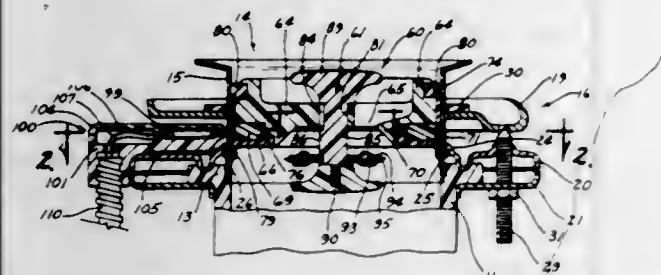
3,409,234

**LID ASSEMBLY FOR DISPOSER APPARATUS**

Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware

Filed Nov. 10, 1966, Ser. No. 593,475

10 Claims. (Cl. 241—32.5)



1. In a lid assembly engageable with the inlet of a waste disposer apparatus in a first posture and a second

inverted posture relative to said inlet for selectively controlling fluid flow into said disposer apparatus and controlling energization of said disposer apparatus, the combination comprising: a body portion engageable with said inlet in a multiplicity of angular positions about the center line of said inlet; annular actuation means operable with said lid assembly in said first posture and said body portion in any of said angular positions for energizing said disposer apparatus, said annular actuation means being inoperative for energizing said disposer apparatus with said lid assembly in said second posture; a fluid ingress into said disposer apparatus defined at least in part by said body portion; and a movable portion supported by said body portion and movable relative thereto, said movable portion being axially movable to an open position with said lid assembly in said first posture whereby said disposer apparatus is energized and fluid is admitted into said disposer apparatus, said movable portion being selectively movable from said open position to a closed position for closing said fluid ingress when said lid assembly is in said second posture whereby said disposer apparatus is de-energized and fluid flow through said lid assembly is prevented.

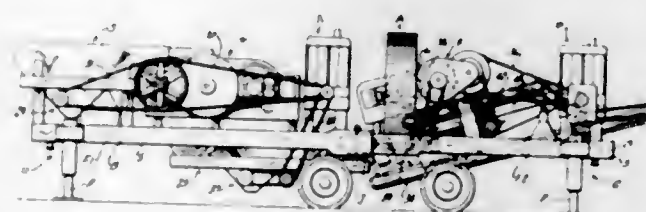
3,409,235

**PORTABLE CRUSHING PLANT**

John N. Quinn, Madison, Wis., assignor of fifty percent to Johnson Welding & Equipment Co., Inc., Madison, Wis., a corporation of Wisconsin

Filed Apr. 21, 1966, Ser. No. 544,203

14 Claims. (Cl. 241—76)



1. In a crushing plant:

- (A) means providing a fore-and-aft extending frame;
- (B) an elevator carried by the frame intermediate the front and rear ends thereof, said elevator having a low level receiving portion and a higher level discharge portion;
- (C) a first crusher mounted on the frame means between the rear end thereof and the elevator and having an inlet at its top and an outlet at its bottom;
- (D) means for directing coarse material to be crushed into the inlet of said first crusher;
- (E) a first material advancing vibratory screen carried by the frame means and having a receiving portion beneath the outlet of said first crusher and a discharge end portion arranged to feed carryover material vibratorily advanced therealong into the receiving portion of the elevator;
- (F) a second crusher mounted on the frame means adjacent to the elevator and having an inlet in its top and an outlet at its bottom;
- (G) means for conducting material from the discharge portion of the elevator into the inlet of the second crusher;
- (H) first conveyor means having a receiving portion beneath the outlet of the second crusher and a discharging portion spaced forwardly from its receiving portion;
- (I) a second vibratory screen having a receiving portion beneath the discharging portion of the first conveyor means and having a discharge end portion arranged to feed carryover materials vibratorily advanced therealong into the receiving portion of the elevator;

(J) and second conveyor means extending forwardly beneath said first vibratory screen, the elevator and the second vibratory screen, for receiving finished materials from said vibratory screens, and having a discharging end portion located at the front end of the frame means.

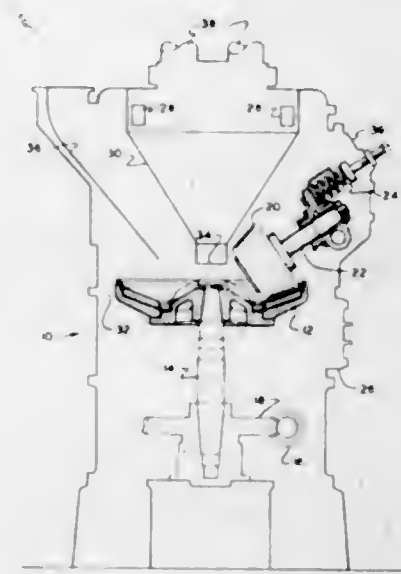
3,409,236

**SEGMENTED GRINDING ROLL ASSEMBLY**

Thomas B. Hamilton, Arlington Heights, Lorenz J. Andresen, Chicago, Ill., and Alexander Bogot, West Hartford, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Dec. 21, 1965, Ser. No. 515,375

2 Claims. (Cl. 241—232)



Apparatus for pulverizing coal including a bowl and a cooperating roller between which the coal is pulverized. The roller is made up of a number of pieces or segments, which segments are secured to an inner cylindrical member by means of nuts and bolts. The heads of the bolts are cast integrally with the segments. Malleable metal washers are positioned between each segment and the inner cylindrical member to insure a tight fit between the segments and member.

3,409,237

**REVERSIBLE WINDING ARRANGEMENT**

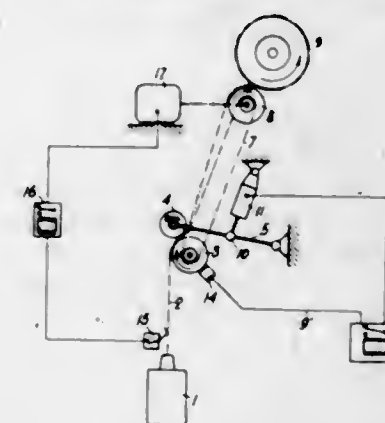
Frantisek Pospisil and Jiri Elias, Usti nad Orlici, Czechoslovakia, assignors to Vyzkumny Ustav Bavinarsky, Usti nad Orlici, Czechoslovakia

Filed Mar. 21, 1967, Ser. No. 624,952

Claims priority, application Czechoslovakia,

Mar. 23, 1966, 1,923/66

10 Claims. (Cl. 242—18)



Yarn produced in a spinning chamber and transported by a pair of transporting rollers to a windup roller, is

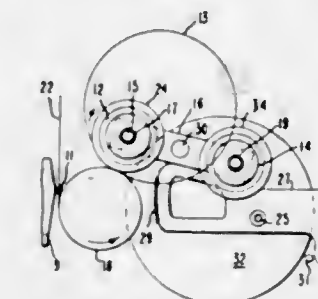
3,409,238

**CONTINUOUS YARN WINDUP APPARATUS**

Joseph Campbell, Waynesboro, Va., and Robert L. Kelly, Swarthmore, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Mar. 28, 1967, Ser. No. 626,490

4 Claims. (Cl. 242—18)



Yarn windup apparatus which permits doffing without interrupting operation. Two chucks, each carrying yarn packages, are mounted on a pivot arm. During winding, packages on first chuck contact a drive roll until full. In doffing, pivot arm is rotated so empty packages on second chuck contact drive roll; yarns break, and leading ends engage empty packages. Entanglement of trailing ends is prevented by shield between drive roll and full packages. Shield retracts during winding and during first part of doffing, but swings back to shielding position during latter part of doffing.

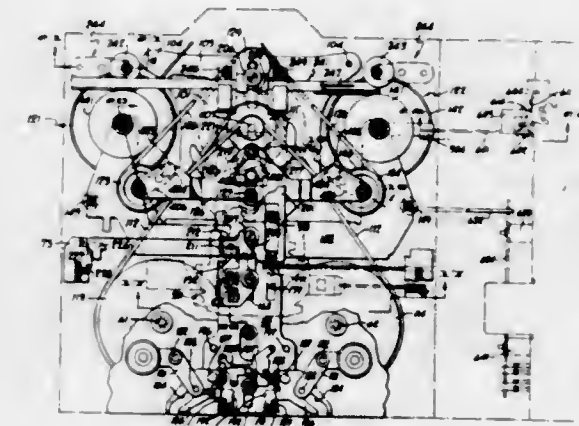
3,409,239

**TAPE RECORDING AND REPRODUCING MACHINE**

Raymond C. Siebert, Saratoga, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed May 4, 1964, Ser. No. 364,668

29 Claims. (Cl. 242—55.12)



1. In a magnetic tape transport of the class in which the tape is mounted on a pair of reels for selective winding and playing movement in both forward and reverse longitudinal directions, the combination comprising: main drive means operable in forward and reverse direction; means for selectively coupling and uncoupling said tape and said main drive means in both of said forward and reverse directions of operation; means for selectively coupling and uncoupling said main drive means and the takeup one of said reels for winding up said tape in the direction of movement thereof;



said tape-coupling means having a lost-motion connection with said reel-coupling means such that operation of said tape-coupling means causes corresponding operation of said reel-coupling means, said reel-coupling means being also operable independently of said tape-coupling means; and

reel brake means operatively associated with said reels for continuous braking of at least the supply one of said reels.

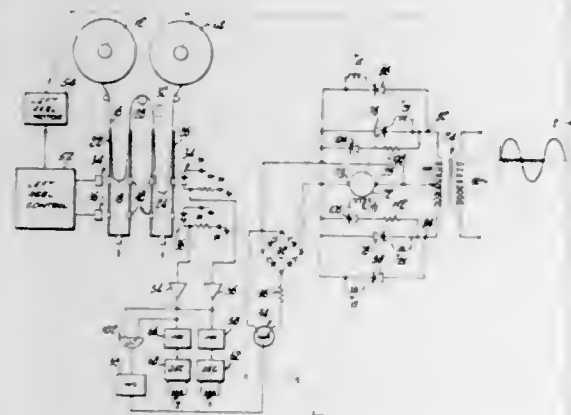
22. A tape driving device comprising:

- a tape arranged for motion in forward and reverse directions on a predetermined path;
- a pair of rotatable capstans frictionally engaging said tape at spaced points on said path for causing said motion;
- an endless elastic belt engaging both of said capstans for driving same;
- the ratio of the tape-engaging and belt-engaging diameters of each capstan being equal to the ratio of said diameters of the other capstan; and
- reversible drive means arranged for driving said drive belt in a direction from said drive means to that one of said capstans that is upstream with respect to tape motion on said path, thence to the downstream capstan and thence to said drive means.

3,409,240

#### CONTROL CIRCUIT FOR TAPE REEL SERVO MOTORS

Frederick G. Moritz, Hauppauge, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York  
Filed Apr. 27, 1966, Ser. No. 545,769  
2 Claims. (Cl. 242—55.12)



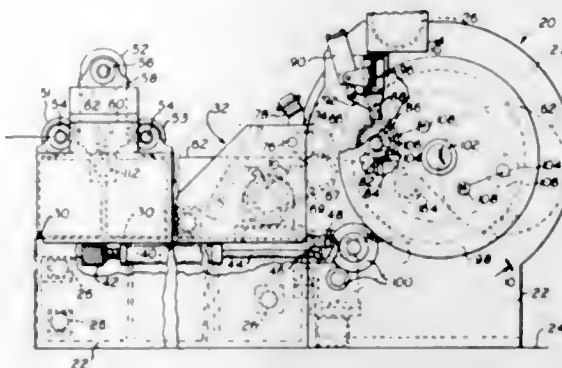
The specification and drawings disclose a reel servo system for a magnetic tape transport in which the reel is driven in one direction when the buffering tape loop is too short, driven in the opposite direction when the buffering loop is too long, and the kinetic energy of the motor is dissipated when the buffering loop is of intermediate length.

3,409,241

**WEB WINDING MACHINE WITH CUT-OFF**  
John J. Farrell, 40 Abby Lane, Green Brook, N.J. 08812  
Filed Mar. 29, 1967, Ser. No. 626,758  
15 Claims. (Cl. 242—56)

This disclosure is of a winder having a turret with two or more cores on which a continuously supplied web is wound and with provisions for cutting the web when the winding on one core is complete and transferring the winding of the web to an empty core without interrupting the web feed downstream from a knife or shear that makes the cut. The winder has a shear with which is associated guiding means including a shroud for guiding the new end of a cut web around the circumference of an empty core, and the guiding means is adjustable for cores

of different diameter. Part of the cutting shear is moved out of the path along which a full core moves as the

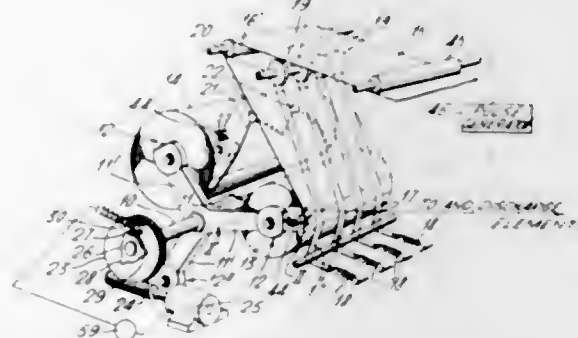


turret turns to shift the full core out of winding position and to bring an empty core into wind position.

3,409,242

#### APPARATUS FOR DETECTING THE DIAMETER OF A ROLLED SHEET

Taneji Kishioka, Toyonaka, Osaka, Japan, assignor to Hamada Printing Press Mfg. Co., Ltd., Osaka, Japan, a corporation of Japan  
Filed Oct. 7, 1966, Ser. No. 585,067  
Claims priority, application Japan, Nov. 11, 1965, 40/69,340  
8 Claims. (Cl. 242—58.1)



An apparatus for detecting the changing diameter of a rolled sheet being wound or unwound including a pair of magnetically permeable proximity detectors fixed relative to a projecting magnet member on the roll shaft to effect check pulses upon shaft rotation, the time interval between pulses determining the increase in charged voltage of a condenser, the condenser voltage originating from the output of a pulse generator via a stepped wave-producing element, the system actuating a relay through AND and MEMORY elements to change rolls whenever the condenser voltage drops below a predetermined reference voltage.

3,409,243

#### WINDING APPARATUS

John H. Wasserlein, Clarksville, Tenn., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania  
Filed Feb. 8, 1965, Ser. No. 431,016  
7 Claims. (Cl. 242—64)

High speed web winding apparatus is disclosed which is adapted for turret type winders to control tension applied to the web being wound. The apparatus responsively adjusts the torque transmitted by a drive motor to a winding mandrel to reflect various changing torque conditions existing during the progress of the wind of a web into a roll upon a core carried on the mandrel. In addition to a rotatable mandrel on which the web is to be wound, a drive means, and a clutch for transmitting torque from said drive means to said mandrel, the apparatus includes means responsive to the velocity of said mandrel as a function of the square of the velocity of the mandrel and, in addition, program means responsive to the progress

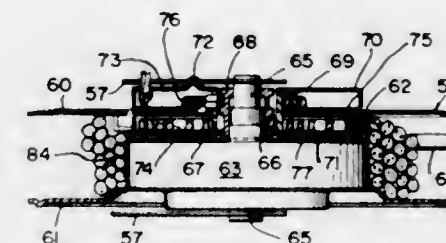
of a wind on said mandrel and acting on said clutch for progressively controlling the torque transmitting ability of the clutch during the web wind. For example, one embodiment of the apparatus employs means, such as the combination of a centrifugally actuated clutch system and

ing guide. Movement of the line operates a traction roller to close a signal switch.

3,409,246

#### CORD REEL APPARATUS

Laddie A. De Pas, Benton Harbor, Mich., assignor to Whirlpool Corporation, a corporation of Delaware  
Filed Oct. 31, 1966, Ser. No. 590,694  
4 Claims. (Cl. 242—107)

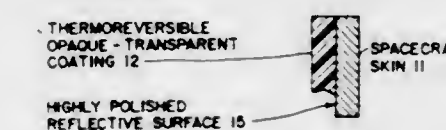


A cord reel apparatus having an inner reel and an outer reel area whereby the cord on the inner reel first unwinds and then rewinds upon unwinding the cord on the outer reel area. This eliminates the need for slip rings.

3,409,247

#### SOLID STATE THERMAL CONTROL POLYMER COATING

George F. Pezdirtz, Newport News, Va., assignor to the United States of America as represented by the Administration of the National Aeronautics and Space Administration  
Filed Mar. 28, 1966, Ser. No. 538,907  
4 Claims. (Cl. 244—1)

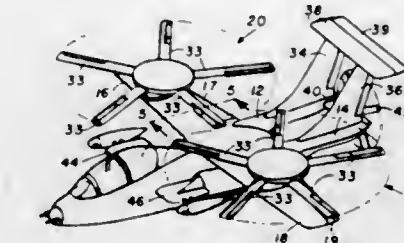


A thermosensitive coating for achieving thermal balance in a spacecraft with the coating being a unitary film of a polymer.

3,409,248

#### ROTARY WINGED AIRCRAFT WITH DRAG PROPELLING ROTORS AND CONTROLS

Harvard J. Bryan, 9303 Sorrento, Dallas, Tex. 75228  
Filed Oct. 22, 1965, Ser. No. 502,184  
17 Claims. (Cl. 244—6)

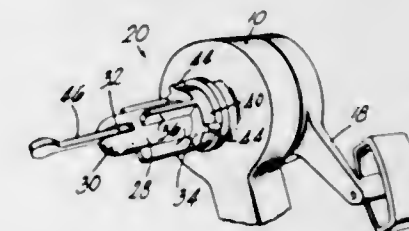


An aircraft with an elongated body having fixed laterally extending wings with at least one power rotor positioned above the body. The rotor includes a hub with a plurality of airfoil shaped blades extending therefrom; each blade comprises a plurality of movable surfaces symmetrically arranged with respect to the upper and lower surfaces of the blade. A first rotor control is provided for individually, cyclically, and symmetrically varying the shape of each blade for increased drag during the retreat of the blade to provide thrust. A second rotor control is provided for feathering all the rotor blades about their respective feathering axis for lift control.

3,409,244

#### REEL SPINDLE

David W. Husted, Ann Arbor, Mich., assignor to Baia Corporation, Jackson, Mich., a corporation of Michigan  
Filed June 30, 1967, Ser. No. 650,409  
10 Claims. (Cl. 242—68.3)

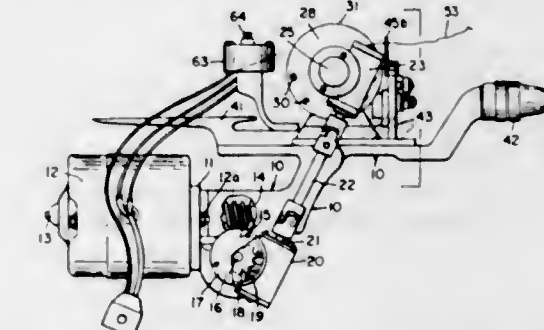


A reel spindle for supporting film reels having differently dimensioned reel supporting portions wherein the spindle is able to support and retain reels having differently sized spindle receiving holes or openings, locking means being utilized upon the spindle to maintain the reel thereon when in use.

3,409,245

#### MOTOR DRIVEN FISHING REEL

Freddie Grace, 1246 Washington Ave., Bronx, N.Y. 10456  
Filed May 14, 1965, Ser. No. 456,608  
5 Claims. (Cl. 242—84.1)

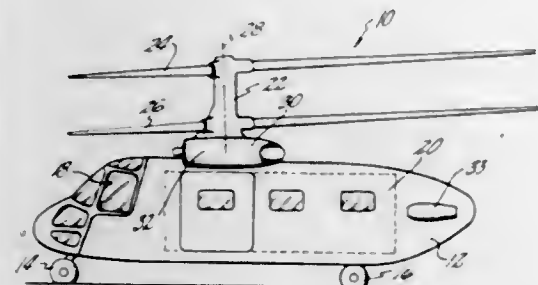


A fishing rod driven by an electric motor connected to the spool by a transmission including a universal shaft and a manually operated, positive clutch. Rotation of the spool is transferred via linkage to reciprocate a level wind-



### 3,409,249 COAXIAL RIGID ROTOR HELICOPTER AND METHOD OF FLYING SAME

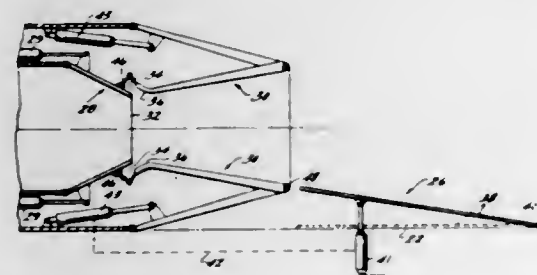
Russell Raymond Bergquist, Trumbull, Philip L. Michel, Weston, and Evan A. Fradenburgh, Fairfield, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware  
Filed June 29, 1966, Ser. No. 561,448  
19 Claims. (Cl. 244-17.13)



Counter rotating helicopter rotors positioned to establish advancing blade patterns on laterally opposite sides of the helicopter and including means to establish lateral differential cyclic pitch between the helicopter rotors to selectively position the lift vectors of the rotors in offset relation to the axes of the rotors so as to selectively position the lift vectors to produce optimum lift-to-drag ratio for each rotor and to produce cancelling roll moments between the rotors, and the method of operating a helicopter with such rotors.

### 3,409,250 MOVABLE FAIRING FOR AN AIRCRAFT- MOUNTED NOZZLE

Robert C. Ammer, Cincinnati, Robert G. Beavers and Bartolomeo J. Ferrari, Mason, and George R. Rabone, Cincinnati, Ohio, assignors to General Electric Company, a corporation of New York  
Filed Dec. 27, 1966, Ser. No. 604,766  
12 Claims. (Cl. 244-52)



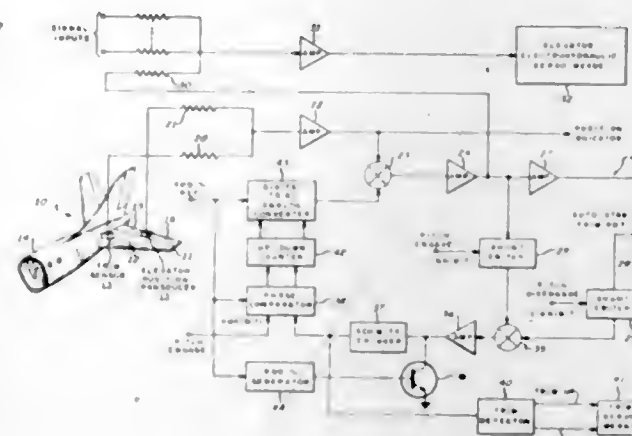
The invention relates to a jet engine nozzle structure arrangement where a preferably symmetrical nozzle is used in conjunction with a movable fairing on the fuselage downstream of the nozzle so that both the nozzle and fairing are varied together to provide a smooth continuous surface for the jet and reduce the base drag on the aircraft.

### 3,409,251 SERVO MEANS HAVING COMPENSATION FOR UNDESIRABLE SIGNALS

Arnold D. Lawson, San Jose, Calif., and John L. Spellman, Phoenix, Ariz., assignors to Sperry Rand Corporation, a corporation of Delaware  
Filed Dec. 1, 1966, Ser. No. 598,285  
7 Claims. (Cl. 244-77)

A servo loop having one mode of operation for sensing the misalignment signal from a misaligned pick-off, storing the misalignment signal and providing a compensating signal thereby rendering only the desirable operating

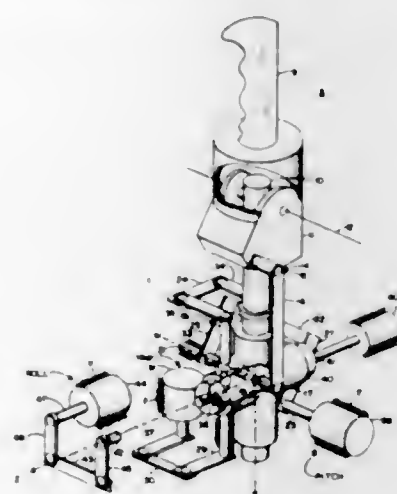
signals effective. In another mode of operation, long-term signals are selectively rendered effective utilizing common



components of the aforementioned servo loop to provide long-term control.

### 3,409,252 CONTROLLERS

Don P. Miller, Minneapolis, Minn., assignor, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration  
Filed Sept. 19, 1966, Ser. No. 580,365  
9 Claims. (Cl. 244-83)

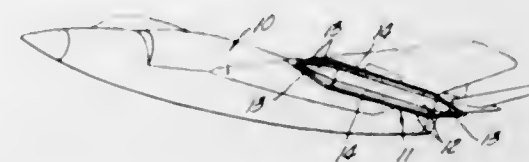


A hand controller operable about three respectively perpendicular axes corresponding to the conventional axes of a flight vehicle. Rotary motion of the controller about a particular axis is transmitted mechanically to operate signal generators for actuating appropriate attitude control devices. The controller includes a first T-shaped cross member disposed with one arm coaxial with the first vehicle axis and journaled to the vehicle frame; the cross member is connected by mechanical linkage to operate a signal generator for effecting attitude control about said first axis such as the roll axis. A tubular member is mounted perpendicular to said first member and journaled thereon for rotation about its own axis. The tubular member is connected by mechanical linkage, including a universal joint to operate a signal generator for effecting attitude control in yaw about a second vehicle axis. A hand grip affixed to the end of the tubular member and axially rotatable therewith is also mounted for pivotal movement thereon about an axis perpendicular to the longitudinal axis of the tubular member. Mechanical linkage, including a universal joint at the intersection of said first and second axes, connects the grip to a signal generator for effecting attitude control in pitch about the third vehicle axis. The use of universal joints obviates the need for wires which couple the signal generators with

detectors of mechanical movements of the controller and also permits operation of the device without cross coupling effects in operation of the signal generators.

### 3,409,253 RETRACTABLE FUEL TANK FOR AIRCRAFT

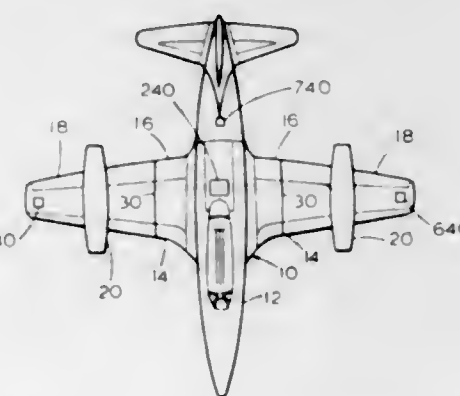
Kenneth Berg, El Cajon, Norman O. Brink, Buddy L. Duft, and Jere L. Robinson, San Diego, Edward C. Skel, Thousand Oaks, and Curtis E. Thompson, San Diego, Calif., assignors to Whittaker Corporation, Los Angeles, Calif., a corporation of California  
Filed Dec. 2, 1966, Ser. No. 598,874  
14 Claims. (Cl. 244-135)



A retractable or collapsible fuel tank for aircraft or the like wherein the volume of the tank may be varied. The tank is formed of a plurality of rigid segments, including intermediate segments hinged to end segments, and the rigid segments are coupled with sections of flexible material. When the tank is in a retracted position, the rigid segments enclose the flexible material and an internal retraction mechanism. The retraction mechanism includes truss members for moving the rigid segments, and a cable system for causing proper folding of the flexible sections.

### 3,409,254 SAFETY AIRCRAFT

Anthony P. Nastase, 6220 Fontenelle Blvd., Omaha, Nebr. 68111  
Continuation-in-part of application Ser. No. 411,672, Nov. 9, 1964. This application Jan. 7, 1966, Ser. No. 519,243  
3 Claims. (Cl. 244-138)



1. In combination with an aircraft having a fuselage, right and left wings extending outwardly from opposite sides of said fuselage, said wings having inner sections permanently attached to said fuselage, first and second ground engageable means attached to each respective inner wing section and adapted to engage the ground during sideways roll-over of said aircraft, such engagement being at a distance from and position with respect to said fuselage as to be sufficient to provide substantial safety against sideways roll-over, said wings having outer sections, means releasably attaching said outer section of each wing to the inner section thereof, engine means mounted on each said outer section, explosive fuel-carrying means in each outer section whereby when said releasable means for securing said outer sections to said inner sections are released, not only the fuel-carrying portion of said outer sections are discarded, but also those portions of said

wings which carry said engines are also released and discarded whereby after such discarding, not only fuel in said outer sections, but also fuel in said engines, is no longer in danger of damaging the remainder of said aircraft, and controllable means operatively correlated with said releasable means for securing said sections together for controllably releasing said securing means for such discarding.

### 3,409,255 KITE CONTROL APPARATUS

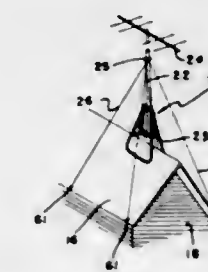
Fermin T. Sada, 106 Continental Ave., San Antonio, Tex. 78228  
Filed Sept. 23, 1966, Ser. No. 581,536  
6 Claims. (Cl. 244-155)



A kite control apparatus comprising: a multi-cornered kite including multiple apertures in its covering material, a right and a left control bridle each comprising multiple lines from the center of said bridle to each corner of the said kite, an altitude control bridle attached to the kite, a telescoping central rod including right, left and altitude reels wound with control lines, wherein the lines from each reel are attached to their corresponding control bridles.

### 3,409,256 ANTENNA ROOF MOUNT SUPPORT

Loren D. Burns, Douglass, Kans. 67039  
Filed Mar. 7, 1966, Ser. No. 532,320  
2 Claims. (Cl. 248-43)



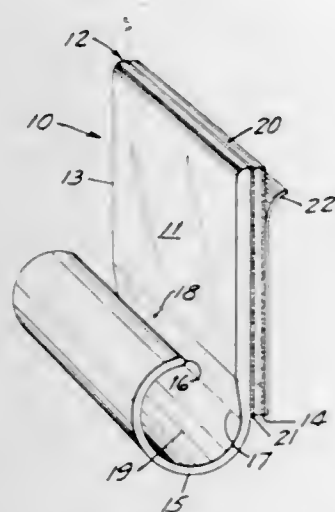
This invention relates to a mounting means for an antenna mast support, and more particularly, to an antenna support attachable to the roof of a house. Still more specifically, this invention relates to an antenna support mountable on a house roof and laterally supported by cable members whereby no holes need be drilled in the roof for installation and support. Additionally, this invention relates to an antenna roof mount support combination having a bracket means with downwardly diverging leg means mountable upon the upper surface of a house roof; cable connector means connectable to an upright antenna mast mounted in the bracket means; cable members having one end connected to the connector means and the other end securable by clamp members to the outer periphery of the house roof; and means for securing the bracket means to the mast to present an upright rigid structure connectable to the house roof without the necessity of drilling holes therein.



### 3,409,257 CABLE CLIP WITH PRESSURE SENSITIVE ATTACHING MEANS

Robert A. Elm, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Mar. 10, 1967, Ser. No. 622,320  
1 Claim. (Cl. 248—65)

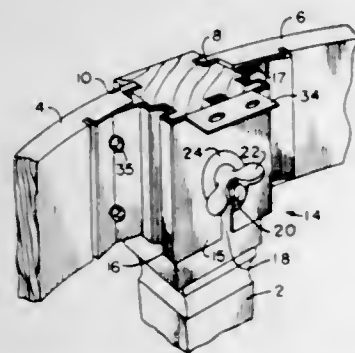


An adherent cable clip having a generally J-shaped cross section, being molded from stiff resilient plastic, and having a tape-like resilient conformable pressure sensitive adhesive composite secured to a flat back surface thereof for attaching the clip to various wall surfaces.

### 3,409,258 TABLE LEG ATTACHING MEANS

Raymond T. Carlson, P.O. Box 82, Lookout Mountain, Tenn. 37350

Filed Sept. 12, 1966, Ser. No. 578,554  
9 Claims. (Cl. 248—188)



Bracket and leg combinations for attaching legs to tables having side rail sections. Bracket permits leg to be secured so that maximum rigidity is achieved with the front of the leg still visible for improved appearance. Leg used in combination with the bracket has grooves to receive rail ends and bracket.

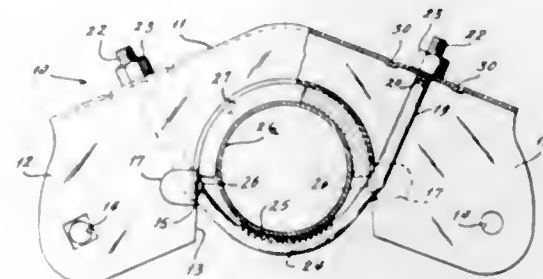
### 3,409,259 GYM SET HEADBAR ATTACHMENT CHANNEL

Earl G. Cross, Du Quoin, Ill., assignor to Turco Manufacturing Company, Du Quoin, Ill., a corporation of Missouri

Filed June 19, 1967, Ser. No. 646,982  
9 Claims. (Cl. 248—214)

A bracket for suspending glide rides and the like from gym set headbars of different diameters. The bracket is a channel having inverted U-shaped openings in the flanges with a curved member fitted between the openings to engage the top surface of the largest diameter headbar. An attachment strap fastened through the web of the channel includes teeth which engage the bottom of the headbar.

The bracket also includes a spacer fitted inside the curved member to reduce the effective diameter of the channel



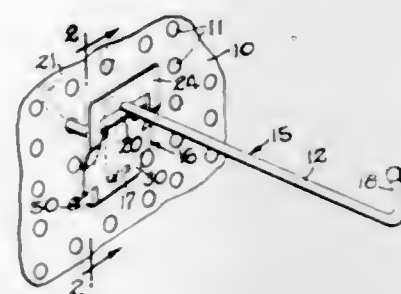
opening so that the bracket can be attached to a smaller diameter headbar.

### 3,409,260 HANGER FOR PERFORATED PANELS

Theodore M. Bleed, Rockford, Ill., assignor to Commercial Wire Products Co., Rockford, Ill., a corporation of Illinois

Continuation-in-part of application Ser. No. 592,063, Nov. 4, 1966. This application Apr. 14, 1967, Ser. No. 633,349

20 Claims. (Cl. 248—216)



The crosspiece 20 of a U-shaped hook member 14 is pivotally supported in an upwardly opening socket 22 in a bracket 16 of material such as sheet metal or plastic engaging the depending short arm 17 and the horizontal long arm 12 of an L-shaped piece of wire to join the wire and bracket together rigidly. With the long arm and the fingers 19 of the hook disposed horizontally, the fingers may be inserted through holes of a perforated board and then interlocked behind the board by downward bodily shifting of the bracket.

### 3,409,261 COUNTERPOISING OR EQUIPOISING MECHANISM

Raymond A. Leporati, Parma, Ohio, assignor to Visual Systems, Inc., a corporation of Ohio

Filed Nov. 7, 1966, Ser. No. 592,421  
12 Claims. (Cl. 248—281)



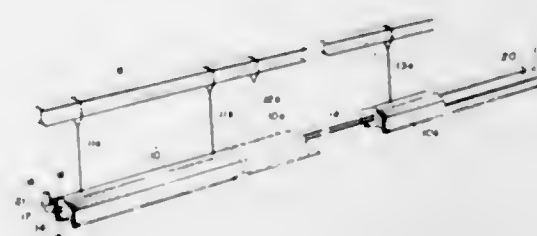
Counterpoising or equipoising mechanism having a pair of arms arranged with spaced block members in a parallelogram, one block member being pivotally supported and the other or free block member being adapted to support a load therefrom.

port a load therefrom, a pair of springs disposed on opposite sides of the arms, one end of each being connected to the upper arm near the supported block member and the other end of each being connected to the said free block member for aiding in the support of the same, the springs each being encased in telescopic tubes, a cable having an end connected to the upper arm near the free block member and its opposite end connected to an end of another coil spring, the cable being reeved around a pulley journaled on the supported block member, the other end of said another coil spring being connected to the lower arm near the free block member to aid in support of the same.

### 3,409,262 SUSPENSION SYSTEM FOR LIGHTING FIXTURES

Walter Frederick Soule, 178 Church St., St. Catharines, Ontario, Canada

Filed Nov. 10, 1966, Ser. No. 593,491  
9 Claims. (Cl. 248—328)

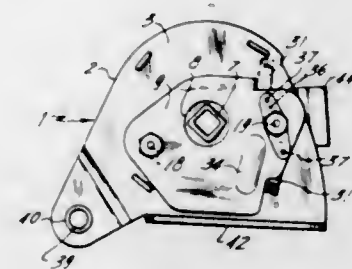


This specification discloses a cable suspension system for use in association with lighting fixtures and the like in which suspension cables are stored in loops extending around a system of pulleys, some of the pulleys being movable in unison so as to cause extension or retraction of the suspension cables in unison and permitting lowering and raising of the lighting fixtures or the like, and in a further embodiment, also incorporates photo sensitive means which are responsive to ambient light levels in a working area so as to cause the lighting fixtures to be lowered or raised so as to maintain a predetermined lighting intensity at such working surface.

### 3,409,263 TIEDOWN DEVICE

George Jantzen, New York, N.Y., assignor to M. Steintal & Co. Inc., New York, N.Y., a corporation of New York

Filed Sept. 9, 1966, Ser. No. 578,209  
8 Claims. (Cl. 248—361)

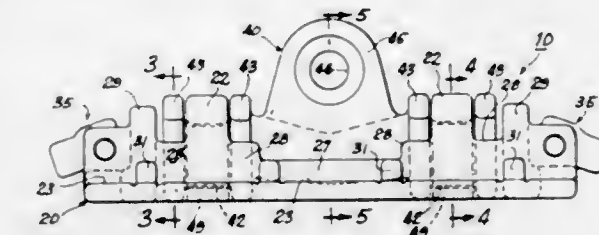


A shaft is spring biased to wind up a tiedown belt, through a rotatable guide. A ratchet wheel is connected to the shaft and a pawl is connected to the body of the device to engage the ratchet to prevent rotation in the opposite direction. A cammed lever cooperates with a cam follower portion of the pawl to disengage the pawl for retraction or extraction of the belt from the shaft. The lever is held by a spring pin in the disengaging position and its ratchet engaging portion is between its pivot axis and its cam follower portion.

### 3,409,264 HEAVY DUTY LADING TIE-DOWN ANCHOR

Phillip D. Schwiebert, Glencoe, and Edward S. Steck, Chicago, Ill., assignors to MacLean-Fogg Lock Nut Company, Mundelein, Ill., a corporation of Delaware

Filed Sept. 29, 1966, Ser. No. 582,875  
13 Claims. (Cl. 248—361)

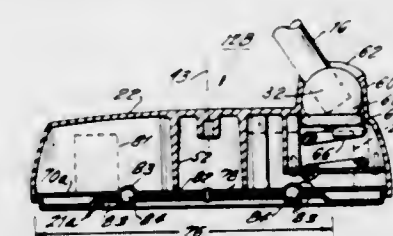


An articulated tie-down anchor having a yoke journaled in a base on an axis in a plane at the mooring channel retaining flanges by shackles, at base quarter lengths, holding yoke trunnions with curved surfaces eccentric with respect to the axis.

### 3,409,265 BASE FOR LIGHT FIXTURE

Louis Wichers, Nyack, and Harvey E. Senft, White Plains, N.Y., assignors to Swiveller Company, Inc., Nantuet N.Y., a corporation of New York

Filed Sept. 27, 1966, Ser. No. 582,363  
6 Claims. (Cl. 248—415)



A base unit for desk-top lighting fixtures of the type which are not secured to the surface upon which they rest, including a first member which remains stationary with respect to the supporting surface and a second member, which carries the fixture, rotatable relative to the first member. The second member carries counterbalancing weight means as far to the rear as possible with respect to the pivotal plane of movement of the light fixture whereby tipping is prevented regardless of the extent of rotation of the second member, and hence the fixture, relative to the first member.

### 3,409,266 SHORING STRUCTURE FOR CONCRETE FORMS

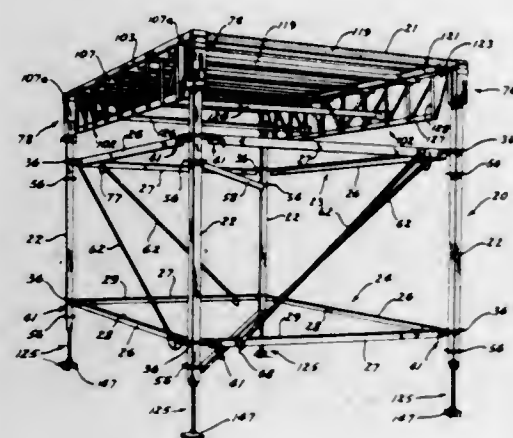
William A. Jennings, Des Moines, Iowa, assignor to Economy Forms Corporation, Des Moines, Iowa, a corporation of Iowa

Filed Aug. 30, 1965, Ser. No. 483,587  
7 Claims. (Cl. 249—18)

The shoring structure is for supporting metal forms in the construction of an elevated concrete floor or top wall and is of a knockdown construction capable of assembly on the job without the use of special tools. The structure comprises four shoring units or corner posts, connected together to form a rigid supporting frame structure. Each post has a flat top surface and slidably carries adjacent its upper end a vertically movable mounting unit for adjustable movement relative to the top surfaces of the posts. Extended between each pair of longitudinally spaced corner posts and releasably connected to a corresponding



pair of mounting units is a truss assembly that has a flat top surface. Metal forms are extended between and releasably connected to the truss assemblies with flat top surfaces thereof in the plane of the top surfaces of the truss assemblies. When the mounting units are moved to first elevated positions, the top surfaces of the posts are in the plane of the top surfaces of the metal forms and truss assemblies so as to form therewith a continuous concrete supporting area. After the concrete has been poured

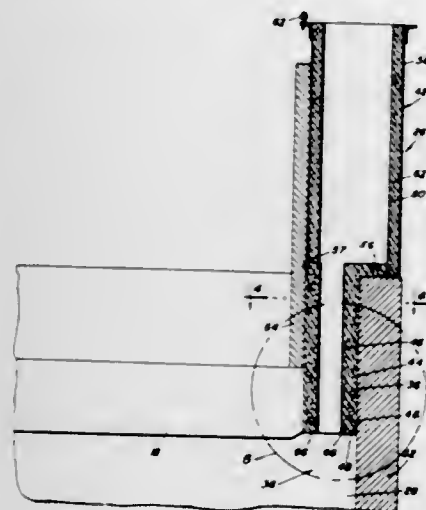


and is in a slab form, the truss assemblies and forms are dropped, on movement of the mounting units to second lowered positions thereof, to positions wherein their top surfaces are below the slab which continues to be supported on the top surfaces of the corner posts. The metal forms are then removable from the truss assemblies which in turn are removable from the lowered mounting units to provide for a reuse of the metal forms and truss assemblies at another location.

3,409,267

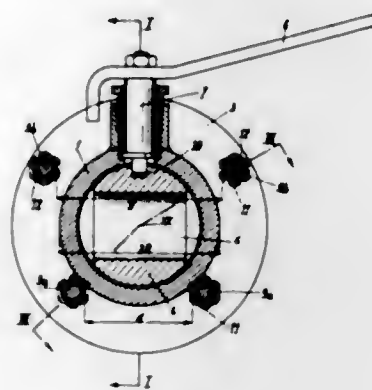
**RISER CONSTRUCTION WITH SEPARATE UPPER RELATIVELY LARGE REUSABLE SECTION**  
Joseph V. Wszolek, Villa Park, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey

Filed July 30, 1965, Ser. No. 476,046  
5 Claims. (Cl. 249-105)



In arrangements for bottom pressure casting, particularly into a mold made up of a plurality of blocks defining the cavity, the riser is made in two separate sections, each of which can be fabricated apart from the mold and assembled therewith. The lower riser section comprises insulating material and, at times, a metal liner, and is expendable. The upper riser section is larger than the lower section and is reusable for the pouring of successive castings.

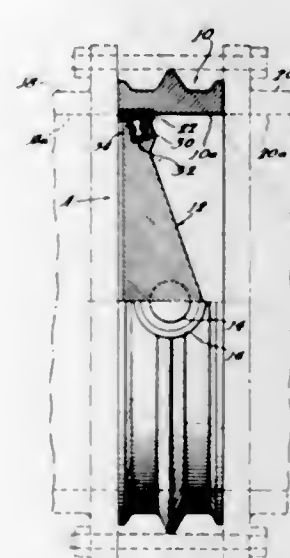
3,409,268  
**BALL VALVE**  
Jean Gachot, 179 Ave. de la Division Leclerc,  
Enghien-les-Bains, Seine-et-Oise, France  
Filed July 15, 1965, Ser. No. 472,140  
Claims priority, application France, Aug. 6, 1964,  
984,343; Apr. 30, 1965, 15,318  
6 Claims. (Cl. 251-148)



In a ball valve having a spherical ball plug and a tubular valve body for the plug, tie bolts extend between and interconnect the flanges of the conduit on either side of the valve. The tie bolts are so spaced on the outside of the tubular valve body that the lower two of them support the valve body, while the others are spaced apart a distance greater than the outer diameter of the valve body so that the valve body can be removed without removing more than one tie bolt. Sleeves surround the tie bolts and have a length slightly less than the axial dimension of the valve body, so as to support the opposed flanges when the valve body is removed.

3,409,269  
**PRESSURE ACTUATED RESILIENT SEALS FOR VALVES**

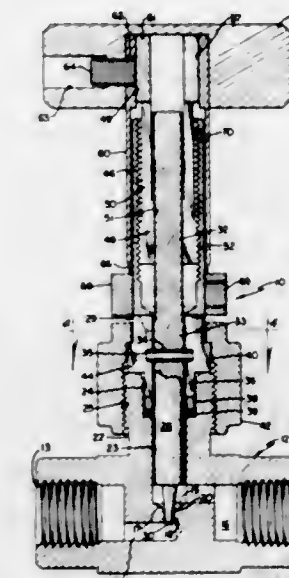
Donald G. Fawkes, Chicago, Ill., assignor to Henry Pratt Company, a corporation of Illinois  
Filed June 21, 1966, Ser. No. 559,322  
15 Claims. (Cl. 251-175)



1. A seal for rotary valves intended for installation in a line carrying fluid under pressure, such valves being of the type having a valve body with a hollow interior defining a fluid passage and a valve closure member rotatably mounted in the interior of said valve body for movement between an open position permitting the flow of fluid therethrough and a closed position spanning the interior of the valve body with the periphery of the closure

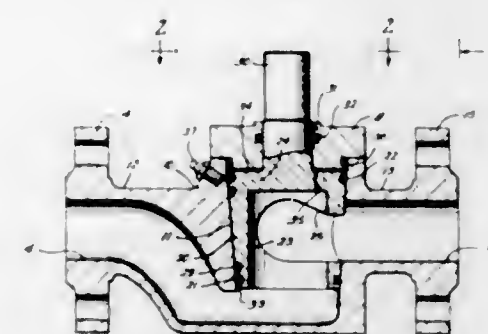
member in sealing relation with the interior of the valve body, comprising: a resilient sealing ring annular in shape; one of said valve body and said closure member peripheral portion having means forming a sealing surface for co-operative engagement with the sealing ring and the other having wall means forming a channel for reception of the resilient sealing ring; said sealing ring having a base portion mounted in the channel with a part of the ring projecting out of the channel, the latter ring part including a nose portion for continuous path contact with the seating surface and portions on both sides of the nose portion respectively exposed to line pressure on respective sides of the closed closure member when installed and in service, said channel wall means including spaced, generally parallel, opposite side walls extending generally toward and away from the seating surface, said sealing ring having opposite side surfaces mating against said channel side walls for forming a static seal area between such side surface and channel side wall under influence of line pressure, said sealing ring adjacent the nose portion being flexible under line pressure force application to flex away from one channel side wall admitting line pressure into the channel to push upon the sealing ring toward the opposite channel side wall effecting said static seal and also urging the nose portion into sealing engagement with the seating surface.

split threaded sections alternately biased inwardly and outwardly for close-fitting interengagement with the threaded sections on said valve member and said tubular casing whereby threaded advancement of said valve con-



trol sleeve relative to the threaded section on said tubular casing will cause longitudinal advancement of said valve member with respect to said valve seat.

3,409,270  
**VARIABLE ORIFICE PLUG-TYPE VALVE**  
Eldon E. Hulsey, 5747 Warm Springs,  
Houston, Tex. 77035  
Filed Oct. 4, 1965, Ser. No. 492,475  
1 Claim. (Cl. 251-209)

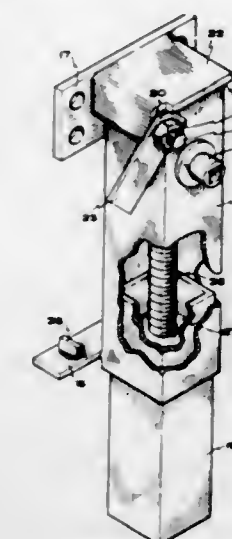


A plug-type valve in which the plug member is open at one end to communicate with one of the valve flow ports and has a side port of elongated, generally tear-drop shape extending circumferentially of the plug member for communication with the other valve flow port and to provide a non-ported closure segment between the ends of the side port for closing off the flow passage through the valve.

3,409,271  
**FLUID FLOW CONTROL VALVE**  
Donald D. Kallenbach, Cheyenne, Wyo., assignor to Ideal Aerosmith, Inc., Cheyenne, Wyo., a corporation of Wyoming  
Filed May 4, 1966, Ser. No. 547,472  
10 Claims. (Cl. 251-265)

1. A fluid flow control valve comprising in combination a valve seat and valve member being guided for longitudinal sliding movement toward and away from closing relation with said valve seat, said valve member including a threaded section thereon, a tubular casing defining a guide passage for said valve member and including a threaded section in spaced concentric relation to the threaded section on said valve member, a valve control sleeve concentrically disposed between said valve member and tubular casing and having longitudinally

3,409,272  
**CAMPER SUPPORT INCLUDING LIFT MEANS**  
Reed Rasmussen, 168 W. Gentile,  
Layton, Utah 84041  
Filed Feb. 13, 1967, Ser. No. 615,717  
8 Claims. (Cl. 254-45)



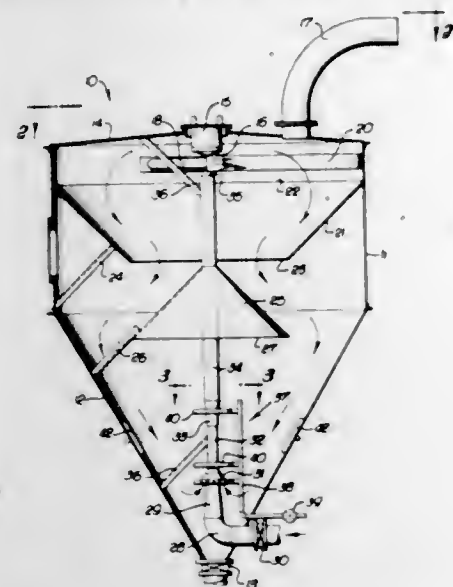
A camper leg having top and bottom ends, with an elongated mounting slot at the top end for pivotally mounting the leg on a shaft secured to the side wall of a camper, and a bottom support plate attached to the leg between its ends for supporting the bottom of the camper. A cam can be secured to the shaft which coacts with a cam follower to shift the position of the shaft in the slot and urge the bottom support against a rack on the bottom of the camper.

3,409,273  
**METHOD AND APPARATUS FOR BLENDING PULVERULENT MATERIALS**  
Edgar J. Kelly, Lake Zurich, Ill., assignor to American Colloid Company, Skokie, Ill., a corporation of Delaware  
Filed Nov. 17, 1967, Ser. No. 683,956  
7 Claims. (Cl. 259-4)

A method and apparatus for mixing pulverulent or finely-divided materials by fluidizing such materials to



reduce the friction between the particles so as to facilitate combining, and recirculating such fluidized materials with-



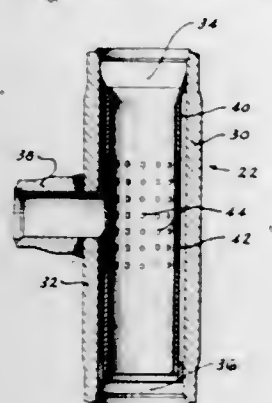
in an enclosed container so as to effect complete blending and mixing thereof, permitting discharge of unsegregated material.

3,409,274

#### MIXING APPARATUS FOR HIGH PRESSURE FLUIDS AT DIFFERENT TEMPERATURES

Carl W. Lawton, West Hartford, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware  
Continuation-in-part of application Ser. No. 603,007, Dec. 19, 1966. This application Nov. 22, 1967, Ser. No. 689,235

7 Claims. (Cl. 259-4)



Mixing apparatus for high pressure fluids at different temperatures in the form of a T-connector, wherein the effect of thermally induced stresses on the body of the apparatus, especially at the intersection of the stem and the straight portion which is most susceptible to stress, is reduced by providing the straight portion with an inner liner which defines an annular chamber about the wall of the body into which fluid from the stem is discharged. The body of liquid in the chamber forms a thermal barrier that prevents the apparatus body from being subjected to undue thermal stresses. Openings in the liner effect passage of fluid from the chamber into the flow stream of the other fluid for mixing.

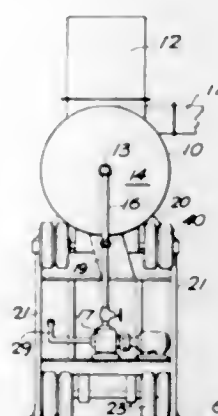
3,409,275

#### PORTABLE WASHER AND COLLECTION TANK ASSEMBLY

William F. Miller, 1175 Academy Drive 44505, and John H. Miller, 760 Golf View Drive 44512, both of Youngstown, Ohio  
Filed Jan. 31, 1967, Ser. No. 613,032  
3 Claims. (Cl. 261-3)

A washer and collection tank assembly for receiving airborne dust and material particles acting to separate

the same from the air by passing the air and materials therein through a water spray washing area, moving the water, dust and particles therein to a second area and



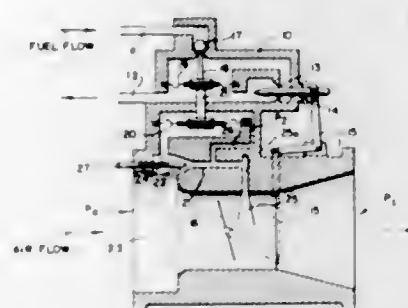
3,409,276

#### CONTROL MECHANISM FOR FUEL INJECTION APPARATUS

Franz Fuchs, Pocking, Germany, assignor to Junkers Flugzeug- und Motorenwerke G.m.b.H., Munich, Germany

Continuation-in-part of application Ser. No. 561,933, June 30, 1966. This application Jan. 22, 1968, Ser. No. 699,447

8 Claims. (Cl. 261-50)



A fuel injection apparatus including fuel valve means is controlled jointly by a differential air pressure device and a differential fuel pressure device. The differential air pressure device is supplied with a pressure differential derived from an elongated control duct of uniform cross-sectional area bypassing a throttle controlled air flow passage. The mixture ratio can be adjusted manually, or as a function of any desired parameter, by means of a control valve associated with the inlet to said control duct.

3,409,277

#### METERING JET ADJUSTABLE FUEL BY-PASS

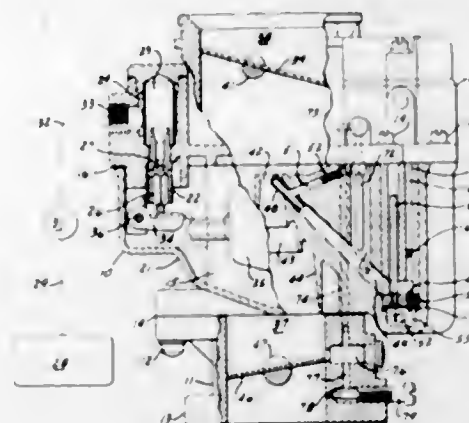
Donald A. Reise, St. Louis, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed June 24, 1966, Ser. No. 560,242

1 Claim. (Cl. 261-51)

A carburetor having a main fuel metering jet and a main fuel metering rod is further provided with an aux-

iliary adjustable main fuel supply port which port is rendered non-accessible after final adjustment of the



operative size of said port to prevent unauthorized change of the size after final calibration.

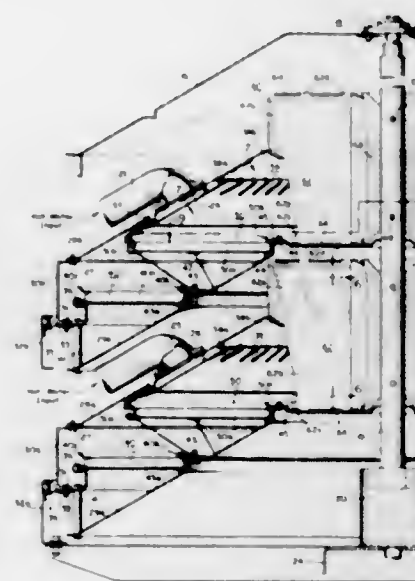
3,409,278

#### CONTACTING METHOD AND APPARATUS

William Lewis Kuechler, North Haven, Conn., assignor to Entoleter, Inc., Hamden, Conn., a corporation of Delaware

Filed Mar. 4, 1965, Ser. No. 437,094

24 Claims. (Cl. 261-79)



A method and apparatus for contacting a gas and a liquid. In a cooling application air is sucked by a fan into the apparatus from two opposite sides and passed upward to a first set of angled vanes. The vanes impart an inward and upward spiral movement to the air in a contacting zone. Water is distributed in the zone and becomes dispersed into droplets due to the air currents. Because of the centrifugal force exerted on the water particles by the spiral air movement, a circulating suspension of various-sized liquid particles is set up in a first contacting region above the first set of vanes. A second similar contacting region is provided above a second set of angled vanes disposed inwardly and upwardly of the first set. The air passes inwardly and upwardly through both contacting regions and the fan causes it to leave the contacting zone toward the center thereof whereupon it is pumped to the ambient air at generally right angles to the incoming air.

3,409,279

#### METHOD OF CONTACTING LIQUIDS AND GASES

William Joseph Mettrailer, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 330,869, Dec. 16, 1963. This application Oct. 6, 1966, Ser. No. 584,643

6 Claims. (Cl. 261-94)

The contacting of a discontinuous phase of gas with a continuous phase of liquid is improved by using contactors which have densities sufficiently close to the density of the liquid to allow them to circulate and move about freely in the continuous liquid phase.

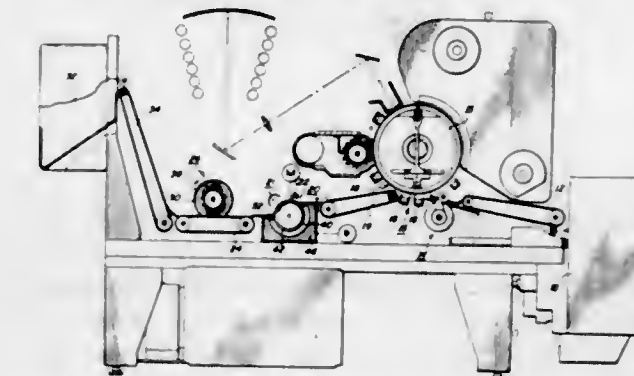
3,409,280

#### POROUS DRUM FUSER

David R. Springett, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed May 1, 1967, Ser. No. 635,090

3 Claims. (Cl. 263-6)



A porous drum fusing apparatus for heating a support material and selectively melting a resinous powder previously placed thereon. The porous drum has an internal heat source and an internal vacuum system maintaining the support material tightly on the drum and a supplemental external heat source to melt the powder into the support material as the heated porous drum rotates, carrying the support past the supplemental heat source.

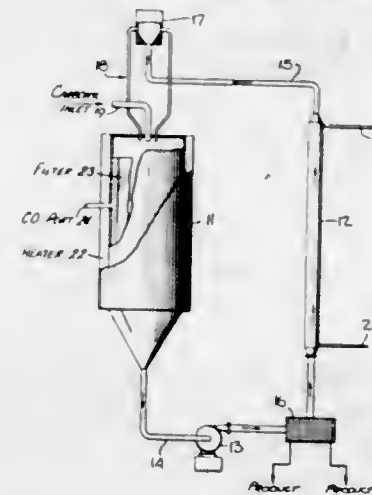
3,409,281

#### APPARATUS FOR DECOMPOSING METAL COMPOUNDS

Charles E. O'Neill, Upper Montclair, N.J., Michael D. Head, Port Colborne, Ontario, Canada, and Charles B. Goodrich, Huntington, W. Va., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

Original application Dec. 4, 1964, Ser. No. 416,045, now Patent No. 3,323,903, dated June 6, 1967. Divided and this application Apr. 10, 1967, Ser. No. 646,783

4 Claims. (Cl. 266-20)

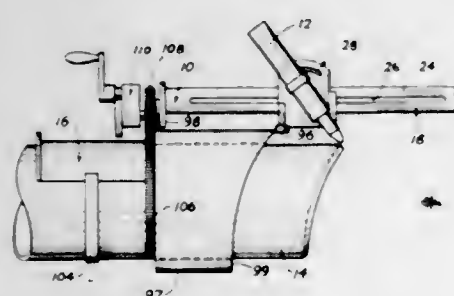


The disclosure is directed to apparatus for decomposing metal compounds, such as metal carbonyls, at a high



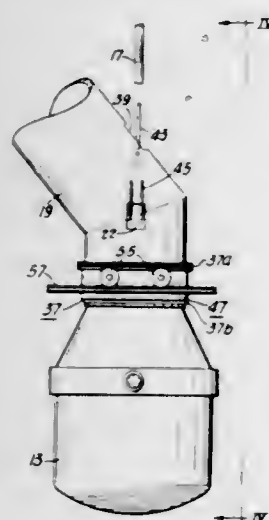
production rate comprising a decomposing chamber, a heating chamber, conduit means connecting the heating chamber and the decomposing chamber, circulating means for circulating a stream of powdered material suspended in gas between the decomposing chamber and the heating chamber, an inlet leading to the decomposing chamber for admitting a stream of a metal compound to be decomposed, and mixing means for mixing the metal compound stream and a stream of powdered material suspended in gas adjacent the inlet to the decomposing chamber.

**3,409,282**  
**PIPE CUTTING APPARATUS**  
Harold F. Livers, Kansas City, Mo., assignor to Mary C. Harter, Tulsa, Okla.  
Filed June 28, 1965, Ser. No. 467,384  
9 Claims. (Cl. 266—23)



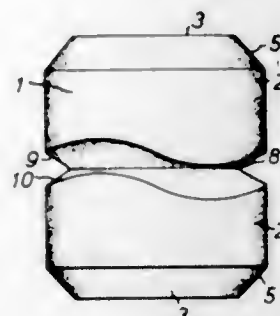
A pipe cutting apparatus for a pipe cutting machine wherein a pipe cutting torch is slidably mounted on a support member which is secured to the pipe cutting machine. A negator spring is connected between the support structure and the cutting torch for constantly urging the torch in a direction toward the pipe cutting machine, and the support structure and cutting torch are moved around the outer periphery of the pipe by the pipe cutting machine whereby the end of the pipe may be beveled or otherwise cut by the cutting torch.

**3,409,283**  
**APPARATUS FOR TREATING EXHAUST GASES FROM AN OXYGEN CONVERTER**  
Edward J. Helm, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware  
Filed June 16, 1966, Ser. No. 558,110  
1 Claim. (Cl. 266—36)



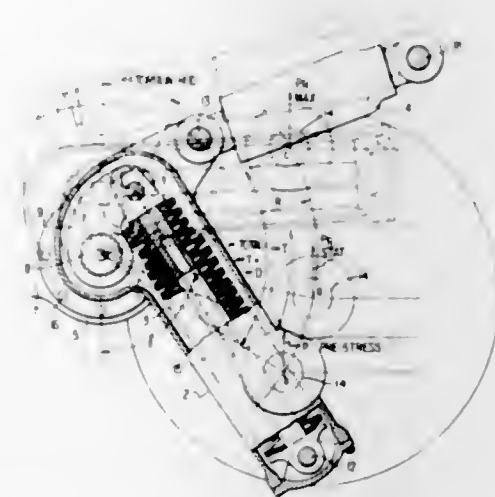
A substantially airtight hood is spaced apart a preselected distance from the mouth of a BOF converter, and during the oxygen blowing period, the gases evolving from the converter, plus ambient air in quantity sufficient to oxidize at least 20 percent of the CO generated in the converter, pass into the hood under the draft supplied by an exhaust fan that operates at constant speed and exhausts a constant volume of gases per unit of time.

**3,409,284**  
**ELASTIC HOLLOW SPRING BODIES**  
Johannes Rix, Kassel, Germany, assignor to Aeon Products (London) Limited, London, England  
Filed May 4, 1966, Ser. No. 547,571  
Claims priority, application Germany, May 15, 1965, R 40,648  
18 Claims. (Cl. 267—1)



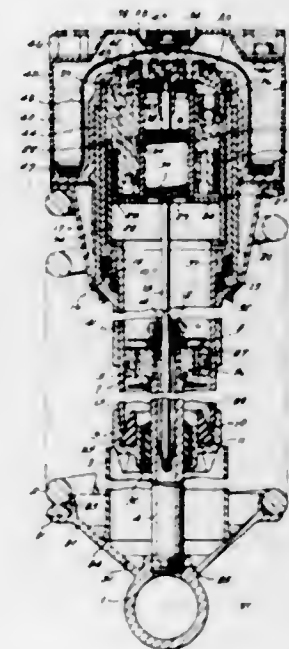
An elastic hollow elongated compression spring body consists of elastomeric material. The body has an outer circumferential surface, and a pair of axial end faces at least one of which is provided with an aperture adapted to receive fastening means therein. The surface is provided with at least one circumferential groove bounded by two mutually inclined side wall surfaces which approach one another in response to axial compression of the body. The angle included between at least one of the side wall surfaces and the axis of the body is different at circumferentially spaced locations of the body. Thus, when the spring is axially compressed, engagement between the side wall surfaces will initially take place at only certain circumferentially spaced portions, and the remainder of side wall surfaces will take place subsequently on continued further axial compression of the body.

**3,409,285**  
**SHOCK ABSORBER ASSEMBLY**  
Heinrich Maennig, Kassel, Germany, assignor to Rhein-stahl Henschel A.G., Kassel, Germany, a corporation of Germany  
Filed Feb. 25, 1966, Ser. No. 530,103  
Claims priority, application Germany, July 12, 1965, H 56,562  
6 Claims. (Cl. 267—57)



A mechanical suspension is provided for a vehicle including a vehicle frame. A torsion bar has one end thereof connected with the frame and the opposite end thereof connected with one end of an axially-acting spring column. The opposite end of the spring column is connected with a housing which supports an axle upon which a wheel is mounted. The housing is also interconnected with a shock absorber which in turn is connected with the vehicle frame.

**3,409,286**  
**SELF-LEVELING VEHICLE SUSPENSION SYSTEM**  
Hans Erdmann, Frankfurt am Main, Germany, assignor to Alfred Teves KG, Frankfurt am Main, Germany, a corporation of Germany  
Filed Apr. 8, 1966, Ser. No. 541,230  
Claims priority, application Germany, Sept. 18, 1965, T 29,428  
9 Claims. (Cl. 267—64)



A level-maintaining shock-damping suspension cylinder having a dash-pot piston (8) reciprocable in the cylinder (15) against a coil spring (2) surrounding the cylinder while a lever control rod (13) within the cylinder cooperates with a cylindrical control slide (21) for controlling a pumping action whereby a spring seat (20) of the suspension spring is displaced relatively to an attachment point (46) on the vehicle to restore the level of the vehicle body upon reciprocation of the piston during movement of the vehicle after loading; the control slide (21) regulates fluid flow through valved passages and the rate of response of the damping system to fluctuation in the positions of the vehicle body and wheel assembly.

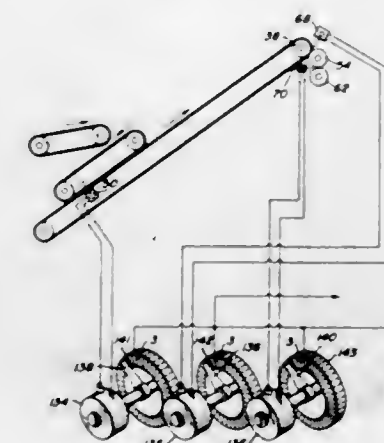
**3,409,287**  
**HEEL STIRRUP ASSEMBLIES**  
George R. Chervenka, St. Louis, Mo., assignor to Affiliated Hospital Products, Inc., a corporation of Delaware  
Filed July 12, 1965, Ser. No. 471,345  
16 Claims. (Cl. 269—328)



A heel stirrup assembly mounted on a physician's examining table. The assembly includes a channel-like track secured to the table and having a slide mounted therein. A bar is connected to the slide at one end for movement about two axes, and at its other end is provided with a hinge-mounted heel stirrup. A height adjuster element is mounted on the table beyond the end of the track, and it includes a pair of legs of different heights which are rigidly affixed to one another so as to form a right angle. The height adjuster element is shiftable between two positions, one in which the long leg is presented vertically and the other in which the short leg is presented vertically. The legs are provided with upwardly opening notches for re-

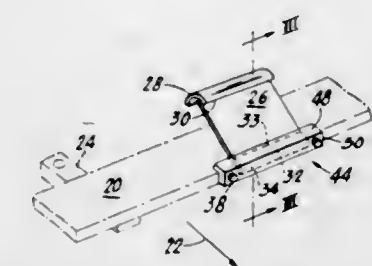
ception of the bar, while the bar is provided with downwardly presented notches for reception of the vertically presented leg.

**3,409,288**  
**MEANS FOR FOLDING SHEETS**  
Robert L. Sjoström, Boca Raton, Fla., assignor to Sjoström Automations, Inc., Boca Raton, Fla., a corporation of Florida  
Filed June 23, 1966, Ser. No. 559,868  
9 Claims. (Cl. 270—69)



A sheet-folding machine for effecting a plurality of transverse folds in a sheet as it moves from the rear to the forward end of the machine. The folding means include means for measuring the length of each successive sheet as it moves through the machine. A folding mechanism is actuated when a sensing device has measured a preselected portion of the measured sheet, as measured by the measuring means. The measuring means and sensing means each include a commutator having a plurality of contacts and a rotor rotatable over contacts at preselected, uniform speeds. The measuring means rotor will move from one contact to a second to indicate the length of the sheet measured. The sensing means rotor moves at a different rate when actuated by the leading edge of the sheet and, therefore, will reach a contact electrically corresponding to the second contact reached by the measuring rotor at a different time interval, which permits the sensing device to then actuate the folding mechanism.

**3,409,289**  
**SPRING FEEDER APPARATUS**  
Ralph K. Barnes, Lutherville, Md., assignor to Koppers Company, Inc., a corporation of Delaware  
Filed June 20, 1967, Ser. No. 647,517  
5 Claims. (Cl. 271—61)



An improved spring feeder assembly for mounting on a reciprocating feeder bar to advance corrugated paper-board blanks into blank processing machinery comprising a plate of spring steel with a lip secured to its trailing edge for gripping the trailing edge of a blank and with its leading edge formed in an angular portion for gripping the leading edge of the feeder bar, the plate being secured to the bar by an angular member corresponding to the



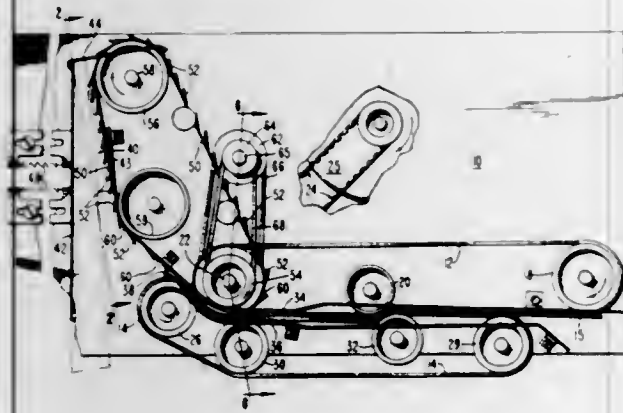
angular portion bolted to the bar in overlapping relation to the angular portion to shift the point of flexure of the plate to a line behind the leading edge of the bar.

3,409,290

**SHEET STACKING APPARATUS**

Harry R. Bergland, St. Clair Shores, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Nov. 14, 1966, Ser. No. 593,986  
1 Claim. (Cl. 271-69)

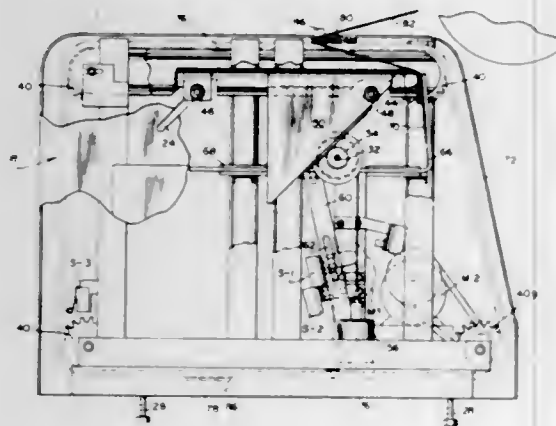


The disclosure embodies a high speed sheet stacking mechanism of the type in which sheets are fed singly in sequential order into an expansible bin.

3,409,291

**FLAT LAY STACKER**

John W. Mitchell, Somerset, and Arthur C. Bergeron, Seekonk, Mass., assignors to A. J. Mitchell Co., Fall River, Mass., a corporation of Massachusetts  
Filed Feb. 6, 1967, Ser. No. 614,169  
10 Claims. (Cl. 271-3)

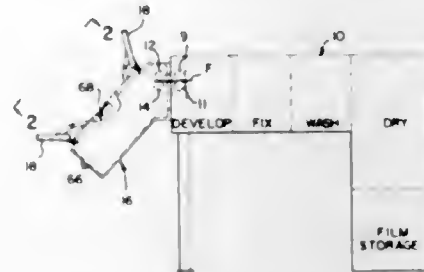


A flat lay stacker device for placing individual pieces of flexible sheet material such as shirt fronts one upon the other in a registered relationship so that the stacked pieces have the leading edges even when placed on a flat surface. The stacker includes a frame, a flat platform which is moved downwardly at a 45° angle in an indexed manner as pieces are laid down on the platform, a clamp which moves between an open and a closed or clamping position to grasp the leading edge of the piece material fed to the stacker, and a traveling bar which travels in one direction circumscribing the platform of the stacker which lays down the piece held by the clamp onto the flat platform. The clamp and bar operating in conjunction with motive means to lower the platform along a 45° path and in combination with a work piece indexing device which feeds pieces to the stacker.

3,409,292  
**MACHINE FOR FEEDING X-RAY FILM OR THE LIKE**

Henry Hope, 195 Welsh Road, Huntingdon Valley, Pa. 19006

Filed Jan. 24, 1967, Ser. No. 611,464  
5 Claims. (Cl. 271-10)



A machine for receiving an exposed film, or number of films, and feeds them automatically, and one at a time, to a film developing and drying machine.

3,409,293

**TABULATING CARD READER INPUT HOPPER FEED STRUCTURE**

Wilbur C. Ahrens, Rochester, N.Y., assignor to Friden, Inc., a corporation of Delaware

Filed Feb. 11, 1965, Ser. No. 431,859  
15 Claims. (Cl. 271-42)



1. Apparatus for feeding tabulating cards including an end corresponding to a first dimension thereof and an edge corresponding to a second dimension thereof one at a time and endwise from a deck of such cards comprising means defining a hopper for receiving and holding said deck of cards between a back portion and a front portion of the hopper; pressuring means located at said front portion of the hopper for reciprocal motion toward and away from said hopper back portion so as to apply and release pressure from said deck of cards therebetween; picker means located at the back portion of said hopper and including a portion thereof adapted to engage an end of the rearmost card only of said deck of cards; guide means for guiding said picker means for reciprocal motion between a first position adjacent a mutual end of said deck of cards and a second position a portion of the way along said deck of cards; and means for coordinating the reciprocal actions of said pressuring means and said picker means so that said deck of cards is under pressure during movement of said picker means from said first position at least a major portion of the way toward said second position.

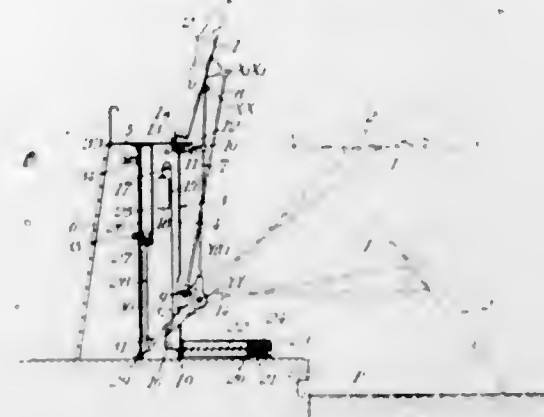
3,409,294

**DEVICES FOR TEACHING DIVING**

Raymond Brosse, 67 Ave. du Marechal Foch, 95

Deuil-la-Barre, France

Filed Oct. 31, 1966, Ser. No. 590,965  
10 Claims. (Cl. 272-1)



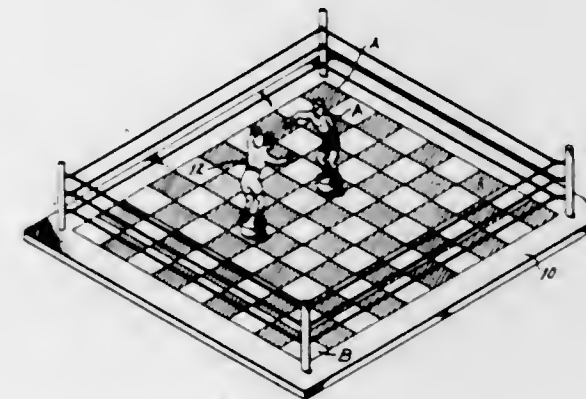
A device for teaching diving has a fixed frame and a movable board with a head portion and a foot portion to support a diver. The board is connected to the frame by two crossing rods each pivoted to the board and the frame for turning the board over as the rods move from an upright position to a horizontal position. The board is returned to the upright position after the diver slides from it.

3,409,295

**MAGNETIC BOXING GAME**

Solomon Bernstein, 1367 Morrissey Blvd., Quincy, Mass. 02169

Filed May 19, 1966, Ser. No. 551,253  
3 Claims. (Cl. 273-85)



1. A boxing game comprising a game board having a plurality of playing positions thereon and a plurality of pawns, each of said pawns comprising a pedestal, an upright body portion, and arms extending outwardly from said body portion, the outermost portion of one of said arms being polarized to form a positive magnetic field and the outermost portion of the other arm being polarized to form a negative magnetic field.

3,409,296

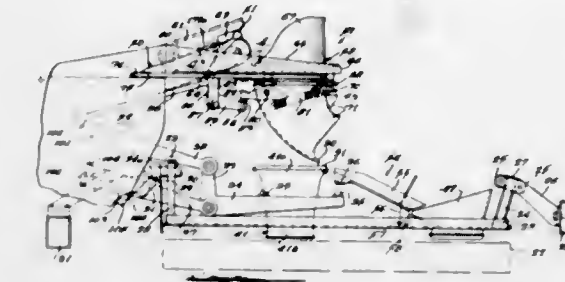
**PIN HANDLING MECHANISM**

William F. Huck, Forest Hills, and James B. Wyatt, Brooklyn, N.Y., Alexander J. Albrecht, Franklin Lakes, N.J., and Michael G. Gautraud, Muskegon, Mich., assignors to Brunswick Corporation, a corporation of Delaware

Filed Aug. 7, 1964, Ser. No. 388,051  
6 Claims. (Cl. 273-43)

A bowling pin handling apparatus having pin distributor mechanism including pivotal chute structure supported by a ring member and having actuating mechanism for causing pivoting of the chute with coaxing pin support and guide structure for receiving pins from the

anism for causing pivoting of the chute with coaxing pin support and guide structure for receiving pins from the



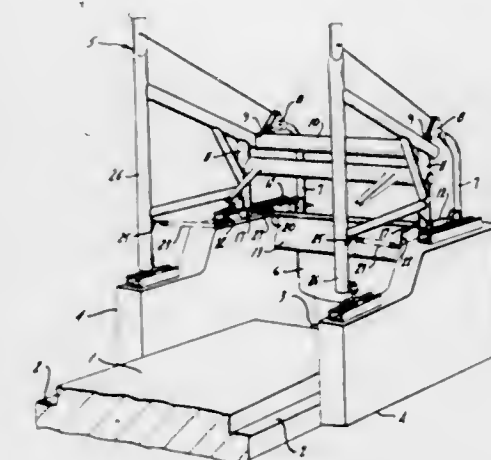
chute to hold pins in storage, a pin conveyor leading to the pin distributor with a three-position pin gate, and an actuating clutch mechanism.

3,409,297

**BOWLING PIN IMPACT CURTAIN WITH DISPLACEABLE FORWARD EDGE**

Ernest T. Witzke, Box 228, Rte. 3, Lake Geneva, Wis. 53147

Filed Sept. 8, 1966, Ser. No. 577,860  
10 Claims. (Cl. 273-53)



7. In a bowling apparatus, an alley, a pit located at the rear of the alley, a frame mounted above the pit, a cushion carried by the frame and extending transversely of the pit in a position to be engaged by a bowling ball, a flexible curtain having a first end fixed to the frame and located adjacent the cushion and having a second end disposed forwardly and upwardly of said cushion, a plurality of guide members extending longitudinally of the alley and connected to said second end of the curtain, guide means carried by the frame for mounting said guide members for movement relative to the frame and longitudinally of the alley, and counterbalancing means connected to said guide members for counterbalancing the weight of said second end of the curtain.

3,409,298

**FOOTBALL GAME INCORPORATING AN ECCENTRICALLY WEIGHTED ROLLABLE DISC**

Gale E. Woods, 5038 E. Grandville Road, Rte. 3, Westerville, Ohio 43081, and Donald G. Woods, Westerville, Ohio; said Donald G. Woods assignor to Hugh A. Kirk, Toledo, Ohio

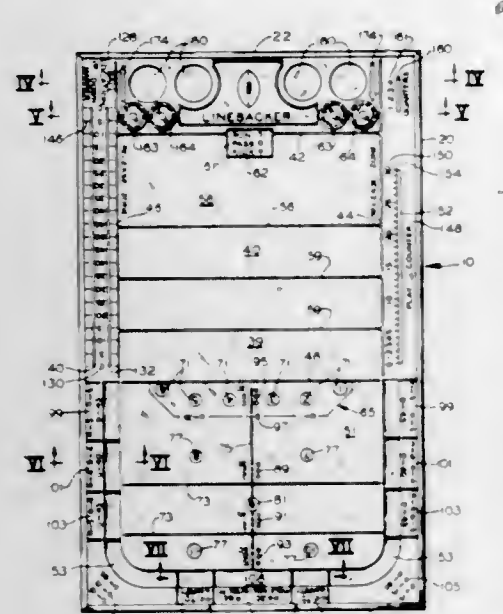
Filed Sept. 17, 1965, Ser. No. 488,161  
9 Claims. (Cl. 273-94)

A longitudinally inclined rectangular board, with adjustable legs, representing a football playing field for teaching football, and a plurality of defensive game pieces



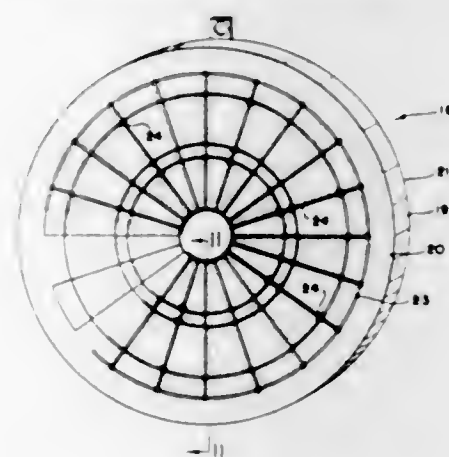
such as figurines to be set in certain areas on the field at lower portion of the board and a plurality of rollable offensive game pieces such as off-balanced disks representing runs, passes, and kicks, which are rolled down the board to be stopped by the placement of certain of the defensive game pieces. Around the lower edge of the board there are provided trough compartments or pockets

which more accurately tests the elevational and lateral aiming skill of the archer by reason of certain of the target



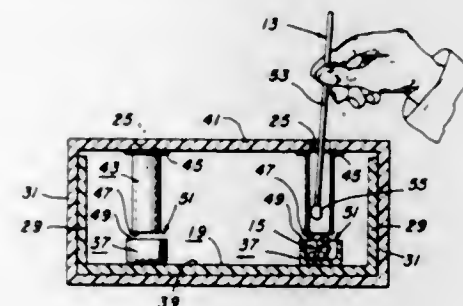
regions being elongated in either the horizontal or the vertical direction.

**3,409,301**  
**EXPANDED POLYETHYLENE DART BOARD**  
Charles E. Studen, R.D. 1, Pekin Road,  
Newbury, Ohio 44065  
Filed Apr. 6, 1964, Ser. No. 357,456  
4 Claims. (Cl. 273-102)



1. A dart board comprising a panel of expanded polyethylene, said panel including a generally planar surface, and indicia on said surface to provide a means for scoring.

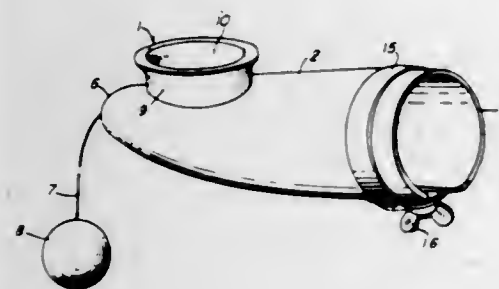
**3,409,302**  
**DOODLEBUG FISHING GAME**  
Billy Jack Harrison, Kelsor, Ark.  
(Box 207, Batesville, Ark. 72501)  
Filed May 10, 1965, Ser. No. 454,531  
7 Claims. (Cl. 273-139)



A doodlebug fishing game simulating fishing a doodlebug from its vertical hole in the ground with a broomstick. The game includes a base member having a top surface carrying a plurality of holes therethrough with a plurality of tubular members being concentric with the

into which the offensive game pieces roll for obtaining different scores. Along opposite sides of the board are markers movable in numbered rows of holes or plastic strips for indicating the number of downs, plays, yardage gains, location of the ball, quarters, and score. The board also may be provided with recesses for drinks and/or ash trays.

**3,409,299**  
**FINGER MOUNTED TETHERED BALL APPARATUS**  
Takashi Yoneshige, 3120 Olu St.,  
Honolulu, Hawaii 96816  
Filed Dec. 22, 1964, Ser. No. 420,321  
4 Claims. (Cl. 273-98)



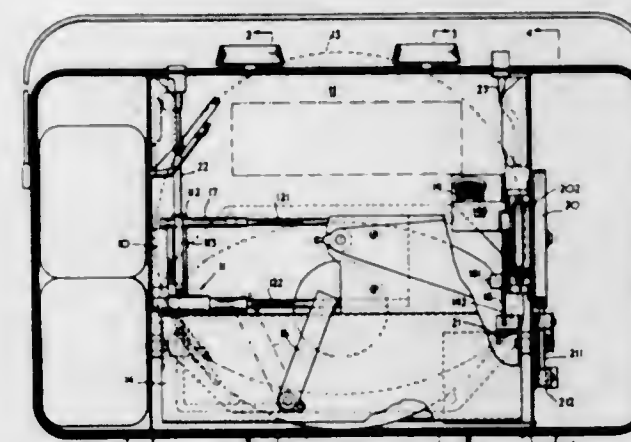
Game apparatus having a closed ended sheath fittable on a single finger and adjustable to fit fingers of different sizes, a cup mounted on an outer end portion of the sheath, and a ball connected by a cord to the sheath and catchable in the cup.

**3,409,300**  
**ARCHERY TARGET**  
Albert M. Rockwood, Muskegon, Mich., assignor to Brunswick Corporation, a corporation of Delaware  
Filed Feb. 15, 1965, Ser. No. 432,551  
5 Claims. (Cl. 273-102)

This invention relates to an integrated archery target

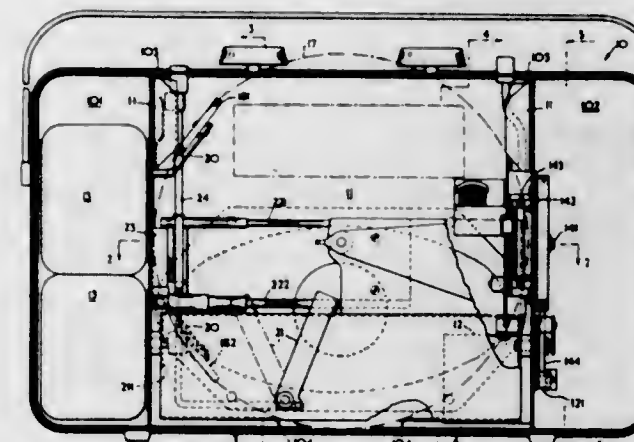
holes and depending therefrom. A pair of drawer-like members are slidably received in opposite ends of the base member and have recesses therein. Magnetically attractable game pieces are adapted to be carried in the recesses for withdrawal through the holes when the game is played by inserting a magnet-tip rod in the holes.

**3,409,303**  
**SOUND REPRODUCING APPARATUS**  
Paul Baron Henn Robinson, 26 Four Ashes Road, Bentley Heath, Knowle, Solihull, England, and Anthony Alfred James Homer, 116 Dorridge Road, Dorridge, Solihull, England  
Filed Sept. 7, 1965, Ser. No. 485,296  
3 Claims. (Cl. 274-15)



Record playing apparatus operative in any position and including, a pickup constrained to move in a linear path along the radius of a record disc in assembly with apparatus which affect an electrical connection when said pickup reaches the run-out grooves of said record disc to cause the pickup to be lifted from record disc engagement and to be returned via the spring action of a lever to the start position, a drive wheel in contact with the underside of said record disc and two idler wheels in contact with the other side of said record disc for affecting stabilization of rotation of said record disc.

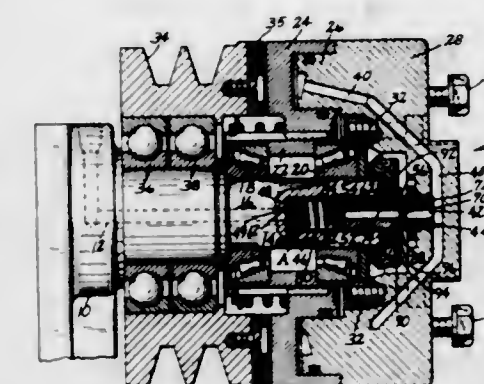
**3,409,304**  
**SOUND REPRODUCING APPARATUS**  
Paul Baron Henn Robinson, 26 Four Ashes Road, Bentley Heath, Knowle, Solihull, England, and Anthony Alfred James Homer, 116 Dorridge Road, Dorridge, Solihull, England  
Filed Sept. 27, 1965, Ser. No. 490,569  
3 Claims. (Cl. 274-39)



The invention provides a record player in which the disc is supported on one side by spaced guide wheels and a drive wheel, and centered and located by a pressure

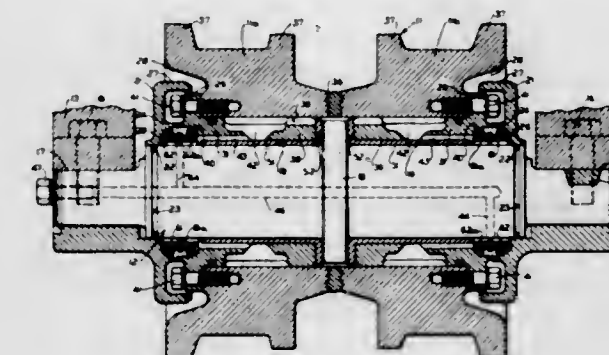
spigot engaged in the disc center from the opposite side, thus enabling the disc to be driven satisfactorily in any spacial position.

**3,409,305**  
**ROTARY AIR SEAL DEVICE**  
Paul J. Nieland, South St. Paul, Minn., assignor to Horton Manufacturing Co., Inc., Minneapolis, Minn.  
Filed Apr. 12, 1966, Ser. No. 546,121  
4 Claims. (Cl. 277-40)



The disclosure relates to a rotary air seal for passing air between first and second relatively rotating parts axially aligned including one of the members as a shaft having an accessible end and a bore extending through the end together with a tubular cartridge having a single lateral wall with an open outer end and an inner end portion. A sealing member is provided having a cylindrical body and mounted in the tubular cartridge, the sealing member having an air passageway on the longitudinal axis thereof together with means within the cartridge for urging the sealing member from the cartridge together with shoulder means carried by the cartridge and the sealing member for limiting the extent that the sealing member is urged from the tubular cartridge and shoulder means for preventing rotation of the sealing member in the cartridge.

**3,409,306**  
**BEARING SEAL STRUCTURE**  
Allan A. Hayatian, Lomita, Calif., assignor, by mesne assignments, to Pettibone Mulliken Corporation, a corporation of Delaware  
Filed Oct. 21, 1964, Ser. No. 405,455  
12 Claims. (Cl. 277-92)



1. In a seal construction, a shaft, a rotatable member mounted for rotation about said shaft, said rotatable member formed with a first annular recess adjacent one end of said member, a cap on said shaft at said end of said member, said cap formed with a second annular recess directly opposite and facing said first recess, each said recess having an outwardly diverging conical surface, a first metal ring at least partially disposed in said first recess, a second metal ring at least partially disposed in said second recess, said metal rings each having a cylindrical portion encompassing said shaft and of greater diameter than said shaft



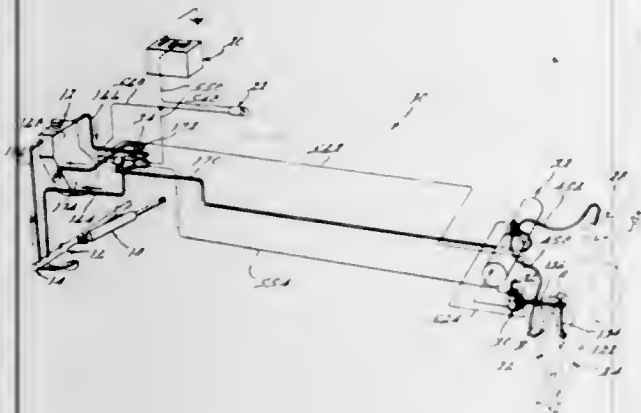
and an abruptly outwardly projecting flange on one end of said cylindrical portion, the flanges of said metal rings being in intimate metal-to-metal sealing contact, a first resilient ring disposed around said cylindrical portion of said first metal ring and disposed in said first recess, a second resilient ring disposed around said cylindrical portion of said second metal ring and disposed in second recess, each said resilient ring being stressed in assembled position and shaped with a resilient midsection of relatively large cross section, said midsection sealing tightly against said conical surface, and having a small diameter inner cylindrical portion integrally joined with said midsection lying along the outside of said cylindrical portion of said metal ring and being of substantially greater length than the thickness of said midsection and terminating in a tip bearing against the flange of the metal ring about which said resilient ring is disposed, said resilient rings urging said flanges into contact and floatingly mounting said metal rings approximately centrally relative to said shaft.

3,409,307

**VEHICLE LEVELING SYSTEM**

William W. Higginbotham, Monroe, Mich., assignor to Monroe Auto Equipment Co., Monroe, Mich., a corporation of Michigan

Filed Mar. 24, 1966, Ser. No. 537,056  
21 Claims. (Cl. 280-6)



1. In a leveling system for a vehicle having a source of pressurized fluid and at least one fluid pressure responsive elevating means for raising or lowering a first portion of the vehicle with respect to a second portion thereof, fluid accumulator means adapted to receive fluid from the source of pressurized fluid and supply the same to the elevating means, first fluid conduit means for communicating fluid between the source thereof and said accumulator means, second fluid conduit means for communicating fluid between said accumulator means and the elevating means, valve means adapted to control the flow of pressurized fluid between the fluid source and said fluid accumulator means, and control means adapted to selectively actuate said valve means, whereby to permit fluid to flow between said fluid accumulator means and the elevating means.

3,409,308

**SKI BOOT HEEL FIXTURE**

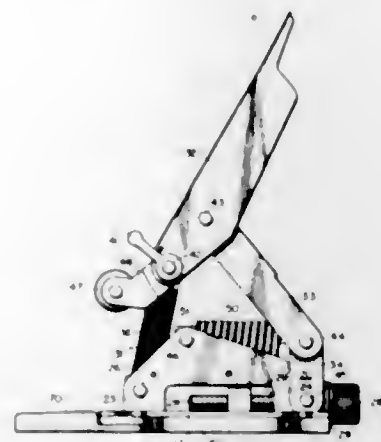
Toshiaki Komatsu, Tokyo, Japan, assignor to Hope Kabushiki Kaisha, Tokyo, Japan, a corporate body of Japan

Filed Sept. 5, 1967, Ser. No. 665,514  
Claims priority, application Japan, Sept. 14, 1966, 41/86,613

7 Claims. (Cl. 280-11.35)

In this ski boot heel fixture, a base, a front lever, an operating lever, a connecting lever and a rear lever are connected in turn with pins in pairs. The rear lever is nor-

mally pulled to the base by a spring. The length of the front lever is adjustable so that the height of a heel-fixing roll, fixed to an arm pivoted to the said front lever, may be adjusted. The base slides in the lengthwise direction in a guide frame attached to the ski and can be fixed in a



proper position. When a skier pushes the free end of the operating lever down or up, the heel-fixing roll will be fixed tightly in (or unfastened) from a groove in the heel of the ski boot. If an unreasonable force, in excess of the pressure of the spring, is applied to the heel, the boot will be freed from the ski.

3,409,309

**COMPACT SELF-CONTAINED SUSPENSION MECHANISM FOR VEHICLE WHEELS**

Dorwin R. Larsen, Washington, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Aug. 24, 1966, Ser. No. 574,617  
6 Claims. (Cl. 280-124)



A vehicle wheel is carried on a pivot arm which extends from an axle journaled in the vehicle body. A portion of the axle has a center line offset from that of the principal portion of the axle and a very short stroke trunnion mounted hydro-pneumatic cylinder is coupled directly to the axle at the offset portion to provide resilient resistance to oscillation of the wheel, arm and axle relative to the vehicle body.

3,409,310

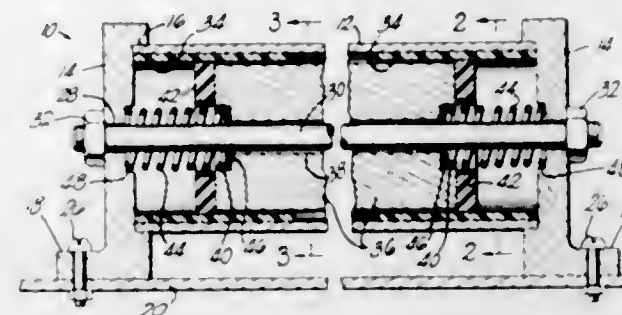
**VEHICLE ANTI-SKID STABILIZING DEVICE**

Buddie J. Hayner, Flushing, Mich., assignor to Flushing Research Corporation, Flushing, Mich., a corporation of Michigan

Filed May 5, 1967, Ser. No. 637,871  
3 Claims. (Cl. 280-150)

An elongated weight having a longitudinal bore there-through is slideably disposed within a hollow casing having a Teflon lining. End plates bearing bracket means for mounting the device to a vehicle close the ends of the casing and support a guide rod which extends through the casing and the bore of the sliding weight. The end plates also bear bracket means for mounting the device transversely of the longitudinal axis of a vehicle near the rear thereof. A pair of Teflon bearings are supported at each end of the weight and arranged to space and slideably sup-

port it within the Teflon lining of the casing. A pair of counterbores are provided in each end of the weight, a pair of annular Nylatron bushings are seated within the counterbores, respectively, surrounding the guide rod, and a pair of variable pitch compression springs are disposed between each end plate and the bushing within the counter-



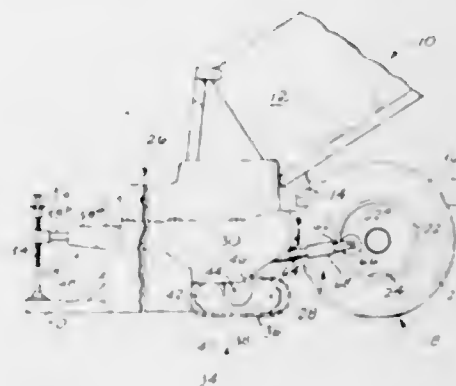
bore in the rear end of the weight, respectively. The variable pitch springs yieldingly urge the weight to return to a central position within the casing with a pressure increasingly proportional to the extent of transverse displacement of the weight from the center of the casing when the weight is displaced by skidding movement of the vehicle.

3,409,311

**TRANSPORT APPARATUS FOR TOWING A VEHICLE**

Jack D. Layton, 4725 Turner Road, Salem, Oreg. 97302

Filed July 15, 1966, Ser. No. 565,600  
6 Claims. (Cl. 280-415)



Apparatus for towing a vehicle such as a spreader which includes a screed adjacent its rear end and ground-traveling support means supporting the forward end of the spreader. The apparatus includes a detachable tow bar which is detachably connected to the spreader at points disposed above the screed and spaced laterally toward opposite sides of the spreader. The tow bar extends rearwardly over the screed and in operative position is coupled to the rear end of the towing vehicle. When so coupled, the tow bar holds the screed elevated from the ground and the spreader is in condition to be towed backwardly by the towing vehicle. A wheeled transport means is provided under the ground-traveling support means in the spreader, which elevated the forward end of the spreader.

3,409,312

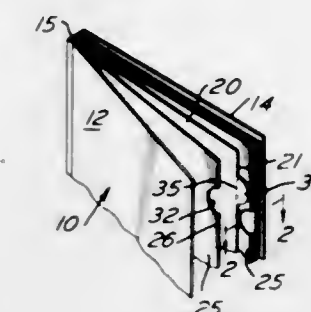
**PAGE MARKING MEANS**

David V. Wills, 4828 Brown St., Philadelphia, Pa. 19139

Filed Oct. 20, 1966, Ser. No. 588,681  
2 Claims. (Cl. 281-42)

1. A book with page marking means comprising a plurality of bound imperforate leaves of equal size and uniform thickness each having an outside edge, only al-

ternative first leaves of said book each having a tab, said tab being of reduced dimensions and being foldably secured with and extending only from a portion of the outside edge of its leaf, said tab being foldable to fit inwardly from said edge within said book while overlying a portion on one side of said leaf and alternately unfolded to extend outwardly beyond said edge to mark a page of said book, alternate second leaves of said book each adjacent to a said first leaf and each having a contiguous edge with



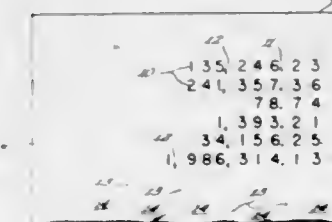
respect to said outside edge of its said adjacent first leaf, said contiguous edge having a configuration with an indentation corresponding to said tab for an even reception of said tab thereby within leaves of said book when said tab is folded inward, each of said tabs being normally folded inwardly to overlie its leaf and being disposed within the indentation in the edge of the adjacent leaf whereby the tabs do not add to the thickness of the book when foldably disposed within the outside edges of the leaves.

3,409,313

**COMPUTING MACHINE TAPES**

Ed N. Cullom IV, Atlanta, Ga., assignor to Control Tape, Inc., Atlanta, Ga., a corporation of Georgia

Filed July 13, 1966, Ser. No. 564,780  
1 Claim. (Cl. 283-66)



A computing machine tape has on a longitudinal face area a plurality of longitudinally extending coextensive spaced linear segregators parallel to each other and to the longitudinal edge of the tape, and which subdivide the area into longitudinal lanes each of a width to receive as a group a predetermined number of figures of a numeral imprinted across the area and in closely columnar relation to the other numerals.

3,409,314

**PIPE COUPLINGS**

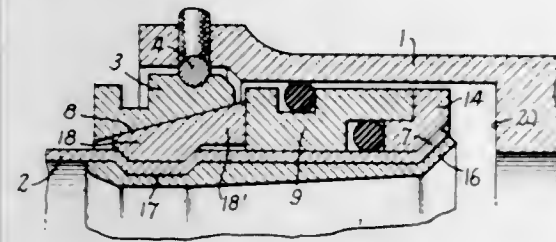
Homer D. Roe, 8 Chapin Place, Huntington, N.Y. 11743

Filed May 27, 1966, Ser. No. 553,448  
1 Claim. (Cl. 285-18)

A coupling for use with thin walled light weight or malleable pipe provides a casing, means for securing an end portion of the pipe therein and sealing means between the open pipe end and the casing. A rigid sleeve in the pipe affords a peripherally grooved backing against



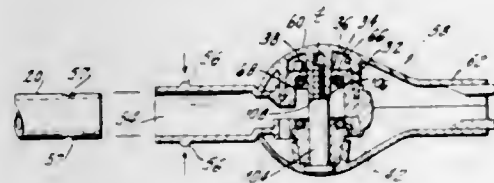
which a deformed portion of the pipe is held by constricting means between the pipe and the casing. Said means include a split ring wedge having a die part extending into the deformed portion of the pipe to provide in effect



a mechanical interlock between the pipe end and the casing thereby to prevent axial separation of the pipe from the casing under extreme internal pressure conditions.

### 3,409,315 SWIVEL JOINT

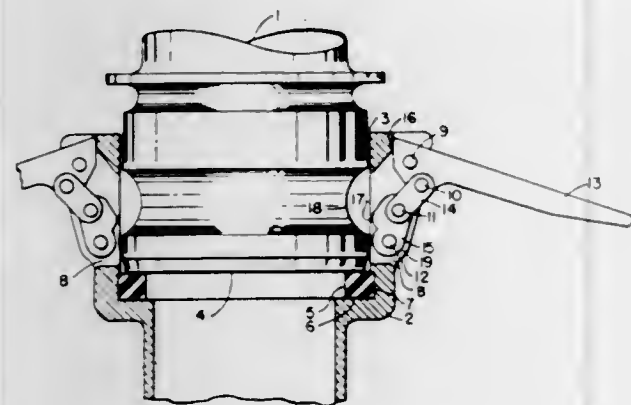
Louis Wichers, Nyack, and Harvey E. Senft, White Plains, N.Y., assignors to Swivelier Company, Inc., Nanuet, N.Y., a corporation of New York  
Filed May 17, 1966, Ser. No. 550,676  
10 Claims. (Cl. 285—175)



A swivel joint of the type having particular applicability in conjunction with electrical fixtures, which includes a pair of outwardly extending frusto-conical surfaces in engagement with a pair of complementary internal frusto-conical surfaces sandwiched thereabout. A biasing means in the form of an expansion type spring member is located intermediate the exterior conical surfaces, for urging such surfaces apart into firm frictional engagement with their complementary surfaces and thereby restrain the selected angular disposition of the swivel joint.

### 3,409,316 CONDUIT COUPLING

David E. Jewell, Littleton, Colo., assignor to The Gates Rubber Company, Denver, Colo., a corporation of Colorado  
Filed Dec. 5, 1967, Ser. No. 688,068  
8 Claims. (Cl. 285—311)

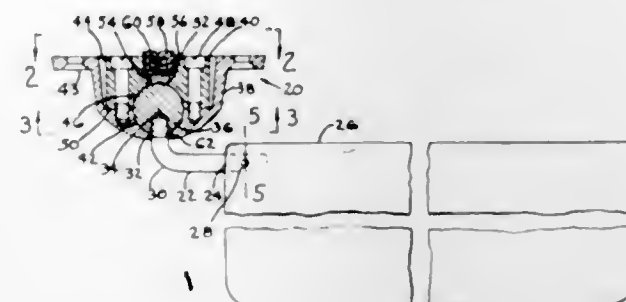


A coupling for use with flexible pipe or other type conduit wherein the coupling mechanism is a toggle actuated cam rotated inwardly and axially onto an adapter

groove forcing the adapter concentrically within a coupler.

### 3,409,317 BALL AND SOCKET JOINT

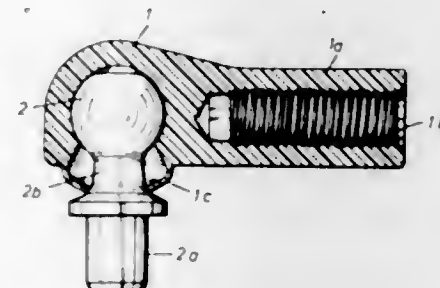
Arthur James Richards, 4240 Yorkshire Road, Detroit, Mich. 48224  
Filed Oct. 18, 1965, Ser. No. 497,131  
1 Claim. (Cl. 287—21)



The invention disclosed relates to a ball and socket joint having a ball adapted for rotatable movement in the socket of a socket member. A rod attached to the ball and projecting through an opening in the socket member carries a sun visor or a mirror of the type used with automotive vehicles. A friction element retained either by the ball or by the socket member is forced by a spring against the surface of the socket member or the surface of the ball to provide a frictional force to hold the ball against movement in the socket. The friction element and the surface the element bears against are fabricated from materials that have a high static coefficient of friction and a relatively low sliding coefficient of friction. The pressure of the spring on the friction element and the high static coefficient of friction between the material of the element and the material the element bears against provide the frictional force to hold the ball securely in a selected stationary position. The relatively low coefficient of friction between the material of the element and the material the element bears against allows the ball to be easily moved between various selected stationary positions.

### 3,409,318 ANGLE JOINT, ESPECIALLY FOR THE LINKAGE OF VEHICLES

Rudolf Gottschald, Osterath, Germany, assignor to A. Ehrenreich & Cie, Dusseldorf-Oberkassel, Germany  
Filed May 25, 1966, Ser. No. 552,949  
Claims priority, application Germany, May 26, 1965, E 21,708  
2 Claims. (Cl. 287—90)



An angle joint, especially for use in connection with vehicles, in which a housing member has a tubular shank and a head forming a socket with a spherical inner surface slidably and directly engaging the ball head of the ball stud forming a part of the angle joint, said spherical inner surface terminating at a plane extending through

said ball head at least approximately transverse to the longitudinal axis of said ball stud while being spaced from the neck end of said ball head, the wall of said housing member head which defines said spherical inner surface of said socket continuing in a direction away from the spherical inner surface in spaced relationship to said neck portion and terminating in a thin annular sealing bellows extending inwardly toward and finally engaging said neck portion so as to provide a lubricant chamber having its outer wall partly formed by the wall of said housing member head and partly formed by said bellows.

### 3,409,319 COLLET LOCKING DEVICE

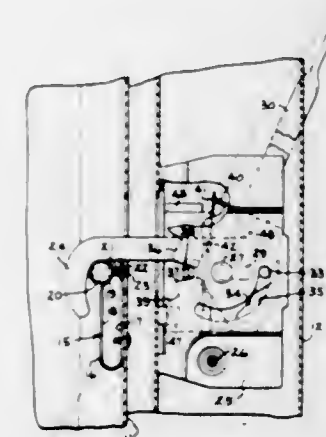
George J. Van Hecke, Detroit, Mich., assignor to Huck Manufacturing Company  
Filed July 27, 1966, Ser. No. 568,291  
3 Claims. (Cl. 287—125)



A coil member for locking together two threadably engaged members, by fixing said coil member at one end to one of said members and with the other end free to engage, in ratchet fashion, a projection on the other member.

### 3,409,320 LATCH AND SWITCH-OPERATING MECHANISM FOR CABINET CLOSURE

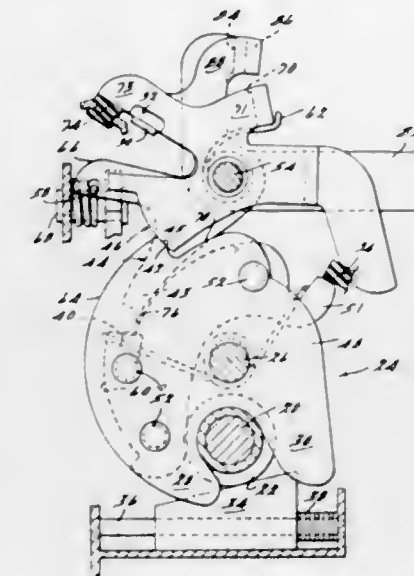
William A. Eckerle, Louisville, Ky., assignor to General Electric Company, a corporation of New York  
Filed Sept. 15, 1966, Ser. No. 579,682  
10 Claims. (Cl. 292—113)



A combination latch and switch-operating mechanism for a cabinet member and a closure member. The mechanism comprises a strike on one of the members and a latch on the other of the members. A manually-operable handle is provided to move the latch between an unlatched position and a latched position, and to also operate a switch when the latch is in the latched position. The latch has a tab which is moved with it by the handle with respect to a relatively stationary member that is provided with a slot and a notch. The latch, strike and tab are arranged relative to each other such that the tab will enter the slot only when the latch properly engages the strike, but will be prevented from entering the slot and will instead enter the notch and prevent the handle from operating the switch when the latch fails to properly engage the strike.

### 3,409,321 DOOR LATCH

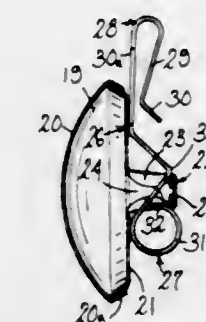
Donald R. Wolfslayer, Bloomfield Hills, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware  
Filed Dec. 30, 1964, Ser. No. 422,459  
13 Claims. (Cl. 292—216)



A motor vehicle door latch wherein the rotary bolt has two separate teeth and two separate detents or pawls are provided, one for coaction with each tooth on the rotor. The detents are arranged so that, as the door is closed, first one of the detents falls into the trace of the radial face of the corresponding tooth and thereafter, with further closing movement of the door, the other detent falls into the trace of the radial face of the second tooth.

### 3,409,322 PULL DEVICE FOR SLIDE FASTENERS

George R. Albanese, Cheshire, and Robert C. Hall, Naugatuck, Conn., assignors to The Ball & Socket Manufacturing Company, Cheshire, Conn., a corporation of Connecticut  
Filed June 27, 1967, Ser. No. 649,318  
9 Claims. (Cl. 294—26)



This disclosure relates to an ornamental pull attachment for the slider of slide fasteners, more commonly known as zippers. This pull comprises a button member having an eye defined on and extending from the rear surface thereof and a tang member which is so formed that it may be inserted through and locked in the eye. The tang portion further has an upper hook portion which allows it to be attached to the slider of the slide fastener.

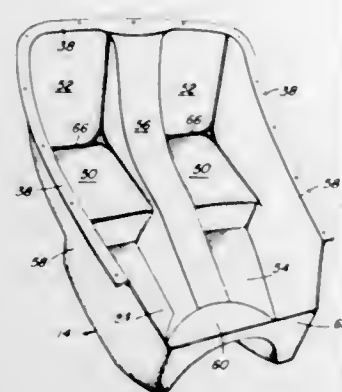
### 3,409,323 ONE PIECE INSERT BODY

Frederick G. Schweser, % Bird Engineering, Box 427, Omaha, Nebr. 68101  
Filed Mar. 24, 1967, Ser. No. 625,644  
4 Claims. (Cl. 296—28)

This invention is a one piece insert body, having integral walls, seat means and floor means for use in com-



ination with a generally one piece roadster vehicle shell body of conventional construction, the roadster shell body and the insert body having complementary overlapping flanges which are secured together to keep the insert body



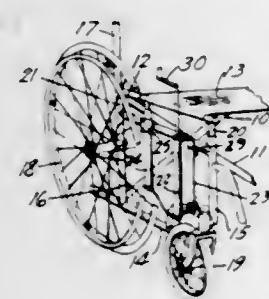
secured in the roadster shell body. Quick and easy assembly of the insert body in the roadster shell body is one great advantage of this invention. It may be made of metal or fiberized glass reinforced plastic.

3,409,324

#### HYDRAULIC DEVICE AND WHEELCHAIR EQUIPPED THEREWITH

Carl W. Oja, St. Paul, Minn. (501 E. South St., Redwood Falls, Minn. 56283), and Richard L. Scheuerman, Inver Grove, Minn.; said Scheuerman assignor to said Carl W. Oja

Filed Aug. 22, 1966, Ser. No. 573,900  
10 Claims. (Cl. 297-45)



The invention is directed to a hydraulic device having an elongated hydraulic pump member with a special sleeve insert defining the lateral surfaces of the hydraulic fluid reservoir thereof. The pump member has a crank receiving recess at one end thereof permitting removal of the pump actuating member from the hydraulic pump. An elongated hydraulic jack member is also provided, preferably also with a sleeve insert defining the lateral surfaces of its hydraulic fluid reservoir. These parts are connected with a flexible hydraulic conduit and the assembly is particularly useful as a part of a wheelchair to facilitate the narrowing thereof for passage through narrow passages (such as some doors).

3,409,325

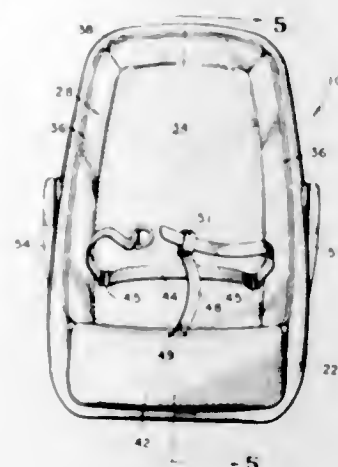
#### INFANT'S CHAIR

John J. Hamilton, James F. Sellars, Jr., Thomas G. Webb, and Edwin K. Moore, Columbus, Ind., assignors to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana

Filed Mar. 3, 1967, Ser. No. 624,648  
16 Claims. (Cl. 297-377)

An infant's chair comprising a shell having a seat, bottom, and side walls. A handle is swingably connected to said shell and locking means are provided for releas-

ably locking said handle in different positions of adjustment with respect to said shell whereby said shell may

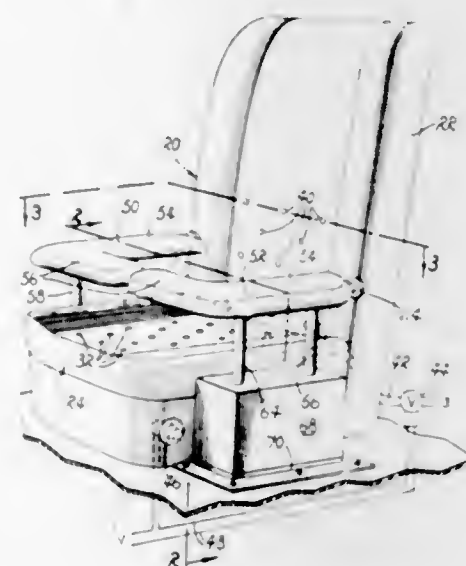


3,409,326

#### SAFETY SEAT FOR VEHICLES

Fredrick G. Kerner, 4638 E. Grand Ave., Fresno, Calif. 93702

Filed Oct. 10, 1966, Ser. No. 585,694  
7 Claims. (Cl. 297-384)



The invention consists of a seat with armrests, the seat having seat and back portions formed with openings connected to a source of vacuum for providing a suction on the body portions of the occupant of the seat and inducing circulation of air around the occupant. The armrests have body restraining portions which are adjustably resiliently mounted for easy access to the seat and to provide a shock absorbing action when a force or strain is placed thereon to decrease chances of injury to the occupant in the event of a sudden stop or accident.

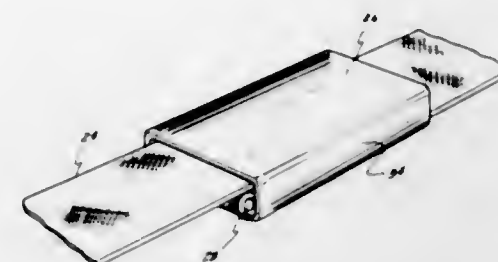
3,409,327

SEAT BELT WITH ENERGY ABSORBING SLEEVE  
Donald G. Radke, Troy, and Frederick C. Booth, Birmingham, Mich., assignors to Jim Robbins Seat Belt Co., Royal Oak, Mich.

Filed June 15, 1967, Ser. No. 646,342  
6 Claims. (Cl. 297-386)

A section of seat belt webbing having overlapping portions formed by a pair of spaced apart transverse folds. The overlapping sections are arranged within an elongated

plastic sleeve with the folds adjacent the opposite ends of the sleeve. A roller member disposed within each of the folds normally prevents the webbing from unfolding under normal tensile forces. When a predetermined tensile



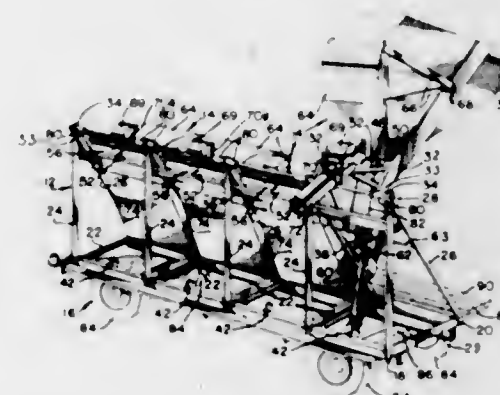
force is applied to the webbing, the walls of the sleeve enlarge so that the roller members can approach one another with the webbing unfolding at a controlled rate to provide a cushioned restraining force on the occupant of the seat belt system.

3,409,328

#### SELECTIVELY DUMPABLE BINS

J W Hamby and Franky D. Mills, Plainview, Tex., assignors to The Hamby Company, Plainview, Tex., a corporation of Texas

Filed July 13, 1966, Ser. No. 569,784  
9 Claims. (Cl. 298-8)



A device providing a series of bins to be mounted on a movable means, such as a trailer or vehicle, which bins are selectively dumpable by power actuated means. The bins may be all filled with the same material, such as fertilizer, or one or more bins may be filled with a different material, for instance herbicide, insecticide or the like and the trailer moved into a field being prepared for seeding, and the contents of the bins selectively dumped by mechanical means, as required into a dispensing device. Each bin is provided with a fill opening, having a weather tight cover, and a dispensing chute. The dumping mechanism is a fluid actuated cylinder which may be moved along a trackway and attached to a selected bin to be dumped, and then moved to the next bin, thereby one dumping mechanism may be utilized for a plurality of bins.

3,409,329

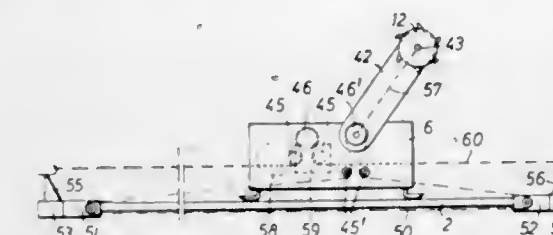
#### COAL MINING MACHINE

Gunther Dommann, Altun, and Werner Mennekes, Wethmar, near Lunen, Westphalia, Germany, assignors to Gewerkschaft Eisenhütte Westfalia, Wethmar, near Lunen, Westphalia, Germany, a corporation of Germany

Filed Mar. 24, 1966, Ser. No. 537,122  
Claims priority, application Germany, Mar. 26, 1965, G 43,186  
6 Claims. (Cl. 299-34)

Machine for mining coal consisting of a body having at least one rotatable cutting means thereon, which ma-

chine body is caused to transverse a mine face by the action of a chain drive wherein the chain drive further

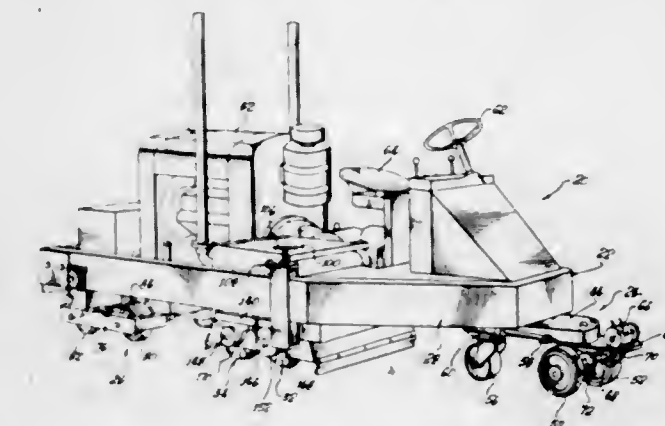


provides the power for driving the rotatable cutting means through a variable power coupling means.

3,409,330

TANDEM PAVEMENT SURFACING MACHINE  
Cecil W. Hatcher, West Covina, Calif., Harold C. Miller, Chicago, and Michael V. Metzger, Highland Park, Ill., and Glen E. Simms, Glendora, Calif., assignors to Concut, Inc., El Monte, Calif., a corporation of California

Filed Aug. 24, 1966, Ser. No. 574,719  
10 Claims. (Cl. 299-39)



A wheeled pavement surfacing machine having two rotary cutter assemblies in tandem between the front and rear wheels of the machine. The relative vertical positions of the front and rear rotary cutter assemblies are adjustable. The front rotary cutter assembly includes laterally-spaced front rotary cutters which are relatively widely spaced, and the rear rotary cutter assembly includes laterally-spaced rear rotary cutters which are relatively narrowly spaced.

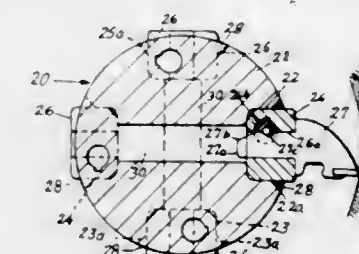
3,409,331

#### MINING MACHINE ROTARY CUTTER BAR

Claude B. Krekeler, Cincinnati, Ohio, assignor to The Cincinnati Mine Machinery Co., Cincinnati, Ohio, a corporation of Ohio

Continuation-in-part of application Ser. No. 555,140, June 3, 1966. This application Jan. 5, 1968, Ser. No. 701,523

22 Claims. (Cl. 299-89)



A rotary cutter bar for a continuous mining machine or the like, which comprises at least one elongated body member providing a plurality of spaced surfaces extending the length thereof. A plurality of lugs are located



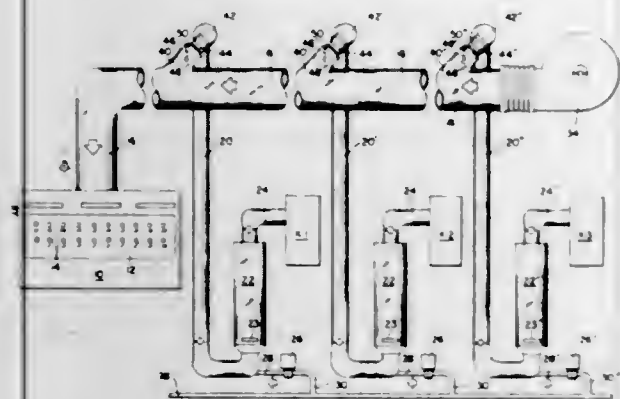
between and affixed to adjacent ones of the spaced surfaces, and are adapted to receive the shanks of cutter bits.

3,409,332

**APPARATUS FOR COLLECTING HOSIERY**

Ralph B. Jones, 3103 Brookcliff Court, Greensboro, N.C. 27408, and Thurman B. Oakley, Burlington, N.C. 27215

Filed May 10, 1967, Ser. No. 637,588  
2 Claims. (Cl. 302-27)



This application relates to an apparatus for collecting and sorting hosiery or socks, and more particularly to a collection system whereby an operator at an inspection station or a seaming station may selectively collect finished hose or socks from knitting machines scattered throughout a mill.

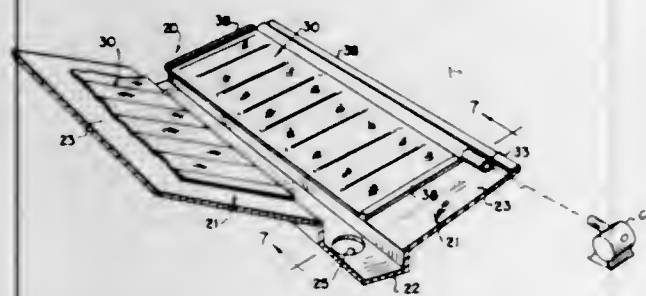
3,409,333

**PADS FOR CEMENT CARGO CARRIERS**

Werner Ostberg, Milan, and Michael D. Challis, Ann Arbor, Mich., assignors to Dundee Cement Company, Dundee, Mich.

Continuation-in-part of application Ser. No. 587,158, Oct. 7, 1966. This application Jan. 2, 1968, Ser. No. 695,271

1 Claim. (Cl. 302-52)



An envelope or pad for covering the sloped floor of a cargo carrier hold through which envelope air is pumped for fluidizing and moving dry, particulate, bulk cargo, the envelope being transversely sectioned by lines of stitching, and a perforated air delivery pipe extending through the sections and located along the envelope edge which is at the top of the slope for progressively billowing the envelope as the cargo level drops down the slope for thereby moving the cargo to the bottom of the slope for emptying the hold.

3,409,334

**TUBULAR COLUMN FOR CONVEYING CONCRETE OR THE LIKE**

Friedrich Wilhelm Schwing, 424 Dorstener Strasse, 468 Wanne-Eickel, Germany

Filed Apr. 26, 1967, Ser. No. 633,775  
Claims priority, application Germany, May 3, 1966, Sch 38,926

6 Claims. (Cl. 302-64)

A tubular column for the conveyance of material, such as concrete, made up of a stack of pipe frames which can

be readily secured together or disengaged from each other, there being a counterbalanced lateral discharge pipe at the top which by means of a slewing joint can be swung in a horizontal plane. The slewing joint may be at the top so that the lateral discharge pipe essentially swings or at the bottom of the column so that the entire



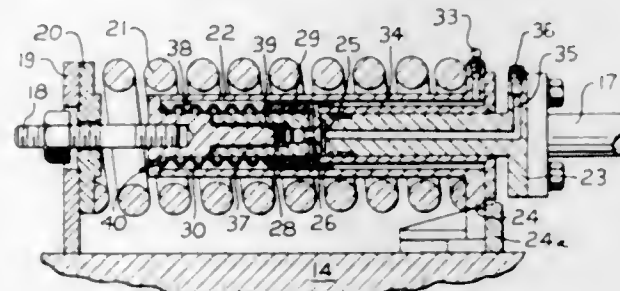
stack of pipe frame turns about a vertical axis. In one form the tubular column can be tilted to an inclined position. Hoist means is provided by which the lower pipe frame along with those superimposed on it can be raised to enable adding pipe frames one at a time, or, alternatively, removing pipe frames for increasing or decreasing the height of the tubular column or dismantling same.

3,409,335

**ADJUSTING MEANS FOR AUTOMATICALLY TENSIONING AN ENDLESS TRACK**

Donald A. Piepho, Aurora, and Sidney J. Audiffred, Jr., Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Dec. 15, 1966, Ser. No. 601,922  
8 Claims. (Cl. 305-10)



A track-type tractor comprising an endless track trained about a drive sprocket and an idler has an automatic adjuster operatively connected to the idler to maintain a pre-set tension on the endless track. Such adjuster comprises a valve arranged to automatically open and charge a chamber positioned behind a hydraulically actuated piston connected to the track idler when the fluid pressure in such chamber drops below a pre-set level.

3,409,336

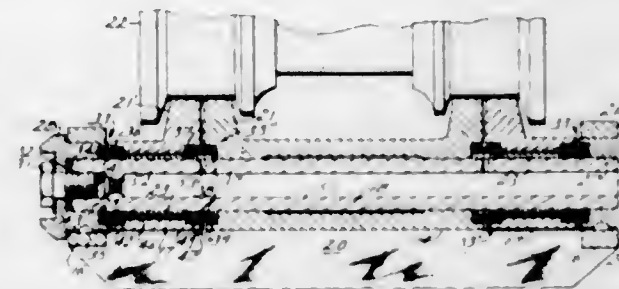
**SEALED TRACK JOINT FOR CRAWLER VEHICLES**

Floyd S. Dadds, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Dec. 21, 1966, Ser. No. 603,578  
9 Claims. (Cl. 305-11)

1. In a joint for coupling component links of a track chain wherein adjacent ones of said links have interleaved hinge members and wherein a track pin is transpierced

through said interleaved hinge members to couple said adjacent links and wherein at least a pair of axially spaced annular seals are disposed at said hinge members in co-axial relationship to said track pin, the combination com-



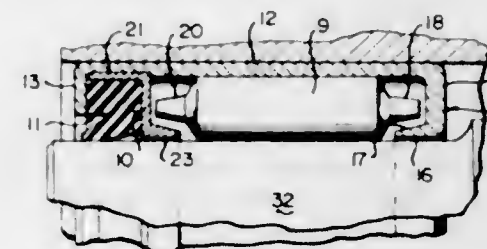
prising means at said joint applying an axial loading force to a first of said seals, and a plurality of rigid load transfer pins extending between said first seal and the second seal for transmitting said loading force to said second seal.

3,409,337

**SEALED ROLLER BEARING**

Philip H. Foote, Jr., Hollywood, Calif., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine

Filed July 5, 1966, Ser. No. 562,878  
9 Claims. (Cl. 308-187.2)



There is disclosed a needle-bearing assembly of the drawn cup type having a cup body providing an outer race, rollers, and a cup lip extending radially inwardly of the cup body at an end thereof, there being a cup flange, positioned internally of the cup body and located axially between the radial cup lip and an adjacent end of the rollers, a seal positioned radially inwardly of a first cylindrical portion of the flange which contacts the inner wall of the cup body and is engaged in end edge abutment against the radial cup lip and positioned axially between and engaging with the radial cup lip and a second portion of the flange spaced axially from and paralleling the radial cup lip, the seal having radially inwardly depending means thereon defined in part by an endwise opening groove in the seal and disposed for seal contacting engagement with a cooperating shaft.

3,409,338

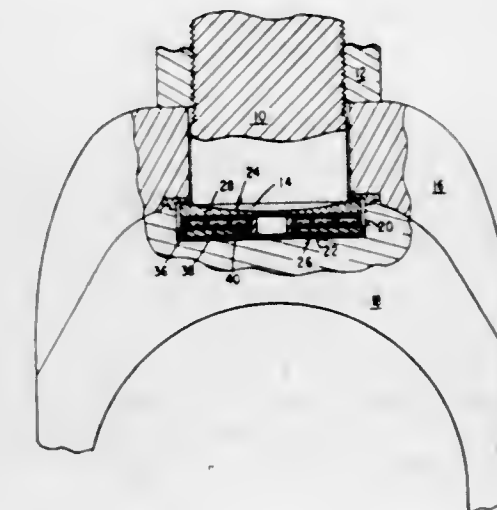
**THRUST BEARING**

Lawrence E. Root, Syracuse, and William F. Peters, Phoenix, N.Y., assignors to Rollway Bearing Company, Inc., Syracuse, N.Y., a corporation of New York

Filed Nov. 14, 1966, Ser. No. 593,997  
1 Claim. (Cl. 308-231)

1. A thrust bearing comprising an upper race and a lower race with a plurality of anti-friction roller complements located therebetween, the roller engaging faces of said races being parallel, each of said roller complements comprising a plurality of individual roller elements of a pre-selected number and axial length arranged in circumferential rows about the center of said bearing, each successive row of roller elements having a greater number of roller elements than the preceding row, the diameter of roller elements in each of said rows being the same,

means to retain said rows of roller complements between the engaging faces of said upper and lower races, said upper race having its upper surface formed complementary to the surface of a thrust element, an inner portion of said lower race being cantilevered on its under surface to deflect under thrust loads applied to said bearing, a ring element positioned in the center portion of said lower race and being spaced a predetermined distance from the roller engaging face of said upper race, said ring element engaging said upper race upon deflection of the upper



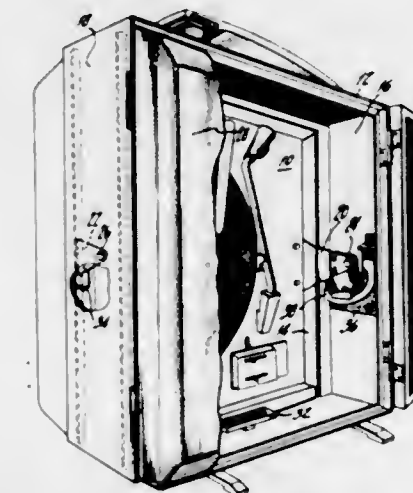
race under a thrust load to form a separate load transmission path through said bearing, said deflection of said upper race to engage said ring providing said bearing with an overload capacity and a seat misalignment compensating element positioned beneath the under surface of the lower race in the bearing seat, said element being of a material formed with a plurality of interstices whereby said element deforms upon application of a thrust load to the bearing to compensate for seat misalignment to insure uniform loading of said bearing.

3,409,339

**DAMPING DEVICE**

Rudi J. Gehring and Leo J. Rhoda, Indianapolis, Ind., assignors to Radio Corporation of America, a corporation of Delaware

Filed May 20, 1966, Ser. No. 551,577  
7 Claims. (Cl. 312-8)

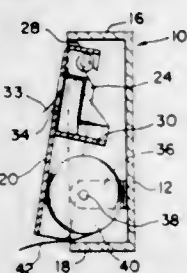


In a portable equipment cabinet which includes a pivotally mounted tray member, a brake member is provided for damping the pivotal movement of the tray when it is caused to move from a vertical position to a horizontal position.



3,409,340

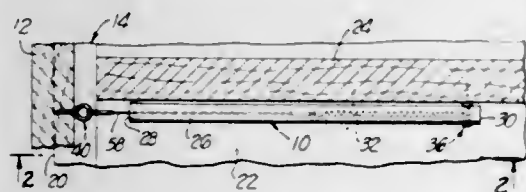
**COMBINED TISSUE AND TOWEL DISPENSER**  
Robert A. Clark, Allentown, Pa., assignor to Caloric Corporation, Tipton, Pa., a corporation of Pennsylvania  
Filed Aug. 4, 1965, Ser. No. 477,122  
2 Claims. (Cl. 312-39)



A cabinet, for dispensing soft tissues for facial use and towels for hand use. The cabinet is not limited to the use of towel rolls of a diameter larger than the depth of the cabinet. The door is detachable for ease in re-loading.

3,409,341

**AUTOMATIC DOOR CLOSER**  
Frank W. Pickard, Inglewood, Calif., assignor of ten percent to Eleanor D. J. Stanford, Los Angeles, Calif.  
Filed Aug. 2, 1967, Ser. No. 657,839  
9 Claims. (Cl. 312-319)



An automatic door closer, about pencil size, including a horizontally extending tubular member for connection by a vertical pivot to a cabinet shelf and housing a coil spring secured at one end to the pivot and connected at an opposite end to and holding an eyelet-type screw in an open forward end of the tubular member for connection to a door of the cabinet adjacent its hinged edge.

3,409,342

**METHOD OF HEAT SEALING FLASH-LAMPS CONTAINING COMBUSTIBLE GAS MIXTURES**  
Robert M. Anderson, Pepper Pike, and Louis A. Demchick, Jr., Lyndhurst, Ohio, assignors to General Electric Company, a corporation of New York  
Filed Dec. 23, 1966, Ser. No. 604,282  
6 Claims. (Cl. 316-24)

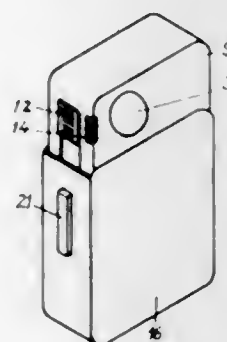


A flashlamp of the type having a hermetically sealed vitreous bulb and containing a filling of combustible gas is manufactured by the following process: (1) a vitreous tube having an ignition mount structure sealed in one

end is heated at an intermediate section and attenuated resulting in a bulb being formed at one end; (2) the tube is evacuated and filled with a combustible gas mixture; (3) the sealed end including a portion of the bulb is immersed in a coolant so that a sufficient portion of the combustible mixture is condensed to render the remaining gaseous mixture no longer explosive; (4) the attenuated portion is heated until the walls collapse and the bulb is hermetically sealed. Alternatively, the bulb may contain a filling of filamentary material in addition to the gaseous mixture.

3,409,343

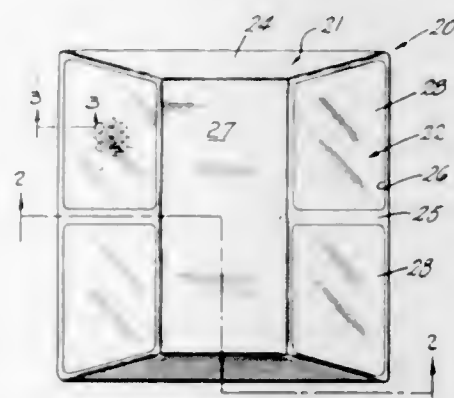
**MAGNIFYING VIEWING DEVICE**  
Walter Zapp, Oberegg, Switzerland  
Filed Oct. 23, 1965, Ser. No. 503,142  
4 Claims. (Cl. 350-51)



A viewing device in which a sheath bearing an eyepiece and objective lens is extendible from a casing. An optical system perpendicular to the axes of the lenses is provided with an adjustment for focusing. The eyepiece and objective lenses are concealed within the casing but are exposed when the sheath is extended.

3,409,344

**ROADWAY REFLECTORS**  
Rudolph D. Balint, Peter Hedgewick, and George E. Howell, Windsor, Ontario, Canada, assignors to Reflex Corporation of Canada Limited, Amherstburg, Ontario, Canada, a corporation of Canada  
Filed Mar. 3, 1967, Ser. No. 620,542  
11 Claims. (Cl. 350-103)



The roadway reflector disclosed herein comprises a hollow housing which has inclined side and end walls and a flat top wall. The housing is molded in situ about the periphery of previously molded reflective inserts so that the inserts are in the end walls. The inserts have substantially flat outer surfaces and a plurality of retro-reflective prisms on the inner surfaces thereof, the axes of the prisms forming an angle with the plane of the insert and in turn with the pavement when the marker is in position such that the light beams from the automotive vehicle is reflected back to the eyes of the driver. The surfaces of the prisms are coated with a metallized layer

and the entire housing is filled with a plastic material to provide strength and rigidity to the marker. A method and apparatus for making the roadway reflector is disclosed.

3,409,345

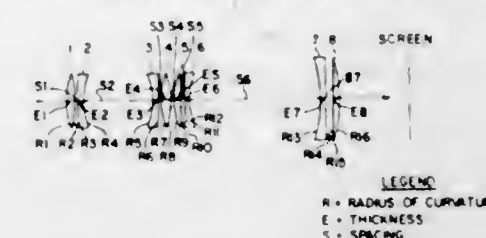
**ELECTROMAGNETIC WAVEGUIDING GASEOUS DEVICE WITH HELICAL VANES**  
Dietrich Marcuse, Lincroft, and William H. Stieler, Middletown, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Apr. 22, 1965, Ser. No. 450,121  
3 Claims. (Cl. 350-179)



To minimize the effect of gravity upon the rotational symmetry of a gas lens used to guide electromagnetic wave energy, a helical motion is imparted to the flowing gas. In the embodiment described, helical vanes, attached to the inner surface of the gas-enclosing conduit are used. To avoid disturbing the radial temperature gradient in thermal gas lenses, the vanes are preferably made of heat insulating material.

3,409,346

**AFOCAL PROJECTION LENS ATTACHMENT**  
Irving Stapsy, 5737 Wilkins Ave., Pittsburgh, Pa. 15217  
Original application July 21, 1964, Ser. No. 384,136.  
Divided and this application Apr. 18, 1966, Ser. No. 543,181  
2 Claims. (Cl. 350-202)



An afocal attachment reducing an overall projector focal length by a factor of more than 3 is formed of spaced lens elements in positive and negative power groups, the negative power groups being as large or larger in diameter than the positive power groups. The last element grouping of the attachment is negative and spaced from the remaining lenses by a distance comparable to the total spacing of the remaining elements, which permits incorporating a small 45° folding mirror in the spacing to produce a right-angle change in the direction of the light beam from the attachment.

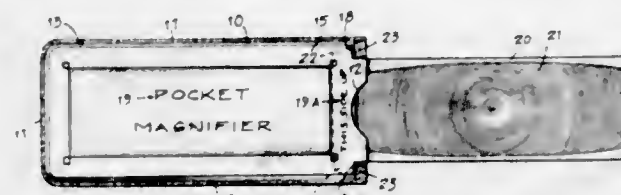
3,409,347

**POCKET MAGNIFIER**  
Rudolf Vogel, 1140 Laurel Ave., Bridgeport, Conn. 06604  
Filed Nov. 15, 1965, Ser. No. 507,893  
6 Claims. (Cl. 350-242)

1. A pocket magnifier of the character described comprising, in combination:  
(A) a generally rectangular case formed of superim-

posed upper and lower layers closed along the longitudinal side edges and along one end edge of the case and open at the other end edge;

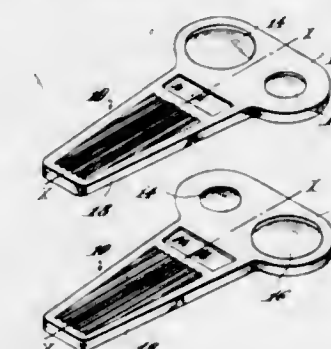
(B) a generally rectangular liner comprising upper and lower layers folded one upon the other along a transverse fold line and engaged within said case with its fold line adjacent the closed end of said case;



(C) a generally rectangular magnifying lens unit having longitudinal side edges and inner and outer transverse end edges and disposed between said layers of said liner for retracting and projecting longitudinal movement, whereby in a retracted position said unit is concealed within said case and in a projected position is exposed beyond the open end of said case;  
(D) means fixing said liner within said case while permitting the projecting and retracting movement of said lens unit through the open end of said case; and  
(E) means for limiting the projecting movement of said lens unit.

3,409,348

**STUDENT LENS ASSEMBLY**  
Martin Annis, Newtonville, Joseph P. Pennimpede, Danvers, Raymond St. Martin, South Acton, and Edwin C. Williams, Jr., Southboro, Mass., assignors to American Science and Engineering, Inc., Cambridge, Mass., a corporation of Massachusetts  
Filed Dec. 6, 1965, Ser. No. 511,774  
5 Claims. (Cl. 350-254)



1. An optical assembly comprised of two optical implements, each embodying a holder mounting two lenses of different magnifying power in spaced relation, and means on the holders of the implements interengageably operable to hold the implements, when superposed, with the optical centers of the lenses coinciding wherein each holder has a handle and a plurality of transversely spaced, longitudinally extending ribs and grooves on the opposite faces of said handles, interengagement of which positions the implements in such transverse relation that the centers of the lenses coincide.

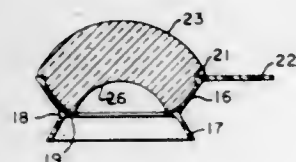
3,409,349

**GONIOSCOPIC CONTACT LENS DEVICE HAVING A FLEXIBLE SCLERAL FLANGE**  
Robert M. Boyle and Stephen F. Boyle, Oakland, Calif., assignors, by mesne assignments, to Stephen F. Boyle, Oakland, Calif.  
Filed Aug. 31, 1964, Ser. No. 393,067  
2 Claims. (Cl. 351-6)

A direct viewing gonioscopic device is provided with a transparent contact lens, a scleral flange, and a tab por-



tion integral with the flange which may be pulled away a sufficient distance from the lens to create an air pas-

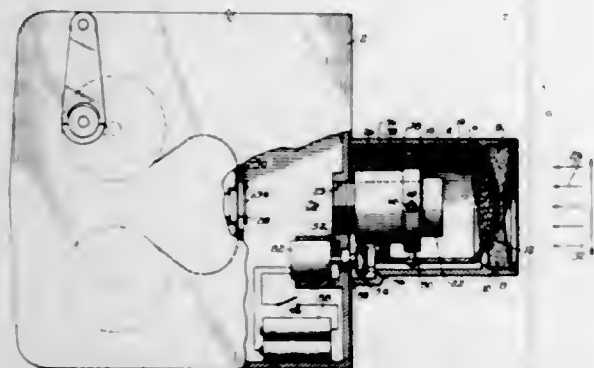


sage from the eye through a gap between the lens and the flange to the atmosphere.

3,409,350

#### LENS STABILIZATION SYSTEM

Daniel D. Call, Elk Grove Village, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois  
Filed July 12, 1965, Ser. No. 470,966  
22 Claims. (Cl. 352-140)

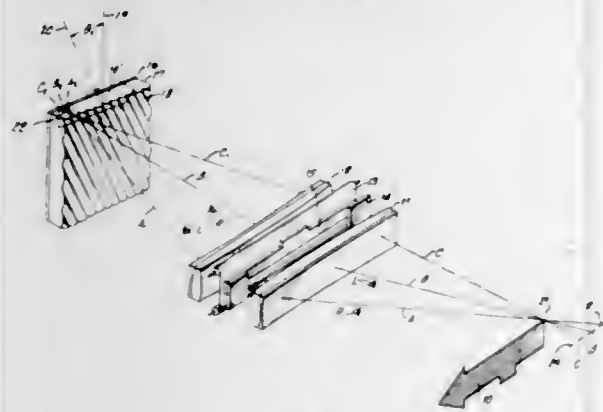


A lens stabilization system wherein the lens is mounted on a rotor so that spin axis of the rotor corresponds with the lens' optical axis. The rotor is pinned to a gimbal suspension system which is rotated by a drive means. In this manner, as the gimbal suspension system is spun, the lens spins about a spin axis at substantially the same speed as the gimbal system.

3,409,351

#### COMPOSITE STEREOGRAPHY

Douglas F. Winnek, 544 Lowell Ave.,  
Palo Alto, Calif. 94301  
Filed Feb. 7, 1966, Ser. No. 525,572  
15 Claims. (Cl. 353-7)



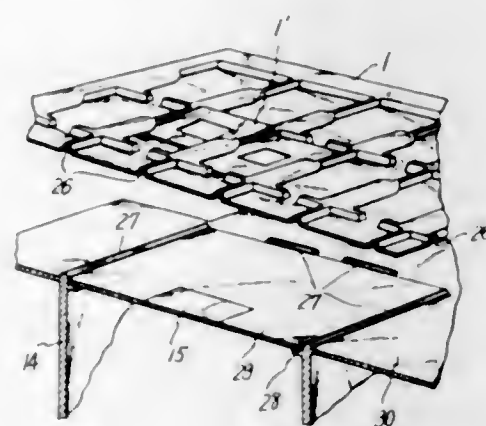
1. A method of projecting, from a composite stereograph which comprises a picture and is divided into picture components each subdivided into aspect elements, and which is arranged for a predetermined viewing axis, an image that constitutes a second composite stereograph which comprises an image of the picture and is divided into picture components each subdivided into aspect elements, and which is arranged to have a like viewing axis, comprising: associating with said first stereograph and with a surface to receive said image, respective first and second lenticular screens each comprising a multiplicity of parallel, linear, component-resolving lenticular ridges;

illuminating the first stereograph; and optically projecting from said first stereograph, through its associated screen, then through an intermediate slit crosswise of the viewing axis of said first stereograph and onto said surface through the screen associated therewith, an image of said first stereograph, while preventing appreciable extraneous patterns in said image as viewed through the last-mentioned screen, by disposing said screens so that the ridges of one extend at an acute angle, selected in the range of 10° to 60°, to the ridges of the other while maintaining the ridges of each at an angle of not more than 45° to the viewing axis of the first stereograph, to establish said image on said surface with a viewing axis substantially aligned with said axis of the first stereograph.

3,409,352

#### DEVICE FOR PROJECTING PHOTOGRAPHIC SLIDES HELD BY A RECTANGULAR FILING PLATE FRAME

Yoshichika Sakamoto, 214 2-chome, Sengen-cho, Ohmiya, Japan  
Original application June 18, 1965, Ser. No. 465,040.  
Divided and this application Aug. 31, 1967, Ser. No. 671,909  
Claims priority, application Japan, Feb. 15, 1965, 40/8,219  
3 Claims. (Cl. 353-25)



A device for projecting film slides comprises a housing having a projection window in its top, and a light source and condenser lenses in the housing for directing light upwardly through the window, in combination with projection lenses and mirrors above the window for directing the light onto a screen. A rectangular filing plate frame in and from which film slides to be viewed are individually insertable and removable in a plurality of rows has recesses on its underside, and the housing top has corresponding projections that fit into the recesses to register any selected slide precisely with the window. A translucent viewing screen within the device receives the image from a mirror, and that mirror is vertically swingable to an inoperative position to permit projection of the image alternatively on a wall screen.

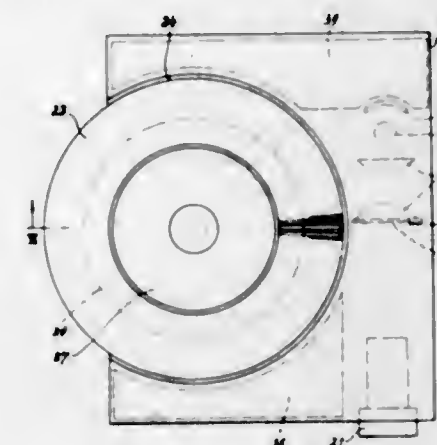
3,409,353

#### PHOTOGRAPHIC PROJECTOR WITH CIRCULAR MAGAZINE

Erich Zillmer, Braunschweig, Germany, assignor to Voigtlander A.G.  
Filed Mar. 22, 1966, Ser. No. 536,424  
Claims priority, application Germany, Mar. 26, 1965, Z 11,435  
2 Claims. (Cl. 353-117)

A photographic projector for coacting with a rotary magazine. The projector has a generally rectangular housing having at one side an image-projecting system. A bearing member carried by the housing supports a circular

magazine for rotary movement. The magazine has more than half of its circular exterior periphery situated within the housing so that the generally rectangular periphery of the latter remains substantially unchanged. The bear-

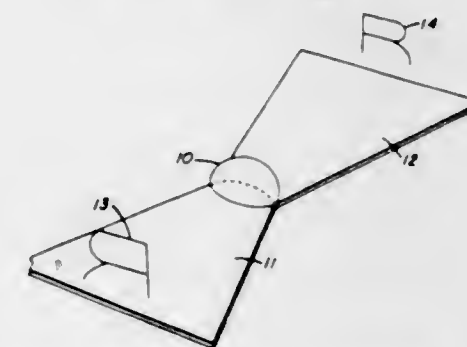


ing member includes a rotary carrier which supports the magazine while the housing supports the rotary carrier for lateral movement toward and away from that side of the housing where the image-projecting system is situated.

3,409,354

#### OPTICAL SYSTEMS WITH AXIAL MIRRORS

Lee F. Frank, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
Filed June 8, 1966, Ser. No. 556,215  
15 Claims. (Cl. 355-1)



1. An efficient optical system comprising focusing means for receiving a beam of light from an object and for forming a real image thereof, an axial reflector coplanar with the optic axis of the focusing means on both the object and image side of the focusing means, a second plane reflector to one side of said first beam for receiving a second beam from the object and reflecting it to the focusing means and axial reflector, and a third plane reflector for receiving the second beam from the focusing means and axial reflector and oriented to reflect said second beam into focused register with said image.

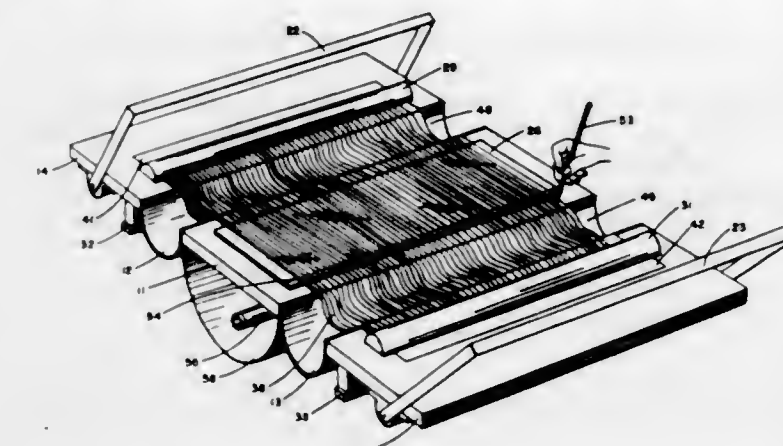
3,409,355

#### TRACE SLITTED RECORD SECTION

Moses B. Widess, Fort Worth, Tex., and Thomas J. Williams, Gretna, La., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware  
Filed Sept. 17, 1965, Ser. No. 488,140  
5 Claims. (Cl. 355-2)

This apparatus consists of a mechanism used to adjust seismic data or similar time-varying information recorded so that it is displayed in cross-section form, such data include records made in side-by-side relation. It is frequently desirable to be able to shift a part of the informa-

tion along the time axis compared to other information. The apparatus provides for illumination of a slitted record by means of a transparent tabletop or equivalent,

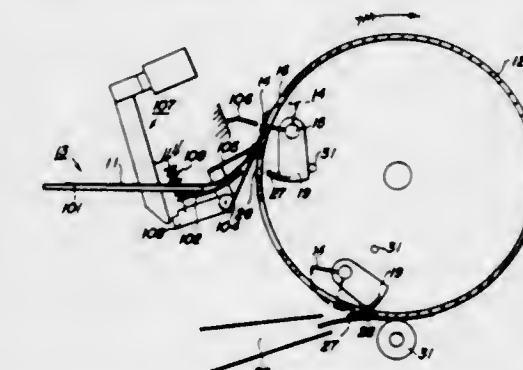


the record being positioned and in contact with the table by at least one friction plate and secured by weights in such fashion that the individual traces may be moved in a direction parallel to the slits.

3,409,356

#### CONVEYOR FOR DOCUMENTS

Robert Robertson, London, and John L. Handscombe, West Drayton, Middlesex, England, assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York  
Filed Sept. 1, 1966, Ser. No. 576,760  
1 Claim. (Cl. 95-77.5)

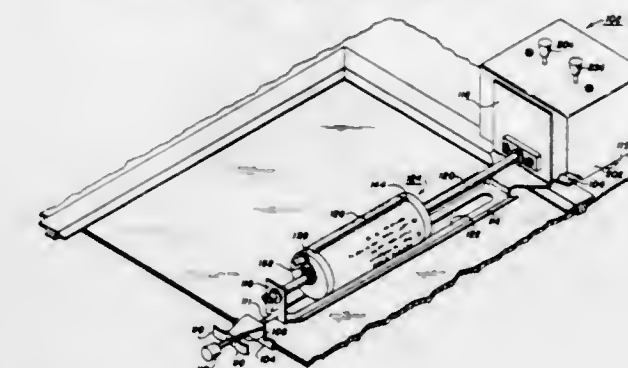


A conveyor for carrying documents to be reproduced from a first station to subsequent stations having a first and second set of grippers mounted thereon and a pair of solenoids for actuating either the first or both sets of grippers.

3,409,357

#### APPARATUS FOR AN ELECTROSTATIC MACHINE

Edward J. Lavander, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York  
Filed June 21, 1965, Ser. No. 465,335  
5 Claims. (Cl. 355-7)



A device for projecting text from a cylinder to the exposure station of a copying apparatus including an index-

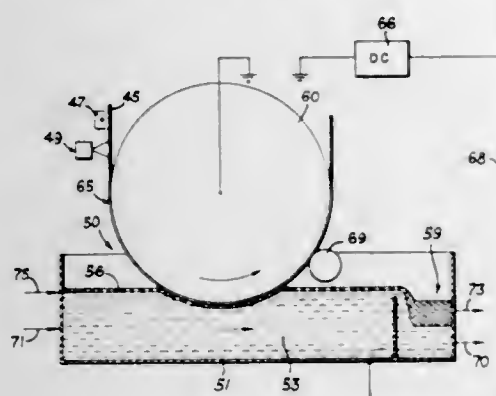


ing apparatus for sequentially positioning different portions of the text in a step-wise manner.

### 3,409,358 ELECTROPHOTOGRAPHIC APPARATUS AND METHOD

Donald L. Fauser, Lakewood, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware  
Continuation of abandoned application Ser. No. 96,436, Mar. 17, 1961. This application Mar. 9, 1964, Ser. No. 350,507

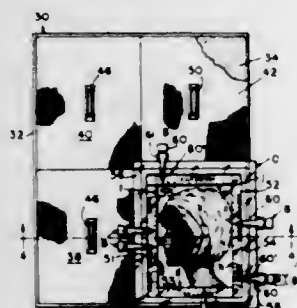
8 Claims. (Cl. 355—10)



1. A counter-electrode system for use in electrostatic photography wherein an image bearing member includes a support element and an electrically insulating photoconductive layer, the photoconductive layer forming an image surface having differentially charged image areas and non-image areas and wherein said image surface is brought into contact with a liquid developer, comprising a conductive liquid material forming a counter-electrode, means for positioning said image bearing member so as to place said image bearing surface, while said surface is in contact with said liquid developer, in close proximity to said conductive liquid to cause said counter-electrode to be spaced from said image bearing surface a relatively small distance, and means including electrical connections to said conductive liquid material to apply a potential across said image bearing surface to effect formation of an impressed electrical field opposite in direction and intermediate in strength to the fields created by said image and non-image areas on the surface of the image bearing member.

### 3,409,359 PHOTO PRINT DATA DESIGNATING DEVICE

Joseph Mullan, 217 Northway, Baltimore, Md. 21218  
Filed Oct. 23, 1965, Ser. No. 502,981  
5 Claims. (Cl. 355—40)

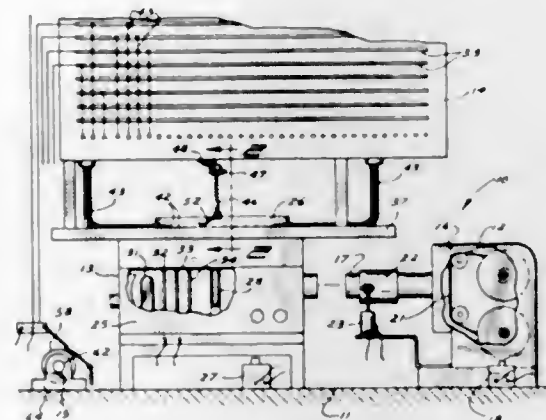


A device for photographically recording certain data on a photographic print for use in duplicating the same at a future time. A tray for receiving a sheet of print paper, a mask composed of a number of individually removable and interchangeable sections of equal area covering the area of the tray, a frame of transparent material of such size as to occupy the area of any one mask

section. The frame has opaque indicia markings thereon and one or more mark designating elements clamped on the frame at selected positions. The indicia markings and impressions of the mark designating elements are reproduced on the photographic print as the latter is printed.

### 3,409,360 FILMSTRIP PRODUCING DEVICE

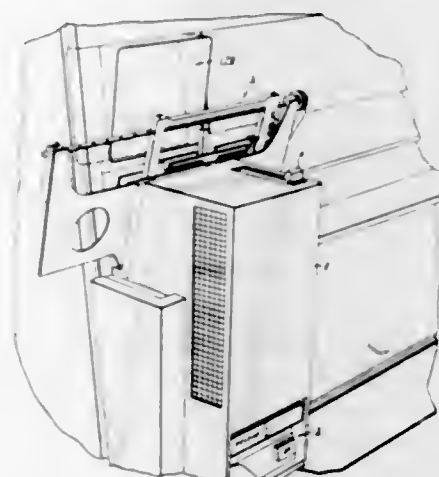
Lowell T. Nerge, Becker, Minn. 55308  
Filed Oct. 12, 1965, Ser. No. 495,175  
10 Claims. (Cl. 355—42)



A device for making a plurality of identical filmstrips from a preselected number of slides including a magazine for holding the slides in order and which can be cycled continuously so that the slides will appear sequentially and repetitively at an exposure station. A filmstrip camera is positioned to photograph the slide at the exposure station. The device includes means to program the camera's exposure for each individual slide so that when that slide again appears at the exposure station, it will be exposed identically onto the filmstrip for each of the plurality of filmstrips made. In this manner, slides having different densities can be properly copied onto a filmstrip with several uniform quality filmstrips being produced automatically after the first programming.

### 3,409,361 MICROFICHE POSITIONING APPARATUS

Frank R. Hynes and Edward J. Lavander, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York  
Filed May 17, 1966, Ser. No. 550,849  
3 Claims. (Cl. 355—42)

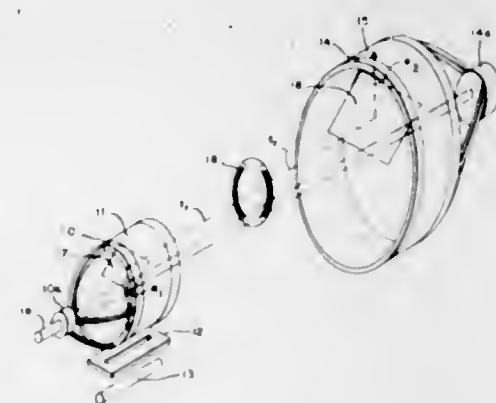


1. In a projector of the type wherein a microfiche containing a plurality of microimages is scanned, apparatus to position selected image or images in a light path of the

projector and to move the selected image or images across the light path for scanning thereby including a movable carriage mounted on the projector transversely to the light path, an indexable holder mounted on the carriage, a microfiche clamping means mounted on the indexable holder, means for indexing the microfiche holder relative to the carriage so that the selected image or images on the microfiche are positioned horizontally relative to the carriage, means for indexing the microfiche clamping means relative to the indexable holder to position the microfiche in the vertical direction so that the selected image or images in the microfiche are positioned vertically to the carriage, and means to drive the carriage, the indexable holder and the microfiche clamping means transversely to the light path to scan the image or images on the microfiche.

### 3,409,362 SLIT-SCAN PANORAMIC RECTIFIER

Arthur A. Magill, Glen Cove, N.Y., assignor to Fairchild Camera and Instrument Corporation, a corporation of Delaware  
Filed Jan. 6, 1966, Ser. No. 519,082  
4 Claims. (Cl. 355—52)



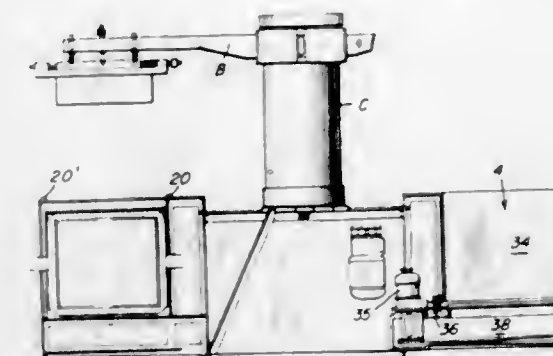
A slit-scan rectifier for rectifying a panoramic film image comprising a rotatable transparent drum for a film image to be rectified, an illuminated slit for scanning a film image on the drum, a second transparent drum for a print film mounted on a common shaft with the first drum, and an optical scanning system for transferring an image from an image film on the first drum to a print film on the second drum including reflecting mirrors individually mounted within the drums and having an optical axis substantially coincident with the axis of the drums. The radial dimensions of the two drums vary on either side of the position corresponding to the nadir of the film image in accordance with a derived mathematical function.

### 3,409,363 MACHINE FOR THE AUTOMATIC REPRODUCTION OF PRINTS USING A PHOTOSENSITIVE PROCESS

Gottfried Matthaes, Corso Sempione 21, Milan, Italy  
Filed Mar. 9, 1965, Ser. No. 438,301  
Claims priority, application Italy, Mar. 9, 1964, 5,146/64  
7 Claims. (Cl. 355—87)

A machine for automatically reproducing prints using a photosensitive process employing an upright member having radially extending arms which rotate about the upright member as well as move vertically. A plurality of work stations are arranged radially around the upright member and include a coating station and first and second photographing stations where a plate is suspended

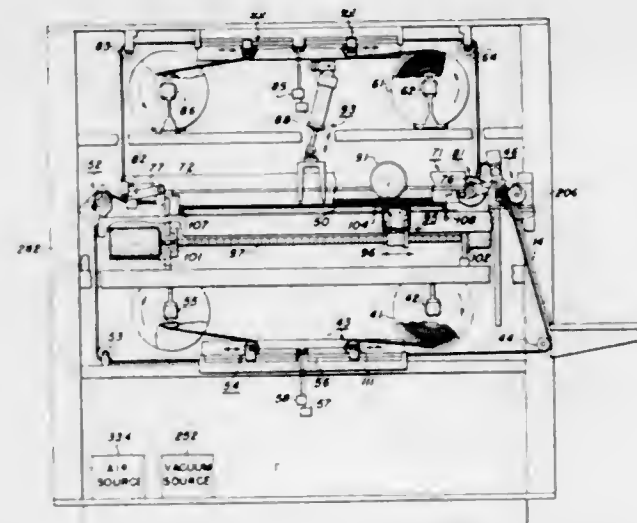
from one of the arms. At this location the plate is lowered to the coating station to be coated with a photosensitive



substance and then lowered into the first and second photographing stations to have both faces printed.

### 3,409,364 GATE ASSEMBLY

Robert W. Moorhusen, Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York  
Filed Oct. 1, 1965, Ser. No. 491,911  
6 Claims. (Cl. 355—92)



The gating assembly is for use within a contact printing device which contains a web of duplicating material and a web of negative film. The assembly includes a pivotally mounted parallelogram frame which supports a pneumatically inflated cylinder. The cylinder translates the web of duplicating material superposed on a web of negative film to maintain the webs in intimate contact against the top side of a platen during the exposure of the sensitized duplicating material to the negative. The parallelogram frame is pivotable between two positions, one position in which the cylinder urges the webs together and another position in which the webs are released from firm contact. An illumination device is positioned on the underside of the platen opposite the cylinder. The illumination device transgresses the platen in correspondence to the movement of the cylinder.

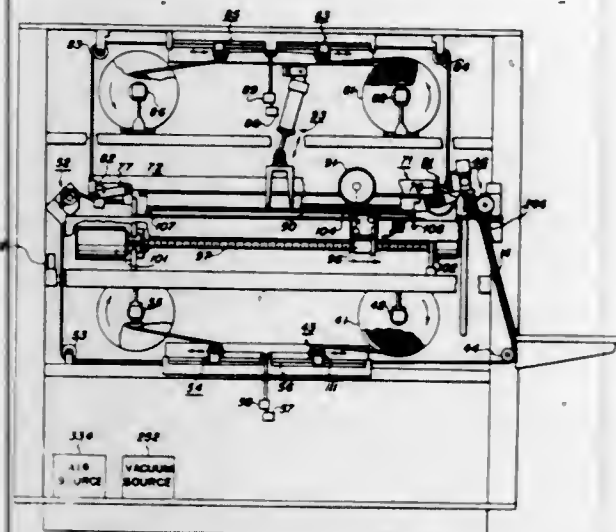
### 3,409,365 CONTACT PRINTER

Robert W. Moorhusen and Douglas E. Webb, Webster, and Edwin Zucker, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York  
Filed Oct. 1, 1965, Ser. No. 491,935  
12 Claims. (Cl. 95—75)

The step and repeat contacting printing apparatus is capable of mass producing high resolution prints from large size high contrast negatives onto a web of sensitized duplicating material. The apparatus includes an automatic



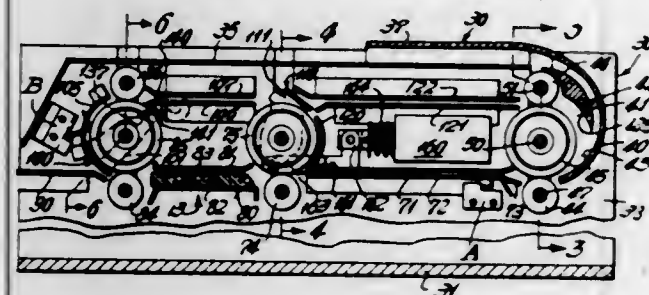
exposure control system, a high speed threading and transport system, and a material gating mechanism for effect-



3,409,366

### MULTIPLE COPY ARRANGEMENT FOR PHOTOCOPY MACHINES

Walter J. Hanson, Old Greenwich, Conn., and George Ludwigson, Yonkers, N.Y., assignors to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware  
Filed Sept. 2, 1966, Ser. No. 576,920  
17 Claims. (Cl. 355-102)



1. In a photocopy machine having an irradiation station at which an original to be copied may be irradiated; means for irradiating that portion of said original that is located at said irradiation station; and guide means for guiding an original through the machine during normal single-copy operations: the improvement comprising primary means for recirculating an original along an effectively short original sheet feed path, said original passing through said irradiation station during movement along said short path; supplemental means for recirculating an original along an extended original sheet feed path that is effectively longer than said short feed path, the last mentioned original passing through said irradiation station during movement along said extended original sheet feed path; and transport means for transporting originals along said short and extended feed paths respectively.

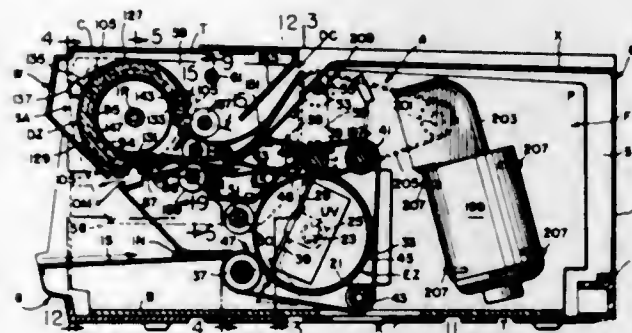
3,409,367

### APPARATUS FOR MAKING PRINTS

Hubert J. Thomiszer, Skokie, Ill., assignor to Eugene Dietzgen Co., Chicago, Ill., a corporation of Delaware  
Original application July 31, 1962, Ser. No. 213,630, now Patent No. 3,224,355, dated Dec. 21, 1965, Divided and this application July 26, 1965, Ser. No. 474,908  
6 Claims. (Cl. 95-75)

The apparatus is for making diazo and like prints with ultraviolet exposure section and heat (infrared) develop-

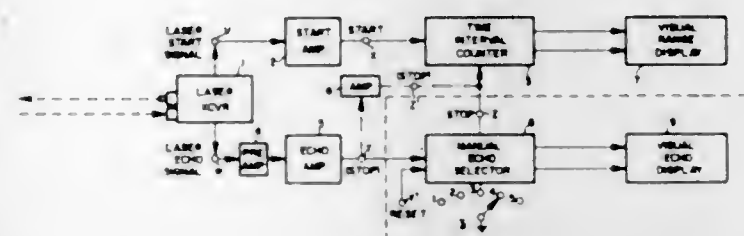
ing section. A belt system holds the graphic and copy sheets against exposure roller and developer roller. There is ready access mounting of developing unit and vacuum sheet-separating device. A control device is present for maintaining the developing zone at desired developing



3,409,368

### RANGING DEVICE

Humbert M. Fernandez, Orange County, Fla., assignor to Martin-Marletta Corporation, Middle River, Md., a corporation of Maryland  
Filed Jan. 7, 1964, Ser. No. 336,230  
11 Claims. (Cl. 356-5)



This invention relates to a laser ranging device that enables a user to avoid the spurious range responses which often accompanied the use of prior art ranging devices as a result of objects such as trees or rocks intervening between the ranging device and a selected remote object. An echo selector arrangement is advantageously disposed in the ranging device in accordance with this invention, by the use of which the user can cause pulses representative of the intervening objects to be disregarded, thus allowing only the pulses representative of the selected remote object to reach the range readout means of the device.

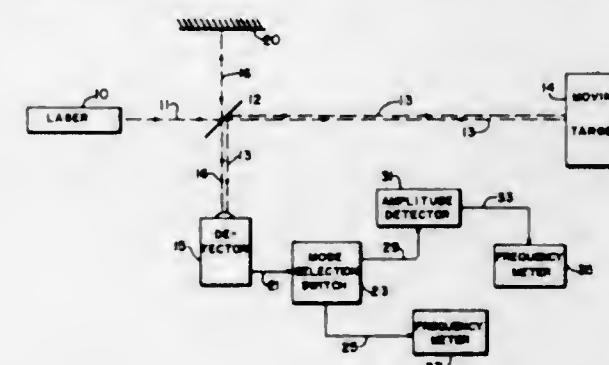
3,409,369

### LASER RADAR

Gary W. Bickel, Natick, Mass., assignor to Honeywell, Inc., Minneapolis, Minn., a corporation of Delaware  
Filed Apr. 30, 1964, Ser. No. 363,734  
6 Claims. (Cl. 88-1)

1. A Doppler radar device comprising: means to generate a plurality of electromagnetic waves; means to receive Doppler shifted reflections of said plurality of electromagnetic waves from moving objects; means to beat the frequencies of said plurality of waves with their respective Doppler shifted reflection frequencies to produce Doppler shift frequencies;

means to combine said Doppler shift frequencies to generate an amplitude modulated signal the fre-

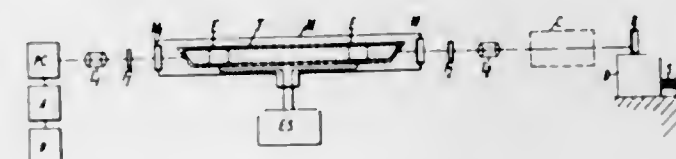


quency of which is indicative of velocity of the moving objects; and means to indicate the frequency of the amplitude modulated signal.

3,409,370

### APPARATUS FOR MEASUREMENT OF LENGTHS AND OF OTHER PHYSICAL PARAMETERS WHICH ARE CAPABLE OF ALTERING AN OPTICAL PATH LENGTH

Percy George Robert King, Baldock, and Graham John Steward, Hitchin, England, assignors to National Research Development Corporation, London, England, a corporation of Great Britain  
Filed Nov. 21, 1963, Ser. No. 325,315  
Claims priority, application Great Britain, Nov. 22, 1962, 44,192/62  
7 Claims. (Cl. 356-51)



The following specification discloses apparatus for the measurement of lengths and other physical parameters which are capable of altering an optical path length comprising a laser provided with an external reflector at one end to return into the laser some of the radiation emitted therefrom, the optical path distance of the external reflector from the laser being controllable, either by actual physical movement of the external reflector or by alteration of the nature of the medium in which the radiation is propagated, and detector means disclosed at the other end of said laser for monitoring the intensity of emitted radiation.

3,409,371

### PERISCOPE HAVING MEANS TO ADJUST THE REMOTE OPTICAL ELEMENT IN STEPS

John Martin Strang, Annesland, Glasgow, Scotland, assignor to Barr and Stroud Limited, Annesland, Glasgow, Scotland  
Continuation-in-part of application Ser. No. 368,549, July 17, 1953. This application June 19, 1957, Ser. No. 667,063  
Claims priority, application Great Britain, June 28, 1956, 20,108/56  
17 Claims. (Cl. 356-72)

6. A periscope having means for measuring the angle between a distant object and a datum, comprising a remote optical element pivotally mounted at the upper part of the periscope adapted to receive a beam of light from a distant object, means for coarse mechanical adjustment of said remote optical element in precise steps, a datum

at the lower part of the periscope, optical means at the lower part of the periscope for viewing the image of said distant object in association with the image of said datum,

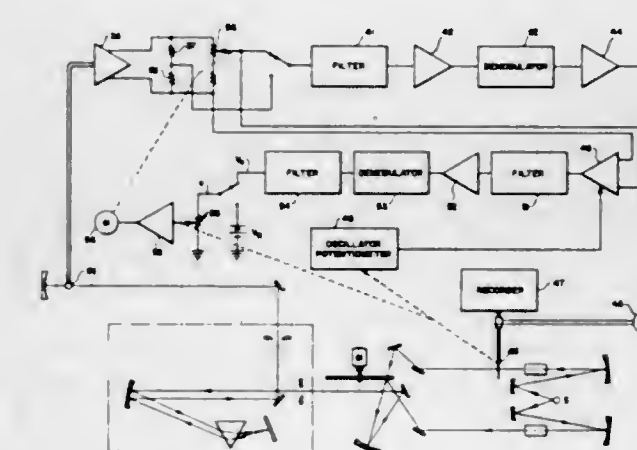


and means operatively associated with said optical means for viewing for effecting fine adjustment between the image of said distant object and the image of said datum.

3,409,372

### OPTICAL ANALYZER

Leo H. Ricken, Cleveland, Ohio, assignor to Beckman Industries, Inc., a corporation of California  
Filed Dec. 9, 1965, Ser. No. 512,737  
1 Claim. (Cl. 356-82)



1. In combination: a radiation source; a monochromator; a radiation detector generating an electrical output signal as a function of radiant energy impinging thereon; means defining reference and sample beam paths from said source through said monochromator to said detector; a reference beam attenuator positioned in said reference beam path; servo loop means responsive to the output signal of said detector for controlling the position of said beam attenuator to control the energy in said reference beam path and balance the energies in said paths; means connected to said detector for producing an electrical signal varying directly as a function of background radiation; means comparing said signal produced by said last named means with a fixed reference signal for producing an error signal;

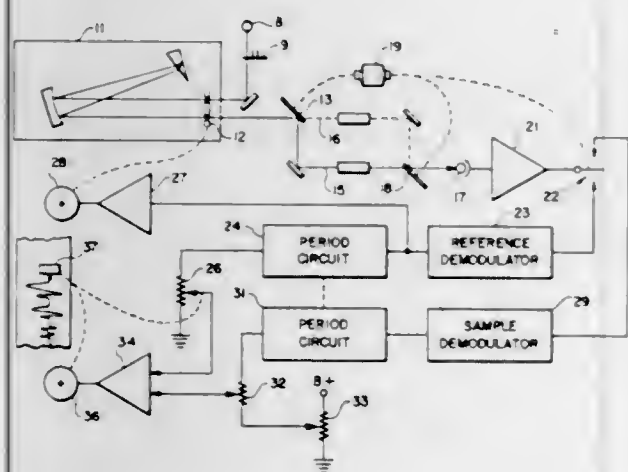


means connected to said comparison means and said attenuator for modifying said error signal in response to the attenuator position thereby modifying said error signal proportional to sample transmittance; and  
means connected to receive said modified signal for controlling the gain of said attenuator servo loop means.

3,409,373

**PERIOD CONTROL FOR SPECTROPHOTOMETERS**  
Kenneth Vincent Matthews, Garden Grove, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed Dec. 10, 1965, Ser. No. 512,880  
2 Claims. (Cl. 356—96)



1. An optical analyzer comprising, in combination:  
a radiation source;  
a radiation detector providing an output;  
means providing a beam path from said source to said detector and including monochromator means for dispersing radiant energy in said beam path;  
means connected to the output of said detector for providing a signal that is a function of the intensity of radiation impinging upon said detector;  
period circuit means having an input and an output terminal and including a plurality of capacitors one of which may be selectively connected as an active element in said period circuit;  
means connecting the input terminal of the period circuit means to the means connected to the output of said detector;  
means having its input connected to the input terminal of said period circuit and providing an output as a function thereof;  
means coupling at least one of said plurality of capacitors different from that connected in said period circuit for maintaining the operating voltage of said coupled capacitor at approximately the voltage across said selectively connected capacitor in said period circuit; and  
means connected to the output terminal of said period circuit for measuring the intensity of radiant energy impinging upon said detector.

3,409,374

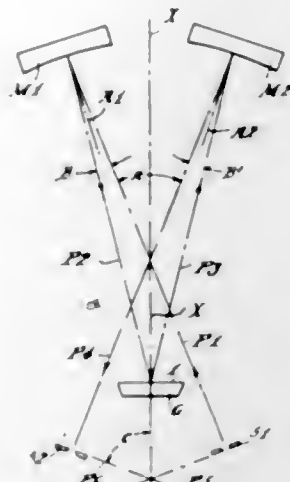
#### OPTICAL GRATING SPECTRAL DISPERSION SYSTEMS

Paul M. McPherson, Acton, Mass., assignor, by mesne assignments, to McPherson Instrument Corporation, a corporation of Delaware

Filed Feb. 26, 1965, Ser. No. 435,511  
6 Claims. (Cl. 356—99)

A spectrometer system for use in dispersing a wide range of wavelengths of light including the vacuum ultra-

violet wavelengths, where the system includes a grating, two mirrors and entrance and exit slits, all symmetrically disposed with respect to a plane of symmetry running through the grating. The optical axes between the entrance



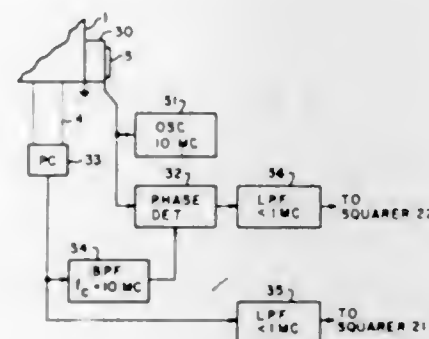
slit and first reflector and between the exit slit and second reflector are crossed to permit lateral space around the slits for light sources and detectors while compensating for off axis error and maintaining a low F number for the system.

3,409,375

#### GAUGING INTERFEROMETER SYSTEMS

Charles J. Hubbard, Huntington, N.Y., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed Oct. 21, 1964, Ser. No. 405,494  
2 Claims. (Cl. 356—106)



1. In an interferometer of the type that includes a source for producing a beam of a monochromatic light, a retroreflector, means for dividing said beam into first and second parts that are directed along respective paths, one of said paths intersecting said retroreflector, said retroreflector being translatable with respect to said dividing means along the light path therebetween and being oriented with respect to said dividing means to redirect one of said parts from the dividing means for recombination with the other part in an interference field, means for directing said other part to said interference field, whereby the translation of the retroreflector produces cyclic variations in the net intensity of light at a point in said interference field, photoelectric means for producing an electrical signal of a magnitude that corresponds to the light intensity at said point, means responsive to said electrical signal for providing a first interference signal having a cyclic variation corresponding to the cyclic variation in intensity of light at the point in the interference field that results solely from the translation of the retroreflector, the improvement that comprises,

means for cyclically varying the optical length of the path of one of said first and second beam parts to produce a further cyclical variation in said electrical signal in addition to any variation therein resulting from the translation of said retroreflector, the optical length of the path of said one beam part being changed by a distance less than that required to produce one interference fringe in the interference field, and the frequency of the cyclical variation in the optical length of the path of said one beam part being such that the frequency of the further cyclical variation in the electrical signal is higher than the maximum anticipated frequency of the electrical signal that results solely from said translation of the retroreflector,

means providing a second interference signal having a cyclic variation corresponding solely to the change in phase of said further cyclical variation in said electrical signal relative to the phase of the cyclical variation in the optical length of said one of the paths, and

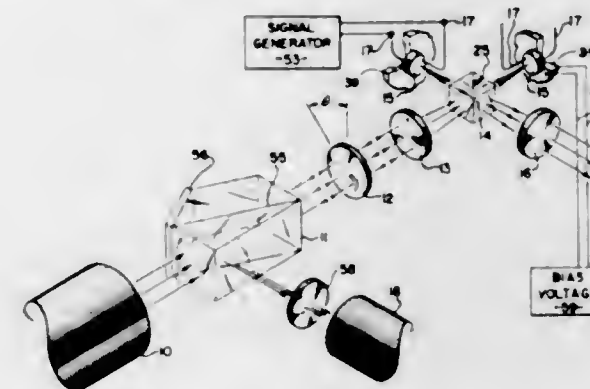
reversible counting means responsive to said first and second interference signals to produce a count corresponding to the cyclic variations in said first interference signal, the second interference signal controlling the direction of counting of the counting means.

3,409,376

#### INTERFEROMETER ALIGNMENT

Melvin H. French, Redondo Beach, and Daniel E. Richmond, San Pedro, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware

Filed Oct. 26, 1964, Ser. No. 406,434  
14 Claims. (Cl. 356—110)



Means for optically aligning an interference type light modulator is described wherein the two reflective surfaces in the two legs of the interferometer are each rotatable about axes extending approximately normal to the respective surfaces so that reflected light beams therefrom are re-directed in a common plane. A beam splitter cube in the common plane between the two reflective surfaces is rotatable about an axis normal to the common plane so that the beam splitting plane therein bisects the angle between the reflective surfaces for precise recombination of the light beam reflected from the two reflective surfaces.

3,409,377

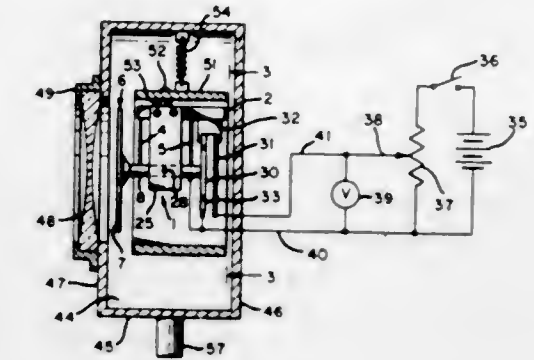
#### APPARATUS AND METHODS FOR MEASURING ENERGY OF LIGHT BEAMS AND ION BEAMS

Vernon L. Rogallo, 539 Los Ninos Way, Los Altos, Calif. 94022

Filed Nov. 17, 1964, Ser. No. 411,947  
3 Claims. (Cl. 356—217)

Apparatus and process for measuring the energy of continuous-wave or pulsed beams such as light beams or ion beams. A movable target is supported by parallel piezoelectric cantilever beams. When light or other energy

impinges on the target, the beams are deflected and an electrical signal is generated which is proportional to the



energy. An adjustable voltage source and capacitor are provided to calibrate the transducer.

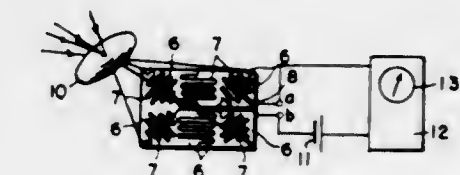
3,409,378

#### MULTI-ELEMENT EXPOSURE METER

Jun Shimomura, Setagaya-ku, Tokyo, Japan, assignor to Nippon Kogaku K.K., Tokyo, Japan, a corporation of Japan

Filed Dec. 23, 1964, Ser. No. 420,615  
Claims priority, application Japan, Dec. 28, 1963, 38/70,522

3 Claims. (Cl. 356—222)



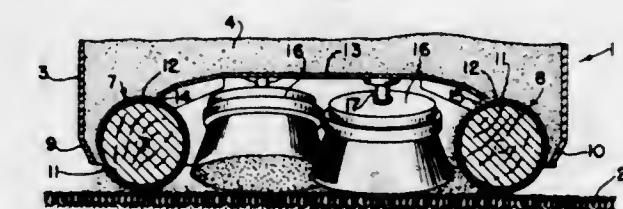
The invention provides a multi-element exposure meter in which the light receiving surface is divided into more than two light receiving elements connected in series for determining the exposure indication on the basis of the dark portions of the scene to be photographed.

3,409,379

#### CLEANING

Frederick B. Vanderveer, Grand Rapids, Mich., assignor to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan

Filed Oct. 22, 1965, Ser. No. 500,956  
8 Claims. (Cl. 401—22)



A dry rug shampooer having a hopper and front and rear transverse flexible rollers for rollingly supporting the hopper on a floor for translation thereover. A pair of rows of rotary brushes are disposed between the rollers, with each row being offset transversely from the other row. The brushes in each row are tilted in a direction opposite to the brushes in the other row. Dry shampoo in the hopper is fed down by the hopper and is worked into a nap surface by the rollers and brushes.



3,409,380

## FOUNTAIN PEN

Roland Longarzo, Valley Stream, N.Y., assignor to Union Pen & Pencil Corp., Mount Vernon, N.Y., a corporation of New York

Filed June 23, 1966, Ser. No. 559,879

7 Claims. (Cl. 401—112)



This invention relates to writing pens, and more particularly to those of the ball point construction, in which there is a retractable ink cartridge with a ball point at one end. It is the purpose of the present invention to provide indicating means through an opening in the barrel of the pen to indicate when the cartridge is retracted with the writing point inside the barrel.

3,409,381

## COMPACT TOOTHBRUSH DEVICE

Frank P. Hoffman, 1270 E. 19th St., Brooklyn, N.Y. 11230

Continuation-in-part of application Ser. No. 586,595, Sept. 27, 1966. This application Feb. 15, 1968, Ser. No. 705,803

3 Claims. (Cl. 401—175)



This invention relates to improvements in the fountain toothbrush art and comprises a removably disposed brush-

ing element adapted to be secured so that the bristles thereof extend beyond the plane of the handle, a gate valve for cutting off the supply of toothpaste to the brushing element and novel propulsion means for propelling the toothpaste upon said brushing element.

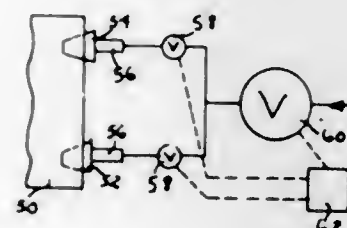
3,409,382

## FUEL FLOW RESTRICTOR FOR HIGH CAPACITY BURNERS

Temple S. Voorhels, Atherton, Calif., assignor to Coen Company, Burlingame, Calif., a corporation of California

Filed Dec. 28, 1965, Ser. No. 516,856

2 Claims. (Cl. 431—18)



A fuel flow restrictor for high capacity oil burners in which there is provided oil restrictor tubes connected between inlet and outlet chambers and in which the inlet end of each tube is smoothly rounded for minimum flow disturbance and the length and diameter relation of the cylinder chosen to insure laminar flow and requisite pressure drop. The restrictors are connected in series with dual high capacity burners so that when the flow rate to one of the burners is changed, the pressure variation at the other burner is minimal.

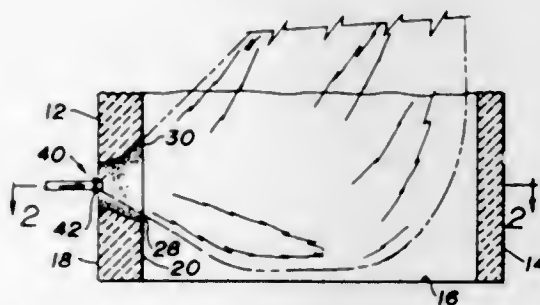
3,409,383

## FLAME FORMING BURNER CONSTRUCTION

Temple S. Voorhels, Palo Alto, Calif., assignor to Coen Company, Burlingame, Calif., a corporation of California

Filed May 9, 1967, Ser. No. 637,123

2 Claims. (Cl. 431—174)



A combustion chamber wall defining a throat opening that is shaped in accordance with the flame shape desired, which in turn is dictated by the combustion chamber configuration. A fuel nozzle formed with plural fuel outlet openings so arranged and oriented to cooperate with the asymmetrical burner throat to form an asymmetrical flame in a combustion chamber.

## CHEMICAL

3,409,384

## METHOD OF DYEING LEATHER WITH AZOIC DYESTUFFS AND PRODUCTS SO PRODUCED

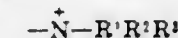
Clemens Streck, Loudonville, N.Y., assignor to GAF Corporation, a corporation of Delaware

No Drawing. Filed Apr. 22, 1965, Ser. No. 450,209

13 Claims. (Cl. 8—13)

The invention coupler an azoic coupling component and a diazotizable primary amine, both devoid of sulfonic and carboxylic acid solubilizing groups, on and in leather with an  $\alpha$ -sulfofatty acid, such as  $\alpha$ -sulfolauric acid  $\alpha$ -sulfopalmitic acid and  $\alpha$ -sulfostearic acid, and a diazotizing agent. Both stabilized diazonium compounds and primary amines with sodium nitrite and an acid, e.g. formic acid are used as the diazo component.

wherein R is an aliphatic hydrocarbon group containing about twelve to above eighteen carbon atoms, Y is —CONH— or —C—



is an aliphatic tertiary amine or a heterocyclic tertiary amine and X<sup>-</sup> is a halogen atom or mineral acid radical; and optionally an additional catalyst constituent selected from the group consisting of a salt of (1) a metal of Group II, III or IV of the Periodic Table and (2) an organic acid, which additional constituent will impart a pH of below 7 to the aqueous solution. The impregnated fabric is then dried, cut and sewn to form the desired garment and thereafter cured at an elevated temperature.

3,409,388

## METHOD FOR PRESERVING WOOD POLES

Robert F. Nelson, St. Paul, Minn., assignor to Chem-Wood Corporation, St. Paul, Minn., a corporation of Minnesota

Filed Jan. 2, 1964, Ser. No. 334,982

2 Claims. (Cl. 21—7)

3,409,385  
ANTHRAQUINONE DYED POLYPROPYLENE FIBERS

Joseph W. Dehn, Jr., Great Neck, and Harold J. Kuhfuss and Paul Resnick, Brooklyn, N.Y., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Sept. 21, 1964, Ser. No. 398,046

3 Claims. (Cl. 8—39)

Polypropylene dyed with 1-(2',4',6'-trimethylanilino)-4-hydroxyanthraquinone or with 1-(2',4',6'-triethylanilino)-4-hydroxyanthraquinone.

3,409,386

## REACTION OF HALOCYCLOALKENYL ACYL HALIDE WITH POLYESTERS, POLYAMIDES AND TEXTILES

Herman S. Bloch, Skokie, and Louis Schmerling, Riverside, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Oct. 1, 1964, Ser. No. 400,933

18 Claims. (Cl. 8—94.21)

Natural or synthetic textiles and non-textile polymers or prepolymers are treated with a halo-substituted cycloalkenylacyl halide to impart flame retardance thereto. For example, cotton, wool, polyesters and polyamides may be treated with 1,4,5,6,7,7-hexachloro-5-norbornen-2-ylacetyl chloride or the analogous bromine substituted compound. Also, leather, nylon and rayon fibers and unshaped alkyl resins, adipic acid-diethylenetriamine polyamide are treated by the above acyl halide also polyesters are made from propylene glycol (modified by the above acyl halide) and maleic anhydride.

This application relates to a wood preservative bandage for the above-ground treatment of wooden poles and the method of treatment. The bandage comprises an elongated tube of preservative impermeable water soluble material which releases the preservative into contact with the pole as the bandage dissolves when contacted by rain or a water spray. The method comprises applying bandages to spaced areas of the pole and dissolving the protective film to permit direct contact between the preservative and the pole. The preservative is such as to spread longitudinally of the pole from the bandages to cover the entire pole surface.

3,409,389

## METHOD OF REMOVING AIR FROM GOODS IN PREPARATION FOR AUTOCLAVE STERILIZATION

Bengt A. Bjork, Getinge, Sweden, assignor to Getinge Mekaniska Verkstads Aktiebolag, Getinge, Sweden, a Swedish joint-stock company

Filed Sept. 16, 1964, Ser. No. 396,929

Claims priority, application Sweden, Sept. 16, 1963, 10,130/63; Oct. 4, 1963, 10,875/63

3 Claims. (Cl. 21—56)

Removing air from goods in a space during a pretreatment period to prepare such goods for subsequent sterilization by steam in the space, such pretreatment period including a first step in which fluid initially is evacuated from the space to reduce the pressure therein to a first vacuum, a second step in which steam is introduced into the space to increase the pressure therein to a partial vacuum which is at a lower vacuum than the first vacuum and below atmospheric pressure, a third step in which fluid thereafter is evacuated from the space to reduce the pressure therein toward the first vacuum, and a fourth

3,409,387  
PRESS-FREE GARMENTS AND METHODS OF MANUFACTURE

Alex F. Gordon, Black Mountain, N.C., assignor to United Merchants and Manufacturers, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 15, 1966, Ser. No. 542,756

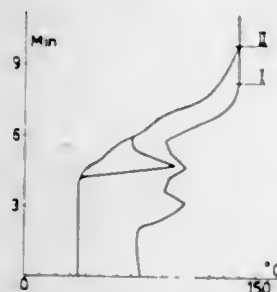
9 Claims. (Cl. 8—116.2)

Process for the production of press-free garments which will retain their crease, which includes the steps of impregnating the fabrics from which the garments are produced with an aqueous solution containing an acetal and a synergistic catalyst, the synergistic catalyst comprising an acid salt of a primary aliphatic amine and a quaternary ammonium salt of the formula:





step in which steam is subsequently introduced into the space to increase the pressure therein toward the partial vacuum which is at a lower vacuum than the first vacuum and below atmospheric pressure, and evacuating fluid

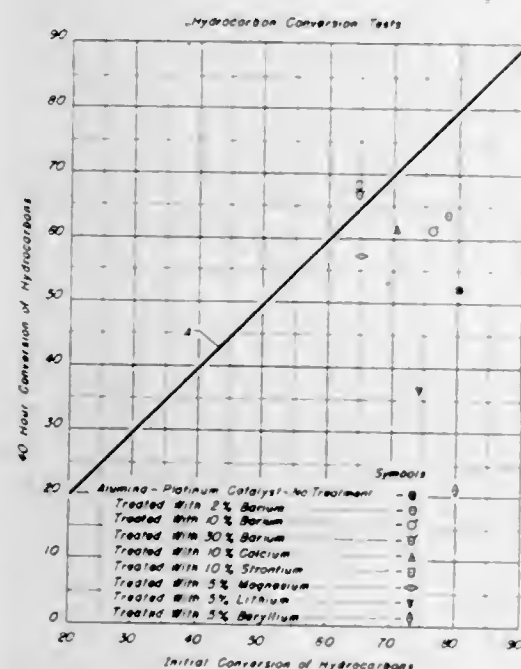


from the space during the first portion of each of the second and fourth steps while steam is being introduced into the space to promote removal of air from the goods to prepare such goods for subsequent sterilization by steam in the space.

### 3,409,390 TREATMENT OF COMBUSTIBLE WASTE PRODUCTS

James Hoekstra, Evergreen Park, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Apr. 1, 1963, Ser. No. 269,328  
7 Claims. (Cl. 23—2)



1. A method for effecting the oxidation of noxious exhaust gases which comprises contacting said gases at oxidation conditions with a catalytic composite consisting essentially of alumina, a platinum group metal component in an amount of from about 0.01% to about 1% by weight thereof, and in excess of 1% by weight of an alkaline earth component selected from the group consisting of calcium, strontium and barium.

### 3,409,391 PROCESS FOR PRODUCING HIGH PURITY COLUMBIUM OXIDE

Charles E. Mosheim, Pennsburg, Pa., assignor to Kawecki Chemical Company, New York, N.Y., a corporation of Pennsylvania

No Drawing. Filed Jan. 17, 1966, Ser. No. 520,877  
3 Claims. (Cl. 23—23)

Indigenous iron contaminant in columbium oxide is removed to produce optical grade columbium oxide by reacting the contaminated oxide with oxalic acid to convert both the columbium and iron to oxalates in solution, then separating the columbium oxalate by crystallization from the iron oxalate-containing solution, and calcining

the separated substantially iron-free columbium oxalate to form optical grade columbium oxide.

### 3,409,392 METHOD FOR PREPARING ALKALI METAL TRI- POLYPHOSPHATE PRECURSOR MIXTURE

Kenneth J. Shaver, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed May 6, 1964, Ser. No. 365,441

9 Claims. (Cl. 23—106)

In the continuous method wherein a phosphate source and an alkali metal source are used as reactants to form a precursor mixture having a molar ratio of di-alkali metal phosphate to mono-alkali metal phosphate of about 2:1 in slurry or dry particulate form suitable for use in further processing the precursor mixture into alkali metal tripolyphosphate, the improvement comprising continuously proportioning both of the reactants into two predetermined fractions and mixing one fraction from each reactant together with sufficient water to form a solution, correlating the flow of at least one of the reactants being proportioned to a property of the solution, and mixing the solution with the remaining fractions to form the precursor mixture.

### 3,409,393 PROCESSES AND COMPOSITIONS FOR CONDITIONING PHOSPHATES

Norman Earl Stahlheber, Columbia, Ill., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application July 24, 1961, Ser. No. 125,947. Divided and this application June 21, 1965, Ser. No. 465,778

9 Claims. (Cl. 23—108)

A process is disclosed for manufacturing calcium disodium pyrophosphate tetrahydrate of which more than 50 weight percent is amorphous which process comprises reacting sodium acid pyrophosphate and calcium hydroxide in an aqueous medium at a pH from about 6 to about 10.5. The foregoing composition is useful as an anti-caking agent for monocalcium orthophosphate monohydrate.

### 3,409,394 METHOD OF PRODUCING PHOSPHATE GRAN- ULES BY REACTING PHOSPHORIC ACID AND A CARBONATE WITH CONTROLLED REAC- TION TIMES

James P. Sprigg, 5233 Randolph St., Los Angeles, Calif. 90022

No Drawing. Continuation-in-part of application Ser. No. 252,617, Jan. 21, 1963. This application Dec. 22, 1967, Ser. No. 692,723

10 Claims. (Cl. 23—109)

This disclosure describes a method for producing phosphates such as calcium phosphate which includes mixing an acid of phosphorus and a carbonate to form a slurry. Mixing is terminated and the mixture is placed in a quiescent state before substantial reaction has occurred. The porous mass formed as a result of the reaction in the quiescent state is easily broken up into granules without the use of a special crusher. The method may be carried out as a batch process or continuously.

### 3,409,395 METHOD OF GROWING ALPHA-ALUMINA AND BETA-SILICON CARBIDE WHISKERS

James J. Shyne, Caldwell, and John V. Milewski, Saddle Brook, N.J., assignors to General Technologies Corporation, Reston, Va., a corporation of Delaware

No Drawing. Filed Apr. 5, 1965, Ser. No. 445,763  
1 Claim. (Cl. 23—142)

A method of preparing alpha-alumina whiskers and beta-silicon carbide whiskers simultaneously in different

growth areas by reacting a hydrocarbon gas containing 500 to 40,000 p.p.m. water with an alumina-silica receptacle containing a charge of aluminum metal.

### 3,409,396 PREPARATION OF WHITE FUSED ALUMINA

Harry E. Osment, Robert B. Emerson, and Robert L. Jones, Baton Rouge, La., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

No Drawing. Filed Mar. 30, 1966, Ser. No. 538,533

9 Claims. (Cl. 23—142)

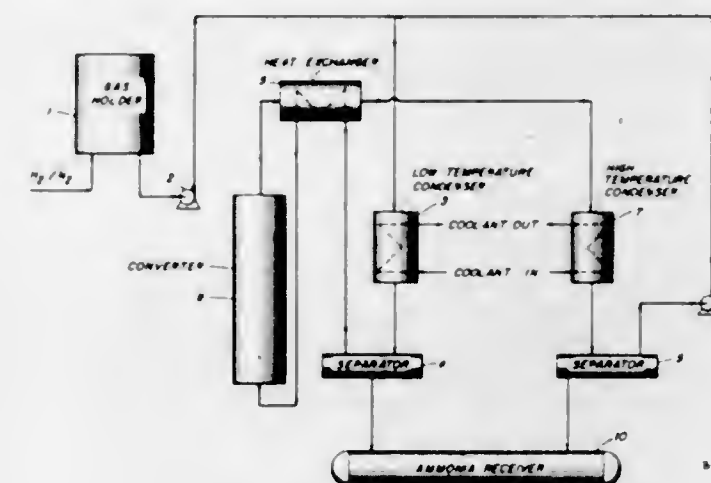
1. In the method of producing fused aluminum oxide by calcining alumina, fusing the calcined alumina and obtaining a solidified fused product, the improvement which comprises:

(a) blending a thermoplastic resin consisting essentially of at least one straight-chain, hydrocarbon resin in which considerable cyclic but no aromatic structures are present with the calcined alumina prior to the fusing of the alumina, so that a fused alumina product substantially free of chromatic discoloration is formed when the calcined alumina is fused and solidified.

### 3,409,397 AMMONIA SYNTHESIS

Abram Miko Fayon, New York, and Jack Barnet Goldstein, Queens, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed May 19, 1965, Ser. No. 456,947  
3 Claims. (Cl. 23—199)



Ammonia is produced by reacting hydrogen and nitrogen in the presence of lithium amide at pressures of at least 2400 p.s.i.g. and temperatures of 350°–500° C. Under these conditions lithium imide, produced by the ammonia-forming reaction, is converted to lithium amide by reaction with additional hydrogen and nitrogen.

### 3,409,398 PROCESS FOR THE RECOVERY OF MAGNESIUM VALUES FROM DOLOMITE

Lloyd M. Housh, Santa Clara, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

No Drawing. Filed Dec. 17, 1965, Ser. No. 514,719  
9 Claims. (Cl. 23—201)

A method of separating the magnesium values from the calcium values in dolomite comprises calcining the dolomite, slaking the dolomite with sufficient water to form magnesium hydroxide and calcium hydroxide, forming said hydroxides into a slurry, contacting said slurry with sufficient cation exchange medium so as to adsorb

substantially all the calcium in the slurry, separating said cation exchange medium from the residual slurry of magnesium hydroxide, and separately recovering the magnesium values from the slurry.

### 3,409,399 PROCESS FOR THE PREPARATION OF CARBONYL SULFIDE

Eugene R. Bertozzi, Yardley, and George Rosen, Levittown, Pa., and Marvin L. Sakowitz, Trenton, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 352,973, Mar. 18, 1964. This application Aug. 25, 1967, Ser. No. 663,935

13 Claims. (Cl. 23—203)

Carbonyl sulfide is produced in high yields by reacting carbon dioxide and carbon disulfide in the presence of a high surface area catalyst at temperatures between 100 and 600° C.

### 3,409,400 BINARY, TERNARY AND QUATERNARY COM- POUNDS COMPOSED OF SILICON, NICKEL, ARSENIC, AND PHOSPHORUS

Tom Allen Bither, Jr., and Paul C. Donohue, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 10, 1967, Ser. No. 622,082  
11 Claims. (Cl. 23—204)

Binary, ternary and quaternary compositions having the pyrite crystal structure of the formula

$Si_{1-x}Ni_xP_yAs_z$

where x is 0–1.0, y and z are 0–2.15 and the sum of y and z is 1.85–2.15 are claimed. These compositions are produced from mixtures of elemental As, Ni, P and/or Si at temperatures of 700–1300° C. at pressures up to 70 kilobars (kb.).  $SiP_2$  and  $Si_{1-x}Ni_xP_2$  also are produced from mixtures of elemental Ni, P and/or Si at autogenous pressures. The products are useful as components of electrical switches and devices.

### 3,409,401 METHOD OF PRODUCING PHOSPHORUS TRIBROMIDE

Herbert Jenkner, Cologne-Deutz, and Otto Rabe, Cologne-Hohenberg, Germany, assignors to Chemische Fabrik Kalk G.m.b.H., Cologne-Kalk, Germany

No Drawing. Filed Dec. 16, 1966, Ser. No. 602,175  
Claims priority, application Germany, Jan. 19, 1966, C 37,954

5 Claims. (Cl. 23—205)

Method of producing phosphorus tribromide by reaction of bromine and white phosphorus in phosphorus tribromide as diluent and, if desired, distillation of the crude phosphorus tribromide wherein the reaction is carried out at a temperature over 100° C., preferably, at 120 to 130° C., the quantity of bromine supplied to the reaction mixture being 0.05 to 0.5% in excess of that theoretically required for the reaction.

### 3,409,402 STABILIZATION OF CUBIC SILICON CARBIDE

Arrigo Addamiano, Willoughby, Ohio, assignor to General Electric Company, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 376,271, June 18, 1964. This application May 5, 1967, Ser. No. 636,287

2 Claims. (Cl. 23—208)

Stabilization of cubic beta silicon carbide, the low resistivity form, above the normal cubic to hexagonal transition temperature is achieved by saturating the material with nitrogen and thereafter maintaining an atmosphere of nitrogen about the material.



3,409,403

**PLASMA PREPARATION OF CARBON BLACK**

Geir Bjornson and Homer M. Fox, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 5, 1964, Ser. No. 401,425

3 Claims. (Cl. 23—209.3)

A process for the production of high-structure carbon black in which the hydrocarbon feed is passed into a plasma reaction zone for an effective length of time. The effluent from the plasma zone is then passed into a second intermediate zone where it is maintained at a lower temperature for an effective length of time. The effluent from said second zone is then passed to a cooler and/or separator zone where the high-structure carbon black is removed as a product of the process.

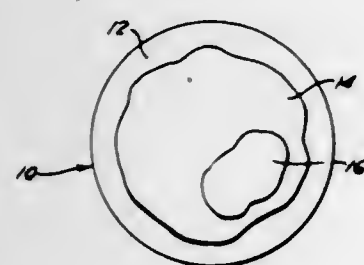
3,409,404

**ANALYTICAL METHODS AND DEVICES EMPLOYING CHOLESTERIC LIQUID CRYSTALLINE MATERIALS**

James L. Ferguson, Verona, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 13, 1963, Ser. No. 323,341

19 Claims. (Cl. 23—230)



The optical properties of a cholesteric liquid crystal-line material are changed when the cholesteric material is contacted with another material. A variety of materials, particularly vapors, are identified by observing their effect on cholesteric liquid crystalline materials. The most convenient observable effect is a change in the color of the cholesteric material and, if necessary, comparing the change to the change effected by a known standard material. An analytical device may comprise one or more distinct elements of cholesteric liquid crystalline material. Suitable cholesteric liquid crystalline materials include a wide variety of compounds, and mixtures thereof, derived from cholesterol.

3,409,405

**DIAGNOSTIC PREPARATION FOR THE DETECTION OF FORMALDEHYDE**

Raam R. Mohan, 1 Irish Lane, Randolph Township, Dover, N.J. 07801; Frank J. Turner, 2 Brent Place, Succasunna, N.J. 07876; and Stephen J. Schulte, 13 Timber Hill Drive, Livingston, N.J. 07039

No Drawing. Filed Feb. 17, 1965, Ser. No. 433,476

3 Claims. (Cl. 23—230)

A diagnostic preparation for the detection of formaldehyde comprising a bibulous material impregnated with a specific solution consisting of phenylhydrazine hydrochloride, ferric ammonium citrate and tribasic potassium phosphate. In use the impregnated material is allowed to come in contact with a sample and hydrochloric acid. The presence of formaldehyde is indicated by a red color.

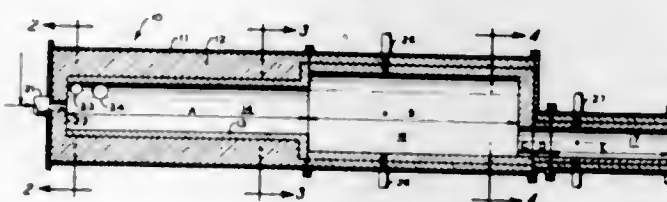
3,409,406

**APPARATUS FOR THE PRODUCTION OF CARBON BLACK**

Lawrence K. Murray, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 13, 1965, Ser. No. 513,470

6 Claims. (Cl. 23—259.5)

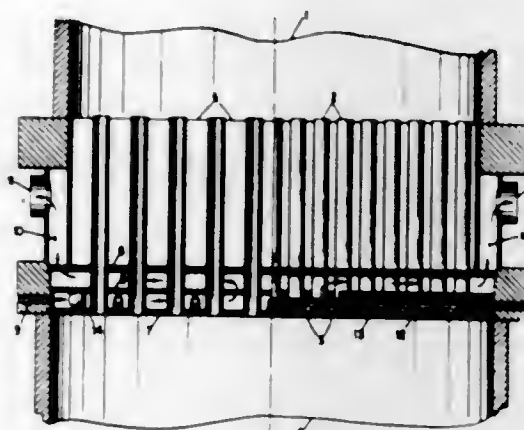


A carbon black furnace comprising an elongated first cylindrical chamber, a second elongated cylindrical chamber having a diameter greater than said first chamber and being in communication with and in axial alignment with said first chamber, and an elongated third cylindrical chamber having a diameter less than the diameter of said first chamber and in communication with said second chamber with the bottom of said third chamber in horizontal alignment with the bottom of said second chamber, said first chamber having means for introducing a reactant hydrocarbon and a free oxygen-containing gas therein.

3,409,407

**CORROSION RESISTANT FLAME REACTOR**

John Edward Loeffler and H. P. McAllister, Houston, and Paul R. Prokish, La Porte, Tex., assignors to Diamond Shamrock Corporation, a corporation of Delaware  
Continuation of application Ser. No. 424,418, Jan. 8, 1965. This application July 31, 1967, Ser. No. 667,021  
1 Claim. (Cl. 23—277)



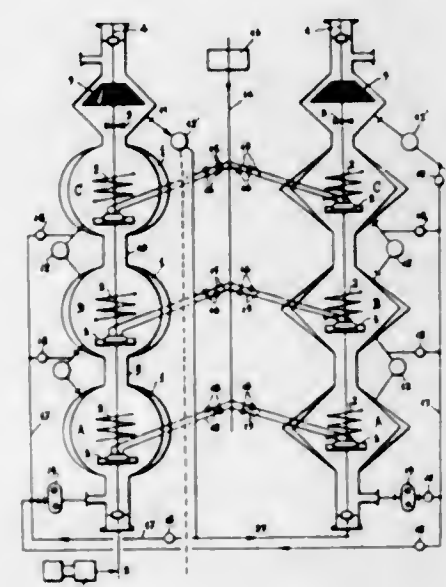
In producing acetylene by incomplete oxidation of saturated hydrocarbons, where a portion of a gas distributor issues streams of premixed oxygen plus hydrocarbon feed-stock into a reaction zone, and other portions of the distributor feed streams of auxiliary oxygen into the reaction zone, it has also been disclosed to provide the lower portion of the distributor adjacent the reaction zone with a liquid-cooled heat exchanger. This exchanger passes cooling fluid around the lower portion of the means feeding the gaseous streams into the reaction zone and as a result the exchanger has a lower tube sheet exposed on one side to the reaction chamber and on the other to the cooling fluid. The sheet thus encounters an extreme heat flux while at the same time is exposed to the deleterious atmosphere of the reaction zone. To withstand this atmosphere and to cope with the extreme heat flux,

the lower tube sheet is made from low-carbon steel having a thin chromium diffusion layer of chromium diffused into the surface of the sheet exposed to the reaction chamber.

3,409,408

**COLUMN REACTOR WITH SERIES REACTION CHAMBERS**

Mario Ballestra, Viale Bianca Maria 26, Milan, Italy  
Filed Sept. 29, 1964, Ser. No. 400,076  
Claims priority, application Italy, Oct. 4, 1963, 20,524/63; Nov. 5, 1963, 23,186/63  
3 Claims. (Cl. 23—283)



1. A reactor for carrying out a reaction between a liquid reagent and a gaseous reagent, said reactor having walls defining a plurality of reaction chambers serially arranged as an upright column, each of said reaction chambers having a constricted inlet at its lower end and a constricted outlet at its upper end, the outlet of each reaction chamber opening directly into the inlet of the next reaction chamber, means communicating with the inlet of the lowermost chamber for feeding of the liquid reagent thereto, means communicating in parallel with the reaction chambers for the feeding of the gaseous reagent thereto, said last mentioned means communicating with each reaction chamber at a zone intermediate the upper and lower ends of the reaction chamber, agitating means disposed in said intermediate zone, a hollow shaft mounted upright in the column, said agitating means being mounted on said hollow shaft and said hollow shaft having an inlet to its interior communicating with said means for the feeding of the gaseous reagent and further having outlet openings for the gaseous reagent, said outlet openings for the gaseous reagent being located adjacent to said agitating means, and each reaction chamber being provided with heat exchange means for controlling the temperature of said reaction.

3,409,409

**CONTROLLED pH SCRUBBER SYSTEM**

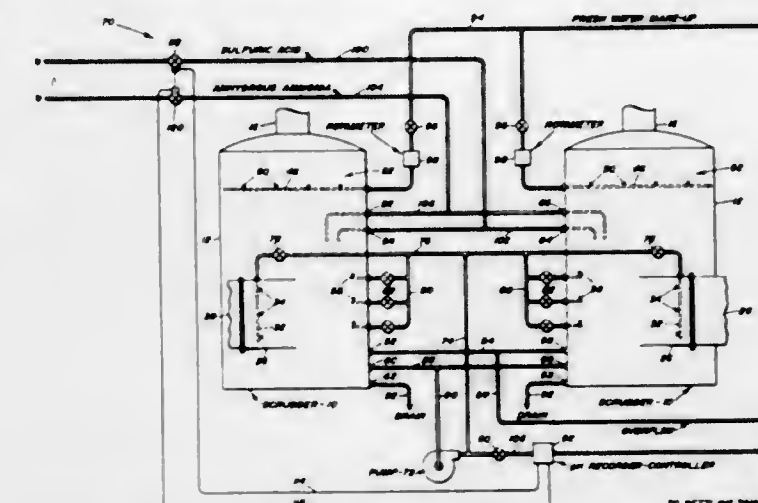
Walter J. Sackett, Sr., 3700 Echodale Ave., Baltimore, Md. 21206

Filed Apr. 22, 1966, Ser. No. 551,482

3 Claims. (Cl. 23—283)

A vertical tank is provided with a tangential inlet in the side of the tank and an outlet in its top for passing air through the tank; spaced filters are positioned within the tank in the path of air, sprayers spray the air as it passes between the filters with clean water, with this water being collected in the bottom of the tank, and with a pump withdrawing the water from the bottom of the tank and

supplying it to other sprayers spraying the air as it passes from the inlet to the filter closest to the inlet, with supply



lines being positioned within the tank between the lowermost filter and the inlet for supplying modifying chemical.

3,409,410

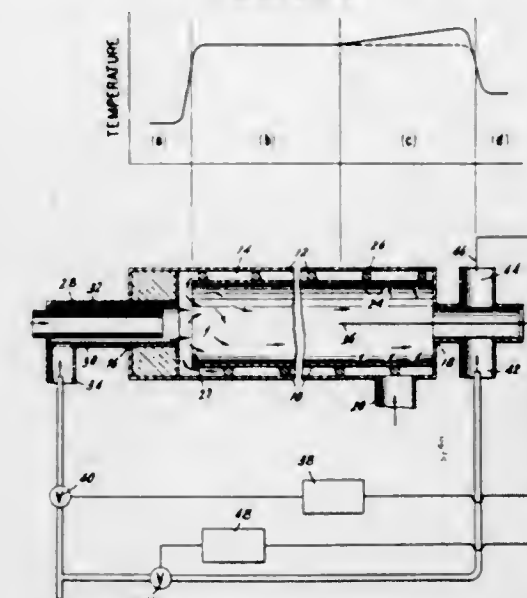
**HIGH TEMPERATURE REACTOR PROVIDING A CONSTANT TEMPERATURE REACTION ZONE AND A FINAL ELEVATED TEMPERATURE REACTION ZONE**

Sydney P. Spence, Westfield, Leonard M. Baker, Plainfield, Ulrich A. Steiner, North Plainfield, Larry Madestau, Martinsville, and Lester A. Rowe, Somerville, N.J., assignors to Union Carbide Corporation, a corporation of New York

Original application Mar. 26, 1964, Ser. No. 354,869, now Patent No. 3,311,668, dated Mar. 28, 1967. Divided and this application Oct. 18, 1966, Ser. No. 601,254

3 Claims. (Cl. 23—284)

LONGITUDINAL TEMPERATURE PROFILE THROUGH REACTOR



A high temperature reactor useful in endothermic reactions comprising a multi-zoned tubular reaction chamber enveloped by an annular passageway through which a high temperature diluent flows counter-current to the flow of the reaction stream before mixing with the reaction stream.

3,409,411

**APPARATUS FOR SEPARATING SOLIDS AND LOADING REACTOR VESSEL**

John C. Mosley, Baytown, and Haskle W. Oliver, Highlands, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

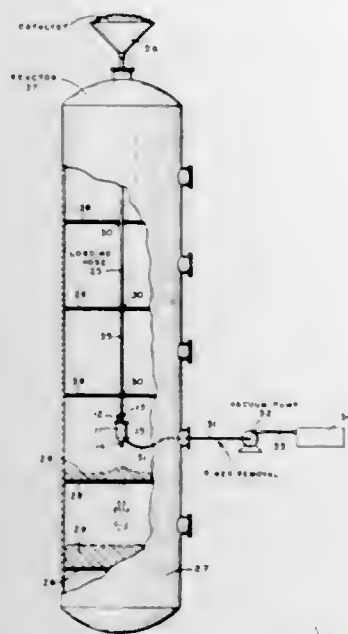
Filed July 26, 1965, Ser. No. 474,818

4 Claims. (Cl. 23—288)

A solids separation apparatus having a top feed inlet,



a first perforate member directing feed particles in a diverging path, a second perforate member directing the particles in a converging path, air inlets and an air and



finer outlet arranged for air to flow through the particles as they are divergently and convergently flowed towards a coarse particle outlet.

3,409,412

**PROCESS FOR PRODUCING BUTTERFLY TWIN BARIUM TITANATE SINGLE CRYSTALS AND BARIUM TITANATE MIXTURE USED THEREIN**  
Hiromu Sasaki, Osaka-shi, Osaka-fu, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan  
No Drawing. Filed Dec. 8, 1965, Ser. No. 512,511  
Claims priority, application Japan, Dec. 28, 1964, 40/40

4 Claims. (Cl. 23—300)

1. The process of producing butterfly twin crystals of barium titanate in a large size comprising the steps of adding barium titanate powder to a flux material which is a solvent therefor, heating the mixture of barium titanate and flux to an elevated temperature to form a melt, maintaining the said mixture at the said elevated temperature for a period of time during which a portion of the barium titanate dissolves, the ratio of barium titanate to flux in said mixture being greater than the solubility limit of barium titanate in the flux material at the said elevated temperature, and cooling the melt to promote the crystal growth, the said barium titanate powder comprising (a) 50 to 80 weight percent of barium titanate wherein the molar ratio of barium oxide to titanium dioxide is 0.60 to 0.85 and (b) 20 to 50 weight percent of barium titanate wherein the molar ratio of barium oxide to titanium oxide is 1.0 to 1.5.

3,409,413

**METHOD OF DISSOLVING ALUMINUM-CLAD THORIA TARGET ELEMENTS**

Raymond E. Burns, John F. Phillips, and Wallace W. Schulz, Richland, Wash., assignors to the United States Atomic Energy Commission  
No Drawing. Filed Aug. 11, 1967, Ser. No. 660,569  
5 Claims. (Cl. 23—324)

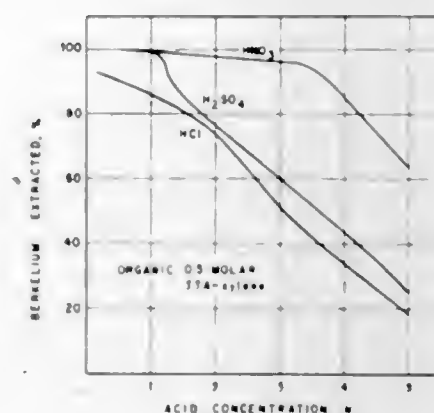
Aluminum-clad thoria target elements used for the production of uranium-233 by irradiation in a nuclear reactor are dissolved. The dissolving solution is 10 to 13 M nitric acid and contains fluoride, mercury and nickel ions. The fluoride and mercury ions together activate the aluminum so that it will dissolve in the concentrated

$\text{HNO}_3$ , the fluoride ion catalyzes the dissolution of thoria, and the nickel ion controls the rate of dissolution of the aluminum.

3,409,414

**EXTRACTION OF BERKELIUM VALUES IN THE TETRAVALENT STATE USING 2-THENOYLTRIFLUOROACETONE**

Fletcher L. Moore, Knoxville, Tenn., assignor to the United States Atomic Energy Commission  
Filed Oct. 6, 1967, Ser. No. 674,067  
8 Claims. (Cl. 23—339)



A method of selectively removing berkelium values from an aqueous solution containing said values comprising reducing the pH of the solution to a value less than 2, oxidizing the berkelium to the tetravalent oxidation state, and extracting the resulting berkelium values with an organic solution of 2-thenoyltrifluoroacetone.

3,409,415

**METHOD OF EXTRACTING SOLUBLE METAL COMPLEXES USING AMINE SOLVENTS**

Fletcher L. Moore, Knoxville, Tenn., assignor to the United States Atomic Energy Commission  
No Drawing. Continuation-in-part of application Ser. No. 569,757, Aug. 2, 1966. This application May 31, 1967, Ser. No. 643,315

6 Claims. (Cl. 23—340)

A method for removing metal values such as trivalent actinides and lanthanides from an aqueous solution substantially free of sulfate. A water soluble organic carboxylic acid is added to the aqueous solution to complex the metal values. The resulting aqueous phase is then contacted with an organic solution of high molecular weight amine having 10 or more carbon atoms to extract a metal-organic acid-amine complex into the organic phase.

3,409,416

**NITRIDE-REFRACTORY METAL COMPOSITIONS**  
Paul C. Yates, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 457,467, May 20, 1965, which is a continuation-in-part of applications Ser. No. 371,776 and Ser. No. 371,779, June 1, 1964. This application Aug. 29, 1966, Ser. No. 580,848

15 Claims. (Cl. 29—182.5)

Dense refractory compositions containing a nitride of aluminum, titanium, zirconium, tantalum, hafnium, niobium, vanadium or their mixtures interdispersed with a metal binder selected from among molybdenum, tungsten, rhenium and their alloys, and optionally containing substantial amounts of other refractory oxides, nitrides, silicates, aluminates, chromites or carbides such as alumina or titanium carbide, are useful as cutting tool tips.

3,409,417

**METAL BONDED SILICON NITRIDE**

Paul C. Yates, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 371,757 and Ser. No. 371,777, June 1, 1964. This application Oct. 19, 1966, Ser. No. 587,671

9 Claims. (Cl. 29—182.5)

Dense, refractory compositions of silicon nitride and a pressing adjuvant bonded with iron, cobalt, nickel, chromium, rhenium, tungsten, molybdenum or their alloys, are useful as strong, hard, cutting tips. Up to one half of the silicon nitride can be replaced with other chemically stable refractory nitrides, carbides, aluminates, chromites, oxides and silicides without adversely affecting the cutting tips.

3,409,418

**DENSE PRODUCTS OF VANADIUM OR ZIRCONIUM NITRIDE WITH IRON, NICKEL OR COBALT**

Paul C. Yates, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 457,468, May 20, 1965. This application Nov. 9, 1966, Ser. No. 593,000

6 Claims. (Cl. 29—182.5)

Dense, refractory compositions of vanadium or zirconium nitride, bonded with iron cobalt or nickel are useful as cutting tool tips.

3,409,419

**NITRIDES PLUS WEAR-RESISTANT ADDITIVES BONDED WITH IRON, COBALT OR NICKEL**

Paul C. Yates, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 371,778, June 1, 1964. This application Nov. 9, 1966, Ser. No. 593,001

6 Claims. (Cl. 29—182.5)

Dense, refractory compositions containing a nitride of titanium, zirconium, hafnium, niobium, vanadium or their mixtures and a thermodynamically wear-resistant additive of aluminum nitride, tantalum nitride or alumina interdispersed with a refractory binder metal selected from among iron, cobalt, nickel and their alloys, are exceptionally effective for use as cutting tools. The nitrides can be partially replaced by other refractory nitrides and carbides so long as at least 20% by volume of the refractory phase remains one of the named nitrides.

3,409,420

**CATALYTIC DISSOCIATION ACCELERATOR FOR GASEOUS AND SOLID FUELS**

Fred C. Booth, 105 Ardell Road, Bronxville, N.Y. 10708

No Drawing. Filed Jan. 9, 1964, Ser. No. 336,627

3 Claims. (Cl. 44—4)

1. A combustion fuel carrying an additive consisting of 0.01% to 0.1% of a combination of a calcium soap of a high molecular weight saturated fatty acid and selected from the group consisting of stearic acid, lauric acid, palmitic acid or myristic acid dissolved in an organic solvent solution, the solvent of which is selected from the group consisting of benzene, toluene and xylene, said soap being in a 1 to 5% solution, said fuel, when burned, giving rise to an emission in the dissociation zone of a radiation of 6200 Angstrom units.

3,409,421

**HYDROCARBON OIL COMPOSITIONS**

George Belo and Elizabeth L. Fareri, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Sept. 1, 1964, Ser. No. 393,731

6 Claims. (Cl. 44—72)

Antimicrobial activity is imparted to hydrocarbon oils by the addition thereto of an amine from the group comprising normal primary alkylamines having a single alkyl group which contains 5 to 14 carbon atoms in a straight chain configuration without branching or a mixture of octylamines produced by reductive amination of the octyl aldehydes produced by treatment of a heptene petroleum refinery stream by the Oxo process. The octylamines do not have straight chain alkyl substituents but rather each octylamine of the mixture possesses a branched alkyl substituent.

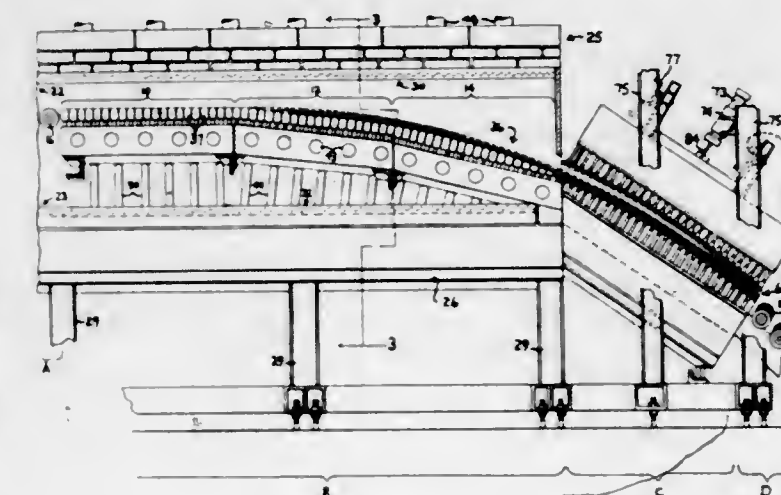
3,409,422

**METHOD AND APPARATUS FOR FORMING A COMPOUND BEND IN A GLASS SHEET ON A GAS SUPPORT BED**

Joseph A. Gulotta, New Kensington, Pa., assignor to PPG Industries Inc., a corporation of Pennsylvania

Continuation of application Ser. No. 379,108, June 30, 1964. This application Aug. 14, 1967, Ser. No. 660,469

3 Claims. (Cl. 65—25)



Glass sheets having a compound curvature composed of curves extending both transversely and longitudinally of the sheet are formed on an elongated support bed providing a gaseous support for the glass. The support bed forms a common surface of changing contour composed of an initial zone of flat configuration, a final zone having curves extending both longitudinally and transversely of the path of travel of the sheet and a transition zone of a configuration changing progressively from a flat surface to a curvature transversely of the path of travel of the sheet and, finally, to curvatures extending both transversely and longitudinally of the path of travel of the sheet. The apparatus is provided with means to heat the sheets to their deformation temperature on the support bed, a quenching zone beyond the support bed and means for conveying the sheets along the support bed into the quenching zone.

3,409,423

**METHOD AND APPARATUS FOR MANUFACTURE OF FLAT GLASS**

Stephane Dufau de Lajarte, Paris, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France

Filed Apr. 14, 1964, Ser. No. 359,659

Claims priority, application France, Apr. 16, 1963, 931,627

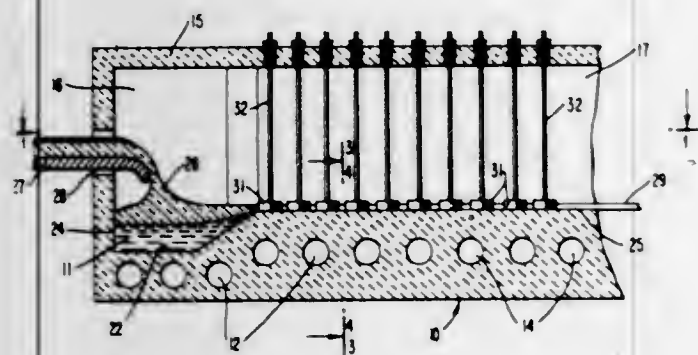
20 Claims. (Cl. 65—65)

10. Apparatus for the production of sheets of glass comprising tank means, a flotation liquid in said tank



means, means for supplying melted glass to the surface of said liquid, and means for directing the flow of said glass to form a sheet of glass on the surface of said liquid, said last-named means comprising parallel rows of rollers engageable with and confining between them the edges of said sheet.

19. The process of manufacturing sheet glass in ribbon form, comprising, depositing molten glass onto a bath



of molten metal, to a thickness greater than stable equilibrium thickness, and maintaining said greater thickness by confining the molten glass on the molten metal, between laterally-spaced rows of rollers contacting the respective edges of the ribbon, each said roller lying substantially in the plane of the ribbon and rotating on an axis inclined to the plane of the ribbon, while gradually reducing the temperature of the glass to solidify the same.

3,409,424

## PROPYNONES AS DEFOLIANTS

James L. Brewbaker, Farmington, and John P. Napolitano, Royal Oak, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia  
No Drawing. Filed Mar. 1, 1966, Ser. No. 530,778  
6 Claims. (Cl. 71-70)

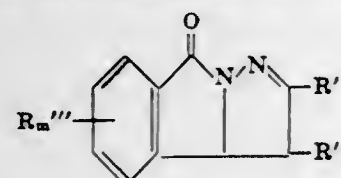
A herbotoxic composition for controlling undesirable deciduous vegetation is provided by a composition comprising an aromatic ketoacetylenic compound such as 1,3-diphenyl-propyn-3-one, a surfactant as a dispersant therefor, and a carrier. A method of controlling said vegetation comprises contact the vegetation with the composition of this invention.

3,409,425

## 2-SUBSTITUTED PYRAZOLOISOINDOLONES AS HERBICIDES

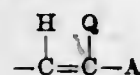
Euclid W. Bousquet, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 435,351, Feb. 25, 1965. This application Jan. 24, 1966, Ser. No. 522,358  
6 Claims. (Cl. 71-76)

1. A plant growth retarding composition comprising a major amount of an inert diluent and a plant growth retarding amount of a compound of the formula:

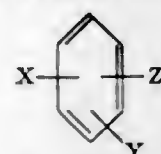


wherein

R' is selected from the group consisting of tert-alkyl of 4 through 12 carbon atoms,



naphthyl, phenanthryl, phthalidylalkyl where the alkyl is 1 through 3 carbon atoms and



m is 1 when R''' is fluorine and is a whole number less than 5 when R''' is selected from the group consisting of chlorine and bromine;

A is selected from the group consisting of hydrogen, methyl, phenyl, methylphenyl, and chlorophenyl;

Q is selected from the group consisting of hydrogen and methyl;

X is selected from the group consisting of hydrogen, halogen, alkyl of 1 through 4 carbon atoms, alkoxy of 1 through 4 carbon atoms, alkylthio of 1 through 4 carbon atoms, nitro, methylsulfonyl, trifluoromethyl and cyano;

Y and Z are each separately selected from the group consisting of hydrogen, halogen, alkyl containing 1 through 4 carbon atoms, and alkoxy containing 1 through 4 carbon atoms;

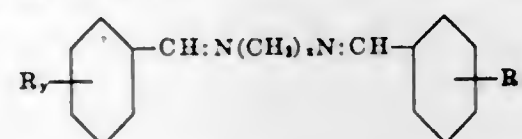
R'' is selected from the group consisting of hydrogen, alkyl of 1 through 4 carbon atoms and cyano; and R''' is selected from the group consisting of hydrogen, fluorine, chlorine and bromine.

3,409,426

## N,N'-(SUBSTITUTED BENZYLIDENE) ALKYLENE DIAMINES AND THEIR USE IN THE CONTROL OF PLANT GROWTH

Pasquale Paul Minieri, Woodside, N.Y., and Joseph F. De Gaetano, Montvale, N.J., assignors to Tenneco Chemicals, Inc., a corporation of Delaware  
No Drawing. Filed Nov. 12, 1964, Ser. No. 410,734  
4 Claims. (Cl. 71-121)

N,N'-(substituted benzylidene) alkylene diamines having the structural formula



wherein each R represents chloro, nitro, amino, lower alkyl, or lower alkoxy groups, or mixtures thereof; x represents an integer in the range of 1 to 6; and each y represents an integer in the range of 2 to 5, are effective pre-emergence and postemergence selective herbicides. Among the most active of these compounds are N,N'-bis-(2,3,6-trichlorobenzylidene)-ethylene diamine and N,N'-bis-(2,6-dichloro-3-nitrobenzylidene)-ethylene diamine.

3,409,427

## METHOD OF TREATING LATERITES

Georges Bonnard, Metz, France, assignor to Institut de Recherches de la Siderurgie Francaise, St. Germain-en-Laye, Yvelines, and Bureau de Recherches Geologiques et Minieres, Paris, France  
Filed Apr. 4, 1966, Ser. No. 539,781

Claims priority, application France, Apr. 6, 1965, 12,089

13 Claims. (Cl. 75-1)

A method of treating iron ore containing a small percentage of non-ferrous metals, such as chrome, nickel, cobalt and aluminum in which the ore is ground while sodium carbonate and also possibly, but not necessarily, calcium carbonate is mixed thereto and the mixture is humidified and formed into pellets. The pellets are subjected to a first roasting process in the presence of air to form from the chrome and aluminum contained therein chromates and salts of aluminum, which are leached out from the pellets by submerging the same into a liquid.

Subsequently the pellets are subjected in the presence of sulfur dioxide to a second roasting process and the sul-

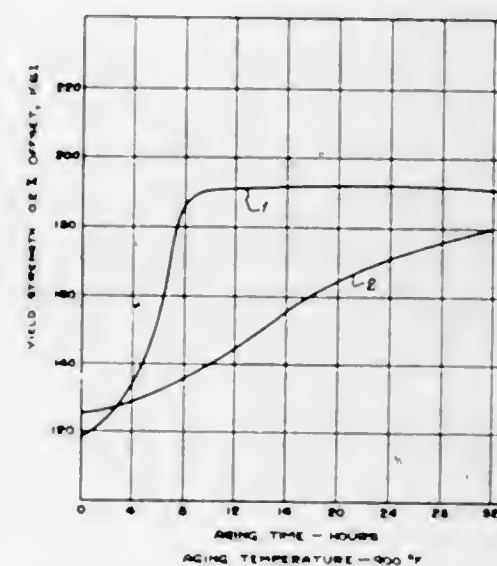


fates thus formed are leached out from the pellets whereafter the latter are dried.

3,409,428

## TITANIUM BASE ALLOY

Warren M. Parris, Las Vegas, Nev., assignor to Titanium Metals Corporation of America, New York, N.Y., a corporation of Delaware  
Continuation-in-part of application Ser. No. 346,142, Feb. 20, 1964. This application Aug. 3, 1966, Ser. No. 569,852  
2 Claims. (Cl. 75-175.5)



An age hardenable, metastable beta titanium base alloy containing 9-11% vanadium, 7-8.5% chromium, 2.4-3.2% aluminum, up to 0.2% in total amount of carbon, oxygen and nitrogen, balance titanium with incidental impurities.

3,409,429

## TRANSPARENCY AND METHOD OF MAKING AND USING A THIN TRANSPARENT RADIATION SENSITIVE FILM CONSISTING ESSENTIALLY OF TITANIUM DIOXIDE

Carl F. W. Ekman, Bedford, and Janet M. Norbury, Waltham, Mass., assignors to Itek Corporation, Lexington, Mass., a corporation of Delaware  
No Drawing. Filed Apr. 15, 1964, Ser. No. 360,113  
11 Claims. (Cl. 96-27)

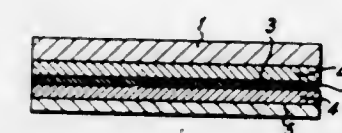
This invention relates to methods of making radiation-sensitive substrates, methods of making information-containing photographic transparencies, and to novel photographic transparencies produced from and used in these

processes. A radiation-sensitive titanium dioxide surface suitable for the production of photographic images is produced by heating a titanium-containing surface in an oxidizing atmosphere at a temperature between about 400° C. and about 900° C. wherein this titanium-containing surface is a film of a titanium compound selected from the groups, consisting of hydrolyzable titanium esters and polymers thereof. A photographic transparency is prepared, according to this invention, by exposing a transparent copy medium, comprising a transparent substrate having coated thereon a thin transparent radiation-sensitive film, said film consisting essentially of titanium dioxide with a pattern of activating radiation, thereby rendering the titanium dioxide chemically reactive in portions thereof corresponding to the image pattern of radiation, and then developing the chemically reactive portions of the titanium dioxide by contacting at least the reactive portions with image forming materials to form an irreversible image corresponding to the image pattern. The photographic transparency of this invention comprises a transparent substrate having coated thereon a thin transparent film, this film consisting essentially of titanium dioxide and including portions of different optical density defining an image pattern thereon.

3,409,430

## METHOD OF MAKING COPIES BY DIFFUSION TRANSFER

Walter Limberger, Hamburg, Germany, assignor to Lumoprint Zindler K.G., Hamburg, Germany, a corporation of Germany  
Continuation-in-part of application Ser. No. 42,312, July 12, 1960. This application Aug. 29, 1966, Ser. No. 579,451  
Claims priority, application Germany, July 15, 1959, L 33,733  
8 Claims. (Cl. 96-29)



A method of making copies by image diffusion from a liquid-developed negative layer to a chemically activated image-receiving layer wherein the layers are carried on respective supports and are bonded together along their juxtaposed faces prior to exposure and development by a light- and liquid-permeable separating layer (polyvinyl alcohol base) wettable to release the negative and image receiving layers from one another while forming a chemical insulation precluding activation of the positive layer and also mechanically bonding them together in the dry state of the separating layer.

3,409,431

## PHOTOELECTROPOLYMERIZATION

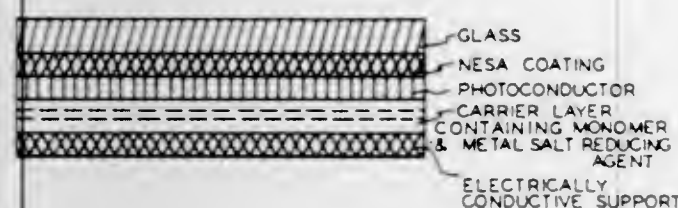
Albert S. Deutsch, Vestal, N.Y., assignor to GAF Corporation, a corporation of Delaware  
Filed Mar. 14, 1966, Ser. No. 533,889  
14 Claims. (Cl. 96-35.1)

1. A process for the preparation of a positive polymeric resist image which comprises exposing a photoconductor layer having a high dark resistivity to electromagnetic radiation having a wave length extending from the ultraviolet through the visible region whereby said photoconductor layer is rendered capable of conducting an electric current in the exposed areas, said photoconductor layer being disposed in electrically conducting contact with a vinyl monomer layer coated on an electrically



conductive support, said monomer layer comprising (a) a normally liquid to normally solid vinyl monomer containing the grouping  $\text{CH}_2=\text{C}$  attached directly to an electronegative grouping and (b) a reducing agent comprising a metal salt in which the metal cation is capable of oxidation to a higher valence state when contacted with a per compound containing the grouping  $-\text{O}-\text{O}-$ , said oxidation being accompanied by the evolution of free radicals capable of initiating the polymerization of said vinyl monomer, and wherein an electrical potential difference is maintained across said photoconductor layer and said conductive support throughout the exposure interval, said potential difference being substantially uni-

IMAGEWISE EXPOSURE



formly distributed over each of said photoconductor layer and said conductive support whereby current is caused to flow through said monomer layer thereby effecting electrolysis of said metal salt in areas corresponding to the exposed areas of said photoconductor layer with the formation of species incapable of promoting the polymerization of said vinyl monomer; contacting said vinyl monomer layer with a solution comprising said per compound so as to effect polymerization in areas of said monomer layer corresponding to the unexposed portions of the photoconductor layer and thereafter removing the unpolymerized areas of said monomer layer to yield a positive resist.

3,409,432

## CHEMICAL AMPLIFICATION OF PHOTSENSITIVE LAYERS

Paul B. Gilman, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
No Drawing. Filed Oct. 24, 1965, Ser. No. 504,993  
14 Claims. (Cl. 96-48)

A silver image on a copper surface is obtained from an exposed photosensitive layer comprising ferric nitrate and potassium bromide by contacting the exposed layer with a physical developing solution containing a silver salt and a silver halide developing agent.

3,409,433

## PHOTOGRAPHIC MATERIALS CONTAINING FILTER DYES

Erich Böckly, Cologne-Stammheim, Germany, and Karl Nikolaus Löffler, deceased, late of Hechingen, Germany, by Beate Elisabeth Löffler, heir and representative for minor heirs and Monika Löffler, heir, Leverkusen, Germany; said Böckly assignor to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany  
Filed June 24, 1964, Ser. No. 377,774  
Claims priority, application Germany, July 15, 1963, A 43,575

6 Claims. (Cl. 96-74)

Resolution and contrast of multicolor photographic images is improved when the images are made on three-layer combination of emulsions in which blue-sensitive emulsion is behind red-sensitive and green-sensitive emulsions, and both of the latter two emulsions or only the

green-sensitive one contains sulfonated alkoxyphenylazo-acylaminonaphthol dye as explained below, that sharply absorbs green and rinses out completely during processing.

3,409,434

## RESIN PRECOATED DIAZOTYPE PAPERS

Maurice J. Landberge, Santa Barbara, Calif., Mark L. Moskowitz, Endwell, and Frank P. Kolesinskas, Binghamton, N.Y., assignors to GAF Corporation, a corporation of Delaware  
No Drawing. Filed Oct. 28, 1965, Ser. No. 505,459  
7 Claims. (Cl. 96-75)

1. A diazotype photo printing material which comprises, in order, an absorbent base containing from about .025 to about .5 gram per sq. ft. of a boron compound which is capable of yielding borate ions in aqueous solution, a layer comprising a film-forming organic resin material having hydrophilic properties and a layer comprising a light-sensitive diazo compound.

2. A diazotype photo printing material which comprises, in order, a paper support having a layer comprising a boron compound which is capable of yielding borate ions in aqueous solution, a layer comprising a film-forming organic resin material having hydrophilic properties, and a layer comprising a light-sensitive diazo compound.

3,409,435

## SILVER HALIDE GELATIN COATING COMPOSITIONS CONTAINING A VISCOSITY REDUCING AGENT

Bernhard Seidel, Cologne-Mulheim, Hans Ulrich, Leverkusen, Wolfgang Himmelmann, Cologne-Stammheim, and Joachim Nentwig, Krefeld-Bockum, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany  
No Drawing. Filed Aug. 5, 1964, Ser. No. 397,054  
Claims priority, application Germany, Aug. 17, 1963, A 43,850

4 Claims. (Cl. 96-94)

Aqueous gelatin casting solutions have their viscosities reduced and cast better when they contain a water-soluble mixed glycol polymer as defined below. This offsets the viscosity increase that results when color couplers or dyes are present in the casting solutions for photographic purposes.

3,409,436

## LIGHT-SENSITIVE SILVER HALIDE PRINT-OUT EMULSIONS

Francis J. Farren, Vestal, and Jerome Sklute, Kirkwood, N.Y., assignors to GAF Corporation, a corporation of Delaware  
No Drawing. Filed Apr. 1, 1965, Ser. No. 444,817  
14 Claims. (Cl. 96-94)

Process for preparing print-out emulsions by preparing a gelatin emulsion of the silver salt of an aliphatic hydroxy-polycarboxy acid, converting the silver salt to a silver halide, and sequentially adding a water soluble iodide, a water soluble lead salt and a water soluble bromide.

3,409,437

## SILVER HALIDE EMULSIONS CONTAINING ANTIBRONZING AGENTS

Ralph A. Copeland, Chenango Bridge, and Fritz Dersch and Charles A. Clark, Binghamton, N.Y., assignors to GAF Corporation, a corporation of Delaware  
No Drawing. Filed Feb. 26, 1965, Ser. No. 435,710  
9 Claims. (Cl. 96-95)

Light-sensitive photographic element and silver halide emulsion therefor, containing as an antibronzing agent, at least 0.5 gram per mole of silver halide of a diphenyl-disulfidedicarboxylic acid in which the disulfide bridge

occupies the position meta or para to the carboxyl group in each of the benzene rings.

3,409,438

## PHOTOSENSITIVE HEAT DEVELOPABLE COPY SHEET

Robert J. Lokken, Maplewood, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware  
Filed Aug. 26, 1963, Ser. No. 304,422  
19 Claims. (Cl. 96-95)

A light-sensitive copy sheet, which develops an intense silver image by simple heating after exposure, contains a water-insoluble silver soap of a fatty acid together with a light-sensitive progenitor of a reducing agent for silver ion.

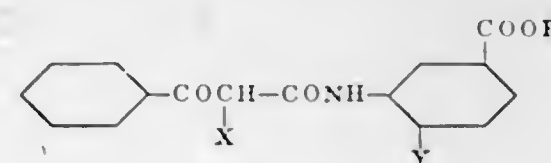
3,409,439

## COLOR PHOTOGRAPHIC MATERIALS

Makoto Yoshida and Momotoshi Tsuda, Odawara-shi, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa-ken, Japan, a corporation of Japan  
Filed Jan. 22, 1965, Ser. No. 427,417  
Claims priority, application Japan, Feb. 1, 1964, 39/4,920

10 Claims. (Cl. 96-100)

A yellow-forming color coupler for use in photographic silver halide emulsion layers, having the general formula:



wherein R is a member selected from the class consisting of an alkyl group having at least 8 carbon atoms and an aliphatic residual group having at least 8 carbon atoms and having at least one ether bond; X is a member selected from the class consisting of a hydrogen atom and a halogen atom; and Y is a member selected from the class consisting of a hydrogen atom, a lower alkoxy group and a halogen atom.

3,409,440

## HEAT-STABLE WHEAT GLUTEN SUSPENSIONS

Josef Höhl, Hannover, Germany, assignor to Werner Bahlsen, Hannover, Germany  
No Drawing. Filed Mar. 1, 1965, Ser. No. 436,297  
8 Claims. (Cl. 99-17)

A heat-stable beatable wheat protein suspension is produced by bringing denatured wheat gluten into an aqueous suspension and establishing a pH of 3.7 to 4.9 by the addition of a food acid. The protein may be denatured either before or as a result of the acid addition. The stable froth produced can be used as a completely equivalent replacement for animal albumin in the production of bakery goods.

3,409,441

## PROCESS OF SWEETENING FOODS WITH MALTOL AND SUGAR

Edward F. Bouchard, Northport, Carl P. Hetzel, Bellerose, and Robert D. Olsen, Brooklyn, N.Y., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 310,155, Sept. 19, 1963. This application Oct. 11, 1966, Ser. No. 585,758  
3 Claims. (Cl. 99-28)

The sugar content of a food is decreased while maintaining the same total sweetness by substituting from 5 to

3,409,442

## NO-BAKE CAKE MIX

Harry W. Block, East Orange, N.J., and Thomas P. Finucane, Hartsdale, and Ernest Lanza, North Tarrytown, N.Y., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 210,572, July 7, 1962. This application July 27, 1964, Ser. No. 385,462

12 Claims. (Cl. 99-92)

Preparation of a no-bake pastry product by hydrating a whippable solid hydrophilic gelatinous substance with an aqueous medium, whipping to a foam and blending with dried pastry crumbs.

3,409,443

## EGG CUSTARD COMPOSITION AND PROCESS

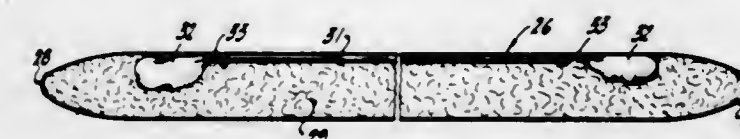
Emery Polya, Tarrytown, and Julius Green, New City, N.Y., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware  
No Drawing. Filed Sept. 7, 1965, Ser. No. 485,590  
13 Claims. (Cl. 99-139)

A composition for making a custard by admixture with milk and egg, comprising an edible hydrocolloid (typically, Irish moss extracts, alginates and pectin), a compound furnishing a sequestering anion non-fat milk solids and egg yolk solids. The process of making the custard and the custard are also described.

3,409,444

## DEVICE AND METHOD FOR TREATING PICKED GRAPES

Joe P. Gentry and Klayton E. Nelson, Davis, Calif., assignors to The Regents of the University of California, Berkeley, Calif.  
Filed May 14, 1965, Ser. No. 455,709  
15 Claims. (Cl. 99-156)



1. A device for treating picked grapes comprising a container adapted when closed substantially to confine gas, a pad permeable to gas disposed within said container, a first holder readily permeable by gas and moisture disposed within said pad, a second holder readily permeable by gas and slowly permeable by moisture disposed within said pad, and materials in said first holder and said second holder adapted to evolve gas in the presence of moisture.

3,409,445

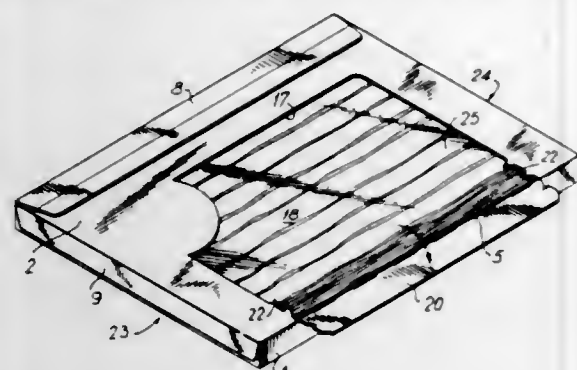
## DISPLAY CARTON

Charles J. Hall, Toronto, Ontario, Canada, assignor to American Can Company, New York, N.Y., a corporation of New Jersey  
Filed Oct. 10, 1966, Ser. No. 585,427  
3 Claims. (Cl. 99-174)

A display carton for a product such as bacon and the like includes a receptacle for receiving the product and a cover for closing the carton. One wall of the carton includes a window or display area which may or may not



be covered by a movable panel of carton material. An inspection flap borders the window area and is movable



the permit additional inspection of the product along the marginal edge of the carton.

### ERRATA

For Classes 99—176 through 99—192 see:  
Patents Nos. 3,408,916 through 3,408,919, inclusive

### 3,409,446 PROCESS FOR PREPARING AN EGG CONCENTRATE

Hendrik A. Van Olphen, Bloemendaal, Netherlands, assignor to Naamloze Vennootschap Van Olphen, Norderhorst den Berg, Netherlands  
No Drawing. Filed May 13, 1965, Ser. No. 455,641  
Claims priority, application Netherlands, Dec. 10, 1964, 6414360

8 Claims. (Cl. 99—210)

This invention relates to an egg-sugar concentrate which may be preserved and stored for long periods without deterioration and to a process of preparing same which comprises mixing an effective amount of sugar with said eggs followed by pasteurization and subsequent evaporation of the chemically unbound water.

### 3,409,447

### TREATING FOOD PRODUCTS WITH MICRO- WAVE ENERGY AND HOT GAS OF DE- CREASING HUMIDITY

Morris R. Jeppson, Danville, Calif., assignor to Cryodry Corporation, San Ramon, Calif., a corporation of California  
Continuation-in-part of application Ser. No. 342,179, Feb. 3, 1964. This application Nov. 28, 1966, Ser. No. 604,106

7 Claims. (Cl. 99—221)

The blanching or cooking of a food product preceding preservative treatment is accomplished by microwave irradiation combined with exposure to a controlled hot gas flow in a continuous process chamber. By programming the gas humidity from an initially high value to a low value fast controlled heating is effected without leaching solids from the product or adding to the moisture content thereof. A partial drying is accomplished thereby reducing the energy requirements and processing times for the subsequent preservation steps such as freezing, drying or the like.

### 3,409,448

### AMINE MODIFIED POLYOLEFIN WAX ADDUCTS, PROCESS FOR PREPARING THE SAME AND EMULSIONS THEREOF

Isaac J. Levine, East Brunswick, and Arthur K. Ingberman, Somerville, N.J., assignors to Union Carbide Corporation, a corporation of New York  
No Drawing. Filed July 6, 1965, Ser. No. 469,840

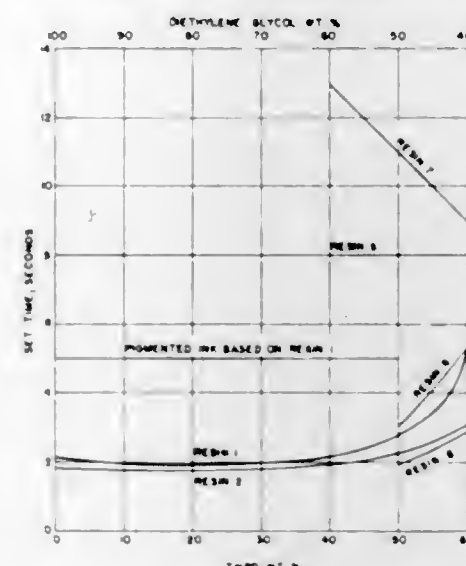
20 Claims. (Cl. 106—10)

Process for preparing emulsifiable amine modified polyolefin wax adducts by reacting a polyolefin wax con-

taining olefinic double bonds with an alkyl phosphite to form an adduct containing phosphonate ester groups and thereafter reacting the phosphonate ester groups with an amine having at least one reactive amino hydrogen atom.

### 3,409,449 INK COMPOSITION AND SOLVENT FOR USE THEREIN

Charles H. Coney and Willie E. Draper, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
Filed Oct. 5, 1965, Ser. No. 493,115  
7 Claims. (Cl. 106—30)



Solvent blends for dissolving the resin component of a moisture-set ink composition consisting essentially of 2,2,4-trimethyl-pentanediol-1,3 and diethylene glycol.

### 3,409,450 METHOD OF AND APPARATUS FOR MAKING POROUS CLAY

Paul Weber, Oelde, Westphalia, and Horst Ritzmann and Hans Mollenkopf, Neubeckum, Westphalia, Germany, assignors to Polysius G.m.b.H., Neubeckum, Westphalia, Germany

Filed Mar. 24, 1965, Ser. No. 442,329

Claims priority, application Germany, Mar. 26, 1964, P 33,918

6 Claims. (Cl. 106—40)

The present invention relates to a method of making porous or bloated clay and is characterized primarily by the steps of providing clearly separate preheating and firing zones respectively in said preheating zone drying and preheating the clay material from which the porous clay is to be made up to a temperature slightly below the temperature at which an inflation or bloating of said clay material will occur, subsequently dropping from said preheating zone into said firing zone over a distance only such preheated clay material which has been heated to approximately the same temperature slightly below the temperature at which an inflation or bloating of the clay material will occur while during said drop quickly firing said material so as to inflate or bloat said material, and at the end of said drop cooling the thus obtained product.

### 3,409,451

### REFRACTORY COMPOSITES AND METHOD OF MAKING THE SAME

Karl J. Zeltsch, Karlsruhe, Germany, assignor to Union Carbide Corporation, a corporation of New York  
No Drawing. Continuation-in-part of application Ser. No. 524,494, Feb. 2, 1966. This application Nov. 28, 1967, Ser. No. 686,308

8 Claims. (Cl. 106—56)

An impermeable, refractory oxidation resistant composite and method for producing the same, the method

comprising, preparing a mixture of graphite or coke and a coat promoting material composed of silicon plus either zirconium dioxide or hafnium dioxide, and then subjecting the mixture to a simultaneous temperature and pressure sufficient to deform the grains of carbonaceous material and to melt at least part of the coat promoting material.

### 3,409,452

### SET RETARDED PORTLAND CEMENT

Richard Lee Angstadt, Silver Spring, Forrest R. Hurley, Ellicott City, and Charles F. Miller, College Park, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut  
No Drawing. Filed Aug. 9, 1965, Ser. No. 478,460

6 Claims. (Cl. 106—89)

A process for retarding the hardening rate of portland cement by adding from 0.1 to 5 weight percent aluminum phosphate to the cement clinker in the process and manufacture.

### 3,409,453

### PROCESS FOR PRODUCTION OF A COAT- ING COMPOSITION COMPRISING DIAL- DEHYDE POLYSACCHARIDE AND SUB- STITUTED POLYSACCHARIDES

Harold Charles Stalter, Edwardsburg, Mich., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed Oct. 31, 1966, Ser. No. 590,547

6 Claims. (Cl. 106—203)

The process of mixing dialdehyde polysaccharide with carboxylated, hydroxyethylated, acetylated or enzyme converted polysaccharides in water at a pH of 5-6 containing 16-30 percent solids, reacting the mixture at 80-85° C. with agitation for at least 60 minutes and then cool the reaction products.

### 3,409,454

### ALUMINA COATED TiO<sub>2</sub> PIGMENTS

Bertha M. Andrew, Wilmington, and Donald J. Smith, Claymont, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 31, 1965, Ser. No. 444,452

7 Claims. (Cl. 106—300)

1. A TiO<sub>2</sub> pigment exhibiting increased water dispersibility characteristics, said pigment being coated with from .5 to 6%, by weight, of aluminum oxide, of which oxide at least 50% is in the form of AlO(OH).

### 3,409,455

### PROCESS OF REPRODUCTION ON BENZENE DIAZONIUM FLUOBORATE SHEET BY HEAT EXPOSURE

Bernard I. Halperin, Glen Aubrey, N.Y., assignor to GAF Corporation, a corporation of Delaware

No Drawing. Filed Jan. 4, 1965, Ser. No. 423,297

3 Claims. (Cl. 117—1.7)

Photographic reproduction process involving image-wise exposure to heat of a material sensitized with a heat-sensitive but relatively ultraviolet-insensitive benzene diazonium fluoborate, and developing by treatment with an azo coupler in alkaline environment.

### 3,409,456

### METHOD AND APPARATUS FOR DUSTING MOLD CORES

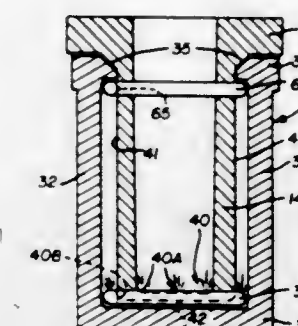
Fred L. Derror, Lucas, Ohio, assignor to Mansfield Sanitary, Inc., Perrysville, Ohio, a corporation of Ohio

Filed Dec. 4, 1963, Ser. No. 328,082

10 Claims. (Cl. 117—5.1)

A mold core is sealingly received in a boot. Dust from an atomizer is blown tangentially across the core from a plurality of orifices at one end of the

boot. Thereafter, dust free air is admitted to the boot while an exhaust pump purges the boot through vents



oppositely positioned with respect to the orifices so that the core can be unsealed and removed without contaminating surrounding atmosphere.

### 3,409,457

### THERMOGRAPHIC COPYING SHEET

Karl-Heinz Menzel, Vaihingen (Enz), Germany, assignor to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 5, 1965, Ser. No. 423,597

Claims priority, application Germany, Jan. 11, 1964, A 44,980

6 Claims. (Cl. 117—36.8)

This invention relates to the reproduction of originals on heat sensitive copying materials by color thermography, using the heat-sensitive copying paper that contains heat-sensitive compounds which form azomethine dyes when heated.

### 3,409,458

### PROCESS FOR PREPARING NUCLEATED FRIT AND WHITE-ENAMELED CAST IRON BODIES PREPARED FROM SAID FRIT

George Henry Spencer-Strong, Baltimore, and Howard J. Smith, Timonium, Md., assignors, by mesne assignments, to SCM Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 25, 1965, Ser. No. 427,958

11 Claims. (Cl. 117—70)

Titania nucleated, porcelain enamel frit compositions containing specified critical amounts of silica, titania, boric oxide, soda, potash, fluorine, and phosphorous pentoxide (with or without additional modifying ingredients) are nucleated through a specified heat-treating process.

This nucleated frit is adapted for dry-process enameling of ground-coated, cast iron substrates to produce tough, adherent, bright, mottle-free enamel top-coats thereon.

### 3,409,459

### FLUIDIZED BED COATING OF TITANIUM- CHROMIUM ALLOY

Howard W. Jacobson, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

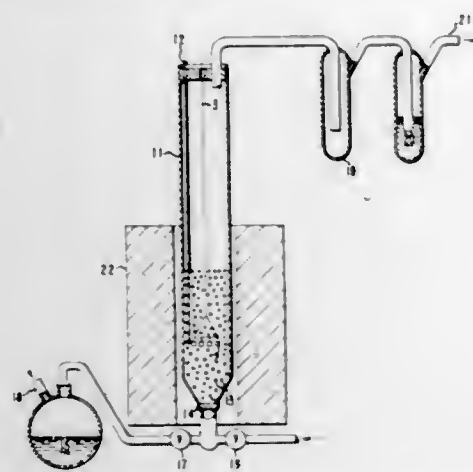
Filed Mar. 10, 1965, Ser. No. 438,579

9 Claims. (Cl. 117—71)

The high-temperature oxidation resistance of articles composed of columbium, tantalum, columbium-base alloys, or tantalum-base alloys is improved by application of a coating composed of titanium and chromium, said



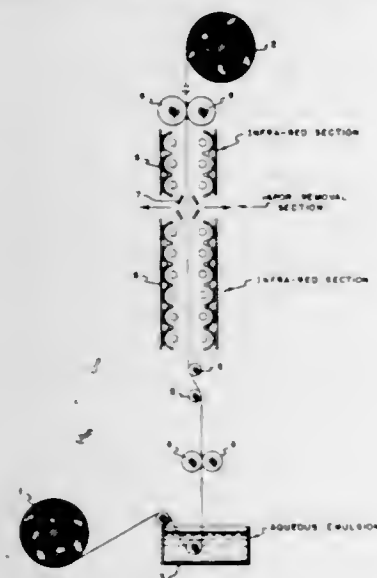
coating being deposited by bringing the articles into contact with vapors of lower iodides of titanium and chro-



mium at 900° to 1200° C. in a fluidized bed of suspended powder particles.

3,409,460

**EMULSION COATING OF CELLULOSIC FILMS**  
 Reid L. Mitchell and Charles F. Murphy, Morristown, and Douglas Allen, Parsippany, N.J., assignors to ITT Rayonier Incorporated, a corporation of Delaware  
 Continuation-in-part of applications Ser. No. 394,264, Sept. 3, 1964, and Ser. No. 516,507, Dec. 27, 1965.  
 This application Apr. 8, 1966, Ser. No. 541,261  
 2 Claims. (Cl. 117—93.31)



A hydrophobic resin coating is applied on a film of regenerated cellulose or hydroxyethyl cellulose by continuously applying on the film a coating of an aqueous emulsion of a thermoplastic hydrophobic resin, followed by a two-stage heating operation to flash off the water content of the emulsion coating and then to fuse and bond the residual resin particles to the film. In the present process, the aqueous emulsion contains up to 0.5% of a silicone rubber polymer as an anti-blocking agent, and advantageously contains a metal organic salt catalyst to consolidate the silicone rubber polymer.

3,409,461

**PROCESS FOR THE MANUFACTURE OF AN ENCAPSULATED ISOCYANATE**  
 Walther Mehlo, Wiesbaden-Biebrich, and Rudolf Titzmann and Rudolf Zinsmeister, Bobingen, Germany, assignors to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany  
 No Drawing. Filed Nov. 22, 1963, Ser. No. 325,782  
 Claims priority, application Germany, Nov. 24, 1962, K 48,293  
 12 Claims. (Cl. 117—100)  
 This invention relates to encapsulated isocyanates and to a process for the manufacture thereof, the encapsu-

lated material including an isocyanate core confined in an envelope of a protective substance which is inert, at least, to isocyanates and to aqueous media. The protective substance, which envelopes the fine isocyanate particles in the form of a more or less continuous film, should melt or soften only at temperatures above 50° C. so that the encapsulated isocyanate can then migrate to the surface of the protective substance either directly or by diasolytic diffusion, which may then be followed by the desired chemical reaction, for example, with hydrogen-active compounds, such as alcohols, enols, acids, amines or amides.

3,409,462

**PROCESS FOR TREATING TEXTILES AND TEXTILES TREATED BY SUCH PROCESS**  
 Heinz Enders, Stadthergen, Augsburg, and Günter Pusch, Leitershofen, Augsburg, Germany, assignors to Chemische Fabrik Pfersee G.m.b.H., Augsburg, Germany, a firm of Germany  
 No Drawing. Filed Nov. 20, 1964, Ser. No. 423,619  
 Claims priority, application Germany, Dec. 21, 1963, C 31,733; Jan. 21, 1964, C 31,929  
 3 Claims. (Cl. 117—119.6)

The wet and dry crease resistance of textiles containing predominantly natural or regenerated cellulose fibers is improved by a process in accordance with which the textile fabric is impregnated with an aqueous bath containing methylol compounds of cyclic alkylene ureas or cyclic oxyalkylene ureas and a strong acid. Then the superfluous bath is removed in the usual manner, the fabric is dried to a moisture content ranging between 4% and 30%, the humid fabric is stored at about room temperature, the fabric is rinsed and then the neutral fabric is subjected to a final drying.

3,409,463

**TREATMENT OF CELLULOSIC MATERIALS WITH A POLYAZIRIDINYLPHOSPHORAMIDE AND A SULFAMIDE**  
 Robert B. Le Blanc, Midland, Mich., and Richard H. Symm, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
 No Drawing. Filed Sept. 17, 1964, Ser. No. 397,274  
 18 Claims. (Cl. 117—143)

A composition for rendering cellulosic materials permanently fire-resistant comprising:  
 (1) A polyaziridinylphosphoramidate and  
 (2) A sulfamide derived from ammonia or a primary alkylamine.

3,409,464

**PIEZOELECTRIC MATERIALS**  
 Lebo R. Shiozawa, Richmond Heights, Ohio, assignor to Clevite Corporation, a corporation of Ohio  
 Filed Apr. 29, 1964, Ser. No. 363,369  
 9 Claims. (Cl. 117—201)

A piezoelectric body is formed from polycrystalline non-ferroelectric materials composed of Class II-VI dihexagonal polar crystals and selected from the group consisting of cadmium sulfide, cadmium selenide, zinc oxide, beryllium oxide, wurtzite zinc sulfide and solid solutions thereof. The body is formed by subliming material in a first temperature zone and vapor depositing the sublimed material on a surface in a second lower temperature zone. An electromechanical transducer in accordance with one embodiment of the invention comprises a substrate having a layer of piezoelectric material vapor deposited thereon. Reference is made to the claims for a legal definition of the invention.

3,409,465

**PROCESS FOR IMPROVING THE WETTABILITY OF SOLID METALLIC SURFACES BY MOLTEN ALKALI METALS**  
 Karl Ziegler, Kaiser-Wilhelm-Platz 2, Mulheim (Ruhr), Germany, and Helmut Dislich, Mainz-Gonsenheim, Germany; said Dislich assignor to said Ziegler  
 No Drawing. Filed Mar. 29, 1963, Ser. No. 269,125  
 Claims priority, application Germany, Mar. 30, 1963, Z 9,335  
 9 Claims. (Cl. 117—210)

1. Process of wetting a solid metallic surface inert to molten alkali metal with alkali metal which comprises:  
 (a) coating the metal with a film of cadmium or gold;  
 (b) contacting the film while on said surface with molten alkali metal;  
 (c) allowing molten alkali metal and the metal of said coating to combine and removing the combined molten alkali metal and metal of said coating leaving molten metallic alkali covering and wetting said surface.

3,409,466

**PROCESS FOR ELECTROLESSLY PLATING LEAD ON COPPER**  
 Buford G. Slay, Jr., Bernard G. Carbajal III, and John P. Pritchard, Jr., Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware  
 No Drawing. Filed Jan. 6, 1965, Ser. No. 423,815  
 8 Claims. (Cl. 117—212)

Disclosed is a process for electrolessly plating lead on a metal such as copper which comprises subjecting the metal to a solution consisting essentially of a lead salt and thiourea dissolved in dimethylsulfoxide. The lead salt may be, for example, lead nitrate, lead chloride or lead acetate.

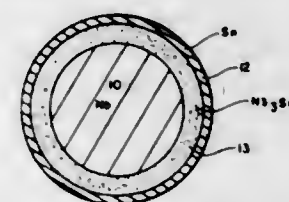
3,409,467

**SILICON CARBIDE DEVICE**  
 Francis R. Foley, Brookline, Mass., assignor to National Research Corporation, Newton Highland, Mass., a corporation of Massachusetts  
 No Drawing. Filed Mar. 11, 1966, Ser. No. 533,402  
 2 Claims. (Cl. 117—217)

1. The process for forming low-resistance contact with a silicon carbide crystal which comprises coating a surface of said crystal to be contacted with powdered titanium hydride, placing a body of contact metal over said titanium hydride coating and then firing the sandwich thus formed in an inert atmosphere to a temperature on the order of 1000° C. to melt the contact metal and to wet the surface of the crystal.

3,409,468

**METHOD OF MAKING A NIOBIUM STANNIDE COATED NIOBIUM WIRE**  
 Lloyd R. Allen, Belmont, Mass., assignor to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts  
 Continuation-in-part of application Ser. No. 104,730, Apr. 21, 1961. This application Jan. 26, 1966, Ser. No. 532,496  
 1 Claim. (Cl. 117—231)

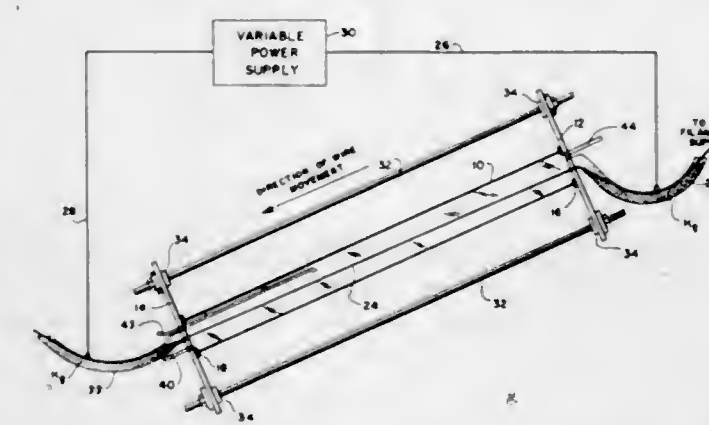


1. An improved coating-diffusion process for the production of long wires and the like containing a continu-

ous layer of superconductive niobium stannide comprising the steps of dipping an elongated niobium wire or the like into a molten tin bath maintained at about 900° C. to deposit a layer consisting essentially of tin on the support and heating the coated wire for a sufficient time to cause interdiffusion of said tin and niobium in a surface layer of the wire and reaction of the tin and niobium to form a continuous path of superconductive niobium stannide.

3,409,469

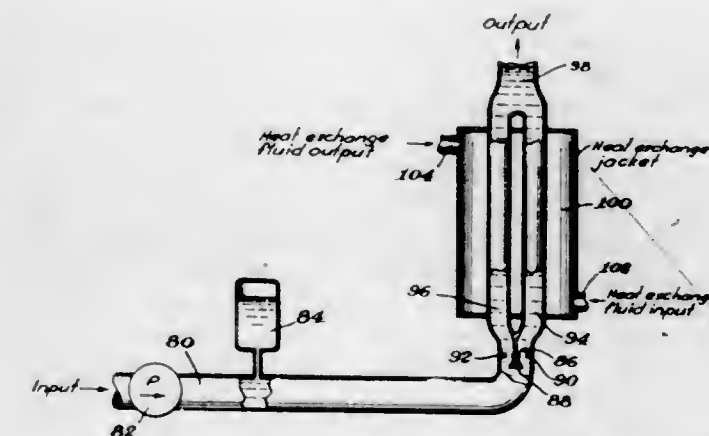
**VAPOR COATING CONDUCTIVE FILAMENTS UTILIZING UNIFORM TEMPERATURE**  
 Urban E. Kuntz, East Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware  
 Filed Mar. 5, 1964, Ser. No. 349,545  
 11 Claims. (Cl. 117—231)



This invention is directed to the deposition of a coating on a substratum by contact of a heated surface of the substratum with vaporized chemicals which react on contact with the hot surface to deposit the coating. According to the invention, the rate of coating deposition may be enhanced by regulating the heat dissipation from selected areas of the filament by means independent of the filament heating means to thereby cause the filament to have a substantially more uniform temperature profile throughout the coating chamber.

3,409,470

**CYCLIC WATER HAMMER METHOD**  
 John Karpovich, Caro, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
 Continuation-in-part of application Ser. No. 195,660, May 11, 1962. This application June 27, 1966, Ser. No. 563,626  
 4 Claims. (Cl. 134—1)



1. A method of removing material adhering to a surface part of an enclosed vessel which is adapted to be pressurized, said vessel having spaced apart inlet and outlet means for passing liquid base flow material over

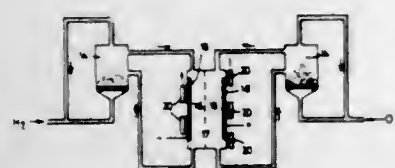


said surface part, comprising flowing liquid which is under pressure along said surface part, heating said surface part to be cleaned to above the boiling temperature of said flowing liquid under tensile stress conditions, and then suddenly interrupting the flow of liquid at said inlet means thus placing said liquid under tension whereby boiling occurs at said surface part.

### 3,409,471 METHOD OF PRODUCING ELECTRICAL ENERGY USING MAGNETIC FIELD

Ferdinand V. Sturm, Erlangen, and Gerhard Richter, Forchheim, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany

Filed June 18, 1964, Ser. No. 376,276  
Claims priority, application Germany, June 19, 1963, S 85,717  
7 Claims. (Cl. 136—86)

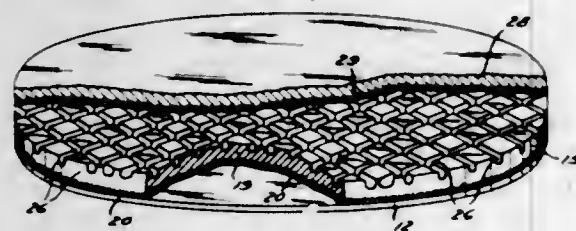


Method of producing electrical energy in an electrochemical cell having an electrically conductive electrode support therein includes the steps which comprise depositing loose ferromagnetic catalyst material on the support, subjecting the support and the material to magnetic force for thereby contacting the material electrically and mechanically with the support so as to form an electrode, producing electrochemical operation of the electrode, and maintaining the magnetic force contact between the material and the support during the electrochemical operation of the electrode.

### 3,409,472 POROUS PLATE AND METHOD OF MAKING SAME

Edward P. Weber, Parma, and Edward L. Thellmann, Walton Hills, Ohio, assignors to Clevite Corporation, a corporation of Ohio

Filed Aug. 13, 1962, Ser. No. 216,640  
3 Claims. (Cl. 136—120)

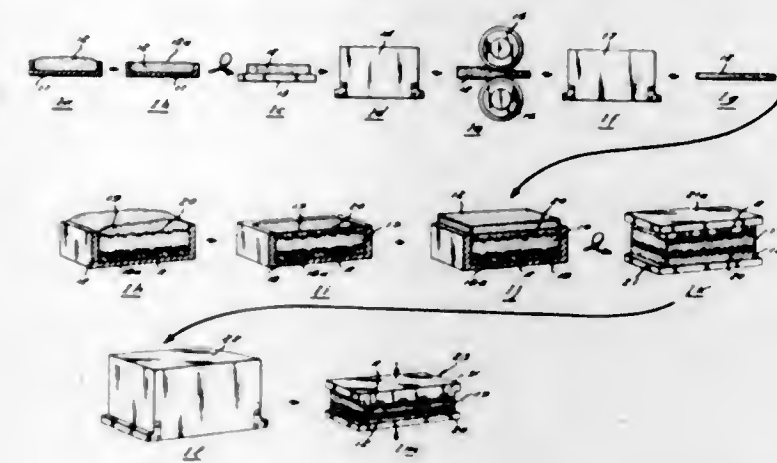


1. A multiple-porosity plate usable as a fuel cell electrode comprising a thin, fine porosity, sintered metal powder inner layer for contact with the fuel cell electrolyte, a coarse porosity sintered metal powder middle layer bonded to the back of said inner layer, said middle layer having a plurality of portions thereof which are densely compacted and regularly distributed throughout substantially the entire area of said layer and having between said densely compacted portions a plurality of remaining portions of substantially greater thickness and lower density than said densely compacted portions, said remaining portions of the middle layer having greater pore size and a substantially greater porosity than said inner layer, said middle layer throughout its extent being substantially thicker than said inner layer, and a coarse porosity sintered metal powder outer layer bonded to the back of said middle layer and having a porosity and pore size at least substantially as great as said remaining portions of the latter.

### 3,409,473 POROUS PLATE AND METHOD OF MAKING SAME

Edward P. Weber, Parma, and Edward L. Thellmann, Walton Hills, Ohio, assignors to Clevite Corporation, a corporation of Ohio

Filed Aug. 13, 1962, Ser. No. 216,635  
2 Claims. (Cl. 136—120)



1. A method of making a multiple-layer porous plate usable as a fuel cell electrode comprising the steps of sintering a thin metal powder inner layer, providing a substantially thicker mass of metal powder and embedding in said mass a stiff reinforcing screen presenting a plurality of ribs projecting in one direction, and sintering said mass of metal powder with said screen embedded therein to one major face of said inner layer and forming external ribs on the face of said powder mass which follow the conformation of said screen ribs.

### 3,409,474 HYDROGEN STORING ELECTRODE AND PROCESS FOR ITS MANUFACTURE

Margarete Jung, Nieder-Eschbach, Taunus, and Hanns H. Kroeger, Frankfurt am Main, Germany, assignors to Varta Aktiengesellschaft, Hagen, Westphalia, Germany, a corporation of Germany

Filed July 26, 1961, Ser. No. 127,031  
Claims priority, application Germany, July 28, 1960, A 35,218  
12 Claims. (Cl. 136—120)

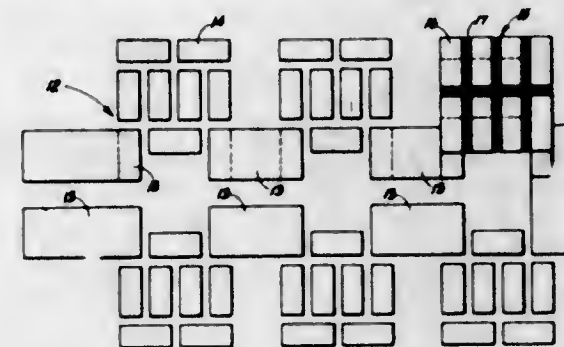
1. A hydrogen storage electrode structure comprising a body of Raney metal particles and thermoplastic synthetic resin, both said metal and said resin being distributed throughout said body, said body being porous to both liquids and gases, and the ratio of said resin to said metal being between about 1:9 and about 1:50 by weight.

### 3,409,475 THERMOELECTRIC HEAT PUMP HAVING PRINTED CIRCUIT INTERCONNECTIONS

Walter E. Breneman, York, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois  
Filed Sept. 19, 1962, Ser. No. 225,415  
1 Claim. (Cl. 136—203)

1. In a thermoelectric heat pump of the type including a base, said base including a sheet formed of material having relatively high thermal conductivity and relatively low electrical conductivity, a copper coating over substantially the entire surface of one side of said sheet, a printed copper circuit on the opposite side of said sheet, said printed copper circuit including spaced arrays of heat conductor patterns, each said pattern including a plurality of spaced copper coatings, each of said copper coatings having a predetermined area, and a plurality of electrically conductive coatings, each of said spaced electrically conductive coatings having a predetermined area and being located so as to connect at least three arrays in series; and a plurality of thermoelectric modules secured to said base,

each module including a plurality of P and N thermoelectric elements alternately connected in series by a plurality of copper connectors arranged in a predetermined pattern, said modules being secured to said base such that said

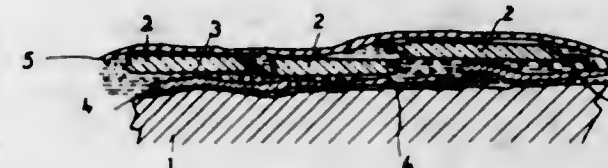


copper connectors are registered and secured in electrical contact with said spaced copper coatings in each of said arrays, the improvement wherein said area of each of said electrically conductive coatings is substantially greater than said area of any one of said spaced copper coatings.

### 3,409,476 PROCESS AND COMPOSITION FOR MAKING PROTECTIVE PHOSPHATE COATINGS

Erich Kussmann, Hannover-Hainholz, Germany, assignor to Firma Ferro-Chemie Dr. Erich Kussmann K.G., Hannover, Germany, a company of Germany

Filed Apr. 26, 1965, Ser. No. 450,603  
Claims priority, application Germany, Apr. 30, 1964, F 42,768  
8 Claims. (Cl. 148—6.15)



A protective layer is provided for ferrous substrates by applying thereto in the cold an aqueous paste containing a mixture of orthophosphoric acid and very finely divided potassium mica flakes in approximately stoichiometric proportions, so as to form an extremely thin, adherent epitaxial growth of crystalline trivalent leucophosphate on the ferrous substrate.

### 3,409,477 WELDING FLUX COMPOSITIONS

Joseph M. Ash, Florence, Ky., assignor of one-third each to Frank Ash, Erlanger, and Harry K. Aurandt, Covington, Ky.  
No Drawing. Filed Sept. 15, 1965, Ser. No. 487,591  
1 Claim. (Cl. 148—23)

A general purpose brazing and welding flux composition comprising particular proportions of borax, boric acid, sodium bicarbonate, sodium chloride, ammonium chloride, agricultural lime, aluminum ammonium sulfate and potassium chloride, which flux is suitable for use with both ferrous and non-ferrous metals.

### 3,409,478 AEROSOL BRAZING FLUX AND METHOD OF BRAZING THEREWITH

Fletcher H. Condit, Wilmington, Del., and Richard H. Hemmenway, Summit, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York  
No Drawing. Filed Sept. 22, 1965, Ser. No. 489,415  
8 Claims. (Cl. 148—23)

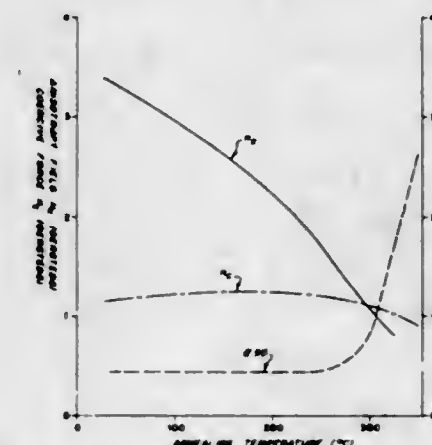
Brazing flux for silver alloy brazing adapted for application as an aerosol spray, comprising a flux powder

suspended in a major proportion of a lower aliphatic monohydric alcohol and a minor proportion of an alkylene glycol or polymer thereof of viscosity between 50 centipoises and 100 centipoises, said suspension being dispersed in an aerosol propellant.

### 3,409,479 METHOD OF HEAT TREATING THIN MAGNETIC FILMS IN A TRANSVERSE MAGNETIC FIELD

Stanley B. Greenberg and Edward Korostoff, Philadelphia, Pa., assignors, by direct and mesne assignments, to the United States of America as represented by the Secretary of the Navy

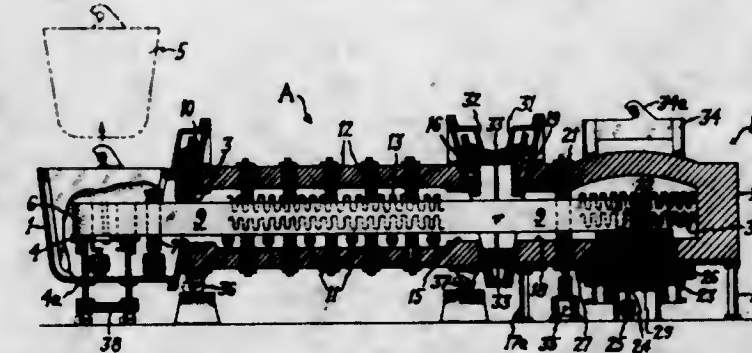
Filed Apr. 29, 1965, Ser. No. 452,035  
4 Claims. (Cl. 148—103)



A process for treating a thin ferromagnetic film made of nickel and iron and having a remanent magnetization lying along a certain magnetic axis in order to lower the anisotropy field ( $H_k$ ) thereof which process includes annealing the film in an environment of 97.5% argon and 2.5% hydrogen at a temperature in the range of 250° C. to 350° C. for a time period of 5 to 15 minutes while subjecting the film to a transverse magnetic field of a size such as 35 oersteds to saturate the magnetic material in the transverse direction and thereafter quenching the film to room temperature.

### 3,409,480 METHOD OF HEAT TREATING SILICON STEEL SHEET

Herbert B. Forslund, Williamstown, Mass., assignor to General Electric Company, a corporation of New York  
Filed Jan. 7, 1965, Ser. No. 424,081  
1 Claim. (Cl. 148—112)



The method of treating silicon steel sheet material which comprises moving a strand of the silicon steel through a heating chamber for raising the temperature thereof to at least about 900° C. such that no part of the silicon steel material is subjected to the temperature range of about 800° C. to about 900° C. for a period



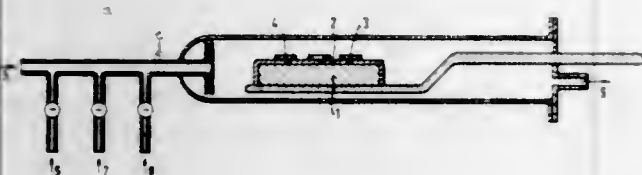
longer than ten minutes, and immediately thereafter without a cooling interval heating the thus preheated silicon steel sheet material in coiled form in a heating chamber in two temperature stages, in the first stage of which said coiled silicon steel sheet material is held for at least one hour in the range of about 950° C. to about 1050° C., and in the second stage of which said coiled silicon steel sheet material is held for at least one hour in the range of about 1100° C. to about 1200° C. Apparatus is disclosed for carrying out the claimed process.

3,409,481

# METHOD OF EPITAXIALLY PRODUCING p-n JUNCTIONS IN SILICON

Hans Merkel, Erlangen, and Siegfried Leibenzeder, Erlangen-Buchenbach, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany  
Filed July 13, 1964, Ser. No. 382,009  
Claims priority, application Germany, July 17, 1963, S 86,210

2 Claims. (Cl. 148-175)

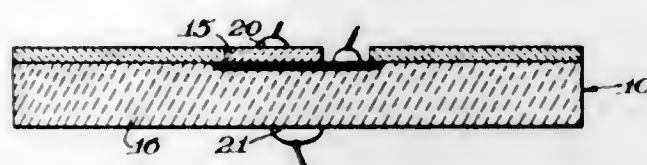


plies, for example, to the metals gallium and indium from the third B-group, to antimony from the fifth B-group, and to zinc from the second B-group of the Periodic Table.

3,409,482

# METHOD OF MAKING A TRANSISTOR WITH A VERY THIN DIFFUSED BASE AND AN EPITAXIALLY GROWN EMITTER

Joseph Lindmayer, Williamstown, Richard R. Garnache, Clarksburg, and James J. Casey, Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts  
Filed Dec. 30, 1964, Ser. No. 428,295  
3 Claims. (Cl. 148-175)

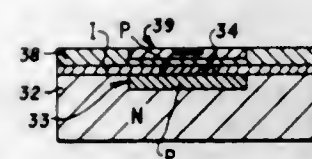
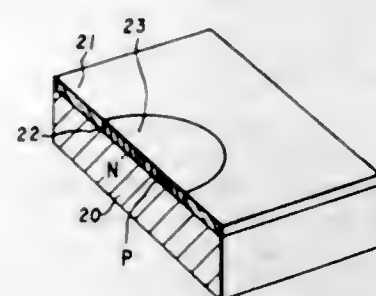


A planar transistor has a very thin, low resistance base region of one conductivity type diffused within a semi-conductive body of the opposite conductivity type at a major surface of the body. An emitter region of the opposite conductivity type is formed on the major surface over the base region by epitaxial growth without significantly increasing the penetration of the diffused base region in the semiconductor body. A PN junction is thereby provided between the diffused base region and the epitaxial grown emitter region. A hole is formed in epitaxially grown emitter region extending down to the diffused base region. Additional impurities of said one conductivity are introduced into the base region at the hole. Ohmic contacts are attached to the base region through the hole and to the emitter region and the semiconductor body.

3,409,483

# SELECTIVE DEPOSITION OF SEMICONDUCTOR MATERIALS

James F. Watson, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware  
Continuation of application Ser. No. 364,234, May 1, 1964. This application May 26, 1967, Ser. No. 641,704  
7 Claims. (Cl. 148-175)



The present invention provides for the production of improved epitaxial p-n junction devices which exhibit good rectifying characteristics, namely a sharply marked current change when passing from forward to reverse operation, as well as an abrupt current increase when the breakdown voltage is exceeded, and which also possess high blocking ability manifested by a relatively high peak inverse voltage. According to the invention, monocrystalline p-type substrates of silicon are placed on top of a heatable body in thermal contact therewith. The top surface of the heater consists entirely or partially of silicon alloyed with an element from the second, third or fifth group of the periodic system. The substrates are then heated by means of the heater body in the reaction vessel to a temperature between 900 and 1400° C., preferably 1150 to 1250° C., in a flow of gaseous mixture composed of hydrogen halide and a silicon halogen compound for a period of 1 to 60 minutes. As a result, the substrates are subjected to etching which exposes a completely undisturbed and planar crystalline surface structure. Subsequently, the composition of the gas supply is changed thereby epitaxially precipitating n-type silicon upon the substrates in the same vessel and while maintaining the temperature within the above-mentioned range. Particularly suitable as alloying components for the silicon heater surface are those elements of the second, third and fifth groups in the periodic system that form with silicon a simple eutectic system of degenerated eutectic. This ap-

A method for depositing small limited area epitaxial regions on a body of semiconductor material. A masking layer such as silicon oxide or magnesium fluoride is used to define a pattern of openings where epitaxial material is

to be grown, followed by said epitaxial growth. The masking layer may be removed and the process repeated to create a complex structure without disturbing shallow underlying layers. Specific combinations of steps to obtain specific complex structures are claimed. The application of the process to the fabrication of integrated circuits is disclosed.

3,409,484

# THICKENED INORGANIC OXIDIZER SALT SLURRIED EXPLOSIVE CONTAINING AN ALKYLAMINE NITRATE AND AN AIR-ENTRAPPING MATERIAL

Joseph J. Minnick, Marion, Ill., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland  
No Drawing. Filed Sept. 15, 1967, Ser. No. 668,193  
12 Claims. (Cl. 149-21)

Thickened slurry explosive compositions containing an inorganic nitrate oxidizing salt, a lower alkylamine nitrate, water, as sensitizer a non-explosive, finely-divided, air-entrapping material and a thickening agent. These explosive compositions are useful in small bore hole blasting operations.

3,409,485

# THICKENED INORGANIC OXIDIZER SALT SLURRIED EXPLOSIVE CONTAINING TRIS(HYDROXYMETHYL)-NITROMETHANE AND AIR-ENTRAPPING MATERIAL

Joseph J. Minnick, Marion, Ill., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland  
No Drawing. Filed Sept. 15, 1967, Ser. No. 668,194  
11 Claims. (Cl. 149-21)

Thickened slurry explosive compositions containing an inorganic nitrate oxidizing salt, tris(hydroxymethyl)-nitromethane, water, as sensitizer a non-explosive, finely-divided, air-entrapping material, and a thickening agent. These explosive compositions are useful in small bore hole blasting operations.

3,409,486

# THICKENED AQUEOUS AMMONIUM NITRATE-HEXAMETHYLENETETRAMINE EXPLOSIVE CONTAINING AMMONIUM PERCHLORATE AS SENSITIVITY STABILIZER

Dale S. Partridge, Shawnee Mission, Kans., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
No Drawing. Filed Dec. 20, 1967, Ser. No. 691,949  
3 Claims. (Cl. 149-21)

In thickened aqueous suspension explosives based principally on ammonium nitrate in combination with a suspended solid fuel, sensitized and stabilized with dissolved hexamethylenetetramine, variation of sensitivity with changing temperature is suppressed by incorporation of about 2 weight percent ammonium perchlorate in the composition. Charges of explosive thickened with hydroxy-substituted thickening agents are conveniently pumped into place without viscosity problems at low temperatures by injection of the gelling agent (borax) into the pump exit stream.

3,409,487

# USE OF A PHENOLIC RESIN AND ETHYLENE OXIDE POLYMER AS AN ETCHING RESIST

John S. Fry and Dale F. Pollart, Somerville, and Julius L. Silver, Somerset, Franklin Township, N.J., assignors to Union Carbide Corporation, a corporation of New York  
No Drawing. Filed Nov. 9, 1964, Ser. No. 410,013  
10 Claims. (Cl. 156-13)

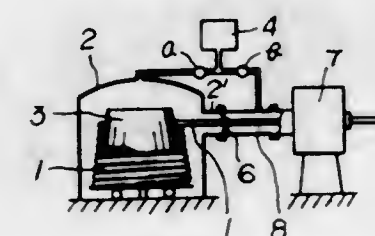
An improved method of etching substrates wherein the substrate is held in intimate contact with an insolubilized membrane of an association product composed of a

phenolic resin and an ethylene oxide polymer. The insolubilized membrane is characterized by areas of water permeability in accordance with the image to be etched. The substrate is subjected to a suitable water soluble etchant for the substrate through the membrane which passes etchant through to the substrate only in those areas of water permeability.

3,409,488

# METHOD OF MANUFACTURING OIL-FILLED CABLES

Etsuji Kusakabe, Kohoku-ku, Yokohama, Japan, assignor to The Furukawa Electric Company Limited, Tokyo, Japan, a corporation of Japan  
Filed Jan. 2, 1962, Ser. No. 163,663  
Claims priority, application Japan, Jan. 17, 1961, 36/1,380  
1 Claim. (Cl. 156-48)

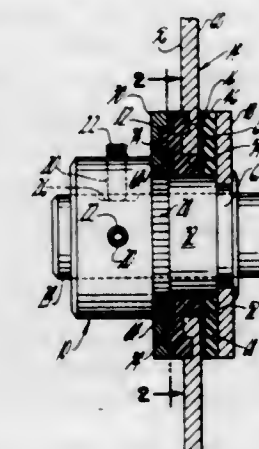


1. A method of manufacturing oil-filled cables which comprises drying under vacuum in a drying zone a cable core having paper insulation covering, delivering said covered core after drying from said drying zone to a sheathing zone through a vacuum tight joint pipe, maintaining vacuum conditions in said sheathing zone and covering said cable core with a metal sheathing while said cable core is passed therethrough, sealing the forward end of said sheathed cable upon emergence from said sheathing zone and sealing the rearward end of said sheathed cable at the completion of said sheathing step while under vacuum conditions, thereby providing a hermetically sealed length of interiorly dry sheathed cable which is protected from moisture and gas absorption while awaiting oil-filling; thereafter directly attaching means to said cable leading to its interior for delivery of oil, and filling said hermetically sealed sheathed cable with oil from said means while the interior of said cable is under reduced pressure such as will effectively induce oil flow thereinto.

3,409,489

# METHOD OF MAKING RESILIENT HUB ASSEMBLY

Robert I. Renton, Simsbury, Conn., assignor to The Torrington Manufacturing Company, Torrington, Conn., a corporation of Connecticut  
Filed Nov. 10, 1964, Ser. No. 410,119  
1 Claim. (Cl. 156-60)



A method for making a resilient hub assembly comprising steps of providing rigid torque applying member, re-



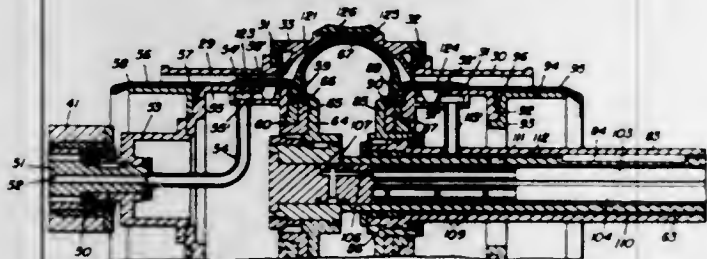
silient grommet with radial cavities, resilient washer with radial cavities, and rigid washer, filling all cavities with adhesive, and assembling with torque applying member and grommet on one axial side of torque absorbing structure and with washers on opposite axial side thereof with rigid washer and torque applying member clamping all parts together.

3,409,490

# METHOD AND APPARATUS FOR MANUFACTURING PNEUMATIC TIRES

Antonio Pacciarini, Virgilio Lavazza, and Dario Giletta, Milan, Italy, assignors to Pirelli S.p.A., Milan, Italy  
Filed Feb. 26, 1965, Ser. No. 435,607  
Claims priority, application Italy, Mar. 16, 1964, 5,633/64

36 Claims. (Cl. 156—123)



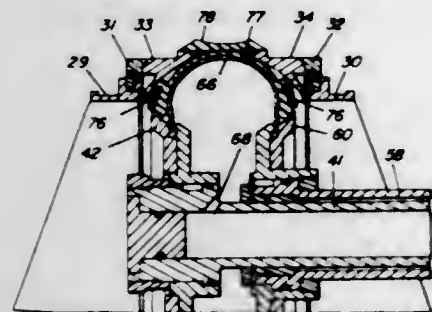
A method and apparatus for manufacturing pneumatic tires having substantially inextensible elements wherein a carcass is formed on a rigid drum, transferred to an expansible central portion of a second drum, and shaped into a toroidal form on the latter drum. A ring-shaped reinforcing structure and a tread band are then applied on the mid-circumferential portion of the carcass and a sidewall strip is applied to each side of the carcass.

3,409,491

# METHOD AND APPARATUS FOR THE MANUFACTURE OF PNEUMATIC TIRES

Antonio Pacciarini and Dario Giletta, Milan, Italy, assignors to Pirelli S.p.A., Milan, Italy  
Filed Nov. 30, 1964, Ser. No. 414,586  
Claims priority, application Italy, Dec. 3, 1963, 24,819/63

14 Claims. (Cl. 156—126)



A method and apparatus for the manufacture of pneumatic tires wherein a carcass is built up on a rigid drum and the sidewalls are applied to the carcass on said drum. The carcass is then transferred to an expansible drum and shaped to a toroidal form, after which a reinforcing structure and a tread band are applied to complete the tire.

3,409,492

# METHOD AND APPARATUS FOR ONE STAGE BUILDING OF RADIAL PLY TIRES

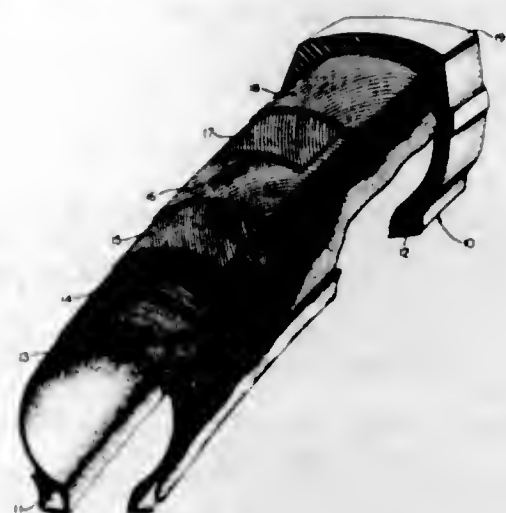
Duane O. Yoe, Akron, Ohio, assignor to The Goodyear Tire and Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Apr. 1, 1965, Ser. No. 444,691

5 Claims. (Cl. 156—132)

A pneumatic tire and a method of building the same in which a breaker strip having substantially inextensible

cords therein is applied over the carcass plies and beneath the tread in flat form. The cord angle of the breaker



being substantially less than the cord angle of the carcass plies and the cords being pantographed to a lesser angle simultaneously upon shaping the tire to toroidal shape.

3,409,493

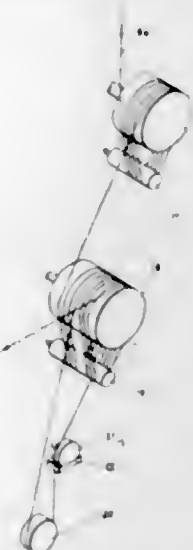
# PROCESS FOR TWISTLESS MULTIFILAMENT POLYETHYLENE TEREPHTHALATE YARN

James Eric McIntyre, Hendry Wilson Dempster, and Derek Kingston, Harrogate, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed Nov. 15, 1963, Ser. No. 324,091

Claims priority, application Great Britain, Nov. 16, 1962, 43,399/62

4 Claims. (Cl. 156—166)

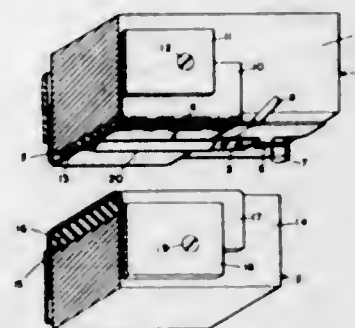


1. A process for the production of a coherent multifilament yarn having an average cohered yarn count of 5-80% of the total number of filaments from a polyethylene terephthalate having a water absorbency of less than 1% at 70° F. and 65% relative humidity comprising wetting the surfaces of the individual filaments of a yarn containing 5 to 2,000 filaments with 1-80% by weight of the filaments of a liquid, passing the filaments under tension through a heating zone where it is heated by heat transfer from a solid metal surface, a gas or a vapor maintained for a time in said zone and at an elevated temperature of 140-600° C. in which the product of the temperature, in degrees centigrade, of the heating zone, and the time in seconds, spent in the heating zone, is in the range 0.5-200, said liquid containing a compound which is a solvent for the oriented filaments at said elevated temperature.

3,409,494

# SEALING ELEMENT FOR SHRINK FILM PACKAGING MACHINE

Charles J. Korzinek, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware  
Filed Mar. 3, 1966, Ser. No. 531,561  
3 Claims. (Cl. 156—515)



1. In a shrink-film packaging machine, means for severing and sealing the severed edges of a plurality of plies of thermoplastic film comprising a pair of opposed jaws for clamping the film between the working faces thereof and including a severing jaw and an opposing jaw, a resilient backing member on the working face of the opposing jaw and a severing and sealing element on the working face of the severing jaw for severing the film by heat and for heat sealing the severed edges, said severing and sealing element comprising a ribbon having a substantially V-shaped cross-section and disposed with the side edges thereof toward said severing jaw and the apex thereof toward the backing jaw whereby when said jaws are closed said element compresses the film against said backing member with the maximum pressure at said apex and progressively decreasing pressure toward said side edges, said jaws acting to clamp the film on both sides outwardly of said severing and sealing element, and means for heating said element to a severing and sealing temperature.

3,409,495

# LAMINATED THERMOPLASTIC SHEET MATERIAL

Ole-Bendt Rasmussen, Copenhagen, Denmark, assignor to Phillips Petroleum Company, a corporation of Delaware  
No Drawing. Filed Feb. 25, 1964, Ser. No. 347,114  
Claims priority, application Great Britain, Mar. 2, 1963, 8,429/63

9 Claims. (Cl. 161—55)

A tear resistant plastic laminate is disclosed and a method of making the same, including mixing a minor amount of a swellable foreign polymer in a major amount of an orientable polymer, forming the mixture into a film, exposing said film to a solvent so that at least some of the solvent is taken up by said foreign polymer, orienting the film, heating the oriented film to expand the solvent and form small cavities therein, and bonding at least a pair of oriented films together so that their directions of orientation form an angle with each other wherein at least one of said films contains the cavities.

3,409,496

# TWISTLESS MULTIFILAMENT YARN OF POLYETHYLENE TEREPHTHALATE

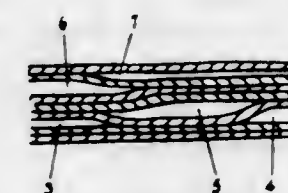
James Eric McIntyre, Hendry Wilson Dempster, and Derek Kingston, Harrogate, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain  
Original application Nov. 15, 1963, Ser. No. 324,091. Divided and this application June 1, 1964, Ser. No. 377,166

Claims priority, application Great Britain, Nov. 16, 1962, 43,399

5 Claims. (Cl. 161—179)

1. A coherent thermoplastic substantially twistless multifilament yarn of denier less than about 1090 made

from polyethylene terephthalate possessing in the form of oriented fibres a water absorbency of less than 1% at 70° F. and 65% relative humidity, wherein each filament adheres to adjacent filaments by bonds extending substantially for the whole length of the filaments, each bond varying in strength along its length, said bond consisting of the polyethylene terephthalate of which the filaments



are composed so that any cohered portion between and including the filaments consists of a chemically continuous phase of the same polymer further characterised in that said bond consists of the polymer in a crystalline or partly crystalline form, the degree of cohesion being defined by an average cohered filament count of about 8-80% of the total number of filaments in the untreated and uncohered yarn.

3,409,497

# ADHESIVE SHEET MATERIALS AND METHOD OF MAKING THE SAME

Luther M. Roseland, Seal Beach, Calif., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware  
No Drawing. Continuation-in-part of abandoned application Ser. No. 201,243, June 11, 1962. This application Feb. 21, 1963, Ser. No. 260,328

8 Claims. (Cl. 161—184)

A self-sustaining thermosettable adhesive sheet material consisting of a web of fibers having latently reactive sites and a non-fibrous organic resin reactive with the latently reactive sites at specified temperatures and methods of making said sheet materials are provided.

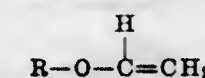
3,409,498

# ADHESIVES FOR POLYOLEFIN RESINS COMPRISING PITCH AND A VINYL ALKYL ETHER POLYMER

John F. Suter, Charleston, and Ray C. Hamon, St. Albans, W. Va., assignors to Union Carbide Corporation, a corporation of New York  
No Drawing. Continuation-in-part of application Ser. No. 307,798, Sept. 10, 1963. This application Dec. 21, 1964, Ser. No. 420,128

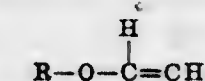
29 Claims. (Cl. 161—252)

1. An adhesive composition for polyolefins consisting essentially of a homogeneous, completely miscible, fluid blend of pitch, a polymer produced from a vinyl alkyl ether represented by the formula



wherein R is an alkyl radical having from 1 to 20 carbon atoms, and at least one inert viscosity modifier.

21. A structure comprising a polyolefin adhered to a substrate by means of an adhesive produced by drying a composition consisting essentially of a homogeneous, completely miscible, fluid blend of from about 10 parts by weight to about 90 parts by weight of pitch, from about 2 parts by weight to about 50 parts by weight of a polymer produced from a vinyl alkyl ether represented by the formula



wherein R is an alkyl radical having from 1 to 20 carbon atoms, and from about 5 parts by weight to about 96 parts by weight of at least one inert viscosity modifier.



3,409,499

**CHRYSOTILE ASBESTOS FIBER DISPERSION INCLUDING MONOCARBOXYLIC ACID**

William H. Drescher, Warwick, and Alfred W. Naumann, Suffern, N.Y., assignors to Union Carbide Corporation, a corporation of New York  
No Drawing. Filed May 14, 1965, Ser. No. 456,005  
10 Claims. (Cl. 162-3)

1. An aqueous dispersion having a pH of from 3.8 to 6.3 comprising from about 0.5 to 5.0 weight percent finely divided chrysotile asbestos fibers, and as the sole dispersing and stabilizing agent, a water-soluble, monocarboxylic acid containing up to 6 carbon atoms.

3,409,500

**METHOD OF SIZING PAPER WITH CATIONIC POLYAMINE AND CARBOXYLIC ANHYDRIDE**  
Edward Strazdins and Russell Joseph Kulick, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine  
Continuation-in-part of applications Ser. No. 112,959, May 26, 1961; Ser. No. 423,895, Dec. 23, 1964; and Ser. No. 490,617, Sept. 27, 1965. This application Oct. 28, 1966, Ser. No. 598,576  
10 Claims. (Cl. 162-164)

Sized paper is manufactured by separately adding an aqueous anionic dispersion of hydrophobic organic cellulose-reactive paper sizing carboxylic anhydride particles to an aqueous suspension of cellulose paper-making fibers and a water-soluble cellulose-substantive cationic polyamine having a molecular weight in excess of 1,000, sheeting said suspension to form a water-laid web, and drying said web at a temperature between 190° F. and 250° F. The amount of polyamine added is sufficient to deposit the carboxylic anhydride particles on the fibers and to accelerate the rate at which the anhydride develops its sizing properties when the web is dried.

3,409,501

**PYROGENIC TiO<sub>2</sub> PIGMENT AND METHOD FOR PRODUCING SAME**

Walter T. Siuta, Metuchen, N.J., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey  
No Drawing. Continuation-in-part of application Ser. No. 369,291, May 21, 1964. This application Dec. 10, 1965, Ser. No. 513,115  
7 Claims. (Cl. 162-166)

The present invention relates in general to pigmentary titanium dioxide produced by the vapor phase oxidation of TiCl<sub>4</sub> and more especially to untreated, uncoated TiO<sub>2</sub> burner discharge having one or more coatings thereon of partially dehydrated hydrous oxides of silicon and aluminum to render the pigment photochemically inert; and to coating compositions, plastics and resinous materials containing said hydrous oxide coated TiO<sub>2</sub> pigment.

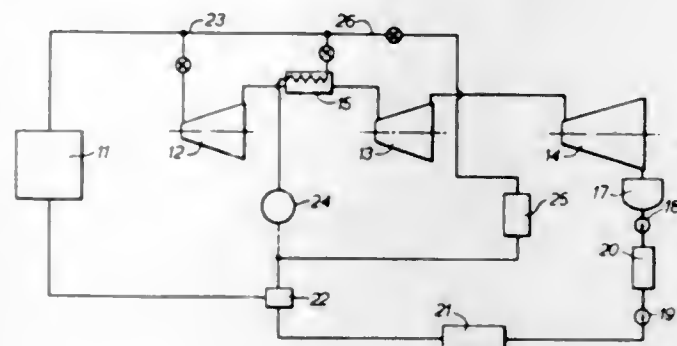
3,409,502

**FAST NUCLEAR REACTOR COOLED BY SUPERCRITICAL STEAM**

Allan Barker, Chester, England, assignor to United Kingdom Atomic Energy Authority, London, England  
Continuation of application Ser. No. 342,971, Feb. 6, 1964. This application Dec. 8, 1966, Ser. No. 600,271  
Claims priority, application Great Britain, Feb. 11, 1963, 5,579/63; Oct. 19, 1963, 41,221/63  
5 Claims. (Cl. 176-40)

A fast nuclear reactor cooled by steam at supercritical pressure. Features of the reactor include a heat rating of not less than 8 mw. per cubic foot of core, heat transfer surface area of at least 80 square feet per cubic foot of fuelled core, cylindrical, elongated fuel elements, preferably sheathed ceramic fuel, of approximately diameter 0.2 inch, and a temperature rise of coolant across the core of less than 200° C. A power plant including the core and

including an arrangement for dividing the coolant from the core into two streams, one of greater mass flow for

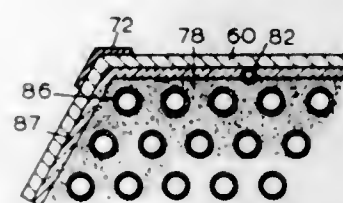


supplying heat to a reheater and the other stream of lesser mass flow for driving a turbine.

3,409,503

**NUCLEAR REACTOR FUEL ELEMENTS**

Kenneth MacGregor Swanson, Thurso, Calthness, Scotland, assignor to United Kingdom Atomic Energy Authority, London, England  
Filed Dec. 19, 1966, Ser. No. 602,988  
Claims priority, application Great Britain, June 23, 1966, 28,202/66  
3 Claims. (Cl. 176-68)



A fast nuclear reactor fuel element has sheathing forming internal and external walls, both being exposed to the same flowing coolant, ceramic nuclear fuel contained in the sheathing and being less than theoretical density so as to provide distributed voidage, and a layer of thermal insulating material between the fuel and the inner face of the external wall, the fuel contacting the inner face of the internal wall closely, whereby the operating temperature of the fuel adjacent the insulating layer is raised compared with that of the fuel adjacent the internal wall so as to lower the compressive creep resistance of the portion of fuel operating at higher temperature and so induce irradiation-induced swelling to be absorbed in the distributed voidage of the fuel. The concept is particularly applicable to the case where the external wall of the sheathing is constituted by a shell and where coolant tubes within the shell form the internal wall of the sheathing.

3,409,504

**NUCLEAR FUEL ELEMENT**

Henri Bailly, Orsay, Bernard Francois, Grenoble, and Lucienne Meny, Paris, France, assignors to Commissariat a l'Energie Atomique, Paris, France  
No Drawing. Filed Jan. 24, 1967, Ser. No. 611,228  
Claims priority, application France, Feb. 2, 1966, 48,174; Dec. 21, 1966, 88,412  
4 Claims. (Cl. 176-82)

A fuel element formed of a ceramic material having an actinide oxide base and contained in a can formed of zirconium or zirconium alloy. An intermediate layer formed of a metallic nitride, especially of titanium and/or niobium, is located between the base and the can.

3,409,505

**METHOD FOR THE PRODUCTION OF 5'-INOSINIC ACID**

Akira Imada, Nishinomiyu, Seizi Igarashi, Ashiya, Ikuo Nogami, Kyoto, and Yoshio Nakao, Ibaraki, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan  
No Drawing. Filed Nov. 4, 1965, Ser. No. 506,390  
Claims priority, application Japan, Nov. 4, 1964, 39/62,637  
5 Claims. (Cl. 195-28)

1. A method for producing 5'-IMP, which comprises inoculating an adenine and amino acid double-requiring mutant induced from a *Bacillus megaterium* de Bary microorganism capable of accumulating 5'-nucleotides other than 5'-IMP, into a culture medium containing adenine source and amino acid source, incubating said culture medium until 5'-IMP is accumulated in the culture medium, and recovering the 5'-IMP thus accumulated from the culture medium.

3,409,506

**MICROBIOLOGICAL PRODUCTION OF ESTERS**

Nicholas J. Stevens, Colonia, John W. Frankenfeld, Atlantic Highlands, and John D. Douras, Jr., Millington, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware  
No Drawing. Filed Dec. 8, 1965, Ser. No. 512,545  
6 Claims. (Cl. 195-28)

Fermentation process for the production of esters which comprises fermenting an aliphatic hydrocarbon with *Micrococcus cerificans* in a suitable growth medium characterized by containing less than the amount required for maximum growth of mineral nutrients selected from the group consisting of divalent magnesium cation and divalent calcium cation.

3,409,507

**METHOD FOR THE PRODUCTION OF 5'-INOSINIC ACID AND INOSINE**

Masahiko Yoneda, Suita, Seiji Igarashi, Ashiya, Akira Imada, Nishinomiyu, Ikuo Nogami, Kyoto, and Einosuke Omura, Nishinomiyu, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan  
No Drawing. Filed Dec. 22, 1965, Ser. No. 515,742  
Claims priority, application Japan, Dec. 23, 1964, 39/72,966  
6 Claims. (Cl. 195-28)

1. A method for producing a member selected from the group consisting of 5'-inosinic acid, inosine and a mixture thereof, which comprises inoculating a mutant, which is induced from a microorganism belonging to the genus *Bacillus* and which requires both (1) adenine and (2) guanine or xanthine into a culture medium containing adenine source and a member selected from the group consisting of guanine source and xanthine source, incubating said culture medium until objective substance is accumulated therein, and recovering the objective substance thus accumulated from the culture medium.

3,409,508

**METHOD FOR ANALYSIS OF UREA IN BIOLOGICAL FLUIDS**

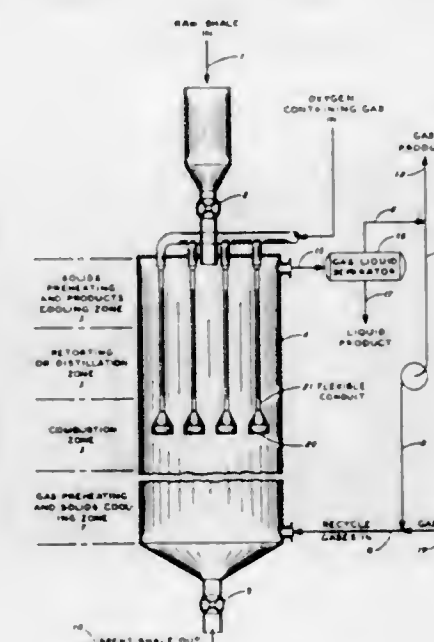
Leonard A. Hughes, Oakland, Calif., assignor, by mesne assignments, to Nuclear-Chicago Corporation, Des Plaines, Ill., a corporation of Delaware  
No Drawing. Filed Jan. 26, 1966, Ser. No. 523,023  
5 Claims. (Cl. 195-127)

4. A reagent for urea analysis comprising a buffered solution of urease and nitroferrocyanide containing a stabilizing amount of glycol.

3,409,509

**SHALE RETORTING APPARATUS**

George D. Gould, Orinda, Calif., assignor to Chevron Research Company, a corporation of Delaware  
Filed Oct. 2, 1964, Ser. No. 400,993  
1 Claim. (Cl. 196-116)

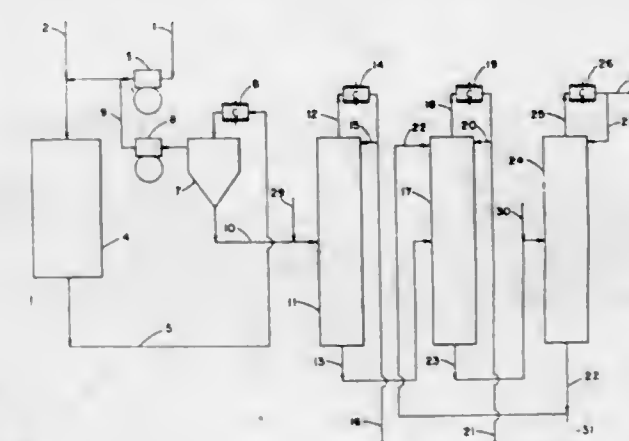


Shale retorting apparatus comprising vertically elongated housing for downwardly moving shale, elongated oxygen supply conduits within said housing extending downwardly from an upper portion of said housing and terminating in lower free ends below about the midpoint of said housing, said lower free ends being the gas release ends of said conduits, said conduits having at said lower free ends means for deflecting downwardly moving shale from the immediate gas release areas near said lower free ends, said conduits having sufficient flexibility to permit said lower free ends to move with respect to each other in response to forces exerted by downwardly moving shale.

3,409,510

**PROCESS FOR DISTILLING ETHYL ALCOHOL BY THE ADDITION OF A BLEND OF SILOXANES**

Gregg I. Le Master and Don S. Martin, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
Filed Oct. 19, 1966, Ser. No. 587,705  
8 Claims. (Cl. 203-20)



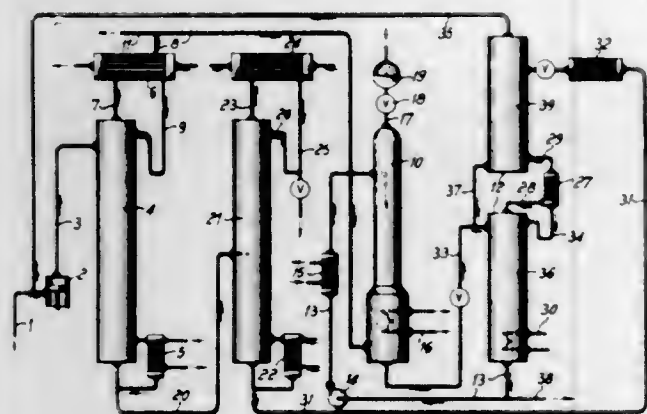
Pressure buildup in ethanol refining columns is materially inhibited by the use of certain water-dispersible polymers of dialkyl siloxanes.



# 3,409,511 PLURAL STAGE DISTILLATION OF VINYL CHLORIDE WITH GAS RECYCLE TO THE REACTION ZONE

Gerhard Rechmeier, Kierdorf, and Armin Jacobowsky, Knap-sack, near Cologne, Germany, assignors to Knap-sack Aktiengesellschaft, Cologne, Germany, a corporation of Germany

Filed Jan. 23, 1967, Ser. No. 611,052  
Claims priority, application Germany, Mar. 8, 1966, K 58,661  
7 Claims. (Cl. 203-42)



Crude vinyl chloride obtained by the reaction of acetylene with hydrogen chloride and contaminated with inert gases, acetylene and higher-chlorinated  $C_2$ -hydrocarbons is worked up by dilution of the acetylene with gas mixture. Acetylene previously allowed to escape can be recovered, and vinyl chloride free from higher-chlorinated  $C_2$ -hydrocarbons is produced.

# 3,409,512 AZEOTROPIC DISTILLATION OF FLUORINATED ETHER AND ACETONITRILE

Louis G. Anello, Basking Ridge, and Richard F. Sweeney, Randolph Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 27, 1966, Ser. No. 582,258  
4 Claims. (Cl. 203-45)

Heptafluoroisopropyl, 2'-iodotetrafluoroethyl ether is separated from acetonitrile by distillation to recover an azeotrope of the ether and acetonitrile having a greater proportion of the ether content than the original mixture. The azeotrope is then water washed to extract the acetonitrile. This separation by azeotropic distillation is particularly useful for separating the fluorinated ether from 1,2-diodotetrafluoroethane and 1-chloro-2-iodotetrafluoroethane. With these additional by-products present an additional distillation step is provided therefor.

# 3,409,513 PURIFICATION OF ACETONE BY HYDRO-EXTRACTIVE DISTILLATION

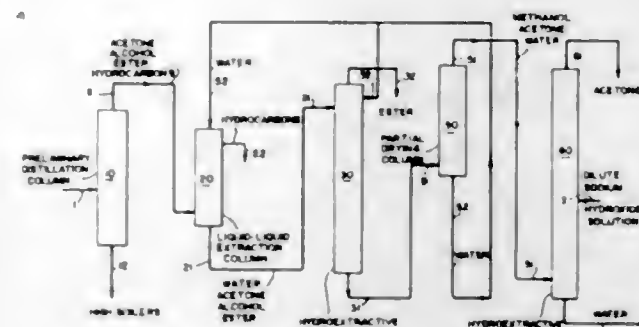
James William Hamlin and Raymond Sowerby, Hull, England, assignors to The Distillers Company Limited, Edinburgh, Scotland, a British company

Filed Nov. 3, 1965, Ser. No. 506,156  
Claims priority, application Great Britain, Nov. 27, 1964, 48,279/64

5 Claims. (Cl. 203-46)

Acetone of substantially pure form can be obtained from a mixture comprising acetone, at least one lower aliphatic alcohol, at least one ester of a lower aliphatic alcohol with a lower carboxylic acid and at least one hydrocarbon by subjecting the mixture to liquid-liquid extraction to remove the at least one hydrocarbon, followed by hydro-extractive distillation, thereafter the acetone being removed as an overhead product. Alternatively a

second hydro-extractive distillation step can be used and the acetone can then be recovered subsequent to the second hydro-extractive distillation. An optional preliminary



distillation can be used before the liquid-liquid extraction step to remove high boilers and an optional drying step may be utilized after the initial hydro-extractive distillation step.

# 3,409,514 METHOD OF PREPARATION OF PURE STRAIGHT-CHAIN PARAFFINIC HYDROCARBONS

Yves Drapeau, Le Havre, and Michel Bestougeff, Eau-bonne, France, assignors to Compagnie Francaise de Raffinage, Paris, France

No Drawing. Filed June 26, 1964, Ser. No. 378,436

Claims priority, application France, June 27, 1963, 939,585; June 8, 1964, 977,465

11 Claims. (Cl. 203-48)

1. In a method for separating a particular desired one straight-chain paraffinic hydrocarbon having from 12 to 16 carbon atoms per molecule in substantially pure state from a mixture of hydrocarbons containing said one desired paraffin and at least one other substance from the group consisting of n-paraffins, iso-paraffins, naphthenes, aromatics, and mixtures thereof, the steps which comprise in combination distilling said mixture to obtain a narrow cut thereof consisting essentially of hydrocarbons having the same number of carbon atoms per molecule as said one desired paraffin and the largest percentage of said one desired paraffin obtainable from said mixture, concentrating said one desired paraffin in said narrow cut obtaining a fraction having at least a minimum percentage content by weight of said one desired paraffin, which minimum content is individually different for and characteristic of each of said 12-16 carbon paraffins and is approximately 60% for n-dodecane, 56% for n-tridecane, 50% for n-tetradecane, 35% for n-pentadecane, and 25% for n-hexadecane, and fractionally crystallizing said fraction after said concentrating step at a temperature of at least as high as  $-30^{\circ}\text{C}$ . for crystallizing out said one desired paraffin hydrocarbon from other said other hydrocarbons in said mixture in substantially pure state.

# 3,409,515 METHOD OF STRIPPING VOLATILE CONSTITUENTS FROM A MIXTURE

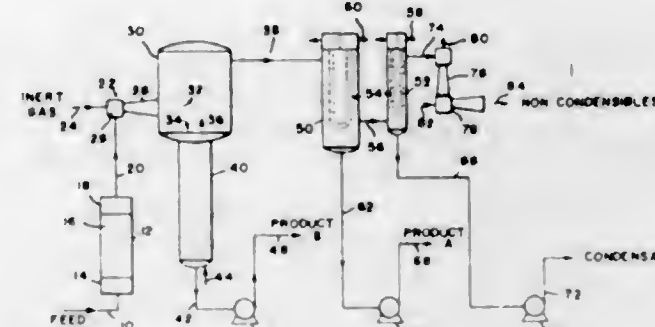
James L. Baird, Winchester, and Edmund A. J. Mroz, Stoneham, Mass., assignors to Artisan Industries, Inc., Waltham, Mass., a corporation of the Commonwealth of Massachusetts

Filed Mar. 30, 1966, Ser. No. 538,733

8 Claims. (Cl. 203-49)

Feed material is passed through a tubular heat exchanger and heated to but not exceeding its boiling point.

An inert gas at about the same or higher temperature is injected into the heated feed at its exit and prior to admission into a flash chamber where higher volatility



vapors are released and subsequently elsewhere condensed. The residue is passed downwardly into an indirectly steam heated disc-tube film evaporator.

# 3,409,516 ELECTROLYTIC RECORDING PAPER CONTAINING A SEQUESTERING AGENT

Robert S. Ives, Lexington, Mass., assignor to Milton Alden, Needham, Mass.

No Drawing. Filed June 11, 1963, Ser. No. 286,951  
10 Claims. (Cl. 204-2)

Electrochemical recording material consisting of a support impregnated with a water solution containing an organic lake former, an electrolyte and a chelating or sequestering agent to form colorless complexes with stray recording metal ions in non-recording parts of the support.

# 3,409,517 METHOD OF PRODUCING A MERCURY-CALOMEL ELECTRODE

Serafim Fedorovich Zavgorodny, Budennovskiy, Prospect 70, Apt. 2, and Ivan Fedotovich Kamysnikov, Prospect K. Marx 55, Apt. 6, both of Rostov-na-Donu, U.S.S.R.

No Drawing. Filed May 11, 1965, Ser. No. 454,960  
5 Claims. (Cl. 204-29)

A mercury-calomel electrode is produced by calcinating a graphite rod, washing the graphite rod with water, coating the graphite rod with a layer of mercury and calomel by electrochemical deposition thereof from a solution of  $\text{Na}_2(\text{HgCl}_4)$  at a potential of 1.3 to 1.7 volts and thereafter immersing the coated graphite rod in solution of potassium chloride.

# 3,409,518 ORGANIC HALIDE RECOVERY

David G. Braithwaite, Chicago, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

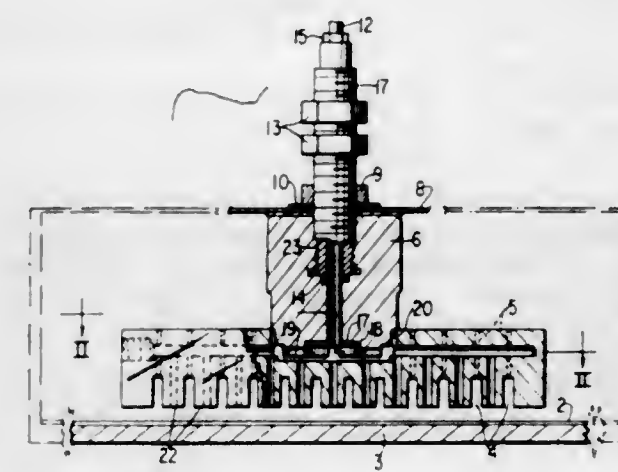
No Drawing. Continuation-in-part of application Ser. No. 351,021, Mar. 11, 1964. This application Jan. 6, 1966, Ser. No. 518,974

21 Claims. (Cl. 204-59)

Organic halides are removed from liquid glycol diethers by heating the mixture of the glycol diether containing the organic halide and a stripping solvent which boils below the boiling point of the glycol diether, the temperature of heating being above the boiling point of the stripping solvent but below the boiling point of the glycol diether, and the volatilized components comprising the organic halide are separated from the residual body of liquid comprising the glycol diether. The process is especially useful in separating an organic halide, such as methyl chloride or ethyl chloride, from an electrolyte containing tetraalkyl lead compounds and a glycol diether, using tetrahydrofuran as a stripping solvent.

# 3,409,519 METHOD OF PROTECTING ELECTROLYTIC CELLS

Patrizio Gallone and Giovanni Trisoglio, Milan, Italy, assignors to Oronzio de Nora Impianti Electrochimici, S.A.S., Milan, Italy, a corporation of Italy  
Filed Oct. 4, 1965, Ser. No. 492,526  
Claims priority, application Italy, Oct. 10, 1964, 52,182/64  
6 Claims. (Cl. 204-99)

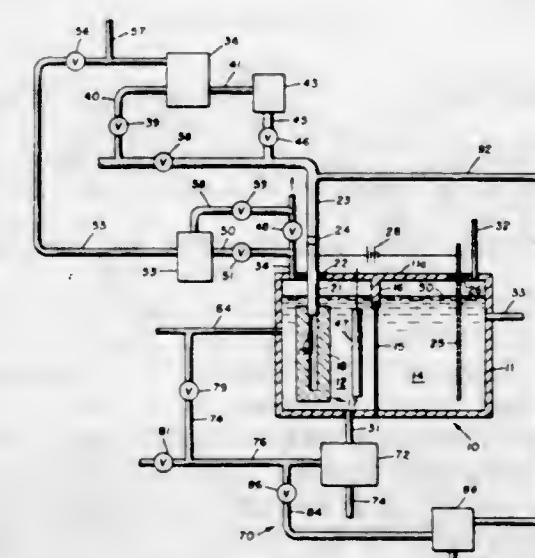


6. A method of protecting an alkali metal electrolysis cell having a flowing mercury cathode from the corrosive effects of chlorine during periods of inoperation which comprises introducing a non-corrosive fluid onto the mercury cathode surface adjacent to the electrolyte when the electric current is halted.

# 3,409,520 REMOVAL OF HYDROGEN SULFIDE FROM A HYDROGEN SULFIDE-HYDROCARBON GAS MIXTURE BY ELECTROLYSIS

Perce W. Bolmer, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York  
Continuation-in-part of application Ser. No. 434,533, Feb. 23, 1965. This application Sept. 23, 1965, Ser. No. 489,548

17 Claims. (Cl. 204-101)



1. In the removal of hydrogen sulfide from a hydrogen sulfide-hydrocarbon gas mixture with the formation of sulfur product and free hydrogen by electrolysis in an electrolysis cell having an electrolyte therein and an anode and a cathode in contact with said electrolyte and con-



ected to an external source of electric power, the method of:

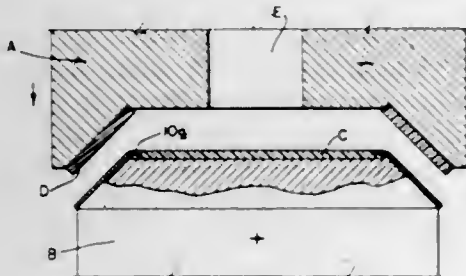
- introducing a hydrogen sulfide-hydrocarbon gas mixture into said electrolysis cell and into contact with said electrolyte and said anode;
- passing an externally generated electric current through said electrolyte between said anode and said cathode to electrolytically oxidize at said anode sulfide ions to a sulfur oxidation product of said sulfide ions and electrolytically reduce at said cathode hydrogen ions to free hydrogen;
- separately withdrawing said hydrocarbon gas and at least a portion of said sulfur product from said electrolysis cell; and
- withdrawing said hydrogen gas from said electrolysis cell.

3,409,521

### METHOD OF MANUFACTURING CENTRIFUGE DISCS BY ELECTROCHEMICAL MACHINING

Thomas D. Sharples, Lansdale, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed Apr. 22, 1965, Ser. No. 449,965  
6 Claims. (Cl. 204-143)



Centrifuge discs are made by securing a disc blank of frusto-conical shape to an electrode and placing an electrode of opposite polarity in spaced opposing relation thereto, masking off portions of the disc which are to become protruding spacer portions on the disc, flowing an electrolyte through the space between the disc blank and the electrode of opposite polarity, and passing an electric current between the two electrodes in order to electrochemically machine away the space between the protruding portions.

3,409,522

### ELECTROCHEMICAL MACHINING OF TITANIUM AND ALLOYS THEREOF

John W. Grenier, Cincinnati, and Joseph Bayer, Middletown, Ohio, assignors to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 10, 1965, Ser. No. 513,083  
7 Claims. (Cl. 204-143)

1. In the electrolytic material removal process of metallic materials based on titanium, said removal process including disposing a tool opposite said titanium based materials and spaced therefrom to provide a machining gap, causing electrolyte to flow rapidly through said gap, and connecting said titanium based materials to a source of electric current so as to make said materials predominantly anodic whereby dissolution of said titanium based materials takes place, the improvement wherein the electrolyte has a pH of 5-7 and consists essentially of:

- about 1-4 molar concentration of water soluble compounds selected from the group consisting of alkali metal salts of chlorides and bromides, and
- a water soluble complexing agent selected from the group consisting of sodium citrate and water soluble salt of ethylenediaminetetraacetic acid, the sodium citrate when selected being included at a concentra-

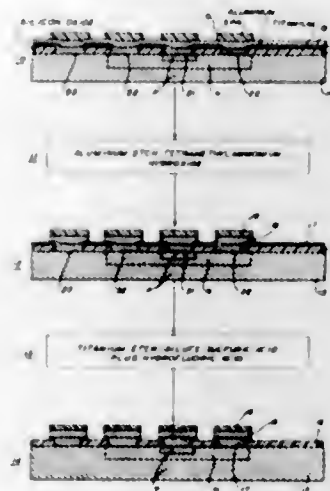
tion of less than 0.5 molar and the ethylenediaminetetraacetic acid salt when selected being included up to the amount required to saturate the electrolyte.

3,409,523

### ELECTROETCHING AN ALUMINUM PLATED SEMICONDUCTOR IN A TETRAALKYLAMMONIUM HYDROXIDE ELECTROLYTE

Victor C. Garbarini, Bethlehem, Pa., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 10, 1966, Ser. No. 533,288  
9 Claims. (Cl. 204-143)



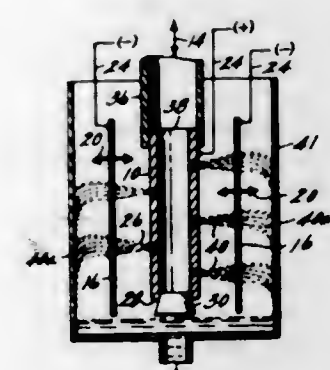
1. The method of etching aluminum plated on semiconductor material comprising immersing the aluminum plated material in an aqueous solution of tetraalkylammonium hydroxide denoted by the generic expression  $R_4N^+(OH)^-$ , where R is selected from the series consisting of ethyl, methyl, propyl and butyl with a metal cathode member and biasing said cathode negatively with respect to the aluminum plating.

3,409,524

### ELECTROLYTIC METHOD FOR DEBURRING ANNULAR SHOULDERS DEFINING MACHINED HOLES

Robert D. Olson, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York

Filed Mar. 23, 1966, Ser. No. 536,830  
2 Claims. (Cl. 204-143)



1. In a method for removing electrically conductive material from a workpiece portion defining the periphery of at least one hole through the workpiece portion, the steps of:

- positioning the workpiece portion in juxtaposition with an electrically conductive tool electrode configured to permit electrolyte flowing from said hole to pro-

ceed along any paths which do not permit the electrolyte to recontact the workpiece and spaced to define an electrolytic machining gap;

directing electrolyte through the hole in the workpiece portion from the workpiece toward and in contact with the tool to cause a continuous stream of electrolyte across the gap without recontacting the workpiece, and at the same time,

applying an electrical potential between the tool and the workpiece portion so that the workpiece portion is predominantly anodic with respect to the tool while passing through the electrolyte sufficient electrical current between the tool and the workpiece portion to remove material electrolytically from the workpiece portion at the periphery of the hole.

3,409,525

### PROCESS FOR REDUCING CORROSION

Charles W. Taylor, Jr., Akron, and Daniel T. Conrad, Cuyahoga Falls, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed May 24, 1965, Ser. No. 458,436  
8 Claims. (Cl. 204-147)

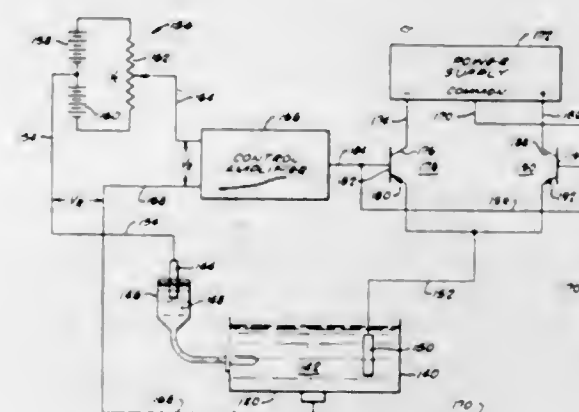
1. In the cathodic process of protecting ferrous articles from corrosion the improvement which comprises subjecting a ferrous article to a treatment that forms a phosphate coating on the surface of the article, then coating it with a fused resin, and then cathodically protecting said article.

3,409,526

### METHOD AND APPARATUS FOR CORROSION PROTECTION

William P. Banks, Eddie C. French, and Norman L. Conger, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Aug. 13, 1965, Ser. No. 479,578  
27 Claims. (Cl. 204-147)



1. A method of corrosion protection for a metallic vessel containing a corrosive solution, said metallic vessel and corrosive solution system having a polarization curve wherein increasing noble vessel potentials are characterized by anodic current density through the Flade arrest potential and then cathodic current density, comprising the steps of:

- applying direct current energy between the metallic vessel and an electrode immersed in said corrosive solution; and
- controlling the polarity of said applied direct current energy in accordance with the potential of the metallic vessel.

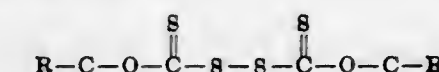
3,409,527

### PROCESS FOR PREPARING SEGMENTED HALOETHYLENE POLYMERS IN THE PRESENCE OF A DIALKYL DIXANTHATE

Norman A. Lefevre, Bay City, Harold G. Hahn, Midland, and William D. Shelburg, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 7, 1964, Ser. No. 402,328  
6 Claims. (Cl. 204-159.17)

This invention relates to a process for preparing segmented haloethylene polymers by first polymerizing a haloethylene monomer in the presence of a dialkyl dixanthate having the formula:



wherein R is an alkyl radical having from 1 to about 4 carbon atoms to form a polymer having terminal xanthate groups which groups produce free radicals when subjected to actinic radiation; then dissolving the so-formed haloethylene polymer in at least one monoethylenically unsaturated monomer, which monomer is capable of polymerization by addition reaction in the presence of such free radicals and polymerizing such monomer by exposure to actinic radiation.

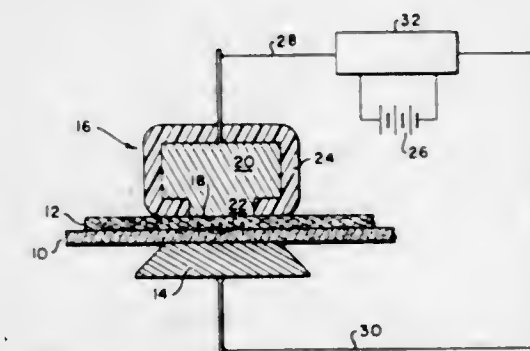
3,409,528

### TWO-COLOR ELECTROPHORETIC PRINTING

Donald Joseph John Lennon, Acton, Mass., assignor to The Carter's Ink Company, Cambridge, Mass., a corporation of Massachusetts

Continuation-in-part of application Ser. No. 338,245, Jan. 16, 1964. This application Aug. 2, 1965, Ser. No. 476,385

2 Claims. (Cl. 204-180)



An electrophoretic two-color printing system employs a source sheet containing undissolved oppositely charged color materials, and electrodes which may be polarized in either direction. The color materials may be adsorbed on an adsorbent material or undissolved in a liquid medium in which they are not soluble.

3,409,529

### HIGH CURRENT DUOPLASMATRON HAVING AN APERTURED ANODE COMPRISING A METAL OF HIGH MAGNETIC PERMEABILITY

Kasturi L. Chopra, Lexington, and Myron Ronald Randlett, North Wilmington, Mass., assignors to Kennecott Copper Corporation, New York, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 579,599, Sept. 15, 1966. This application July 7, 1967, Ser. No. 651,816

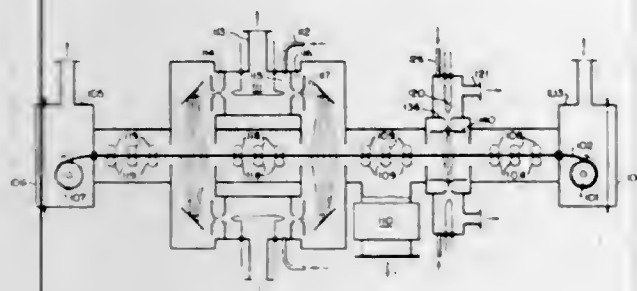
8 Claims. (Cl. 204-192)

A duo-plasmatron having an apertured anode of high magnetic permeability which cooperates with magnetic means to focus plasma generated therein. Advantageously



the plasma beam is directed on a target causing sputtering onto a substrate. Means are provided for passing a mov-

ponents. Multiple parts may be treated by quick disconnect fixtures with precise locating surfaces. The entire



ing web substrate continuously through the sputtered material to receive the sputtered material.

3,409,530

**HELICAL ELECTRODE**

Carl E. Locke, Ponca City, and Gerald D. Harral, Kildare, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Oct. 20, 1965, Ser. No. 498,421

11 Claims. (Cl. 204-196)



An electrode for use in corrosion protection systems comprising a helical winding of suitable electrically conductive material discontinuously covered by an insulator material to allow contact between the conductive material and the surrounding solution, said electrode being flexible to a degree to allow for ease of installation within varied vessel interior configurations, and said electrode having sufficient exposed surface area for providing sufficient throwing power for operation in said corrosion protection systems.

3,409,531

**ELECTROPROCESSING APPARATUS**

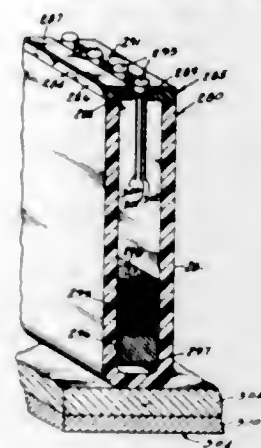
James N. Ryerson, Oceanport, David S. Ackerman, Linden, and Arnold E. Kream, Hillside, N.J., assignors to The Meaker Company, Nutley, N.J., a corporation of Illinois

Continuation-in-part of application Ser. No. 310,274, Sept. 20, 1963. This application Feb. 16, 1965, Ser. No. 433,029

8 Claims. (Cl. 204-198)

In the illustrated embodiments precious metal plating is carried out by a loop series of tanks on a table, small electronic components being individually partially immersed so as to plate predetermined portions of the com-

ponents. Multiple parts may be treated by quick disconnect fixtures with precise locating surfaces. The entire machine may be sold as a complete package requiring a minimum of site preparation.



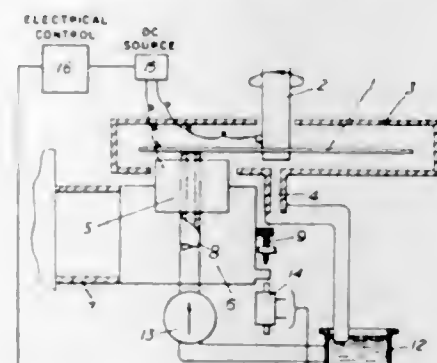
3,409,532

**APPARATUS AND METHOD FOR ELECTROLYTIC GRINDING**

Brian Herbert Shaw and Collin Stratford, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 8, 1965, Ser. No. 485,817

5 Claims. (Cl. 204-212)



Apparatus and method of electrolytically machining workpieces by electrolytic action occurring from the passage of a direct current between the grinding wheel and the workpiece through an electrolyte interposed therebetween. The present invention utilizes a smooth wheel as distinct from prior art wheels with abrasives thereon and also utilizes a flexible wheel in place of the usual rigid wheel.

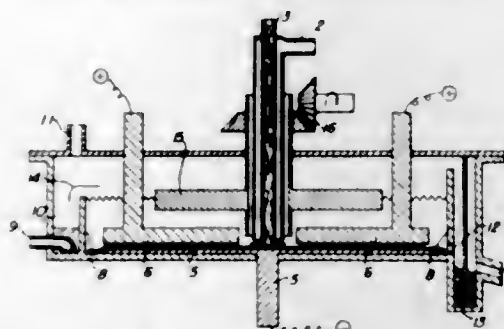
3,409,533

**MERCURY-METHOD CELL FOR ALKALI CHLORIDE ELECTROLYSIS**

Koichi Murayama and Shoji Toshima, Nobeoka-shi, and Toshio Fukushima, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

Filed Mar. 23, 1964, Ser. No. 354,033

6 Claims. (Cl. 204-219)



An electrolytic cell for electrolyzing an aqueous alkali chloride solution using a platinum-plated titanium anode and a mercury cathode at a high current density of over

100 amp./dm.<sup>2</sup>, a voltage of not more than 4.5 volts and a current efficiency as high as 99%, wherein the electrode distance is reduced to less than 3.5 mm. without short circuit, and the resulting foam layer on the electrolyte surface in a amalgamation chamber is removed therefrom.

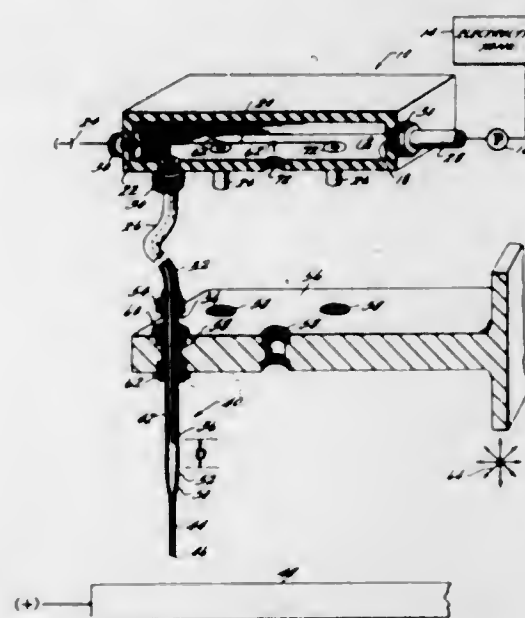
3,409,534

**ELECTROLYTIC MATERIAL REMOVAL APPARATUS**

James D. Andrews, Cincinnati, and Carl E. Shurts, Loveland, Ohio, assignors to General Electric Company, a corporation of New York

Filed Dec. 29, 1965, Ser. No. 517,239

3 Claims. (Cl. 204-224)



An improved apparatus for electrolytically producing cavities in a conductive workpiece is described. A cathode is located within a hollow electrolyte directing nozzle in a particular manner so as to provide process control, as well as accurate and repeatable cavities within the workpiece.

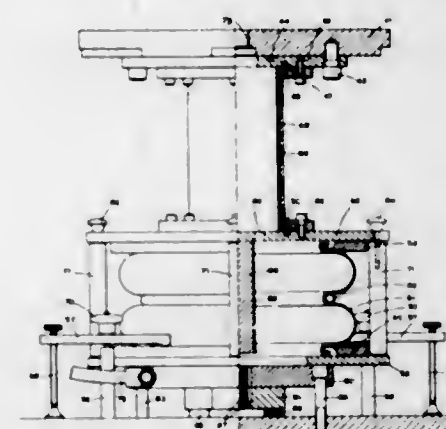
3,409,535

**ELECTROCHEMICAL MACHINING APPARATUS HAVING EXTENSIBLE AND CONTRACTIBLE ELECTROLYTE CHAMBER**

Edward Ross, Headington, Oxford, and Edward Clive Allen, Cowley, Oxford, England, assignors, by mesne assignments, to Anocut Engineering Company, Elk Grove Village, Ill., a corporation of Illinois

Filed Mar. 17, 1965, Ser. No. 440,569

5 Claims. (Cl. 204-224)



An electrochemical machining apparatus is defined by a chamber of varying length through which electrolyte passes. The bottom of the chamber is apertured and rests on top of the workpiece. An electrode is carried by the top wall of the chamber and is aligned with the aperture in the bottom wall. The top of the chamber moves up and down, thus varying the distance from the electrode to the workpiece, to permit the electrode to pass through the

aperture in the bottom wall of the chamber for machining a workpiece. In the embodiments disclosed, electrolyte passes into the chamber through apertures in the top wall which are exterior of the electrode, and then out of the chamber through the space defined between the electrode and the aperture in the bottom of the chamber, to flow between the electrode and the workpiece for electrolytic machining. The pressurized electrolyte then passes to the exterior through a hole drilled in the workpiece. In one embodiment disclosed, the side walls of the chamber are formed in a flexible bellows shape, thus rendering the chamber expansible and contractible.

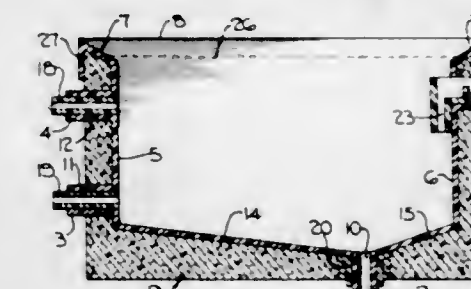
3,409,536

**ELECTROLYTIC CELL WITH CELL LINER**

Donald B. Barber, Los Angeles, Paul L. Everett, South Gate, Donald L. Mihelich, Redondo Beach, and Ivar Nou, North Hollywood, Calif., assignors to The Barber-Webb Company, Los Angeles, Calif., a corporation of California

Continuation of application Ser. No. 286,368, June 7, 1963. This application June 3, 1966, Ser. No. 562,036

9 Claims. (Cl. 204-275)



1. In an electrolytic cell comprising a cell having one or more conduits for conducting fluids, and a liner received within said cell, said liner having a bottom and walls corresponding to those of the cell to protect the interior surfaces of said cell; the improvement wherein said liner within said cell is liquid-tight and comprises a flexible, heat conformable, seamless, solid, one-piece molded plastisol which prior to installation has at least one dimension smaller than the corresponding interior dimension of the cell, and said liner within said cell being heat conformed to the interior dimensions of said cell.

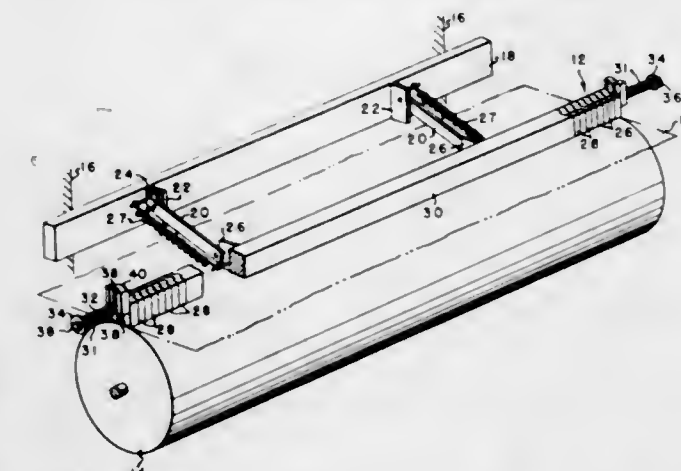
3,409,537

**APPARATUS FOR TREATING POLYMERIC FILM IN AN ELECTROSTATIC FIELD HAVING AN ADJUSTABLE ELECTRODE**

James R. Cannon, Spartanburg, S.C., assignor to Milliken Tetra Pak, a Division of Clemson Industries, Inc., Pacolet, S.C., a corporation of Delaware

Filed Dec. 7, 1965, Ser. No. 512,145

6 Claims. (Cl. 204-312)



1. In an apparatus for treating film in an electrostatic field including a first electrode and a second electrode in



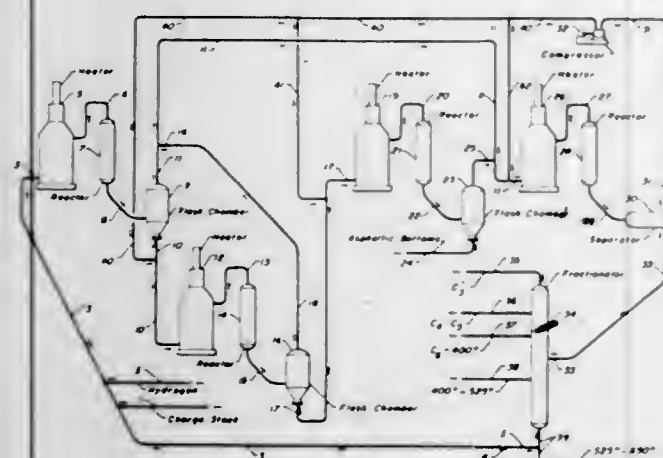
the shape of a roller adjacent the first electrode, substantially axially parallel to said first electrode and adapted to create an electrostatic field with said first electrode, and means for supplying an electrical current to said electrode causing said electrostatic field to be supported therebetween, the improvement wherein said first electrode includes an elongated electrode portion, and at least one electrode element at least at one side of said elongated electrode portion, means connecting said electrode element to said elongated electrode portion allowing selective movement of said electrode element radially away from said axis of said second electrode to reduce the effective length of said first electrode.

3,409,538

# **MULTIPLE-STAGE CASCADE CONVERSION OF BLACK OIL**

William K. T. Gleim, Island Lake, and Mark J. O'Hara, Prospect Heights, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Apr. 24, 1967, Ser. No. 633,052  
1 Claim. (Cl. 208—59)



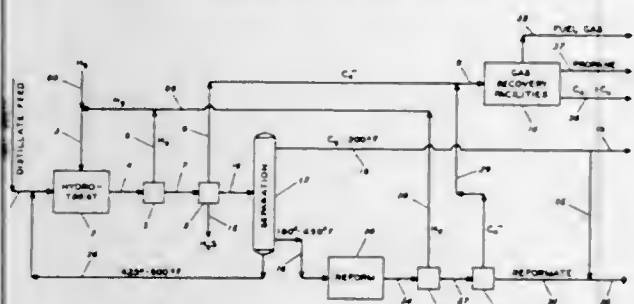
A process for the conversion of heavy, contaminated hydrocarbonaceous charge stocks commonly referred to in the art as "black oils." The process constitutes successive stages of conversion, each of which involves a catalytic reaction zone coupled with a hot flash separation zone. A preferred processing technique encompasses successively higher average catalyst temperatures in the succeeding conversion zones.

3,409,539

# **COMBINATION HYDROTREATING AND REFORMING PROCESS FOR CONVERTING LOW BOILING NORMALLY LIQUID HYDROCARBON MATERIALS TO A VARIETY OF NORMALLY LIQUID AND NORMALLY GASEOUS FUEL PRODUCTS**

Norman J. Paterson, San Rafael, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

Filed Nov. 25, 1966, Ser. No. 597,116  
4 Claims. (Cl. 208—60)



A two-stage process for producing valuable products including LPG and gasoline from a hydrocarbon feedstock boiling in the range 180°–600° F., containing 10–

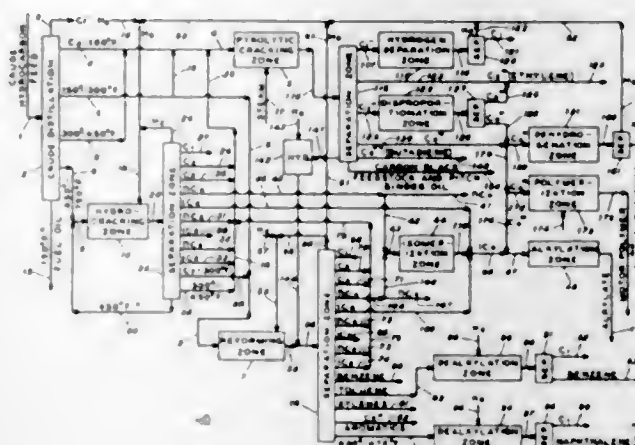
1000 parts per million sulfur and less than 300 parts per million nitrogen, comprising a hydrocracking stage followed by a reforming stage, the hydrocracking stage containing a solid, acidic, siliceous, highly active hydrocracking catalyst, operating at a per-pass conversion of at least 15%, said hydrocracking stage producing valuable products including LPG and also producing a superior feedstock for said reforming stage.

3,409,540

# **COMBINATION CATALYTIC HYDROCRACKING, PYROLYTIC CRACKING AND CATALYTIC REFORMING PROCESS FOR CONVERTING A WIDE BOILING RANGE CRUDE HYDROCARBON FEEDSTOCK INTO VARIOUS VALUABLE PRODUCTS**

George D. Gould, Orinda, Norman J. Paterson, San Rafael, and Ronald R. Roselius, Point Richmond, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

Filed Dec. 22, 1966, Ser. No. 603,917  
4 Claims. (Cl. 208—79)



A process for converting a wide boiling range crude petroleum feedstock into various valuable products including ethylene and aromatic hydrocarbons, comprising fractionating the crude, catalytically reforming a heavy straight run fraction thereof, catalytically hydrocracking a fraction thereof boiling in the range 350° to 800° F., and pyrolytically cracking a light straight run fraction thereof together with a portion of the effluent from the hydrocracking zone.

3,409,541

# **METHOD OF FLUID CATALYTIC CRACKING OF METAL CONTAMINATED FEEDS**

Robert L. Flanders, San Anselmo, and Charles E. Rudy, El Cerrito, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 361,875, Apr. 22, 1964. This application July 14, 1966, Ser. No. 565,073

4 Claims. (Cl. 208—120)

The process is directed to an improvement in catalytic cracking of hydrocarbonaceous feeds contaminated with metallo organic compounds wherein the feeds are cracked in a reaction zone in the presence of a finely divided fluidized catalyst and the catalyst is continuously circulated through a reaction zone and a regeneration zone. Finely divided material is introduced to the circulating fluidized catalyst and together with at least some of the metals of said contaminants and siliceous catalyst fines forms under the conditions in the regeneration zone a sintered product containing said contaminating metal thereby rendering said contaminating metal catalytically inactive and withdrawing sintered product from the circu-

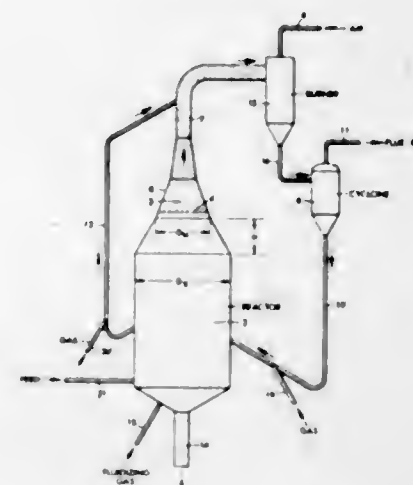
lating fluid catalyst. The finely divided material which is added is selected from the group consisting of alkali metal, alkaline earth metal and boron compounds.

3,409,542

# **COKING PROCESS AND APPARATUS**

Byron V. Molstedt, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Dec. 21, 1966, Ser. No. 603,490  
8 Claims. (Cl. 208—127)



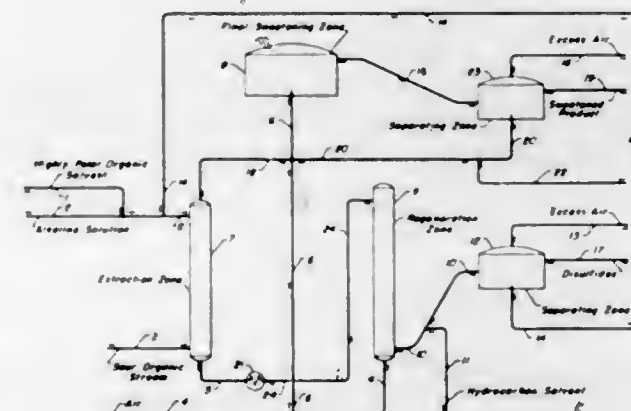
A process and apparatus are described for coking hydrocarbons wherein heat is supplied to the process by up-flow transfer of coke particles with liberated gases through a transfer line heater and the heated particles are then returned to the coking zone. The top of the reactor is tapered in a trumpet shape. The disclosed invention is especially useful in a high temperature coking process.

3,409,543

# **TREATMENT OF SOUR ORGANIC STREAMS**

Peter Urban, Northbrook, and Henry A. Cyba, Evanston, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Apr. 20, 1966, Ser. No. 543,870  
10 Claims. (Cl. 208—234)

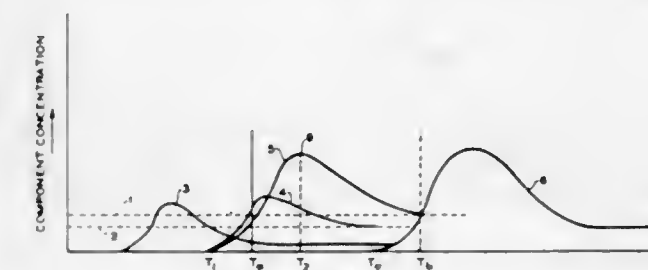


Treatment of a mercaptan-containing organic stream with an alkaline solution containing a polar organic solvent, such as dialkyl sulfoxides, amino alcohols, amino-hydroxy-alkyl ethers and alkyl amines and amides, oxidizing the resultant mercaptide-rich, polar-organic, alkaline phase in contact with phthalocyanine catalyst, and recycling resultant regenerated polar-organic, alkaline phase to the first-mentioned treating step.

3,409,544

# **HYDROCARBON SEPARATION USING TWO ADSORPTION ZONES**

John E. Cottle, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed Sept. 15, 1966, Ser. No. 579,600  
1 Claim. (Cl. 208—310)



A relatively wide boiling range hydrocarbon mixture is subjected to adsorption in a first zone and a predetermined fraction having a relatively narrow boiling range is isolated therefrom by directing the adsorber effluent to a second adsorption zone during the period in which the desired fraction is predominant in the effluent from the first adsorption zone.

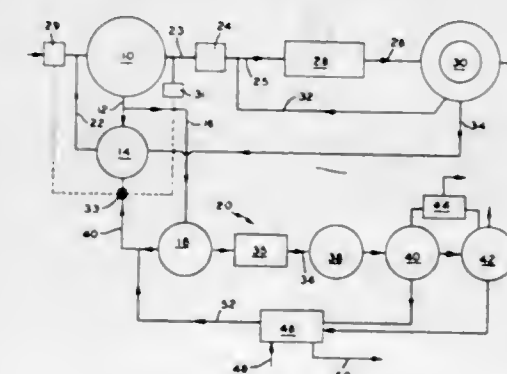
3,409,545

# **WASTE TREATMENT PROCESS AND PROCESS AND APPARATUS FOR RECOVERING LIME**

Orris E. Albertson, Norwalk, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware

Continuation-in-part of application Ser. No. 570,017  
Aug. 3, 1966. This application Sept. 12, 1967, Ser. No. 667,097

26 Claims. (Cl. 210—5)



A process for decreasing the phosphorous and nitrogen content of organic waste material comprising mixing the waste with a chemical precipitant; settling and removing precipitated phosphorous bearing solids; stripping the ammonia; aerating the effluent to biologically remove phosphorous and settling and removing precipitated phosphorous bearing solids. The solids from the first sedimentation are then thermally oxidized in a reactor and the solids product of the reactor is run through a recovery system to recover reusable chemical precipitant for the first step.

3,409,546

# **METHOD FOR DEWATERING SEWAGE SLUDGE WITH A MIXTURE OF POLYMERS**

Stanley Mogelnicki, Midland, and Eugene M. Gatz, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Filed June 1, 1966, Ser. No. 554,342  
5 Claims. (Cl. 210—52)

1. A method for dewatering a raw sewage sludge which comprises mixing with the sludge an aqueous solution of



a water-soluble, amino-condensation polymer and a high molecular weight, water-soluble, cationic, vinyl-addition polymer, the amount of vinyl-addition polymer present in the solution being from about 0.02 to about 0.3 part thereof for each part by weight of condensation polymer; the amount of aqueous polymer solution applied being sufficient to condition the sludge for dewatering and separating water from the conditioned sludge.

3,409,547

## WATER CLARIFICATION PROCESS

Mahmoud T. Dajani, Park Forest, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Nov. 16, 1965, Ser. No. 508,159  
5 Claims. (Cl. 210—54)

1. A process for clarifying water which has solid materials suspended therein and which has at least 0.1 p.p.m. of residual chlorine comprising the steps of adding a minor amount of a polymer which contains a plurality of basic nitrogen sites in form of quaternary groups to said water to coagulate said suspended solids, and thereafter separating said solids from said water.

3,409,548

## FLUID LOSS CONTROL IN WELL TREATMENTS

Billy G. Harper, Lake Jackson, Tex., and Charles F. Smith, Tulsa, Okla., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Oct. 7, 1964, Ser. No. 402,116  
8 Claims. (Cl. 252—8.55)

A cross-linked copolymer of an alpha-olefin and sulfur dioxide is admixed with an oil-base fracturing fluid and the so modified fracturing fluid is injected into a formation being fractured whereby the fluid loss to the formation is lessened due to the presence of the copolymer.

3,409,549

## COMPOSITIONS AND ARTICLES INCLUDING NON-PYROPHORIC MICROPARTICLES

Michael Walter Freeman, 401 David Whitney Bldg., Detroit, Mich. 48226

No Drawing. Continuation-in-part of application Ser. No. 225,901, Sept. 24, 1962, now Patent No. 3,276,921, dated Oct. 4, 1966. This application Oct. 22, 1965, Ser. No. 502,506

5 Claims. (Cl. 252—12)

1. An antifriction bearing having a bearing surface consisting essentially of a thermally set synthetic resin of phenol formaldehyde or melamine resins and dispersed therein a transition element bearing metal of rhombic dodecahedral microparticle from about 0.01 to 3 microns in particle size and in amount of from about 5 to 50% by weight of the composition, the composition being inherently non-pyrophoric, the metal having been pyrophoric when produced.

3,409,550

## FIRE RETARDANT COMPOSITIONS

Lincoln E. Gould, Belvedere, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 30, 1965, Ser. No. 517,833  
10 Claims. (Cl. 252—8.1)

The corrosivity of liquid fire-retardant compositions is reduced by using an aqueous mixture of ammonium sulfate and diammonium phosphate in a weight ratio of sulfate to phosphate of from about 1:1 to about 5:1, said mixture having a pH of between about 6.5 and about 7.5.

3,409,551

## LUBRICANT-COOLANT EMULSION

Lyle Treat, Ferguson, Mo., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Continuation-in-part of application Ser. No. 443,528, May 29, 1965. This application Oct. 26, 1966, Ser. No. 589,520

8 Claims. (Cl. 252—33.6)

An oil-in-water emulsion, used in the shaping of metals, that contains polycarboxylic acid chelant or salt thereof spent with polyvalent metal ions and up to 400 p.p.m. of unchelated hardness (expressed as  $\text{CaCO}_3$ ) and exhibits a pH of about 5 to 11, has an oil phase in the form of globules with an average diameter in the range of about 1 to 25 microns, is substantially free of continuous free oil phase, is stable, and filterable whereby solid particulate material having maximum dimensions in the range of about 0.5 to 10 microns or larger is readily removed therefrom. Preferably the amount of unchelated hardness is about 25 to 400 p.p.m.

3,409,552

## ALKYL ARYL ETHER POLYMERS IN LUBRICANTS

Donovan R. Wilgus, Richmond, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Original application Apr. 1, 1964, Ser. No. 356,671, now abandoned. Divided and this application Dec. 5, 1966, Ser. No. 598,943

2 Claims. (Cl. 252—52)

1. A lubricant composition comprising a major proportion of an oil of lubricating viscosity and minor proportions sufficient to improve the viscosity index of said oil of the polymer of 2,6-dialkyl-1,4-phenylene ether in which one alkyl group is selected from the class consisting of methyl and ethyl radicals and the other alkyl group is a straight-chain alkyl radical containing from 8 to 12 carbon atoms, said polymer having a molecular weight in the range of 10,000 to 100,000.

3,409,553

## TWO-CYCLE ENGINE LUBRICANT AND FUEL

Bobby N. Scoggins and Lloyd P. Foster, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 1, 1966, Ser. No. 523,967  
10 Claims. (Cl. 252—57)

A two-cycle engine lubricant and fuel containing di(2-ethylhexyl) cyclohexane-1,2-dicarboxylate or di(2-ethylhexyl) cyclohexane-1,3-dicarboxylate.

3,409,554

## Gd OR Sm DOPED SILICON SEMICONDUCTOR COMPOSITION

Joseph Mandelkorn, Cleveland Heights, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

No Drawing. Original application Mar. 16, 1964, Ser. No. 352,400, now Patent No. 3,311,510, dated Mar. 28, 1967. Divided and this application Dec. 20, 1966, Ser. No. 603,397

3 Claims. (Cl. 252—62.3)

A semiconductor material having improved resistance to radiation damage consists of silicon and an electrically active impurity selected from the rare earth elements to reduce the number of recombination centers and trapping centers while increasing the conductivity of the silicon.

3,409,555

## REFRIGERANT COMPOSITION

Bernhardt J. Elsemann, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 25, 1965, Ser. No. 482,625  
4 Claims. (Cl. 252—67)

Substantially constant boiling compositions of trifluoromethyl 2,2,2-trifluoroethyl ether and dichlorodifluoromethane useful as high-capacity refrigerants and a refrigeration process employing such compositions.

3,409,556

## PHOTOCHROMIC COMPOSITION AND SUBSTRATE COATED THEREWITH

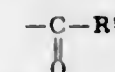
George E. Bruner, Wilton, and John Christos Petropoulos, Norwalk, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Jan. 4, 1966, Ser. No. 518,546  
10 Claims. (Cl. 252—300)

This invention relates to novel photochromic compositions of matter and substrates coated therewith, said compositions of matter composed of an hydroxy-containing polymeric material, an aminoplast cross-linking agent and a transition metal compound having the formula

(I)  $\text{MX}_m\text{O}_n(\text{OR})_p$

wherein M is a transition metal, X is a halide, R is an alkyl radical having from 1-12 carbon atoms, inclusive, an aryl radical having from 6-10 carbon atoms, inclusive, or a



radical,  $\text{R}^1$  is an alkyl radical having from 1-12 carbon atoms, inclusive, or an aryl radical having from 6-10 carbon atoms, inclusive,  $m$  is a whole, positive integer of from 1-6 inclusive,  $p$  is a whole positive integer of from 0-5, and  $n$  is a whole, positive integer of from 0-2, inclusive, the total of  $2n+m+p$  being equal to the valence of the metal M.

3,409,557

## PROCESS FOR PREPARING THORIUM DIOXIDE-URANIUM DIOXIDE SOL

Frederick T. Fitch, Shaker Heights, Ohio, and Jean G. Smith, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Continuation-in-part of application Ser. No. 408,407, Nov. 2, 1964. This application Dec. 21, 1966, Ser. No. 603,449

8 Claims. (Cl. 252—301.1)

A process for preparing stable thorium dioxide-uranium dioxide aquasols suitable for use in nuclear ceramics by autoclaving sols of thorium dioxide and uranium dioxide or mixtures of slurries of thorium and uranium hydroxide, wherein both the thorium and uranium are in the plus four oxidation state, and recovering the product sol.

3,409,558

## METHOD OF PREPARING A SLURRY COATING COMPOSITION

Irwin Kachel, Skokie, Ill., assignor to The Rauland Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed June 30, 1965, Ser. No. 468,590

5 Claims. (Cl. 252—301.3)

In the preparation of a slurry coating composition a quantity of phosphor is first impregnated with a sensitizing agent such as ammonium dichromate. This is accomplished by soaking the phosphor in a solution of the sensitizer after which the impregnated phosphor is dried and ball-milled with normal amounts of resinous binder and a solvent. After ball-milling, additional quantities of sensitizer and binder are added to achieve the desired viscosity.

3,409,559

## METHOD OF PREPARING A SLURRY COATING COMPOSITION

Burton A. Benson, Evanston, Ill., assignor to The Rauland Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed June 30, 1965, Ser. No. 468,628  
3 Claims. (Cl. 252—301.3)

A slurry for screening a color cathode-ray tube is prepared by charging a ball-mill with a mixture of desired quantities of a phosphor, ammonium dichromate as a sensitizer and water. To this is also added a binder such as polyvinyl alcohol and the mixture is ball-milled for approximately 12 hours. The material taken from the mill is then mixed with further amounts of polyvinyl alcohol and water to obtain a slurry of desired viscosity.

3,409,560

## METAL OXIDE DISPERSIONS

Jacob Faust, Belleville, N.J., and Norman C. Ross, Franklin, Pa., assignors, by mesne assignments, to The Perollin Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 23, 1965, Ser. No. 481,906  
10 Claims. (Cl. 252—309)

Stable, free-flowing metal oxide dispersions in water-in-oil emulsion medium comprising, based on the total weight of the dispersion, (A) about 25 to 50% of a metal oxide selected from the group consisting of hydrated aluminum and zinc oxide, having a particle size below about 1 micron, (B) about 8 to 18 total of (i) about 4 to 10% high molecular weight petroleum sulfonates having a molecular weight of between about 480 and 520, and (ii) from about 3 to 8% low molecular weight petroleum sulfonates having a molecular weight between about 400 and 440, wherein the ratio of high molecular weight to low molecular weight petroleum sulfonates ranges from about 0.75:1 to 2.25:1, (C) about 8 to 18% of water; and (D) about 14 to 59% of a hydrocarbon oil having a viscosity between about 30 and 150 S.U.S. at 100° F.

3,409,561

## HETEROPOLYCATALYST SYSTEM

Natale Ferlazzo, Giorgio Caporali, and Nicola Giordano, Milan, Italy, assignors, by mesne assignments, to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Original application Aug. 13, 1963, Ser. No. 301,880, now Patent No. 3,370,083, dated Feb. 20, 1968. Divided and this application Apr. 27, 1966, Ser. No. 567,023

Claims priority, application Italy, Aug. 23, 1962, 26,538/62

2 Claims. (Cl. 252—439)

A catalyst system consisting essentially of at least one heteropolycompound selected from the group which consists of



where  $x$  represents a number in the range from 1 to 180 and  $y$  represents a number in the range from 370 to 730.

3,409,562

## CATALYST MANUFACTURE

Alan G. Bridge, El Cerrito, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed May 4, 1964, Ser. No. 364,821

7 Claims. (Cl. 252—457)

In a process for manufacturing a hydrocarbon conversion catalyst comprising preparing a catalyst support comprising silica and magnesia, calcining said support, impregnating said calcined silica-magnesia support with at



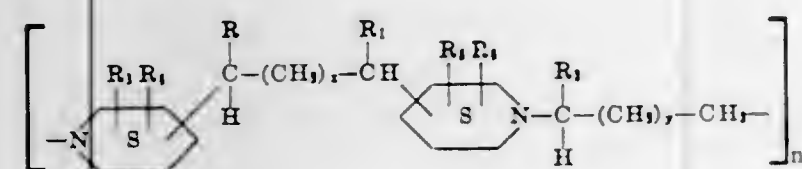
least one metal compound selected from the group consisting of a compound of nickel and a compound of tungsten, drying said impregnated support and calcining said impregnated and dried support after at least one impregnation step to produce said catalyst, the improvement which comprises accomplishing said calcining of said support prior to impregnation at 600° to 700° F. for a period of from 0.2 to 20 hours.

**3,409,563**  
**HYPERCONDUCTIVE GRAPHITE STRUCTURES**  
Franciszek Olstowski, Freeport, Tex., assignor to The Dow  
Chemical Company, Midland, Mich., a corporation of  
Delaware  
No Drawing. Filed Apr. 4, 1966, Ser. No. 539,748  
15 Claims. (Cl. 252—506)

This invention relates to a process for producing hyperconductive graphite structures and to the structures produced thereby. Hyperconductive graphite structures are produced by contacting vermicular expanded graphite with a fluid intercalation agent to produce graphite containing up to about 35 weight percent intercalation agent and compressing such treated graphite into a cohored structure having a density of at least about 0.07 gm./cc.

3,409,564  
**POLYMETHYLENEPIPERIDYL POLYMERS**  
 Francis E. Cislak and Charles K. McGill, Indianapolis,  
 and Frederic Porter Jack, Plainfield, Ind., assignors to  
 Reilly Tar & Chemical Corporation, Indianapolis, Ind.,  
 a corporation of Indiana  
 No Drawing. Filed Apr. 19, 1965, Ser. No. 449,295  
 5 Claims. (Cl. 260—2)

Polymethylenepiperidyl polymers are disclosed. These polymers are prepared by heating together a mixture comprising a di-piperidyl alkane, a di-haloalkane, and alkali. They are characterized by having recurring in their molecular make-up the moiety



wherein R, R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> represent hydrogen or lower alkyl, they may be alike or they may be different; x and y represent small integers, they may be alike or they may be different. These polymers improve the dyeability of filamentary materials, such as polyethylene or polypropylene.

3,409,565

**OLEFIN OXIDE AND OLEFIN SULFIDE  
POLYMERIZATION**

Joginder Lal, Akron, Ohio, assignor to Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

**No Drawing. Continuation-in-part of application Ser. No. 347,624, Sept. 18, 1964. This application May 15, 1967, Ser. No. 638,598**

Novel catalysts for polymerizing olefin oxides and olefin sulfides to high molecular weight polymers are obtained by reacting zinc or cadmium alkyl xanthates with a wide variety of alcohols. Mercaptans or phenols can be substituted for alcohols in preparing these catalysts. These catalysts have the unusual characteristics of possessing metal-sulfur-metal bonds detectable as ionic sulfur.

Polymers of olefin oxides obtained with these catalysts contain significant amounts of acetone-insoluble fraction (which is an approximate measure of the stereoregularity). Gum vulcanizates exhibiting high tensile strength can be obtained from copolymers of propylene oxide and

allyl glycidyl ether. These elastomers are useful for a variety of rubber goods such as hose and belting.

3,409,566

**METHOD OF GRINDING STRONG BASE ION  
EXCHANGE RESINS IN THE HYDROXIDE  
FORM**

Joseph A. Levendusky, Bayonne, N.J., assignor to Union  
Tank Car Company, Chicago, Ill., a corporation of  
Delaware

Filed Jan. 30, 1964, Ser. No. 341,847  
5 Claims. (Cl. 260—2.1)

1. The method of making hydroxide-form strong base, divinylbenzene-styrene copolymer anion exchange resin particles in the size range of about 60 to 400 mesh which comprises grinding in a hammer mill hydroxide-form strong base, divinylbenzene-styrene copolymer anion exchange resin particles in the size range of about 20 to 50 mesh having a free water content in the range of about 1.9 to 7.6% by weight of said resin particles.

3,409,567  
**CLOSURES FOR CONTAINERS**  
 Raymond Dinsdale and Kenneth John Day, London, Eng-  
 land, assignors to W. R. Grace & Co., Cambridge, Mass.,  
 a corporation of Connecticut  
 No Drawing. Filed Nov. 20, 1964, Ser. No. 412,844  
 Claims priority, application Great Britain, Nov. 25, 1963,  
 46,503/63

**10 Claims. (Cl. 260—5)**  
A vulcanizable composition for forming gaskets in closure elements for containers comprised of a rubber latex, a vulcanizing agent for the rubber, an ammonium soap, zinc oxide, a non-ionic surfactant which is a condensation product of an alkylene oxide and a member selected from a long chain fatty alcohol, acid and amine, and a filler. The compositions may include an anti-oxidant, a pigment and a blowing agent.

3,409,568  
ETHYLENE/VINYL CHLORIDE COPOLYMER  
PIGMENT BINDER FOR COATED PAPER PRODUCTS  
AND PROCESS OF PREPARATION  
Harry P. Holladay and Paul R. Graham, St. Louis, Mo.,  
assignors to Monsanto Company, St. Louis, Mo., a cor-  
poration of Delaware  
No Drawing. Filed Nov. 27, 1964, Ser. No. 414,453

**16 Claims. (Cl. 260—8)**  
A pigment binder for paper coatings, said pigment binder containing at least a portion of an ethylene/vinyl chloride copolymer having from about 20 to about 95% by weight polymerized vinyl chloride. A coated paper product, a paper coating composition, and a process of coating paper using the ethylene/vinyl chloride copolymer pigment binder are claimed.

3,409,569

**BUTADIENE-STYRENE-ALPHA-BETA UNSAT-  
URATED ACID-ACRYLIC NITRILE PAPER  
COATING COMPOSITION**

Robert E. Lane, Westbrook, Maine, and John E. Carmichael, Cuyahoga Falls, Ohio, assignors to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 551,468, May 19, 1966. This application Apr. 5, 1967, Ser. No. 628,527

**8 Claims. (Cl. 260—8)**

An improved butadiene-styrene latex type of paper coating composition consists of the basic butadiene and styrene monomer modified by specific proportions of methacrylic acid and acrylonitrile. Coatings made with this polymer have several improved properties, notably better water retention, greater stiffness and higher gloss, as compared to conventional coatings.

**3,409,570**  
**STABILIZATION OF DYES IN A FILM**  
**COATING MATERIAL**  
**Robert E. Dempski, Elkins Park, and Arnold D. Marcus,**  
**Philadelphia, Pa., assignors to Merck & Co., Inc., Rah-**  
**way, N.J., a corporation of New Jersey**  
**No Drawing. Filed Nov. 2, 1964, Ser. No. 408,346**  
**4 Claims. (Cl. 260—17)**

A red colored coating for tablets is made up of methyl cellulose as the principal film forming compound, the dye FDC Red #3 and as a stabilizing agent for the dye, polyvinylpyrrolidone or a copolymer of N-vinyl-5-methyl-2-oxazolidinone with vinyl acetate, or a copolymer of vinyl pyrrolidone with vinyl acetate.

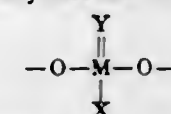
3,409,571

**PHENOL - ALDEHYDE/PHENOL - KETONE  
CONDENSATE-PHOSPHORUS CONTAIN-  
ING ESTERS**

Alvin F. Shepard and Bobby F. Dannels, Grand Island,  
N.Y., assignors to Hooker Chemical Corporation,  
Niagara Falls, N.Y., a corporation of New York  
No Drawing. Filed Nov. 30, 1964, Ser. No. 414,851  
9 Claims. (Cl. 260—17.2)

Novel esters of a member of the phosphorus family and a phenol-aldehyde or phenol-ketone condensate are characterized in that:

(1) a major proportion of the moiety of the member of the phosphorus family has the formula:



in which the unsatisfied bonds are attached to aryl nuclei of the same phenolic condensate, and in which M is an atom of the phosphorus family. Y is oxygen or sulfur, and X is halogen, hydroxyl, mercapto, hydrocarbyl, hydrocarbyloxy, halogen-substituted hydrocarbyl, halogen-substituted hydrocarbyloxy, or an aryloxy radical of the same phenolic condensate to which M is attached:

- (2) at least 60 percent of the phenol-aldehyde or phenol-ketone condensate has o,o'-alkylidene linkages, and
- (3) the phenolic condensate has an average number of aryl nuclei per molecule in the range of 2.2 to 8.

Suitable members of the phosphorus family of elements are phosphorus, arsenic, antimony and bismuth.

The thermoplastic products of the invention can be modified to produce additional thermoplastic products such as reaction products with an oxyalkylation agent. Thermosetting products can be produced by curing the thermoplastic products with agents such as hexamethylene tetramine, or other donors of methylene radicals, or polyepoxides, or polyisocyanates, and the like. These thermoplastic and thermosetting products are used to produce shaped articles such as molded articles; laminates; protective coatings, including drying oils and varnishes; abrasive structures; friction elements, and the like. The compositions are also useful in basing cements and as foundry sand binders. The polyurethane compositions can be utilized for the preparation of foamed products, castings, coatings, and the like. The compositions are also useful for the treatment of normally combustible cellulosic materials to render them fire retardant.

**3,409,572**  
**THERMOPLASTIC POLYMERS PREPARED**  
**FROM COAL TAR**  
**Dennis Neal, Convent Station, and John A. Lopez, Spring-**  
**field, N.J., assignors to Shell Oil Company, New York,**  
**N.Y., a corporation of Delaware**  
**No Drawing. Filed Oct. 11, 1965, Ser. No. 494,935**  
**7 Claims. (Cl. 260—18)**

New thermoplastic reaction products are disclosed. These products are obtained by reacting at 300–350° F. a

coal tar, a polyepoxide, a fatty acid pitch, and from 1 to 75% by weight of the chemical equivalent amount, based on the polyepoxide, of a compound possessing a plurality of active hydrogen atoms. A process for the use of these products in the form of impregnated tapes to be applied cold to metal surfaces, is also disclosed.

3,409,573  
PROCESS FOR THE PREPARATION OF VULCANIZED POLYSILOXANE COMPOSITION  
Paul Alfred Eugene Guinet and Robert Raphael Puthet,  
Lyon, France, assignors to Rhone-Poulenc S.A., Paris,  
France, a French body corporate  
No Drawing. Original application Feb. 1, 1965, Ser. No. 429,679. Divided and this application Feb. 3, 1967, Ser. No. 623,792  
Claims priority, application France, Feb. 5, 1964, 962,735

**4 Claims. (Cl. 260—18)**

Vulcanized polysiloxane compositions are made by mixing an  $\alpha,\omega$ -dihydroxydiorganopolysiloxane, a crosslinking agent, and a composition made by reacting a diorganotin dicarboxylate with an orthotitanic ester.

3,409,574

**MARKING MATERIALS COMPRISING LOW-PRESSURE POLYETHYLENE, HIGH-PRESSURE POLYETHYLENE AND PLASTICIZER**

Jean Ferdinand Gros, Agen, France, assignor to The Mead Corporation, Dayton, Ohio, a corporation of Ohio

No Drawing. Filed July 2, 1965, Ser. No. 469,312

Claims priority, application France, July 10, 1964, 981,389

12 Claims. (Cl. 260—23)

An erasable and shapeneable crayon comprises a homogeneous mixture of polyethylene, at least one plasticizer compatible with polyethylene, a coloring material, and a filler. The polyethylene is present in an amount between 30% and 60% by weight of the whole, the plasticizer between 10% and 50% by weight of the whole, and the coloring material and filler in an aggregate amount between 5% and 50% by weight of the whole. The polyethylene is a blend of low-pressure polyethylene and high-pressure polyethylene in a weight ratio of the former to the latter between 0.25 and 1.5.

**3,409,575**  
**POLYMERIZATION PROCESS, POLYMERS**  
**PRODUCED AND XEROGRAPHIC MEM-**  
**BERS THEREFROM**  
Albert J. Cole, New Hanover Township, and Floyd L.  
Edris, Pottstown, Pa., assignors to The Firestone Tire  
and Rubber Company, Akron, Ohio, a corporation of  
Ohio  
No Drawing. Filed Dec. 11, 1963, Ser. No. 329,895  
8 Claims. (Cl. 260—27)

The homopolymers and copolymers of vinyl chloride have been art recognized to have a number of advantageous properties. Butadiene-styrene interpolymers have been recognized as having still different desirable properties. Many attempts have been made to blend the two types of polymers in order to obtain the best characteristics of each polymer in a single resin mass. Unfortunately, the polymers are quite incompatible and the blends have been found to be essentially useless. It has now been found, however, that vinyl chloride/butadiene-styrene graft copolymers can be prepared in which the vinyl chloride polymer is the polymeric substrate of the graft. The method for making the graft polymer and the desirable properties of the polymer are disclosed. A number of uses for the polymer, including the production of coated papers and xerographic binder plates, are also discussed.



3,409,576

## WAX/COPOLYMER COMPOSITION

Karekin G. Arabian, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 483,351, Aug. 27, 1965. This application June 27, 1966, Ser. No. 560,873

1 Claim. (Cl. 260—28.5)

Heat sealable petroleum wax compositions having a viscosity of at least 6000 centipoises at 300° F. are obtained by incorporating about 6.5% weight of ethylene/propylene copolymer of 3.5 intrinsic viscosity and containing 85–93 mol percent ethylene units and 6.5% weight of ethylene/vinyl acetate copolymer of molecular weight between 25,000 and 90,000 and composed of ethylene and vinyl acetate units in a mol ratio of 8:1 to 14:1.

3,409,577

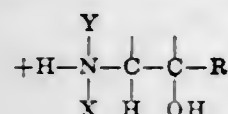
## METHOD OF DETACKIFYING TACKY RESINS

Robert Wong, Newark, Ohio, and Philip W. Sullivan, Hensy, Verviers, Belgium, assignors to Owens-Corning Fiberglass Corporation, Toledo, Ohio, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 495,303, Oct. 12, 1965. This application July 6, 1966, Ser. No. 563,033

12 Claims. (Cl. 260—29.2)

1. A method for improving the characteristics of size compositions for glass fibers which contain an aqueous dispersion of a tacky resin selected from the group consisting of polyester resins and epoxy resins, comprising: adding to said dispersion a quantity of detackifying agent equal to between 1 to 100% by weight of said tacky resin, said detackifying agent having the formula:



wherein Y is a member of the class consisting of hydrogen, an alkyl radical of a chain length of from 1 to 7 carbon atoms, and an X radical; and X is a member of the group consisting of: (1) an aliphatic hydrocarbon having a chain length of from 1 to 7 carbon atoms and including at least one hydroxy group, (2) —OH, and (3) —(OR')<sub>n</sub>OH, wherein R' is an aliphatic hydrocarbon radical having a chain length of from 1 to 6 carbon atoms and n is an integer of from 1 to 25, and R is a long chain organo molecule having a molecular weight up to approximately 10,000 and devoid of the terminal group given above at its other end.

3,409,578

## POWDERED WATER-INSOLUBLE POLYMERS DISPERSIBLE IN AQUEOUS MEDIA AND METHODS OF MAKING THEM

Jesse C. H. Hwa, Stamford, Conn., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 273,312, Apr. 16, 1963. This application July 14, 1965, Ser. No. 472,059

25 Claims. (Cl. 260—29.6)

1. A process for producing a dry particulate, water-insoluble polymer which is dispersible in water which comprises incorporating surface-hardening metal ions selected from the group consisting of silver, cuprous, mercurous and polyvalent metal ions into an aqueous dispersion of an emulsion copolymer of monoethylenically unsaturated monomers selected from the group consisting of the nitriles, amides and esters of acrylic acid and methacrylic acid, styrene, acrylic acid, methacrylic acid, and itaconic acid and a dispersing agent for the polymer,

which dispersion contains carboxylate groups in the dispersed polymer or in the dispersing agent for the polymer or in both the polymer and the dispersing agent, the carboxylate groups being of the formula —COOM wherein M is selected from the group consisting of H, NH<sub>4</sub> and alkali metals, the sum of (1) the weight percent in the polymer of the units of the polymer containing carboxylate groups and (2) the weight percent, based on the polymer weight, of carboxylate-containing dispersant being at least 3%, and the amount of surface-hardening metal ions being at least the stoichiometric equivalent of the minimum amount of carboxylate groups required by definition herein and being sufficient to form a layer of metal carboxylate groups between particles capable of preventing cohesion of the underlying polymer particles on drying, and then removing substantially all of the water from the polymer while maintaining conditions of temperature and pressure under which the polymer does not coalesce.

3,409,579

## FOUNDRY BINDER COMPOSITION COMPRISING BENZYLIC ETHER RESIN, POLYISOCYANATE, AND TERTIARY AMINE

Janis Robins, St. Paul, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Continuation-in-part of application Ser. No. 569,106, Aug. 1, 1966. This application May 2, 1967, Ser. No. 635,382

22 Claims. (Cl. 260—30.4)

A binder composition particularly suited for foundry aggregates is obtained by admixing a phenolic resin with a polyisocyanate and thereafter promoting the cross-linking of the mixture with a tertiary amine.

3,409,580

## POLYVINYL HALIDE PLASTISOLS CONTAINING CYCLOHEXYL AMINES AND CELLULAR PRODUCTS THEREFROM

Bernard G. Alzner, Detroit, and Oskar E. H. Klopfer, Bloomfield Hills, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application May 1, 1964, Ser. No. 364,281, now Patent No. 3,338,845, dated Aug. 29, 1967. Divided and this application June 21, 1967, Ser. No. 668,725

5 Claims. (Cl. 260—31.8)

Polyvinyl halide plastisols can have smaller quantities of plasticizer if they contain minor amounts of a cyclohexyl amine. The amine improves flow characteristics and froth stability of the plastisol. These actions of the amine are enhanced by using naphthenic acids or an ether alcohol such as 2-ethoxyethanol in conjunction with the amine.

3,409,581

## POLYHYDROXYETHER MODIFIED RESOLE PHENOLIC RESINS

Joseph W. Hagan, Jr., Scotch Plains, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 29, 1964, Ser. No. 378,953

11 Claims. (Cl. 260—32.8)

The impact resistance, flexibility, and toughness of resole phenolic resins, that is, alkaline catalyzed phenol-aldehyde condensation products, are improved by incorporating therein about 5 to 200 parts by weight of thermoplastic polyhydroxyether per 100 parts by weight of phenolic resin. The thermoplastic polyhydroxyethers are reaction products of substantially equimolar amounts of a polynuclear dihydric phenol and epichlorohydrin said thermoplastic polyhydroxyethers having a degree of polymerization of at least 30.

3,409,582

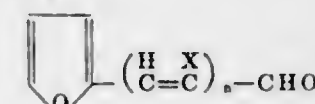
## ALKALINE REFRACTORY MIXTURES CONTAINING FORMALDEHYDE-FURYLETHYLENEALDEHYDE RESINS AND GUNNING THEREWITH

Lloyd H. Bown, Crystal Lake, Earl K. Stigger, Arlington Heights, and David D. Watson, Barrington, Ill., assignors to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey

No Drawing. Filed Apr. 22, 1964, Ser. No. 361,902

3 Claims. (Cl. 260—37)

1. In a gunning method of making a refractory structure, the improvement comprising the steps of admixing a basic catalyst and a major portion of an alkaline refractory material, conveying the resulting refractory mixture in a high velocity air stream, discharging a liquid binder into the air stream near the point of application, said liquid binder comprising a resin produced by the acidic resinification of a composition comprising A moles of formaldehyde and B moles of furethylene aldehyde of the general formula



3,409,583

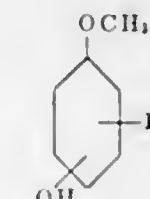
## ETHYLENE POLYMERS STABILIZED WITH CARBON BLACK AND ALKYLATED HYDROXY ANISOLES

Jack Russell Davis and Willard Henry Wharton, Lake Jackson, and Michael Calvin McGaugh, Angleton, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 27, 1965, Ser. No. 505,420

6 Claims. (Cl. 260—41)

A polymer composition of increased stability against oxidative degradation comprised of an ethylene polymer and a stabilizing amount of carbon black and an alkylated hydroxy anisole having the formula



where R is one or more alkyl groups containing one to eight carbon atoms per group.

3,409,584

## TETRAFLUOROETHYLENE PRODUCTS AND METHODS

Francis X. Buschman, Philadelphia, and Joseph A. Dillon and John E. Sloat, Monaca Station, Pa., assignors to L. Frank Markel & Sons, Inc., Norristown, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 3, 1966, Ser. No. 524,832

9 Claims. (Cl. 260—41)

A composition of matter is disclosed having both abrasion-resistant and anti-friction properties. The composition consists of a mixture of 90–95% by weight of a polymer of tetrafluoroethylene and 5–10% by weight of zirconium silicate. The 90–95% by weight of tetrafluoroethylene polymer is comprised of approximately equal parts of virgin tetrafluoroethylene powder and powder obtained from reclaimed tetrafluoroethylene. A principal use of the new composition is in the production of tubing for acceler-

ator cables in which a stranded steel rope is moved back and forth within the tubing.

3,409,585

## PIGMENT CONCENTRATE

Hugh J. Hagemeyer, Jr., and Raymond L. Eter, Jr., Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation of application Ser. No. 321,691, Nov. 6, 1963. This application Mar. 10, 1967, Ser. No. 622,367

3 Claims. (Cl. 260—41)

Pigment concentrates and a process for their manufacture consisting essentially of distinct pigment particles coated with at least one amorphous material having a viscosity as measured at 150° C. between about 5,000 and about 300,000 cps., selected from homopolymers of propylene, butene-1 and hexene-1 and copolymers including block copolymers of at least 60% by weight propylene with ethylene, butene-1 and hexene-1. The pigment concentrates are prepared by providing a 5–20% by weight solution of at least one of the amorphous materials in a substantially non-polar, hydrocarbon solvent, gradually adding solid particulate pigment to said solution while agitating to form a solution-suspension and gradually introducing a non-solvent for said amorphous material into the solution-suspension while agitating to cause the amorphous material to form a coating on the individual pigment particles.

The novel pigment concentrates have been found particularly useful in the coloring of various types of polymeric resinous materials in that they provide unique pigment dispersions therein.

3,409,586

## DIOLEFIN RUBBER VULCANIZATE STABILIZED WITH N-ALKYL-N'-O-SUBSTITUTED-PHENYL PARAPHENYLENEDIAMINE

Arthur E. Oberster, North Canton, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 7, 1966, Ser. No. 519,293

12 Claims. (Cl. 260—45.9)

Diolefin rubber vulcanizate contains an antiozonant amount of N-alkyl-N'-o-substituted-phenyl-para-phenylenediamine.

3,409,587

## ANTIOXIDANT SYSTEM FOR POLYOLEFINS

Kenneth R. Mills, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Continuation-in-part of application Ser. No. 516,349, Dec. 27, 1965. This application Aug. 5, 1966, Ser. No. 570,458

10 Claims. (Cl. 260—45.85)

A polymer stabilizer system comprising an organic phosphite compound such as dioctyl phosphite; a thiol ester such as dilaurylthiodipropionate; 2,6-di-tert-butyl-4-methylphenol; and one of 1,1,3-tris(2-methyl-4-hydroxy-5-tert-butylphenyl)butane and tetrakis [3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionyloxymethyl]methane.

3,409,588

## PREPARATION OF LINEAR ORGANO-POLYSILOXANES

Marcel Lefort, Caluire, and Parasko Nicou, Lyon, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate

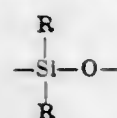
No Drawing. Filed Mar. 8, 1966, Ser. No. 532,586

10 Claims. (Cl. 260—46.5)

1. Process for the preparation of a linear organopolysiloxane oil or gum which comprises contacting (a) a cyclic organosiloxane or an α,ω-dihydroxy linear oligo-



omeric organosiloxane, said cyclic or linear organopolysiloxane consisting of units of the formula:



wherein R is the same or different and is selected from the group consisting of lower alkyl, alkenyl, cycloalkyl, aryl, alkaryl, aralkyl, and the foregoing substituents substituted by at least one halogen atom hydrogen with (b) a dialkyl-silyl sulphate.

3,409,589

#### ADDITION COPOLYMERS OF ALKOXY-SUBSTITUTED PHENYL ESTERS OF ACRYLIC OR METHACRYLIC ACID

Benjamin B. Kline, Elkins Park, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Sept. 2, 1964, Ser. No. 394,064

8 Claims. (Cl. 260-47)

The present invention is concerned with solid addition copolymers of ethylenically unsaturated molecules comprising at least about 1/2% by weight and up to about 95% by weight, but preferably about 1 to 25% by weight, of at least one (C<sub>1</sub>-C<sub>4</sub>)alkoxy-substituted-phenyl ester of acrylic or methacrylic acid.

3,409,590

#### PROCESS FOR PREPARING EPOXY-CONTAINING CONDENSATES, AND RESULTING PRODUCTS

Alton J. Landua, Maplewood, Clifford D. Marshall, Berkeley Heights, and James R. Todd, North Plainfield, N.J., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 27, 1966, Ser. No. 604,577

14 Claims. (Cl. 260-47)

1. A process for preparing highly reactive solid acetone-soluble epoxy-containing condensates which comprises mixing and reacting a polyepoxide having more than one vic-epoxy group with an aromatic monoamine having at least two active hydrogen atoms in the presence of an acidic compound having a K<sub>A</sub> value between 10<sup>-3</sup> and 10<sup>-4</sup>, the polyepoxide and amine being combined so that there is a chemical equivalent excess of epoxide varying from .33 to .033.

3,409,591

#### EPOXY-CONTAINING CONDENSATES, THEIR PREPARATION AND USE

Alton J. Landua, Maplewood, and James R. Todd, North Plainfield, N.J., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 27, 1966, Ser. No. 604,646

20 Claims. (Cl. 260-47)

1. Acetone-soluble highly reactive epoxy-containing condensates of (1) a polyepoxide possessing more than 1 vic-epoxy group, and (2) a polyfunctional aromatic amine possessing more than two active hydrogen attached to amino nitrogen said condensates having a weight per epoxide of from at least about 300 to about 3,000.

3,409,592

#### EPOXY-CONTAINING CONDENSATES, THEIR PREPARATION AND USE

Alton J. Landua, Maplewood, and James R. Todd, North Plainfield, N.J., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 27, 1966, Ser. No. 604,648

17 Claims. (Cl. 260-47)

1. Acetone-soluble highly reactive epoxy-containing condensates of (1) a polyepoxide possessing more than 1 vic-epoxy group, and (2) an aliphatic or cycloaliphatic amine possessing at least two hydrogen attached to amino nitrogen, said condensate having a softening point of at least 50° C. and a weight per epoxide of at least 300.

3,409,593

#### POLYETHERS AND PROCESS FOR THEIR MANUFACTURE

Günter Messwarb, Kelkheim, Taunus, Walter Lüders Neuenburg, and Johannes Munder, Hans Ruckert, and Hartmut Steppan, Wiesbaden, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Jan. 3, 1967, Ser. No. 606,546

Claims priority, application Germany, Jan. 7, 1966,

F 48,109

6 Claims. (Cl. 260-47)

Light-sensitive polyethers produced by copolymerization of an oxirane group containing compounds in the presence of ionic catalysts and suitable for the manufacture of films, sheetings, coatings and shaped articles which can be cross-linked under the action of light.

3,409,594

#### POLYMERCAPTALS OF AROMATIC DIMER-CAPTANS AND FORMALDEHYDE

Manuel Slovinsky, Fanwood, N.J., assignor to Celanese Corporation, a corporation of Delaware

No Drawing. Filed Aug. 14, 1964, Ser. No. 390,268

7 Claims. (Cl. 260-67)

This disclosure comprises a description of polymeric mercaptals of aromatic dimercaptans and formaldehyde, which mercaptals are useful for producing fibers and molded products.

3,409,595

#### THERMOPLASTICALLY PROCESSABLE POLYMERS

Erwin Muller, Leverkusen, Karl Dinges, Cologne-Stammheim, Edmund Hüther, Opladen, and Hans Scheurle, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Feb. 23, 1965, Ser. No. 434,696

Claims priority, application Germany, Feb. 22, 1964,

F 42,100

4 Claims. (Cl. 260-77.5)

Thermoplastically processable synthetic resins are the reaction product of an organic polyisocyanate and a polymer having at least one of the following groups present in the side chains: —CO—NH<sub>2</sub>, —CO—NH—R, —SO<sub>2</sub>—NH<sub>2</sub>, —SO<sub>2</sub>—NH—R, —NH—CO—NH<sub>2</sub>,

—NH—CO—NH—R

—NH—COOR or —CO—NH—CO—R where R is an organic radical, the group being present in an amount from about one to about 20% by weight based on the weight of the polymer.

3,409,596

#### POLYAMIDES FROM DIAMINO DIARYL DISULFONIC ACIDS OR SALTS THEREOF

Otto Unger and Günther Nawrath, Dormagen, and Günther Nischk, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 12, 1965, Ser. No. 425,072

Claims priority, application Germany, Feb. 8, 1964,

F 41,969

9 Claims. (Cl. 260-78)

Condensation of 4,4'-diamino-2,2'-diaryl- or -diaryl-alkane-disulfonic acid or salt with alkylene dicarboxylic acid or salt in the presence of a polyamide-forming material such as a lactam or salt of diamine and dicarboxylic acid, at a temperature between about 250-300° C., in which such disulfonic acid or salt is present in an amount between about 0.1-20% by weight of the polyamide-forming material, to form the corresponding sulfonic acid group-containing melt-spinnable polyamide; and filaments,

fibers and threads produced by meltspinning such polyamide.

3,409,597

#### POLYMETHYLENE PIPERIDYL POLY(ESTER-AMIDES)

Francis E. Cislak, Indianapolis, Ind., assignor to Reilly Tar & Chemical Corporation, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed May 17, 1965, Ser. No. 456,562

6 Claims. (Cl. 260-78)

Polymethylene piperidyl polyesteramides from a dicarboxylic acid and N-hydroxyalkyl piperidyl, piperidyl alkane which are useful as tire cord material.

3,409,598

#### PROCESS FOR THE MANUFACTURE OF WATER SOLUBLE POLYVINYL ALCOHOL FILM

Bin Takigawa, Minoru Yoshida, Shigeto Miyoshi, and Hideyuki Tanaka, Tokyo, Japan, assignors to Denki Kagaku Kogyo Kabushiki Kaisha, Chiyoda-ku, Tokyo, Japan

Filed Mar. 1, 1965, Ser. No. 435,839

Claims priority, application Japan, June 18, 1964,

39/34,071

3 Claims. (Cl. 260-78.5)

A process for producing a water soluble film which comprises drying a modified and partially saponified polyvinyl alcohol obtained by saponifying polyvinyl acetate or vinyl acetate copolymerized with a small amount of acrylic, maleic, or itaconic acid or their esters or vinyl ethers in the presence of a polyhydric alcohol compatible with polyvinyl alcohol to such an extent that from 75 to 95 mol percent of acetic acid residue in 100 mols of said residue is substituted with hydroxyl groups. The final moisture content should be below 2%, and the polyvinyl alcohol is melt extruded in the form of small particles. The polyhydric alcohol should be added when polymerization or saponification takes place. By utilizing such a process, it is not necessary to remove large amounts of water, which is required in conventional processes.

3,409,599

#### METHOD FOR IMPROVING COLOR STABILITY OF POLYSULFONES

Ronald S. Bauer, Orinda, and Kenneth C. Dewhurst, San Pablo, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 29, 1966, Ser. No. 568,753

10 Claims. (Cl. 260-79.3)

The color stability of hydrogenated polysulfone copolymers of a conjugated diolefin and sulfur dioxide and, optionally, a third ethylenically unsaturated comonomer, is improved by treating the copolymers or their hydrogenation products with a small amount of a salt of a weak acid, e.g., potassium cyanide.

3,409,600

#### ESTERS OF 4,4-DI TERT-BUTYLPEROXYPENTANOIC ACID AS CROSS-LINKING INITIATORS IN THE MANUFACTURE OF COPOLYMERS OF ETHYLENE AND OTHER TERMINAL ETHYLENICALLY UNSATURATED MONOMERS

Pieter R. A. Maltha and Stephanus B. Tjissen, Schalkhaar, Netherlands, assignors to Koninklijke Industriële Maatschappij Vorheen Noury & van der Lande N.V., Brink, Deventer, Netherlands, a corporation of the Netherlands

No Drawing. Original application Oct. 10, 1963, Ser. No. 315,344. Divided and this application Apr. 19, 1967, Ser. No. 646,785

Claims priority, application Netherlands, Oct. 12, 1962,

284,315

5 Claims. (Cl. 260-87.3)

The present invention relates to cross-linking with new organic peroxides which are 3,3-di tert-butylperoxybu-

tane-carboxylic acid esters, also known as esters of 4,4-di tert-butylperoxy-pentanoic acid, wherein the ester moiety contains a hydrocarbon group having at most 20 carbon atoms, and which are useful as peroxidic cross-linking initiators in the manufacture of copolymers of ethylene and monomers containing CH<sub>2</sub>=CH— groups. The invention also relates to the resulting cross-linked copolymeric compositions and to shaped articles made therefrom.

3,409,601

#### PROCESS AND CATALYTIC COMPOSITION FOR THE SOLUTION POLYMERIZATION OF VINYLICALLY UNSATURATED MONOMERS

Giancarlo Bordini, Milan, Carlo Nicora, Varese, and Angelo Segalini, Novara, Italy, assignors to Montecatini Edison, S.p.A., Milan, Italy

No Drawing. Filed July 29, 1964, Ser. No. 386,061

Claims priority, application Italy, July 31, 1963,

15,964/63

22 Claims. (Cl. 260-87.5)

A process for polymerizing vinyl halides, vinyl acetate, acrylates, acrylonitriles, and acrylic acids in solution in a polar solvent at a temperature between -100° C. and +40° C. wherein the catalyst composition consists essentially of an organo-metallic derivative having the general formula: MeR<sub>n</sub>, wherein R is an alkyl, aryl, cycloalkyl or aralkyl radical, and Me is an element from Group IV(A) of the Periodic Table; a cupric salt (e.g. cupric acetate, cupric formate, cupric chlorate, cupric perchlorate, cupric nitrate or cupric sulfate; and a cuprous complexer (e.g. organic phosphorus-acid esters or organic nitriles).

3,409,602

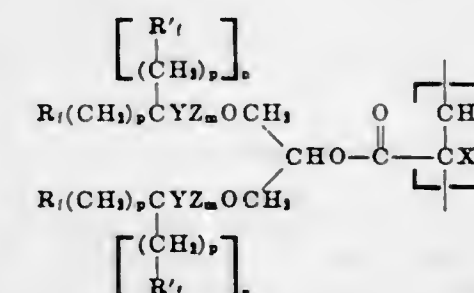
#### NOVEL POLYFLUOROALKYL ACRYLATE MONOMERS, POLYMERS AND INTERMEDIATES

Louis G. Anello, Basking Ridge, and Richard F. Sweeney, Randolph Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 24, 1965, Ser. No. 505,007

17 Claims. (Cl. 260-89.5)

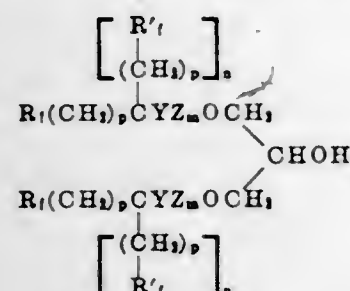
11. Polymers comprising recurring polyfluoroalkoxy acrylate ester units of the formula:



wherein X is H or CH<sub>3</sub>; Y is H or F; Z is H or F; R<sub>1</sub> and R'<sub>1</sub> which may be the same or different, when taken singly, are straight chain perfluorinated alkyl groups each having from 2 to 11 carbon atoms and, when taken together, form a polyfluorinated cycloalkyl group possessing 4-6 carbon atoms inclusive; n is 0 or 1; m is 0 or 1; provided that when n is 1, m is 0 and when n is 0, m is 1 and provided that when m is 1, Y and Z are alike; and wherein p is 0-8.



15. 1,3 - bis(polyfluoroalkoxy)isopropanols of the formula:



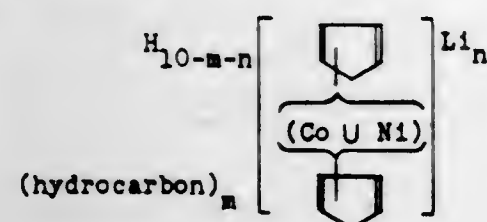
wherein Y is H or F; Z is H or F;  $R_1$  and  $R'_1$  which may be the same or different, when taken singly, are straight chain perfluorinated alkyl groups each having from 2 to 11 carbon atoms and, when taken together, form a polyfluorinated cycloalkyl group possessing 4-6 carbon atoms inclusive;  $n$  is 0 or 1;  $m$  is 0 or 1, provided that when  $n$  is 1,  $m$  is 0 and when  $n$  is 0,  $m$  is 1 and provided that when  $m$  is 1, Y and Z are alike; and wherein  $p$  is 0-8.

3,409,603

#### METHOD OF POLYMERIZING CONJUGATED DI-OLEFINS BY CONTACTING SAME WITH A CATALYST COMPRISING A COMPLEX OF A LITHIUM HYDROCARBON WITH A COBALTOCENE OR NICKELCENE

Adel F. Halasa and George E. P. Smith, Jr., Akron, Ohio, assignors to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio  
No Drawing. Filed Feb. 1, 1966, Ser. No. 523,876  
6 Claims. (Cl. 260-94.3)

Conjugated diolefins are polymerized in the presence of catalysts comprising compounds of the formula



wherein

$m$  is an integer from 0 to 3

$n$  is an integer from 1 to  $(8-m)$

and

(Co/Ni) indicates an atom selected from the group consisting of Co and Ni.

The resulting polymers are characterized by excellent green strength and building tack, broad molecular weight distribution, high cis-1,4 structure, desirable microgel content, and by the excellent properties of vulcanizates made therefrom.

3,409,604

#### POLYMERIZATION OF BUTADIENE

Raymond A. Stewart, Jules Darcy, and Lloyd A. McLeod, Sarnia, Ontario, Canada, assignors to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate and politic

No Drawing. Continuation-in-part of application Ser. No. 214,527, Aug. 3, 1962, which is a continuation-in-part of application Ser. No. 36,120, June 15, 1960. This application is also a continuation-in-part of application Ser. No. 114,631, June 5, 1961. This application Dec. 27, 1966, Ser. No. 604,610

Claims priority, application Great Britain, June 19, 1959, 21,148/59, Patent 917,401; Canada, June 28, 1960, 802,056, Patent 664,393

18 Claims. (Cl. 260-94.3)

A process of polymerizing butadiene to a stereoregular polymer of at least 75% cis-1,4 content in the presence of

a catalyst consisting of two components. The first component is represented by the formula  $\text{TiCl}_n(\text{OR})_{4-n}$  where  $R$  is a hydrocarbon radical having 1-12 carbon atoms and  $n$  is 0-3. The second component is aluminum hydrocarbyl mono- or diiodide represented by the formula  $\text{AlR}'_m\text{I}_{2-m}$  or a mixture of  $\text{AlR}'_3$  and an iodine compound XI where X is H, Cl, Br or I,  $m$  is 1-2, and  $R'$  is hydrogen or R.

3,409,605

#### CONCENTRATION AND PURIFICATION OF GROWTH FACTOR - PLACENTAL ORIGIN (HUMAN)

James Ralph Florini, Pearl River, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 15, 1965, Ser. No. 464,237

9 Claims. (Cl. 260-112)

An improved method for obtaining and purifying a growth factor of human placental origin is described. A method of treating the growth factor so-obtained to inactivate any hepatitis virus which may be present is also described resulting in a product which can safely be used for injection into humans.

3,409,606

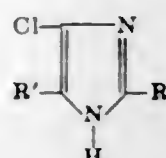
#### HALOGENATED CHLOROIMIDAZOLE COMPOUNDS

Albert William Lutz, Montgomery Township, Somerset County, and Sylvio Andrew De Lorenzo, Trenton, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Dec. 30, 1965, Ser. No. 517,840

7 Claims. (Cl. 260-157)

Chlorinated imidazole compounds are provided having the formula:



wherein R is hydrogen, halogen, lower alkyl or phenylazo and  $R'$  is hydrogen or halogen, provided that when R is chloro,  $R'$  is halogen. A process is provided for producing these compounds by the reaction of an imidazole with sodium hypochlorite in a basic medium. The compounds are suitable for use as herbicides.

3,409,607

#### BENZAZEPINE DERIVATIVES

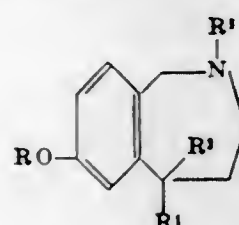
Hajime Fujimura, Kyoto, and Mikio Hori, Gifu, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed Nov. 15, 1965, Ser. No. 507,702

Claims priority, application Japan, Nov. 16, 1964, 39/64,942

20 Claims. (Cl. 260-239)

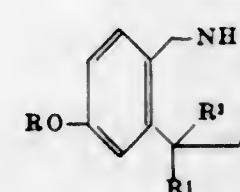
Compounds of the formula



#### 3,409,610 9 $\alpha$ -DIFLUOROMETHYL AND 9 $\alpha$ -TRIFLUOROMETHYL PREGNENES

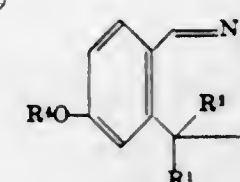
John H. Fried, Palo Alto, Calif., assignor to Syntex Corporation, Palo Alto, Calif., a corporation of California  
No Drawing. Filed June 27, 1966, Ser. No. 560,864  
21 Claims. (Cl. 260-239.5)

1. A compound selected from the group consisting of those having the formulas



wherein  $R$ ,  $R^1$  and  $R^2$  have the afore-recited significances, are disclosed.

Intermediates of the formula



are also disclosed,  $R^1$ ,  $R^2$  and  $R^4$  being  $C_4$ -alkyl.

3,409,608

#### SUBSTITUTED DIBENZODIAZOCINES

John G. Topliss, West Caldwell, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Jan. 4, 1966, Ser. No. 518,560

10 Claims. (Cl. 260-239.3)

This invention pertains to substituted 5,6-dihydrodibenzo[b,f]diazocines, their use as mild tranquilizing agents, and to the processes for preparing such compounds. Specifically, an appropriately substituted N-(2-nitrophenyl)-2-benzoyl benzamide or an N-(2-benzoylphenyl)-2-nitrobenzamide is chemically reduced and certain reduction products then optionally converted to the appropriate 6-oxo-5,6-dihydrodibenzo[b,f]diazocines.

3,409,609

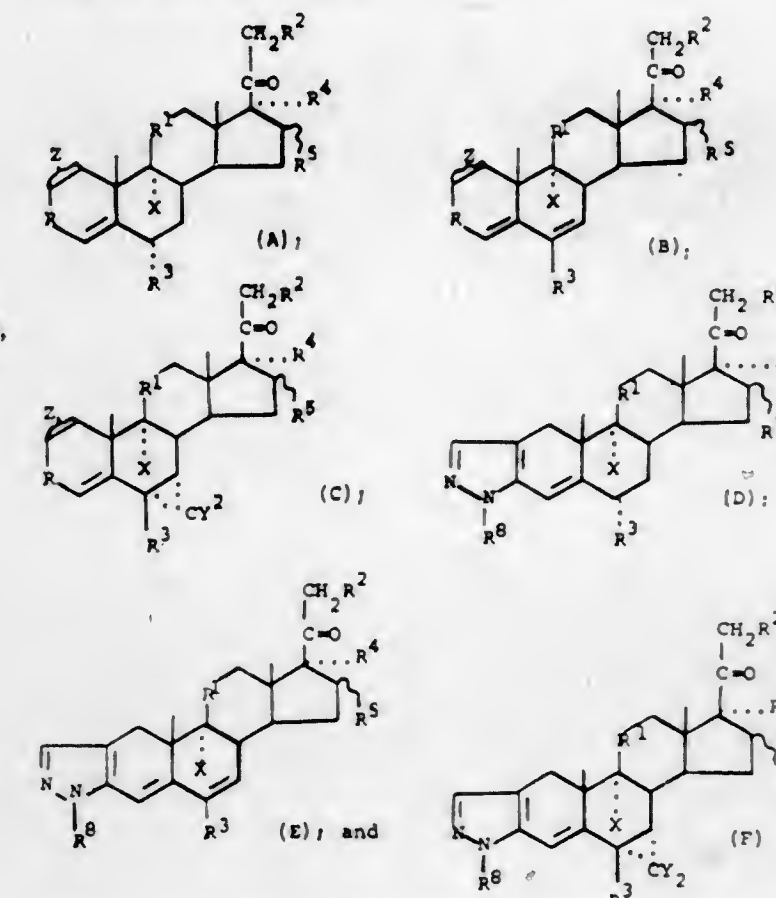
#### ADROSTANO-PYRIDINES AND THEIR PREPARATION

Theodore C. Miller, East Greenbush, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 24, 1964, Ser. No. 421,090

24 Claims. (Cl. 260-239.5)

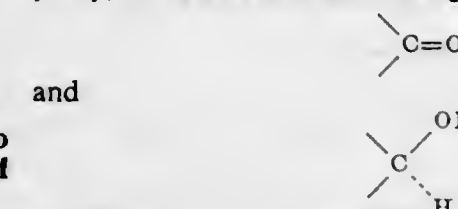
Androstano[3,2-b]-6'-R-pyridines and androstano[17,16-b]-6'-R-pyridines are prepared by pyrolysis of 2-(3-R-allylidene)-3-oximinoandrostanes and 16-(3-R-allylidene)-17-oximinoandrostanes, respectively, where R is lower-alkyl, phenyl, furyl or thienyl. The final products where R is furyl can be ozonized to give compounds where R is carboxy, and the latter decarboxylated to afford compounds where R is hydrogen. Also disclosed is the preparation of bis(17 $\beta$ -oxyandrostano[3,2-b:2',3'-e])pyridines.



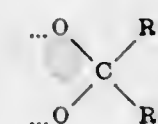
wherein X is selected from the group consisting of difluoromethyl and trifluoromethyl; Y is selected from the group consisting of hydrogen and fluoro; Z is selected from the group consisting of a saturated bond and an ethylenically unsaturated bond between carbon-1 and carbon-2; R is selected from the group consisting of



wherein  $R''$  is selected from the group consisting of hydroxy, a carboxylic acyloxy group of less than 12 carbon atoms, tetrahydropyran-2-yloxy, and tetrahydrofuran-2-yloxy;  $R^1$  is selected from the group consisting of



$R^2$  is selected from the group consisting of hydroxy and a carboxylic acyloxy group of less than 12 carbon atoms;  $R^3$  is selected from the group consisting of hydrogen, fluoro and methyl;  $R^4$  is selected from the group consisting of hydrogen, hydroxy, and a carboxylic acyloxy group of less than 12 carbon atoms;  $R^5$  is selected from the group consisting of hydrogen, alpha hydroxy, alpha methyl, and beta methyl;  $R^4$  and  $R^5$  together form the group



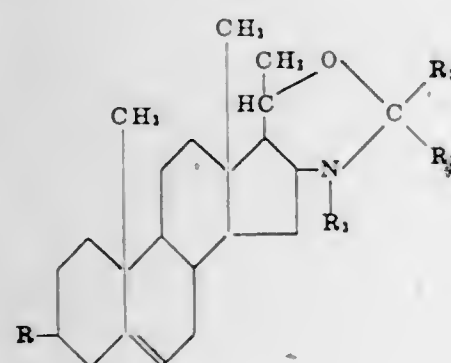


at the 16 $\alpha$ ,17 $\alpha$ -position wherein each of R<sup>6</sup> and R<sup>7</sup> is selected from the group consisting of hydrogen and a hydrocarbon group of up to 8 carbon atoms; and R<sup>8</sup> is selected from the group consisting of hydrogen, phenyl, chlorophenyl, fluorophenyl, methoxyphenyl and methylphenyl, provided that when R<sup>5</sup> is alpha hydroxy that R<sup>4</sup> is selected from the group consisting of hydroxy and a carboxylic acyloxy group of less than 12 carbon atoms.

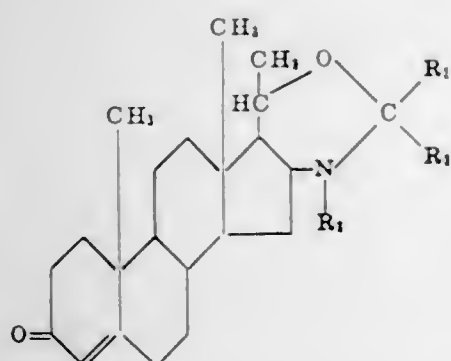
### 3,409,611 16,20-CYCLOSTEROIDS

Milton Heller and Seymour Bernstein, New City, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine  
No Drawing. Filed May 16, 1966, Ser. No. 550,125  
10 Claims. (Cl. 260—239.55)

1. A pregnene selected from the group having the formulas:



and



wherein R is selected from the group consisting of hydroxy, lower alkanoyloxy, formyloxy and

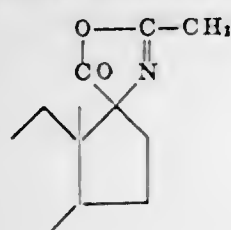


R<sub>1</sub> and R<sub>2</sub> are selected from the group consisting of hydrogen and lower alkyl; R<sub>3</sub> is selected from the group consisting of hydrogen, lower alkyl and lower alkanoyl.

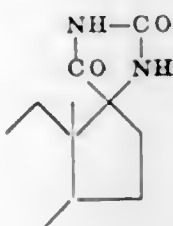
3,409,612  
SPIRO-ANDROSTANE-OXAZOLINONES AND  
PROCESS FOR PREPARING THEM  
Giangiacomo Nathansohn and Gianfranco Odasso, Milan, Italy, and Emilio Testa, Tessin, Switzerland, assignors to Lepetit S.p.A., Milan, Italy  
No Drawing. Filed July 9, 1965, Ser. No. 470,872  
Claims priority, application Great Britain, July 24, 1964, 29,760/64

15 Claims. (Cl. 260—239.55)

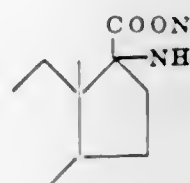
Spiro-androstane-oxazolinones of the formula



and having anti-inflammatory properties, and their intermediates, are prepared by subjecting a spiro-androstane-hydantoin of the formula



to hydrolysis with an alkali metal hydroxide at 150–200° C. to form  $\alpha$ -aminoacids of the formula



The latter are then heated with acetic anhydride to produce III.

3,409,613  
6 $\alpha$ ,21 - DIFLUORO - 9 $\alpha$ ,11 $\beta$  - DICHLORO - 16 $\alpha$ ,17 $\alpha$  -  
ALKYLIDENE - DIOXYPREGN - 4 - ENE - 3,20 -  
DIONES

John H. Fried, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama  
No Drawing. Filed July 28, 1966, Ser. No. 568,418  
3 Claims. (Cl. 260—239.55)

Novel 6 $\alpha$ ,21 - difluoro-9 $\alpha$ ,11 $\beta$ -dichloro-16 $\alpha$ ,17 $\alpha$ -alkylidenedioxypregn-4-ene-3,20-diones and the corresponding pregna-1,4-dienes having topical anti-inflammatory activity.

### ERRATUM

For Class 260—243 see:  
Patent No. 3,409,713

3,409,614  
PHENOXAZINYL AMINOCYCLOPROPANES  
Carl Kaiser, Haddon Heights, N.J., and Charles L. Zirkle, Berwyn, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania  
No Drawing. Filed July 23, 1965, Ser. No. 474,464  
12 Claims. (Cl. 260—244)

Phenoxazinyl aminocyclopropanes having antidepressant activity wherein the phenoxazine ring may be substituted by halogen, trifluoromethyl, methyl, methoxy or methylthio and the amino group may be mono or dialkyl substituted as well as a heterocyclic amine. The compounds are generally prepared either via a phenoxazine cyclopropanecarboxylic acid or a cyclopropanecarboxamide.

3,409,615  
PROCESS FOR THE PREPARATION OF  
1:3-BENZOXAZINE-2:4-DIONES  
John William James and James Albert Baker, Slough, and John Dixon Shrive, Wokingham, England, assignors to Aspro-Nicholas Limited, London, England, a British company  
No Drawing. Filed Oct. 1, 1965, Ser. No. 492,324  
Claims priority, application Great Britain, Oct. 1, 1964, 40,068/64

18 Claims. (Cl. 260—244)

III. A process is provided for the preparation of 1:3-benz-

oxazine-2:4-diones by adding a lower alkyl ester of chloroformic acid to an aqueous medium comprising water, the corresponding salicylamide, and an inorganic base in an amount to bring the pH to above about 8, and holding the reaction mixture at a temperature at which reaction proceeds to form the 1:3-benzoxazine-2:4-dione.

### 3,409,616 4-OXO-10-HYDROXY-1,2,3,4-TETRAHYDRO- ANTHRACENE-2-( $\alpha$ -AMINO)ACETATES

Lloyd H. Conover, Quaker Hill, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 277,081, May 1, 1963. This application July 27, 1966, Ser. No. 568,133

9 Claims. (Cl. 260—247.2)

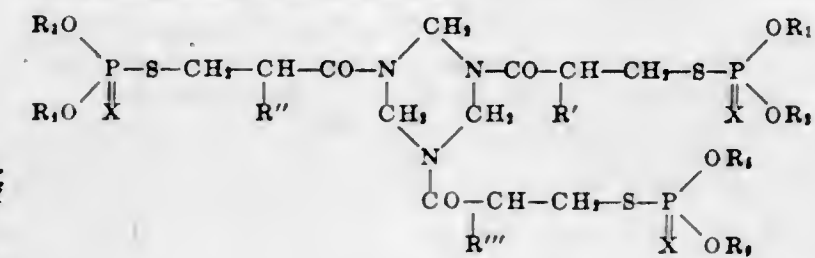
The total synthesis of 5 $\alpha$ ,6-anhydrotetracycline-type antibiotics by a multi-step process comprising: (1) the aldol condensation of a 3,4,10-trioxo-1,2,3,4,4a,9,9a,10-octahydroanthracene with (a) an ester of glyoxalic acid, or (b) a 3- and/or 4-substituted 5-formylisoxazole to produce the corresponding 2-carboxymethylidene-(I-A) or 2-(5'-(3'- and/or 4'-substituted isoxazolyl)methylidene)-3,4,10-trioxo-1,2,3,4,4a,9,9a,10-octahydroanthracene (II-A) aldol condensation products; (2) Michael reaction of the aldol condensation products with an amine to give the corresponding 3,4,10-trioxo-1,2,3,4,4a,9,9a,10-octahydroanthracenes bearing an  $\alpha$ -aminoacetic acid ester (I-B) or an isoxazolyl substituted aminomethyl group (II-B) at the 2-position; (3) selective reduction of the trioxo Michael reaction products to the corresponding 3-hydroxy compounds and thence to the 4,10-dioxo compounds, (4) aromatization of the 4,10-dioxooctahydroanthracenes at the 9,9a- and 10,4a-positions by bromination and dehydrobromination to the corresponding 4,10-dioxo-1,2,3,4-tetrahydroanthracenes; (5) the 4,10-dioxo-1,2,3,4-tetrahydroanthracene-2-( $\alpha$ -amino) acetic acids are converted to mixed anhydrides and then to acyl malonates; (6) the isoxazole ring of the 2-(5'-isoxazolyl)(amino)methyl-4,10-dioxo-1,2,3,4-tetrahydroanthracenes is cleaved to provide the corresponding acyl malononitriles, 4,10-dioxo-1,2,3,4-tetrahydroanthracene 2-( $\alpha$ -amino) acetyl  $\alpha$ -nitriles; (7) the acyl malonates and acyl malononitriles are cyclized to 12a-deoxytetracyclines which are then hydroxylated to 5 $\alpha$ ,6-anhydrotetracyclines.

The 3,4,10-trioxo-1,2,3,4,4a,9,9a,10-octahydroanthracenes are prepared from benzoyl halides by (a) Friedel-Crafts reaction of a benzoyl halide with a pyrocatechol ether, e.g., a di-(lower) alkyl ether, to produce a 3,4-di-(lower)alkoxybenzophenone; (b) conversion of the benzophenone by partial or complete reduction of the carbonyl group by chemical or catalytic methods to a 3,4-di-(lower)alkoxydiphenylmethanol or 3,4-di-(lower)alkoxydiphenylalkane via a Grignard reaction and reduction of the thus-produced alkanol; (c) oxidation of the 3,4-di-(lower)alkoxydiphenylalkane, or the corresponding dihydroxy compound, to a dienedioic acid ester of dienedioic acid; (d) hydrogenation of the dienedioic acid compound to a benzyl adipic acid derivative; (e) cyclization of said compound to a 2-(2-carbalkoxyethyl)-3-tetralone by means of dehydrating or dehydrohalogenating agents; (f) cyclization of the 4-tetralone derivatives by condensation with a dialkylalate to give a 2-carbalkoxy 3,4,10-trioxo-octahydroanthracene; and (g) removal of the 2-substituent by decarboxylation. The intermediates and final products are useful as bactericides and/or chelating agents.

### 3,409,617 PESTICIDAL TRIAZINYL PHOSPHORIC ACID ESTERS

Friedrich Wolf, Leipzig, Siegfried Heldenreich, Bitterfeld, and Manfred Born, Halle, Germany, assignors to VEB Farbenfabrik Wolfen, Wolfen, Germany  
No Drawing. Filed Feb. 25, 1966, Ser. No. 529,973  
4 Claims. (Cl. 260—248)

A compound of the formula



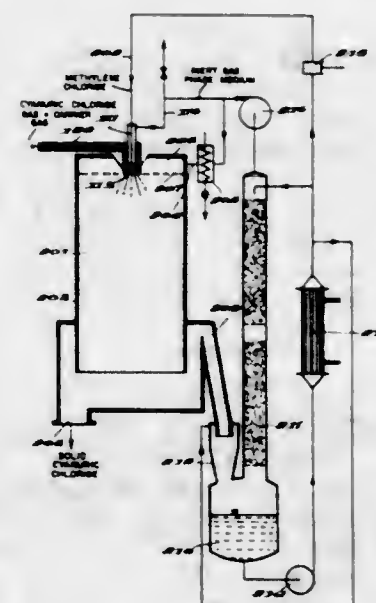
wherein R', R'', R''' represent hydrogen or a lower alkyl radical, and R<sub>1</sub> to R<sub>4</sub> lower alkyl radicals, and X stands for sulphur or oxygen. The invention also comprises a process for making the novel compounds, which are active ingredients of pesticides of low toxicity to humans and warm-blooded animals.

3,409,618  
TRI-SUBSTITUTED ISOCYANURATE  
George E. Ham, Lake Jackson, and Homer L. Hairston, Freeport, Tex., and Donald A. Tomalia, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Filed May 4, 1966, Ser. No. 547,420  
9 Claims. (Cl. 260—248)

Tri-substituted isocyanurates are prepared by rearrangement of aziridinyl formates or by reacting phenyl haloformates with aziridine. Said tri-substituted isocyanurates are bactericidal.

3,409,619  
PROCESS FOR SOLIDIFYING CYANURIC CHLORIDE BY CONTACT WITH VAPORIZING METHYLENE CHLORIDE  
Christian Kosel, Grossauheim, Theodor Lussling, Hanau am Main, and Hermann Schulz, Frankfurt am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany  
Filed Aug. 22, 1966, Ser. No. 574,064  
Claims priority, application Germany, Aug. 21, 1965, D 48,028

14 Claims. (Cl. 260—248)

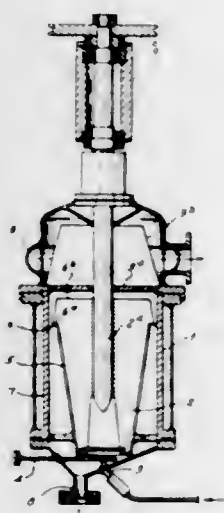


Solid cyanuric chloride is formed from a gas phase by introducing a stream of the gas phase in enveloping relationship with a liquid methylene chloride and an inert gas



phase medium. The methylene chloride vaporizes to form fine solid cyanuric chloride particles which are then separated from the gas phase.

**3,409,620**  
**CONTINUOUS MANUFACTURE IN VACUUM OF NITRIC ESTERS AND/OR ORGANIC NITRO COMPOUNDS**  
Per Valter Ohman, Molle, Sweden, and Hanspeter Moser, Chatacombaz, Switzerland, assignors to Dr. Ing. Mario Blazzi Societe Anonyme, Vevey, Vaud, Switzerland  
Continuation-in-part of application Ser. No. 425,224, Jan. 13, 1965. This application Feb. 6, 1967, Ser. No. 629,336  
3 Claims. (Cl. 260—248.5)



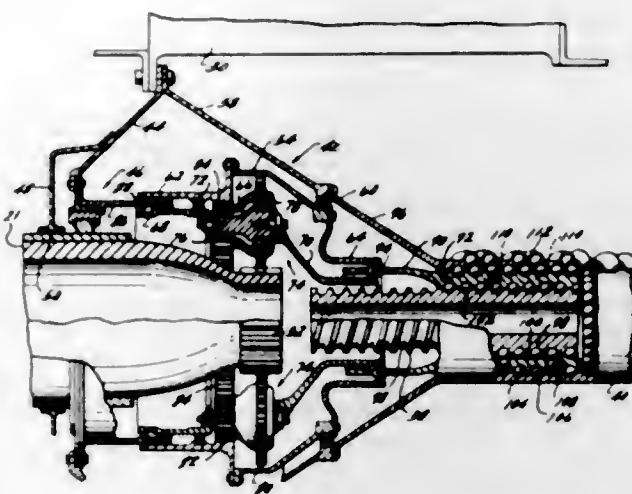
The method of the invention comprises continuously nitrating nitratable organic compounds with boiling points substantially higher than the boiling point of nitric acid to produce nitric esters or nitro-compounds. An organic compound of the indicated type is continuously mixed with an excess of concentrated nitric acid at a reduced pressure which is much lower than atmospheric pressure but higher than the pressure at which such organic compound and its nitrated product evaporate, continuously effecting the nitration of such organic compound at said reduced pressure, and continuously evaporating at said reduced pressure a sufficient quantity of the nitric acid for removing the heat evolved in the nitration reaction.

**3,409,621**  
**PIPERAZINO-AZA-DIBENZO-[a,d]-CYCLOHEPTENES**  
Frank J. Villani, West Caldwell, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey  
No Drawing. Filed Apr. 1, 1966, Ser. No. 539,272  
9 Claims. (Cl. 260—268)  
Aza 5 piperazino dibenzo[a,d]cycloheptenes having anti-histaminic activity are described.

**3,409,622**  
**BALL SCREW DRIVE FOR VARIABLE AREA JET NOZZLE**  
Carroll W. De Lisse, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York  
Filed May 26, 1967, Ser. No. 641,573  
6 Claims. (Cl. 60—271)

The disclosure illustrates a screw jack actuator 42 for use with a gas turbine engine 10 having a variable area exhaust nozzle 24. The actuator 42 has a sleeve 92 which is rotated by the rotor of the gas turbine engine 10 through a reversible gear system 42 to extend or retract

a screw shaft 38. The screw shaft is connected by suitable mechanism 36 to the variable area nozzle. A recirculating path for ball bearings is provided between the screw shaft 38, the sleeve 92, and an outer journaling support

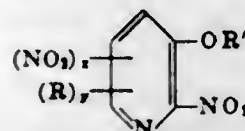


96 for the sleeve 92 so that the actuator size is minimized and axial loads from the variable area nozzle mechanism are uniformly transmitted to the support member for the nut.

**3,409,623**  
**CHLORINATED OXETANE POLYMER COATING COMPOSITION**  
Lester W. Smith, Berwick, Pa., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey  
No Drawing. Continuation-in-part of application Ser. No. 366,614, May 11, 1964. This application Mar. 5, 1965, Ser. No. 437,558  
7 Claims. (Cl. 260—29.2)

A coating composition adapted for application to the interior of large vessels and railway tank cars comprises a dispersion of a finely divided chlorinated polyether polymer in an aqueous medium including water, a surfactant, and an ester of a polyhydric alcohol such as ethylene glycol diacetate; the composition may also include a lower aliphatic alcohol and a water softener. A similarly suited primer coating composition comprises a dispersion of a finely divided chlorinated polyether polymer in a non-aqueous organic diluent, such as methylene chloride, a chlorinated aliphatic hydrocarbon, and an ester of a polyhydric alcohol. The composition is applied by maintaining the surface of the material to be coated above about 50° F., spraying the composition onto the surface and then drying and curing at a temperature between about 380° and 450° F., followed by cooling the coating.

**3,409,624**  
**ESTERS OF 2-NITRO-3-PYRIDOLS**  
Roy C. De Selms, San Rafael, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware  
No Drawing. Filed Feb. 17, 1966, Ser. No. 528,084  
7 Claims. (Cl. 260—294.8)  
Compounds of the formula



wherein R is lower alkyl or halogen of atomic number 9 to 35, y is 0 or an integer from 1 to 3, x is 0 or 1 and R' is a carboxyacyl, sulfonyl, carbamyl having 0 to 1 nitrogen substituents, alkoxycarbonyl or aryloxycarbonyl group. These compounds are herbicidal.

**3,409,625**  
**(Py)-N-OXIDES OF CERTAIN CARBAMATES OF 2-PYRIDINEMETHANOL**  
Masayuki Ishikawa, 17 4-chome, Tokiwa-daie, Matsudo-shi, Chiba-ken, Japan; Tatsuo Shimamoto, 13 Kitamachi, Shinjuku-ku, Tokyo, Japan; and Hisako Ishikawa, 17 4-chome, Tokiwa-daie, Matsudo-shi, Chiba-ken, Japan  
No Drawing. Filed Dec. 7, 1965, Ser. No. 512,234  
Claims priority, application Japan, Dec. 8, 1964, 39/68,652, 39/68,653, 39/68,654  
5 Claims. (Cl. 260—295)

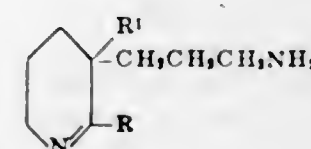
(Py)-N-oxides of N-alkyl- and N,N'-dialkylcarbamates and thioncarbamates of 2-pyridinemethanol were prepared, preferably from the N-oxide of 2-pyridinemethanol, and found in mammals to exhibit anti-inflammatory activity and to prevent passive cutaneous anaphylaxis. 2-pyridinemethanol N-methyl-carbamate (py)-N-oxide was a preferred compound.

**3,409,626**  
**INDOLYLETHYL PYRIDINIUM QUATERNARY AMMONIUM COMPOUNDS**  
Chester John Cavallito and Allan Poe Gray, Decatur, Ill., assignors to Neisler Laboratories, Inc., Decatur, Ill., a corporation of Delaware  
No Drawing. Continuation of application Ser. No. 593,058, June 22, 1956. This application Sept. 17, 1963, Ser. No. 309,413  
6 Claims. (Cl. 260—296)

1. 1-[4-(1-methyl-3-indolylethyl)pyridinium] - 3 - (trimethylammonium)-propane dibromide.

**3,409,627**  
**ALKENYL-3,4,5,6-TETRAHYDROPYRIDINE COMPOUNDS**  
Richard Parke Welcher, Old Greenwich, and Linda Clarendon Mead, Greenwich, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine  
No Drawing. Filed Oct. 11, 1965, Ser. No. 494,936  
6 Claims. (Cl. 260—296)

Alkenyl-3,4,5,6-tetrahydropyridine compounds of the formula



wherein R<sup>1</sup> is hydrogen, a hydrocarbon substituent, or aminopropyl, R is a hydrocarbon substituent; and at least one of R<sup>1</sup> and R is alkenyl or cycloalkenyl. The compounds are useful as fungicides and pesticides.

**3,409,628**  
**5-(3-PYRIDYLETHYL)PYRIDOINDOLE DERIVATIVES**  
Leo Berger, Montclair, and Alfred John Corraze, Wayne, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey  
No Drawing. Continuation-in-part of application Ser. No. 549,455, May 12, 1966. This application Apr. 5, 1967, Ser. No. 628,530  
20 Claims. (Cl. 260—296)

Novel 5-(3-pyridylethyl)pyridoindole derivatives having anti-histaminic and anti-allergic properties are prepared by condensing a N-amino-N-arylaminoethylpyridine with a 4-piperidone.

**3,409,629**  
**SUBSTITUTED PYRIDINES**  
John H. Biel and Edward J. Warawa, Milwaukee, Wis., assignors to Aldrich Chemical Company, Inc., Milwaukee, Wis., a corporation of Wisconsin  
No Drawing. Filed Sept. 15, 1964, Ser. No. 396,735  
9 Claims. (Cl. 260—297)  
Substituted pyridines having hypocholesteremic activity are useful for lowering blood cholesterol levels.

**3,409,630**  
**WATER-SOLUBLE SALTS OF NITRO-SUBSTITUTED 3-PYRIDOLS**  
Roy C. De Selms, San Rafael, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware  
No Drawing. Filed Nov. 26, 1965, Ser. No. 510,070  
7 Claims. (Cl. 260—297)  
Water-soluble salts of 3-pyridols having 1 to 2 nuclear nitro substituents, one of which is in the 2 position, and 0 to 3 nuclear substituents selected from the group consisting of lower alkyl and halogen of atomic number 9 to 35. The cationic portion of these salts may be an alkali metal, magnesium or ammonium ion. These salts are useful as herbicides.

**3,409,631**  
**PROCESS FOR THE PREPARATION OF ISOCYANATES CONTAINING THIOETHER GROUPS**  
Hans Holtschmidt, Leverkusen, and Helmut Freytag, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany  
No Drawing. Filed Feb. 17, 1965, Ser. No. 433,490  
Claims priority, application Germany, Feb. 19, 1964, F 42,052  
12 Claims. (Cl. 260—306)

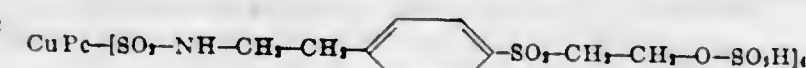
Sulfenyl halide isocyanates, their preparation from organic isocyanates containing a disulfide group and their use for reactions with unsaturated organic compounds to prepare isocyanates containing thioether groups.

**3,409,632**  
**N-TETRAHALOETHYLTHIO PYRAZOLE PESTICIDES**  
Joseph G. E. Fenyes, Oakland, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 573,878, Aug. 22, 1966. This application June 5, 1967, Ser. No. 643,415  
7 Claims. (Cl. 260—310)

N-(1,1,2,2-tetrahaloethylthio) pyrazoles in which the pyrazole nucleus is substituted in the 3 and 5 positions with hydrogen or lower alkyl groups and in the 4 position with hydrogen, halogen or a nitro group. Compounds of this class are fungicidal and bactericidal. They are made by reacting a pyrazole or its alkali metal salt with tetrahaloethylsulfenyl halides.

**3,409,633**  
**WATER-SOLUBLE PHTHALOCYANINE DYE-STUFFS AND PROCESS FOR PREPARING THEM**  
Hartmut Springer, Frankfurt am Main, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany  
No Drawing. Filed Mar. 23, 1965, Ser. No. 442,197  
Claims priority, application Germany, Mar. 26, 1964, F 42,437  
8 Claims. (Cl. 260—314.5)

1. The water-soluble phthalocyanine dyestuff of the formula





3,409,634

**2,3-BIS(p-METHOXYPHENYL)INDOLES**

Jacob Szumskovicz, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 397,649, Sept. 18, 1964. This application July 29, 1965, Ser. No. 475,889

13 Claims. (Cl. 260—326.16)

The invention involves novel 2,3-bis-(p-methoxyphenyl)indoles, compositions thereof, and novel methods for utilizing the novel compositions. The novel compounds are useful as anti-inflammatory, analgesic and antipyretic agents.

3,409,635

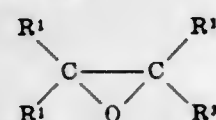
**PROCESS FOR THE PREPARATION OF CYCLIC SULFUR COMPOUNDS**

Peter L. De Benneville, Philadelphia, and Lawrence J. Exner, Cheltenham, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed June 27, 1963, Ser. No. 290,954

8 Claims. (Cl. 260—327)

1. A process for the preparation of cyclic sulfur compounds, which comprises reacting in the temperature range of about 0° to 50° C. carbon disulfide with a compound having the formula



wherein R<sup>1</sup> and R<sup>2</sup> represent members from the class consisting of hydrogen and methyl, with the proviso that, in any one compound, both of the R<sup>1</sup> embodiments or both of the R<sup>2</sup> embodiments must be hydrogen, in the presence of a basic catalyst from the class consisting of sodium and potassium alkoxide, in which the alkyl portion contains from 1 to 8 carbon atoms, and sodium and potassium alkyl xanthate, in which the alkyl portion contains from 1 to 8 carbon atoms.

3,409,636

**ALKYL PHENOXATHIINIUM COMPOUNDS**

Stanley J. Strycker, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 31, 1966, Ser. No. 553,701

5 Claims. (Cl. 260—327)

Novel 10-loweralkylphenoxathiinium compounds are disclosed. These compounds are prepared by treating a phenoxathiin with an alkylating agent. They are useful in achieving adrenergic blockade in animals.

3,409,637

**SULFONATING OLEFINS WITH GASEOUS SULFUR TRIOXIDE AND COMPOSITIONS OBTAINED THEREBY**

Raymond D. Eccles, James E. Yates, and Ted P. Matson, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed July 22, 1963, Ser. No. 296,458

7 Claims. (Cl. 260—327)

1. An improved method for preparing a surface active composition comprising the steps:

- contacting an essentially linear C<sub>17</sub>-C<sub>20</sub> mono-olefin maintained at a temperature not greater than about 50° C. with a gaseous mixture of from about 0.1 to 10 parts by volume sulfur trioxide and correspondingly from about 99.9 to 90 parts by volume of an inert carrier gas until not in excess of about 1 mol of sulfur trioxide per mol of said olefin is reacted;
- hydrolyzing the reaction product of step (a);
- neutralizing said hydrolyzed reaction product with a water-soluble base, and thereupon;

- recovering as the surface active composition the sulfonate content of said neutralized mixture.

3,409,638

**REACTION OF AN ALKYL AROMATIC WITH MALEIC ANHYDRIDE TO PRODUCE A BENZYL SUCCINIC ANHYDRIDE**

Charles M. Selwitz, Monroeville, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed June 28, 1965, Ser. No. 467,754

6 Claims. (Cl. 260—346.8)

A process for preparing a benzylsuccinic anhydride which comprises reacting an alkyl aromatic with maleic anhydride in the presence of oxygen.

3,409,639

**WATER INSOLUBLE DYESTUFFS AND DYESTUFF PRECURSORS**

Elmore L. Bement, Buffalo, and Frederick C. Boye, Orchard Park, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 2, 1965, Ser. No. 484,733

4 Claims. (Cl. 260—397.7)

Production of 4-arylamino-3-nitrobenzene sulfonamide dyestuffs by reaction of a 4-halo-3-nitro-benzene sulfonamide with an aryl amine. The 4-halo-3-nitrobenzene sulfonamides are prepared by reacting an N-(hydroxyalkyl)-4-halo-3-nitrobenzene sulfonamide with an organic isocyanate. The 4-arylamino-3-nitrobenzene sulfonamide dyestuffs of the invention impart yellow colorations to synthetic polyester fibers which are fast to light, washing, and sublimation.

3,409,640

**5-(3'-DIMETHYLAMINO-2'-METHYL-PROPYL) DIBENZOCYCLOHEPTENES**

Frank J. Villani, West Caldwell, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed July 22, 1959, Ser. No. 828,722

1 Claim. (Cl. 260—370.8)

1. 5-(3'-dimethylamino-2'-methylpropyl)dibenzo[a,d][1,4]-cycloheptadiene.

3,409,641

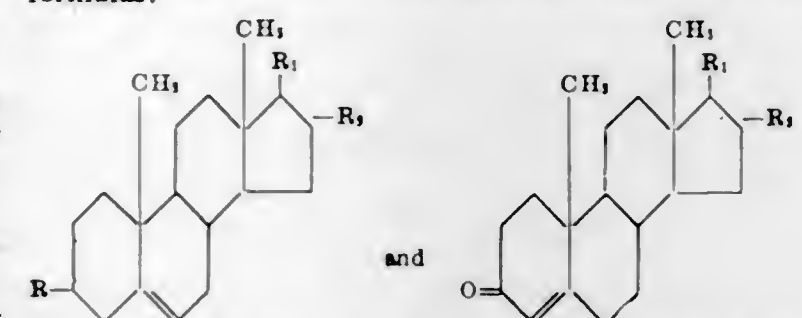
**NITROGEN CONTAINING STEROIDS**

Milton Heller and Seymour Bernstein, New City, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

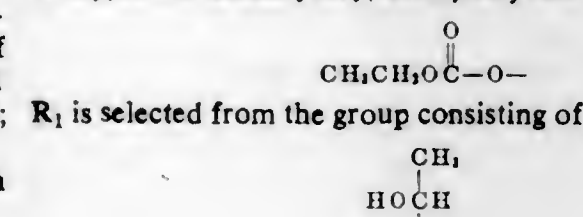
No Drawing. Filed May 16, 1966, Ser. No. 550,174

10 Claims. (Cl. 260—397.4)

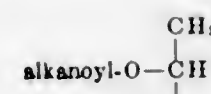
1. A pregnene selected from the group consisting of the formulas:



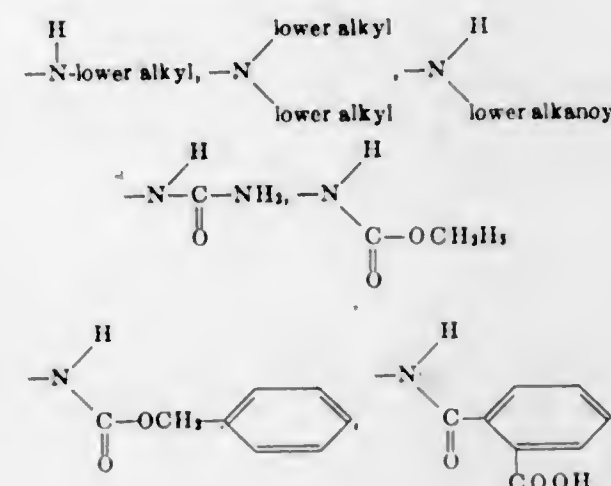
wherein R is selected from the group consisting of hydroxy, lower alkanoyloxy, formyloxy and



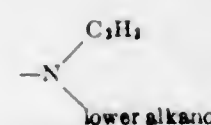
and lower



and R<sub>2</sub> is selected from the group consisting of —N=N+=N—, —NH<sub>2</sub>, —NH<sub>2</sub>·CH<sub>3</sub>,



and



3,409,642

**1-SUBSTITUTED 9β,10α-STERIODS OF THE ANDROSTANE SERIES**

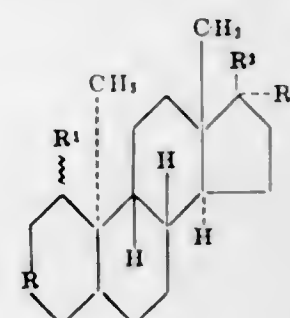
Andor Furst, Basel, and Marcel Muller, Frenkendorf, Switzerland, assignors to Hoffman-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed July 14, 1966, Ser. No. 565,110

Claims priority, application Switzerland, July 19, 1965, 10,074/65

16 Claims. (Cl. 260—397.4)

This disclosure describes compounds of the class of 9β,10α-steroids of the formula



in which R<sup>1</sup> is fluorine, chlorine, bromine, cyano, alkoxy, acyloxy, alkylthio, ar-alkylthio, acetylthio, propionylthio or oxo; R<sup>2</sup>, independently, is hydroxy, acyloxy, alkoxy, benzyloxy, cyclopenten-1-yloxy, 1'-ethoxycyclopentyloxy or tetrahydropyranyloxy; R<sup>3</sup>, independently, is hydrogen, alkyl, alkenyl or alkynyl; R<sup>2</sup> and R<sup>3</sup> together are oxo; and R (when R<sup>1</sup> is a fluorine, chlorine, bromine, cyano, alkoxy, acyloxy, alkylthio, acetylthio or propionylthio) is a

3-keto-Δ<sup>4</sup>,  
3-keto-Δ<sup>1,4</sup>,  
3-keto-Δ<sup>4,6</sup>,  
3-keto-Δ<sup>1,4,6</sup>,  
3-acyloxy-Δ<sup>3,5</sup>-or a  
3-acyloxy-Δ<sup>2,4,6</sup>-system

or (when R<sup>1</sup> is oxo) a

3-keto-Δ<sup>4</sup>,  
3-keto-Δ<sup>1,4</sup>,  
3-acyloxy-Δ<sup>3,5</sup>-or a  
3-acyloxy-Δ<sup>2,4,6</sup>-system.

556 O.G.—8

The compounds are pharmaceutically useful as hormonal or antihormonal agents.

3,409,643

**PROCESS FOR THE PREPARATION OF 17α-ALKYNYL-17β-ALKANOYLOXY STEROIDS OF THE ANDROSTANE AND ESTRANE SERIES**

Elliot L. Shapiro, Cedar Grove, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 11, 1966, Ser. No. 533,435

10 Claims. (Cl. 260—397.5)

A novel process for the preparation of 17α-alkynyl-17β-alkanoyloxy steroids of the androstane and estrane series comprises subjecting a 17-keto steroid of the androstane and estrane series to the action of an alkali metal acetylde and adding in situ to the 17α-alkynyl-17β-hydroxy metal salt intermediate thereby formed, an acylating agent selected from the group consisting of a lower alkanoyl anhydride and a lower alkanoyl halide.

This process advantageously performs concomitantly both an alkylation and esterification reaction and provides a method for preparing an ester of a tertiary alcohol under mild conditions in a medium which will not effect functional groups or systems which are highly reactive or sensitive to vigorous conditions or strongly acidic and strongly basic media.

This process is of particular use in the conversion of 3-methoxy-2,5(10)-esteradien-17-one to 3-methoxy-17α-ethynyl-2,5(10)-esteradien-17-ol 17-acetate, a known, valuable intermediate.

3,409,644

**BENZENESULFONYL UREAS**

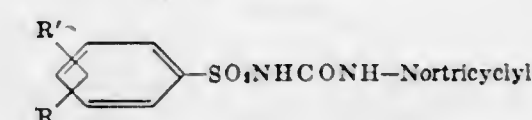
Gerhard Muller and Rudolf Merten, Leverkusen, and Sophie Wirtz, Wuppertal-Elberfeld, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed June 24, 1965, Ser. No. 466,821

Claims priority, application Germany, June 30, 1964, F 43,301

7 Claims. (Cl. 260—397.7)

Benzenesulfonyl ureas, and physiologically tolerable salts thereof, having the formula



in which R is hydrogen, halogen, lower alkyl, lower alkoxy, acetyl, propionyl, benzoyl, halo-lower alkyl, amino-lower alkyl hydroxy-lower alkyl, lower alkenyl, halo-lower alkenyl, amino-lower alkenyl or hydroxy-lower alkenyl and R' is hydrogen, halogen, lower alkyl, lower alkoxy, acetyl, propionyl, benzoyl, halo-lower alkyl, amino-lower alkyl, hydroxy-lower alkyl, lower alkenyl, halo-lower alkenyl, amino-lower alkenyl, hydroxy-lower alkenyl, amino, acetyl-amino, propionylamino or benzoylamino. These compounds have hypoglycemic activity.

3,409,645

**NOVEL PROCESS FOR THE PREPARATION OF GONA-1,3,5(10),8,13-PENTAENONES**

Reinhardt P. Stein, Conshohocken, Herchel Smith, Wayne, and George C. Buzby, Jr., Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

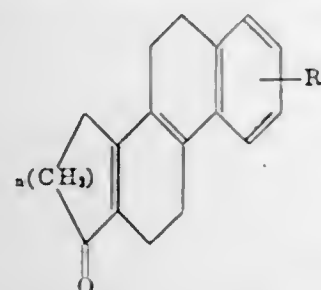
No Drawing. Filed May 9, 1966, Ser. No. 548,409

4 Claims. (Cl. 260—397.45)

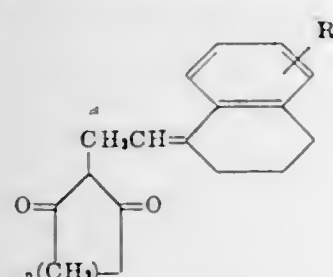
1. A process for the production of a compound se-



lected from the group consisting of those having the formula:



wherein R is selected from the group consisting of hydrogen, lower alkoxy and lower alkyl; and  $n$  is an integer from 1 to 2, which comprises contacting a compound having the formula:

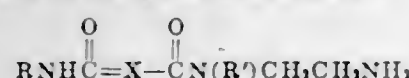


with a mineral acid, in a reaction-inert solvent, at about reflux temperatures for a period of about one half hour to about two hours.

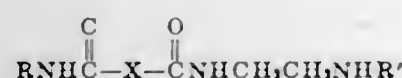
#### 3,409,646 AMINOAMIDES

Homer J. Sims, Horsham, Robert L. Skiles, Warminster, and Hans P. Frohlich, Churchville, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware  
No Drawing. Filed Aug. 10, 1965, Ser. No. 478,732  
5 Claims. (Cl. 260-404.5)

Aminoamides of the general structure



and

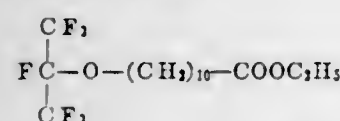


They are useful for the control of phytopathogenic fungi and bacteria.

#### 3,409,647 CERTAIN FLUORINATED CARBOXYLIC ACIDS AND THEIR DERIVATIVES

Allen G. Pittman, El Cerrito, and William L. Wasley, Berkeley, Calif., assignors to the United States of America as represented by the Secretary of Agriculture  
No Drawing. Filed June 24, 1965, Ser. No. 466,865  
12 Claims. (Cl. 260-408)

A fluoroketone is reacted with an alkali metal fluoride to convert the carbonyl radical of the ketone into an alkali metal fluorocarbonyl radical. The resulting intermediate is then reacted with an ester of an omega haloaliphatic acid, yielding a fluoroalkoxy aliphatic acid ester, particularly characterized by containing fluorine on the alpha carbon atom of the alkoxy moiety. Typical example: Hexafluoroacetone is reacted with KF and the intermediate, potassium heptafluoroisopropylate, is reacted with ethyl 11-bromoundecanoate to prepare ethyl 11-(heptafluoroisopropoxy)undecanoate



The esters may be applied to paper, fabrics, etc. to render them resistant to oils and water. Also, the esters may be

converted into other derivatives such as the corresponding acids, salts, acid halides, amides, etc. For instance, the above-mentioned ester may be subjected to hydrolysis to produce the corresponding sodium salt, i.e., sodium 11-(heptafluoroisopropoxy)undecanoate which exhibits unusual surface activity.

#### 3,409,648 PROCESS FOR PREPARING CARBOXYLIC ACIDS FROM OLEFINS

Roby Bearden, Jr., and Joseph Kern Mertzweiler, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware  
No Drawing. Filed July 16, 1965, Ser. No. 472,724  
11 Claims. (Cl. 260-413)

The invention is directed to an improved process for forming chiefly  $\text{C}_6$ - $\text{C}_{30}$  linear organic acids by first oxonating a  $\text{C}_5$ - $\text{C}_{29}$  alpha or internal olefin, preferably a linear olefin, selectively to aldehydes in the presence of a soluble cobalt oxonation catalyst and then contacting the aldehydes previously formed with the oxygen in the presence of the residue of the cobalt oxonation catalyst while maintaining an oxygen feed rate of at least 0.9 mole of oxygen per mole of aldehyde per unit time.

#### 3,409,649 OLEFIN OXIDATION PROCESS

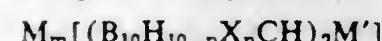
Kestutis A. Keblys, Southfield, and Michael Dubeck, Birmingham, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia  
No Drawing. Filed Dec. 14, 1964, Ser. No. 418,274  
10 Claims. (Cl. 260-413)

A process for catalytic oxidation of an olefin which comprises cleaving the olefin at the carbon-to-carbon double bond using a catalyst system consisting essentially of (1) ruthenium or a ruthenium compound (2) alkali or alkaline earth metal salt of an oxyhalide acid and (3) an alkali, said process being carried out in a basic aqueous medium. Olefins having up to 100 carbon atoms are useful. Sodium or calcium hypochlorite are examples of suitable salts while sodium hydroxide and calcium hydroxide are examples of useful alkalis. The products obtained in this process are carboxylic acids, ketones and keto acids.

#### 3,409,650 TRANSITION METAL COMPOUNDS CONTAINING $\text{B}_{10}\text{H}_{10}\text{CH}_3$

Walter H. Knoth, Jr., Mendenhall, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Filed Aug. 19, 1966, Ser. No. 573,484  
13 Claims. (Cl. 260-429)

1. Compounds represented by the formula



wherein

M is a cation selected from the group consisting of hydrogen, an alkali metal, one equivalent of an alkaline earth metal, silver, ammonium,  $\text{RNH}_3^+$ ,  $\text{RR}'\text{NH}_2^+$ ,  $\text{RR}'_2\text{NH}^+$ ,  $\text{RR}'_3\text{N}^+$ ,  $\text{R}_4\text{P}^+$ ,  $\text{R}_5\text{S}^+$ ,  $\text{R}_6\text{As}^+$ , and  $\text{R}_7\text{Sb}^+$ , wherein R is an aliphatically saturated hydrocarbyl group of up to 18 carbon atoms, R' is an R group that is bonded to N through aliphatic carbon, and any two R and R' groups in one cation can be covalently joined together to form a divalent group of up to 18 carbon atoms selected from the class consisting of aliphatically saturated hydrocarbon and aliphatically saturated monooxahydrocarbon;

$m$  is a whole number of 2 through 4 and is equal to the valence of the  $[(\text{B}_{10}\text{H}_{10}-n\text{X}_n\text{CH})_2\text{M}']$  entity;

X is halogen substituted on boron by replacement of hydrogen;

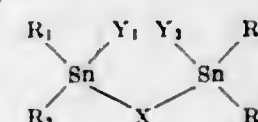
$n$  is a whole number of 0 through 8 and represents the number of X substituents substituted on boron; and M' is a transition metal cation selected from the group consisting of Ti(IV), Fe(II), Fe(III), Cr(III), Mn(IV), Co(II), Co(III), Co(IV), and Ni(IV).

#### 3,409,651 MONOTHIO CONTAINING RADICAL BIS(DI- ORGANOTIN CARBOXYLATES)

James A. Horrocks, Suffolk, England, assignor to Bakelite Xylonite Limited, a corporation of Great Britain  
No Drawing. Filed Aug. 31, 1965, Ser. No. 484,126  
Claims priority, application Great Britain, Sept. 2, 1964, 35,990/64

4 Claims. (Cl. 260-429.7)

The present invention relates to a stabilizer composition for polymeric substances having the general formula:



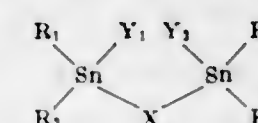
wherein  $\text{R}_1$ ,  $\text{R}_2$ ,  $\text{R}_3$ , and  $\text{R}_4$  are members selected from the group consisting of alkyl, alkaryl, aralkyl and aryl radicals having from 2 to 20 carbon atoms, X is a dibasic radical containing sulfur and  $\text{Y}_1$  and  $\text{Y}_2$  are each a monobasic radical.

#### 3,409,652 BIS(TRIORGANOTIN) SALTS OF DIBASIC ACIDS AND THE PREPARATION THEREOF

James A. Horrocks, Ipswich, England, assignor to Bakelite Xylonite Limited, a corporation of Great Britain  
No Drawing. Filed Sept. 7, 1965, Ser. No. 485,580  
Claims priority, application Great Britain, Sept. 11, 1964, 37,297/64

9 Claims. (Cl. 260-429.7)

This invention relates to a stabilizer composition for polymeric substances having the formula



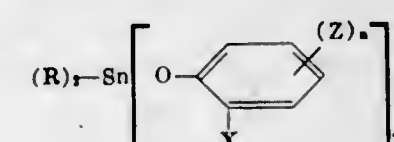
wherein  $\text{R}_1$ ,  $\text{R}_2$ ,  $\text{R}_3$  and  $\text{R}_4$  are members selected from the group consisting of alkyl, alkaryl, aralkyl and aryl radicals having from 2 to 20 carbon atoms, X is a dibasic divalent radical free from sulfur and  $\text{Y}_1$  and  $\text{Y}_2$  are each a monobasic radical selected from the group consisting of a monoester of a dibasic acid, a mercapto acid, a mercapto acid ester and a mercaptan.

#### 3,409,653 DIBUTYL TIN BIS (2,4-DINITRO-6-ALKYL- PHENOLATES)

Walter A. Stamm, Tarrytown, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 286,521, June 10, 1963. This application Oct. 26, 1966, Ser. No. 589,498

2 Claims. (Cl. 260-429.7)

Organotin compounds of the formula:



wherein R is alkyl of from 1 to 12 carbon atoms, X is selected from lower alkoxy, nitro, alkyl of from 1 to 9

carbon atoms, chlorine and bromine, Z is selected from nitro, lower alkoxy, alkyl of from 1 to 9 carbon atoms, chlorine and bromine and  $n$  is an integer of from 1 to 2, it being provided that at least one of the para and ortho positions of the phenoxy ring always has attached thereto at least one nitro group.

#### 3,409,654

#### COPPER AND ZINC SALTS OF DICYCLOHEXYL PHOSPHINIC ACID

Jerry Peter Millionis and Frank Joseph Arthen, Jr., Somerset, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Connecticut

No Drawing. Application Apr. 6, 1964, Ser. No. 357,738, now Patent No. 3,293,208, dated Dec. 20, 1966, which is a continuation-in-part of application Ser. No. 292,721, July 3, 1963. Divided and this application June 7, 1966, Ser. No. 560,976

3 Claims. (Cl. 260-429.9)

This invention relates to a compound selected from the group consisting of the copper and zinc salts of dicyclohexyldithiophosphinic acid. The compound finds use in stabilizing polyolefins against the deteriorative action of light and heat.

#### 3,409,655

#### ALUMINUM N-(3-TRIFLUOROMETHYLPHENYL) ANTHRANILATE

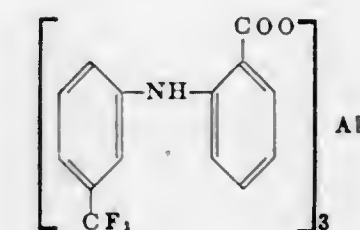
Teruya Seki, Tokyo, and Yoshiaki Watanabe, Saitama, Japan, assignors to Taisho Pharmaceutical Co., Ltd., Tokyo, Japan

No Drawing. Filed Feb. 17, 1965, Ser. No. 433,513

Claims priority, application Japan, Feb. 17, 1964, 39/8,181

1 Claim. (Cl. 260-448)

Aluminum N-(3-trifluoromethylphenyl) anthranilate of the formula



is disclosed. The material is useful as an anti-inflammatory agent.

#### 3,409,656

#### PROCESS FOR PREPARATION OF ISOTHIOCYANATES

Gerhard F. Ottmann, Hamden, and Haywood Hooks, Jr., West Haven, Conn., assignors to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia

No Drawing. Filed Nov. 1, 1965, Ser. No. 506,009

3 Claims. (Cl. 260-454)

A process for providing isothiocyanates by the thermal dissociation of O,O'-dialkyl-S-carbamoyl phosphorodithioates. The phosphorodithioates are provided by the reaction of isocyanates with O,O'-dialkyl dithiophosphoric acids, and thus a process for the conversion of isocyanates to isothiocyanates is disclosed.



3,409,657

**ESTERS AND ETHERS OF TRIMETHYL PENTYL SULFATES AND THEIR PREPARATION**

Alden E. Blood and James D. Heller, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 8, 1965, Ser. No. 424,182  
8 Claims. (Cl. 260—458)

Water-soluble surface-active compounds are prepared by sulfating 2,2,4-trimethylpentane-1,3-diol monoesters and monoethers. The surface-active compounds are efficient wetting agents, particularly in alkaline solutions, with vastly improved properties.

3,409,658

**PROCESS FOR PREPARING TRINITRATO-PENTAERYTHRITYL ACRYLATE**

William D. Emmons, Huntingdon Valley, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 644,955, Mar. 8, 1957. This application Aug. 13, 1958, Ser. No. 755,846

4 Claims. (Cl. 260—467)

1. A process for preparing trinitratopentaerythrityl acrylate with comprises reacting together below 90° C. pentaerythrityl trinitrate, acrylic acid, a benzenesulfonyl chloride from the class consisting of benzenesulfonyl chloride, toluenesulfonyl chloride, xylenesulfonyl chloride, chlorobenzenesulfonyl chloride, and mixtures thereof; and a trialkylamine in which the alkyl groups contain not over five carbon atoms each and together have a total of six to fifteen carbon atoms in an inert polar organic solvent from the class consisting of acetonitrile, acetone, methyl ethyl ketone, dioxane, methylene chloride, chloroform, and ethylene chloride and treating the resulting reaction mixture with water.

3,409,659

**MONO AND BIS CYANOETHYLATED CYCLOPENTADIENE AND DIELS-ALDER ADDUCTS THEREOF**

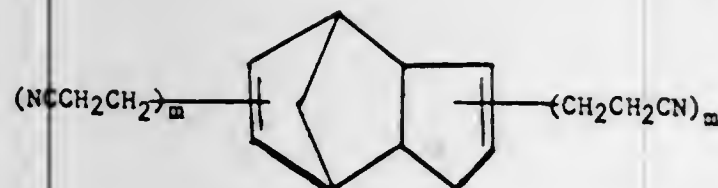
Roy L. Pruett, Charleston, W. Va., and Stephen Raines, Plymouth Meeting, Pa., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 29, 1966, Ser. No. 561,331  
5 Claims. (Cl. 260—464)

Mono(beta-cyanoethyl)cyclopentadiene, bis(beta-cyanoethyl)cyclopentadiene, and Diels-Alder adducts thereof of the formulas:



and



wherein  $n$  is one or two, and wherein each  $m$  individually is zero, one, or two, provided that at least one  $m$  is a number having a value of at least one, are prepared by reacting an excess of cyclopentadiene with acrylonitrile at low temperatures in the presence of a base catalyst. These compositions are useful as intermediates in the preparation of many compounds of known utility. For instance, the compositions can be hydrogenated to form primary amines useful as hardeners for epoxy resins and as curing agents for urethane polymers.

3,409,660

**BENZYL SULFONIUM SALTS**

William G. Lloyd, Dover, N.J., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 260,300, Feb. 21, 1963. This application Aug. 15, 1966, Ser. No. 572,178

8 Claims. (Cl. 260—470)

New benzyl sulfonium salts have been prepared which are active cationic surfactants, readily and irreversibly converted into an inert, hydrophobic residue by heating or drying.

3,409,661

**NUCLEAR POLYSUBSTITUTED [(2-NITRO-1-ALKENYL)-ARYLOXY]ALKANOIC ACIDS**

Everett M. Schultz, Ambler, and Edward J. Cragoe, Jr., Landsdale, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 30, 1965, Ser. No. 491,818  
16 Claims. (Cl. 260—471)

[(2-nitro-1-alkenyl)phenoxy] alkanolic acid products which are nuclear substituted by two or more halogen or alkyl moieties or by an hydrocarbylene chain containing from three to four carbon atoms between its points of attachment to the benzene ring; and the salt, ester and amide derivatives thereof. The products are diuretic and saluretic agents useful in the treatment of hypercholesterolemia.

The products are prepared by treating a nuclear formyl substituted phenoxyalkanoic acid with a primary amine followed by the reaction of the intermediate thus formed with a nitroalkane or with an aryl substituted nitroalkane and, if desired, hydrolyzing the esterified intermediate thus formed to the desired product.

3,409,662

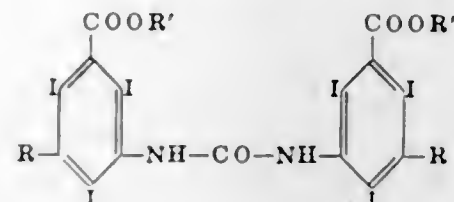
**3,3'-DIAMINO-5,5'-DICARBOXY-HEXAIDOCARBANILIDES AND DERIVATIVES**

Aubrey A. Larsen, Evansville, Ind., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application June 6, 1963, Ser. No. 285,865, now Patent No. 3,306,927, dated Feb. 28, 1967. Divided and this application June 21, 1966, Ser. No. 559,081

12 Claims. (Cl. 260—471)

1. A compound of the formula



wherein R is a member of the group consisting of amino, lower-alkanoylamino, lower-alkanoyl(lower-alkyl)amino and bis(lower-alkanoyl)amino; and R' is a member of the group consisting of hydrogen, lower-alkyl and phenyl-lower-alkyl.

3,409,663

**SALICYLIC ACID ESTERS OF HYDROXY-ALKYLCARBORANES**

Saiyid M. Naqvi, Dover, Martin J. Socha, Wayne, and Marvin M. Fein, Westfield, N.J., assignors to Thikol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Sept. 17, 1964, Ser. No. 397,292  
1 Claim. (Cl. 260—474)

1. A salicylic acid ester of monohydroxyalkylcarboranes and di-hydroxyalkylcarboranes, said alkyl groups having from 1-8 carbon atoms.

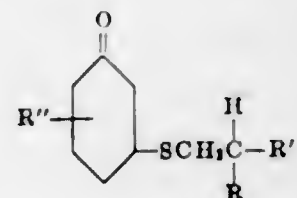
3,409,664

**FUNCTIONALLY-SUBSTITUTED ETHYL-MERCAPTOCYCLOHEXANONES**

Sheldon Chibnik, Plainfield, Harold M. Foster, Middlesex, Harold A. Kaufman, New Brunswick, and Laverne A. Gluck, Edison, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Dec. 20, 1965, Ser. No. 515,252  
5 Claims. (Cl. 260—488)

1. A compound having the formula:



wherein R is selected from the group consisting of hydrogen and alkoxy (C<sub>1</sub>-C<sub>6</sub>), R' is selected from the group consisting of alkoxy (C<sub>1</sub>-C<sub>6</sub>), halogen, and acetoxy, and R'' is selected from the group consisting of hydrogen, alkyl (C<sub>1</sub>-C<sub>6</sub>), and alkenyl (C<sub>2</sub>-C<sub>6</sub>).

3,409,665

**PRODUCTION OF ACRYLIC ACID**

Christopher John Brown, Walton-on-the-Hill, Tadworth, and Frank Christopher Newman, Great Bookham, England, assignors to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Filed Aug. 3, 1965, Ser. No. 477,010  
Claims priority, application Great Britain, Sept. 5, 1964, 36,490/64

7 Claims. (Cl. 260—530)

Process for producing acrylic acid in higher yield from a mixture of acrylic acid and acrolein wherein a catalytic oxidation process is used to convert the acrolein to acrylic acid, the improvement which involves subjecting the mixture of acrolein and acrylic acid to the oxidation process in an iron or iron alloy reactor, the surfaces of which coming in contact with said mixture have been rendered inert by chemical treatment.

3,409,666

**HYDROLYSIS OF AMINONITRILES**

Robert W. Foreman, Chagrin Falls, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 24, 1966, Ser. No. 522,379  
5 Claims. (Cl. 260—534)

1. The process for producing an amino acid salt comprising partially hydrolyzing a mixture of water and substantially equivalent amounts of an aminonitrile selected from the group consisting of nitrilotriacetone, ethylene diamine tetraacetone, diethylene triamine pentaacetone, methylamine diacetone, and ethyl amine diacetone and an alkali metal hydroxide at a temperature of from about 50 to 120° C. and then spray drying the mixture at a temperature of from 200 to 900° F.

3,409,667

**METHOD FOR SEPARATING MONOCHLOROCARBOXYLIC ACIDS FROM DICHLOROCARBOXYLIC ACIDS**

Robert E. Anderson, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 24, 1966, Ser. No. 522,370  
7 Claims. (Cl. 260—539)

1. A method of separating from aqueous solution a mixture of analogous monochloro- and dichlorocar-

boxylic acids having two to three carbon atoms which comprises

- (1) adding to said solution an acid separatory aid having an ionization constant or a first ionization constant intermediate those of the two chlorocarboxylic acids,
- (2) feeding said solution to a column of a weak base anion exchange resin which resin sorbs said chlorocarboxylic acids,
- (3) eluting said chlorocarboxylic acids with a strong mineral acid eluant in fractions, the earlier fractions of which are predominantly those of the monochlorocarboxylic acid and the later fractions of which are predominantly those of the dichlorocarboxylic acid and recovering product chlorocarboxylic acids therefrom.

3,409,668

**SUBSTITUTED ANTHRANILAMIDES AND PROCESS FOR THE PREPARATION THEREOF**

Giuseppe Palazzo and Bruno Silvestrini, both of Via Amelia 70, Rome, Italy

No Drawing. Filed May 17, 1965, Ser. No. 456,566  
Claims priority, application Italy, Nov. 7, 1964, 23,891/64

19 Claims. (Cl. 260—558)

Anthranilamides and salts thereof having therapeutic properties are provided, together with a process for their preparation.

3,409,669

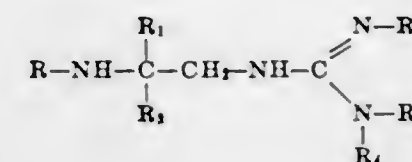
**2-(CYCLOHEXYLAMINO)-2-METHYL-PROPYL-GUANIDINE-1 AND THE SALTS AND HYDRATE THEREOF**

Wilfred James Cecil Dyke, Upton-by-Chester, England, assignor to Evans Medical Limited, Liverpool, England, a British company

No Drawing. Filed Nov. 23, 1964, Ser. No. 413,315  
Claims priority, application Great Britain, Dec. 13, 1963, 49,408/63

2 Claims. (Cl. 260—564)

The guanidine derivatives of the present invention are those which are encompassed by the following formula:



wherein R represents a cycloalkyl group of from 5 to 7 carbon atoms; R<sub>1</sub> and R<sub>2</sub> each represent an alkyl of from 1 to 4 carbon atoms and R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> each represent a hydrogen atom or an alkyl of from 1 to 4 carbon atoms. The invention also includes the hydrate forms and the physiologically acceptable acid addition salt forms of the respective compounds since it has been discovered that these forms also exhibit hypotensive activity.

3,409,670

**ACYLATION OF AROMATIC AMINES**

Earl A. Nielsen, Lombard, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Feb. 28, 1966, Ser. No. 530,358  
8 Claims. (Cl. 260—562)

Acylation of substituted aromatic amines in presence of hydriodic and hypophosphorous acids and certain salts thereof as color suppressants.



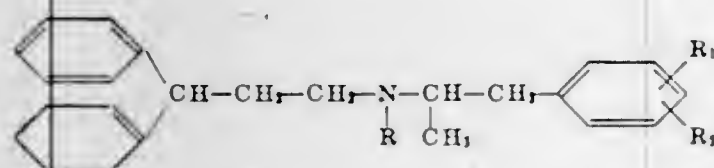
3,409,671

**3'-PHENYL-3'-CYCLOHEXYNYL-PROPYL AMINES AND SALTS THEREOF**

Gustav Ehrhart, Bad Soden, Taunus, Ernst Lindner, Frankfurt am Main, and Heinrich Ott, Eppstein, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany  
No Drawing. Filed May 13, 1966, Ser. No. 549,817  
Claims priority, application Germany, June 2, 1965, F 46,214

4 Claims. (Cl. 260—570.5)

Phenyl-cyclohexenyl-propylamines of the formula



wherein R is hydrogen or methyl and R<sub>1</sub> and R<sub>2</sub> are hydrogen or alkyl of up to four carbon atoms, as well as the acid addition salts thereof are useful as coronary dilators.

3,409,672

**1-PHENYL-2-DIALKYLAMINOALKYL-1,3-PROPANEDIOLS**

Donald L. Trepanier, Indianapolis, Ind., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Filed Sept. 28, 1966, Ser. No. 582,542  
5 Claims. (Cl. 260—570.6)

1-phenyl - 2-(dialkylaminoalkyl)-1,3-propanediols are prepared by the hydrolysis and hydrogenation of α-benzoyl-dialkylamino acid esters with lithium aluminum hydride. The compounds are useful as potentiators of epinephrine, spasmogen-blocking agents, sedatives and pesticides.

3,409,673

**PROCESS FOR PREPARING N,N,N',N'-TETRAKIS (HYDROXYALKYL)-BENZIDINES**

Elmer H. Dobratz, Pittsburgh, Pa., assignor to Kopper Company, Inc., a corporation of Delaware  
Filed Feb. 17, 1966, Ser. No. 528,121  
6 Claims. (Cl. 260—573)

A process for the production of N,N,N',N'-tetrakis-(hydroxyalkyl)benzidine where the alkyl groups contain 2-8 carbon atoms and comprises acidifying an aqueous mixture of phenyldialkanol amines, adding bromide to the acidified mixture at a temperature of about 5-25° C., adding a reducing agent to the mixture, and then, after filtration, basifying the filtrate to obtain N,N,N',N'-tetrakis(hydroxyalkyl)benzidine.

3,409,674

**PREPARATION OF α-DICARBONYL DERIVATIVES FROM β-KETOSULFOXIDES**

Theron L. Moore, Norfolk, Va., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio  
No Drawing. Filed Dec. 22, 1966, Ser. No. 603,738  
8 Claims. (Cl. 260—592)

A process for preparing α-dicarbonyl derivatives from β-ketosulfoxides by acidic rearrangement in an acid liquid medium containing a protic solvent, i.e., primary and secondary alcohols and water, wherein at least one equivalent of an oxidizing reagent is present per mole of β-ketosulfoxide raw material to minimize formation of undesirable sulfur containing compounds and to insure reaction equilibria favorable to product recovery.

3,409,675

**PARAFORMALDEHYDE DEPOLYMERIZATION SOLVENT MEDIA**

James D. Atwood, Kingsville, Tex., and Max L. Jacobs, Livermore, Colo., assignors to Celanese Corporation, a corporation of Delaware  
No Drawing. Filed Dec. 13, 1965, Ser. No. 513,591  
3 Claims. (Cl. 260—606)

Disclosed herein is a process for depolymerizing paraformaldehyde in the presence of organic compounds which act as heat transfer media. The novel heat transfer media of this invention, such as trimethylolpropanetri-pelargonate, can withstand temperatures of 200° C. and above without decomposing.

3,409,676

**PHENYLENEOXYALKANOL-SULFUR CONDENSATION PRODUCTS**

Bruce N. Wilson, Niagara Falls, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York  
No Drawing. Original application May 27, 1964, Ser. No. 370,705. Divided and this application Nov. 21, 1966, Ser. No. 601,727

4 Claims. (Cl. 260—609)

Condensation products are comprised of phenyleneoxy-alkanol radicals joined by sulfur-bearing radicals, which can be one or more connected sulfur atoms or a sulfur oxide radical such as a sulfoxide radical or a sulfone radical. The condensation products generally contain an average of 2 to 10 phenyleneoxyalkanol radicals, more usually an average of 2.5 to 7 phenyleneoxyalkanol radicals, and preferably an average of 2.5 to 4 phenyleneoxyalkanol radicals. The products have a hydroxyl number of about 30 to 500 and a viscosity in the range of 20 Gardner seconds at 50 degrees centigrade to 500 Gardner seconds at 120 degrees centigrade. The condensation products are useful in the preparation of polyurethane compositions by reaction with organic polyisocyanates. They are also useful in the preparation of unsaturated polyester resins, modified and unmodified alkyd resins, epoxy resins, and other polycondensation and polyaddition products. These products are useful in the preparation of foamed plastics, adhesives, binders, laminates, coatings, and potting compounds.

3,409,677

**POLYPHENYL ETHER TREATMENT**

Charles P. Duncker, Brentwood, and John F. Quinn, Kirkwood, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 300,635, Aug. 7, 1963. This application Jan. 16, 1967, Ser. No. 609,351

5 Claims. (Cl. 260—613)

This invention describes a process, for improving the oxidative stability of polyphenyl ethers subsequent to conventional manufacturing purification by contacting a polyphenyl ether with a macroreticular anion exchange resin. The present process also further improves conventionally purified polyphenyl ethers that have been subjected to contact with alumina or have stabilizers such as tetraphenyl tin added thereto.

3,409,678

**ALKYLATION OF PHENOLS**

Hans L. Schlichting, Grand Island, and Anthony D. Barbopoulos and Walter H. Prah, Buffalo, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York  
No Drawing. Filed Nov. 19, 1965, Ser. No. 508,822  
3 Claims. (Cl. 260—621)

Alkylated phenolic compounds are produced by passing in the vapor phase a mixture of an alkyl aryl ether, aryl having at least one reactive position, and a small

but effective amount of a hydrogen halide over an alumina catalyst, and separating the alkylation product from the reaction mixture. The process is highly selective to the ortho-position.

3,409,679

**FLUORINE-CONTAINING TRIOLS**

Hsien Ying Niu, Southgate, and Lester G. Lundsted, Grosse Ile, Mich., and Wilbert H. Urry, Chicago, Ill., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan  
No Drawing. Continuation-in-part of application Ser. No. 572,213, Aug. 15, 1966. This application Nov. 6, 1967, Ser. No. 680,963

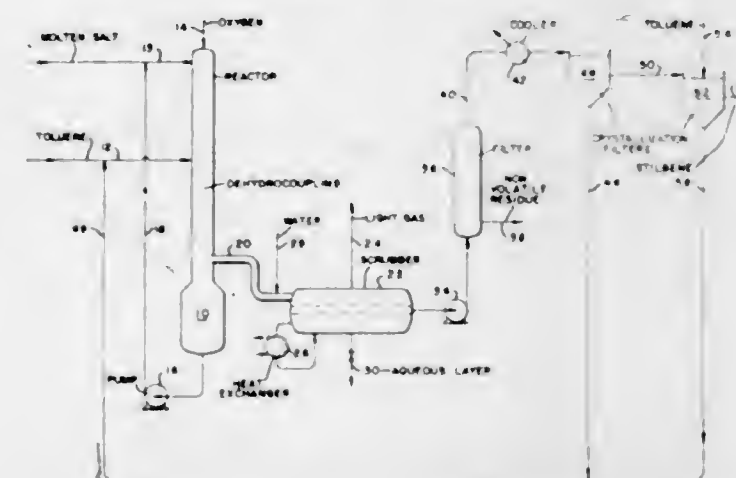
4 Claims. (Cl. 260—633)

Novel fluorine-containing triols may be prepared by the reaction of certain fluorine-containing ketones with isobutylene in a mole ratio of ketone to isobutylene of at least 3:1. The triols so prepared are useful intermediates in the preparation of flame-retardant polymers, have selective pesticidal activity, and may be oxyalkylated to yield surface active agents.

3,409,680

**PRODUCTION OF TRANS-STILBENE AND HALOGEN DERIVATIVES THEREOF**

Donald E. Hardesty and Herbert L. Benson, Jr., Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware  
Filed May 9, 1966, Ser. No. 548,734  
6 Claims. (Cl. 260—649)



Trans-stilbene is obtained as major product in iodine-toluene dehydrocoupling of toluene in the presence of molten metal iodide, by maintaining a controlled conversion in the range of 10 to 30% followed by crystallization of the trans-stilbene from the condensed reactor effluent.

3,409,681

**METHOD OF MAKING NOVEL BIMETALLIC HETEROGENEOUS CATALYSTS AND THEIR USE IN HYDROCARBON CONVERSIONS**

Wolfram R. Kroll, Linden, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware  
No Drawing. Filed May 21, 1965, Ser. No. 457,848  
25 Claims. (Cl. 260—666)

24. A process consisting essentially of heating a cyclic olefin in the liquid phase in the region of the boiling point of said compound in the presence of a catalyst precipitated by the reaction of at least one transition metal chelate selected from the group consisting of iron, cobalt, nickel and platinum with trimethylaluminum at a temperature in the range of -10° to +100° C. in the presence of an inert solvent, said transition metal and aluminum being in a molar ratio of 1:1 to 1:20 and recovering a reaction product comprising hydrocarbons more highly unsaturated and less highly unsaturated than said cyclic olefin.

3,409,682

**ISOMERIZATION OF SATURATED HYDROCARBONS**

Roy T. Mitsche, Island Lake, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware  
No Drawing. Filed Apr. 8, 1966, Ser. No. 541,077  
10 Claims. (Cl. 260—666)

A saturated hydrocarbon is isomerized utilizing a catalyst comprising at least one active catalytic component, preferably platinum, on an alumina support having dispersed therein less than about 20 weight percent of a finely divided crystalline aluminosilicate.

3,409,683

**STABILIZATION OF ALKYLIDENE-BICYCLOHEPTENES**

Samuel B. Britton, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York  
No Drawing. Filed June 7, 1967, Ser. No. 644,084  
9 Claims. (Cl. 260—666.5)

Alkylidenebicycloheptenes are stabilized against polymerization and gum formation during storage by the addition thereto of a minor amount of a dihydroxybenzene derivative, such as the catechols and hydroquinones. The preferred inhibitor is tertiary butylcatechol. The alkylidenebicycloheptenes are used in the production of ethylene/propylene/termonomer elastomers.

3,409,684

**PARTIAL HYDROGENATION OF AROMATIC COMPOUNDS**

Eugene Aristoff, Newtown Square, and Robert W. Rieve and Harold Shalit, Drexel Hill, Pa., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania  
No Drawing. Filed Dec. 27, 1965, Ser. No. 516,724  
8 Claims. (Cl. 260—667)

Process for the partial hydrogenation of aromatic compounds by contacting the compounds with hydrogen at elevated temperatures and pressures in the presence of a catalyst consisting of a metal hydrogenation component and a Friedel-Crafts metal halide-hydrogen halide component.

3,409,685

**XYLENE ISOMERIZATION PROCESS**

George R. Donaldson, Barrington, and Ernest L. Pollitzer, Hinsdale, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware  
No Drawing. Filed Apr. 8, 1966, Ser. No. 541,081  
10 Claims. (Cl. 260—668)

Isomerization of alkyl aromatic hydrocarbons in contact with a Group VIII metal catalyst on an alumina matrix containing finely divided crystalline aluminosilicate suspended therein and also in contact with about 0.001-2.0 weight percent of a sulfur-containing isomerization promoter.

3,409,686

**ISOMERIZATION OF ALKYL AROMATIC HYDROCARBONS USING A CRYSTALLINE ALUMINOSILICATE CATALYST**

Roy T. Mitsche, Island Lake, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 517,845, Dec. 30, 1965. This application Apr. 8, 1966, Ser. No. 541,128  
8 Claims. (Cl. 260—668)

Isomerizing an alkyl aromatic hydrocarbon by contacting the hydrocarbon, in admixture with H<sub>2</sub>, with a catalyst comprising at least one active catalyst component, preferably Pt, on an alumina support having dispersed therein less than about 20 weight percent of a finely divided crystalline aluminosilicate, under isomerizing conditions



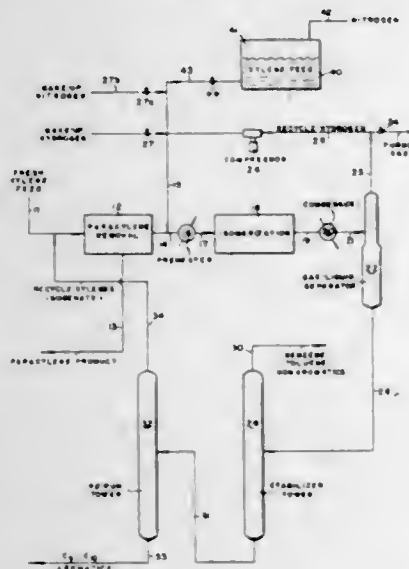
including a temperature of 0°–600° C., a pressure of 1–100 atmospheres, and a hydrogen to hydrocarbon mol ratio of 2:1 to 20:1.

3,409,687

## ISOMERIZING POLYMETHYLBENZENE

Edward F. Wadley and Robert D. Wesselhoff, Baytown, Tex., assignors to Esso Research and Engineering Company

Filed Dec. 7, 1967, Ser. No. 688,952  
10 Claims. (Cl. 260–668)



Polymethylbenzene is isomerized by contact under specific isomerization conditions with a silica-alumina molybdenum-containing catalyst, which has been pretreated with hydrogen under specific temperature and pressure conditions, in the presence of hydrogen and nitrogen.

3,409,688

## DEHYDROGENATION OF HYDROCARBONS WITH AN ARGON-TREATED IRON OXIDE-CONTAINING CATALYST

Bingham Y. K. Pan, Texas City, Tex., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Mar. 21, 1966, Ser. No. 535,710  
10 Claims. (Cl. 260–669)

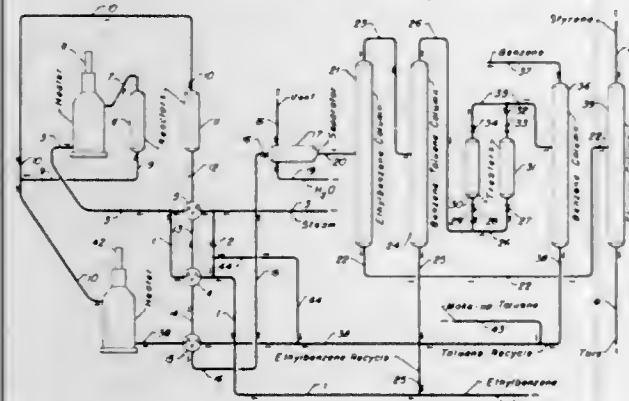
Process for the dehydrogenation of hydrocarbons in the vapor phase in the presence of a diluent at elevated temperatures with an alkali-metal-promoted iron oxide catalyst pretreated with argon at a temperature of at least 400° C. for a period of at least 10 hours.

3,409,689

## DEHYDROGENATION PROCESS

Dennis J. Ward, Lombard, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed May 23, 1966, Ser. No. 552,290  
18 Claims. (Cl. 260–669)



Catalytic dehydrogenation of an alkyl aromatic hydrocarbon in which the alkyl contains at least two carbon

atoms by commingling the alkyl aromatic hydrocarbon with steam and a methyl-substituted aromatic hydrocarbon, such as toluene, the mol ratio of alkyl aromatic hydrocarbon to methyl-substituted aromatic hydrocarbon being in the range of 0.5:1 to 10:1, and contracting the resulting steam-hydrocarbon mixture with a dehydrogenation catalyst at a temperature of 1050°–1300° F., and a pressure of atmospheric to 100 p.s.i.g.

3,409,690

## DEHYDROGENATION PROCESS

Norman A. Fishel, Lansing, Mich., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Oct. 10, 1966, Ser. No. 585,311  
9 Claims. (Cl. 260–673.5)

Cycloparaffinic hydrocarbons are dehydrogenated to aromatic hydrocarbons using a catalyst comprised of a refractory inorganic oxide containing at least one metal from Group VIII of the Periodic Table chemically combined with a metal subfluoride vapor.

3,409,691

## POROUS CATION EXCHANGE RESINS AS SELECTIVE SORBENTS IN ORGANIC SYSTEMS

Hamish Small, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 1, 1966, Ser. No. 523,920  
10 Claims. (Cl. 260–676)

Selective absorption of polar organic species from a nonaqueous liquid or gaseous mixture with a less polar species is obtained using a dry macroporous cation-exchange resin as a selective sorbent. The process is particularly suitable for removing small amounts of a polar impurity from an aliphatic hydrocarbon.

3,409,692

## PROCESS OF SEPARATING LIGANDS BY COMPLEXATION WITH SOLID ADSORBENTS OF GROUP I-B METAL SALTS

Robert B. Long, Atlantic Highlands, N.J., and Donald L. Baeder, Baytown, Tex., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Sept. 7, 1965, Ser. No. 485,574  
14 Claims. (Cl. 260–677)

Process for separating and recovering complexible ligands having heats of complexation no more than 8.0 kilocalories apart which comprises sequential displacement-complexation in a heat balanced process where the heat of complexation of the displacing ligand supplies the sorption heat for the displaced ligand.

3,409,693

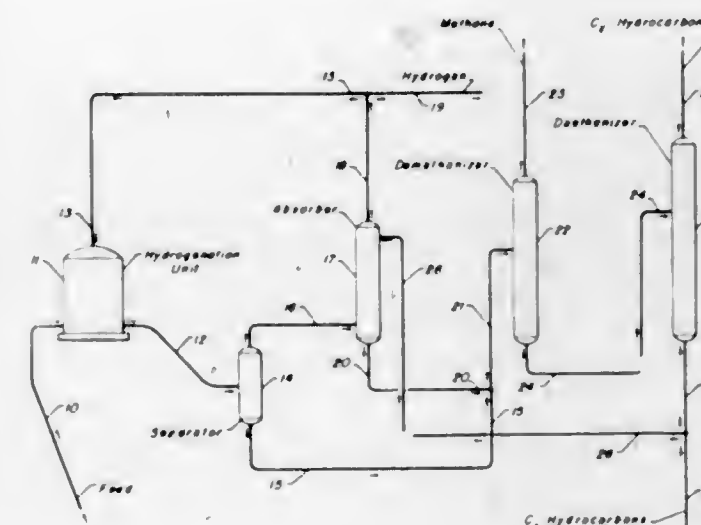
## PROCESS FOR SEPARATING THE COMPONENTS OF A GASEOUS MIXTURE

Robert E. McHarg, Arlington Heights, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Aug. 22, 1966, Ser. No. 573,893  
7 Claims. (Cl. 260–677)

Process for recovering relatively pure hydrogen contained in an acetylene-contaminated gaseous stream by treatment with hydrogen to remove the acetylene and then

passing the treated gas into an absorber system operating at a temperature of at least –90° F. Hydrogen of at least 75% purity is recovered from the absorber and recycled to the hydrotreater. Separate product streams of methane and ethylene are also recovered.



75% purity is recovered from the absorber and recycled to the hydrotreater. Separate product streams of methane and ethylene are also recovered.

3,409,694

## PROCESS FOR THE MANUFACTURE OF MONOVINYLAACETYLENE

Kurt Sennewald, Knapsack, near Cologne, Alexander Ohorodnik, Liblar, Werner Mittler, Frechen, Karl Kaiser, Bruhl, and Paul Stutzke, Walberberg, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

Filed Oct. 17, 1966, Ser. No. 587,201  
Claims priority, application Germany, Oct. 28, 1965, K 57,510

7 Claims. (Cl. 260–678)

Simultaneous introduction of acetylene and an inert organic normally liquid solvent for monovinylacetylene into a reaction zone containing a catalyst solution, continuous withdrawal of gaseous mixture containing monovinylacetylene reaction product from said reaction zone and recovery of said monovinylacetylene from withdrawn gaseous mixture.

3,409,695

## PROCESS AND APPARATUS FOR CRACKING HYDROCARBONS WITH AN ELECTRIC ARC

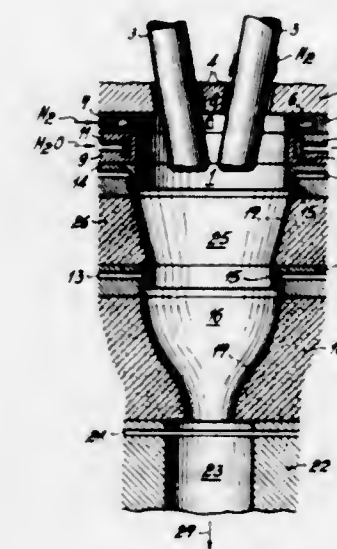
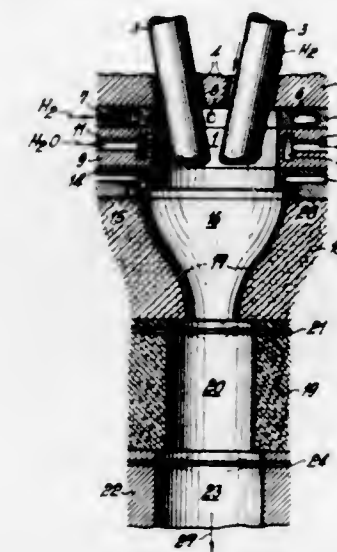
Kurt Sennewald, Knapsack, near Cologne, Ludwig Bender, Bruhl, near Cologne, Klaus Gehrmann, Knapsack, near Cologne, Erich Schallus, Cologne, Hans-Werner Stephan, Cologne-Klettenberg, and Lothar Strie, Knapsack, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

Filed Aug. 2, 1965, Ser. No. 476,422  
Claims priority, application Germany, Aug. 5, 1964, K 53,671

9 Claims. (Cl. 260–679)

Feed hydrocarbon, in vapor form, is injected near the inflow end of a reaction zone, co-currently to hot hydrogen, which travels therethrough. The reaction mixture travelling at a continuously increasing velocity through the reaction zone towards the discharge end. A further quantity of feed hydrocarbon is introduced near the inflow end of a post-reaction zone in vapor form transversely into the hot reaction mixture, and the reaction mixture or cracked product leaving the reaction zone is ultimately quenched in conventional manner.

Apparatus comprises in coaxial arrangement a conventional arc chamber, an axially symmetrical reaction chamber with the larger diameter thereof facing the arc cham-



ber and with the smaller diameter thereof facing a post-reaction chamber following the reaction chamber, and a quenching zone following the post-reaction chamber and serving to quench cracked product.

3,409,696

## DEHYDROGENATION CATALYSTS COMPRISING BISMUTH COMPOUNDS ON MACROPOROUS SUPPORTS

Harvey Minnis, Brian H. Oliver, and John Henry Rolston, Sarnia, Ontario, Canada, assignors to Polymer Corporation Limited, Sarnia, Ontario, Canada, a corporation of Canada

No Drawing. Filed May 13, 1965, Ser. No. 455,597  
Claims priority, application Canada, July 16, 1964, 907,350

12 Claims. (Cl. 260–680)

Dehydrogenation of hydrocarbons is effected in the presence of steam and a catalyst which comprises at least one bismuth compound supported on an inorganic phosphate of a Group II metal, the support having a macroporous structure.

3,409,697

## PROCESS FOR OXIDATIVE DEHYDROGENATION OF OLEFINS

James L. Callahan, Bedford Heights, Robert K. Grasselli, Garfield Heights, and Warren R. Knipple, Bedford, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of two applications, Ser. No. 311,630, Sept. 26, 1963, and Ser. No. 507,716, Nov. 15, 1965. This application Nov. 17, 1966, Ser. No. 594,984

2 Claims. (Cl. 260–680)

A monoolefin is converted to a diolefin by oxidative dehydrogenation in the vapor phase in the presence of oxygen and an antimony oxide-iron oxide catalyst pro-



moted by an oxide of bismuth, copper, tin, germanium, rhenium, niobium, silver, cerium, tellurium, manganese, gallium, lead, tantalum, palladium, cadmium, thorium, vanadium, nickel, titanium, zinc, barium, calcium, thallium, arsenic, or rhodium.

3,409,698

## OLEFIN PREPARATION

George E. Illingworth, Mount Prospect, and George W. Lester, Palatine, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware  
No Drawing. Filed June 24, 1966, Ser. No. 560,056  
9 Claims. (Cl. 260—682)

An unsaturated hydrocarbon is prepared by contacting a metaborate ester with boron oxide or anhydrous boric acid at a temperature of 150°–250° C.

3,409,699

## OLEFIN ISOMERIZATION PROCESS

Roy T. Mitsche, Island Lake, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware  
No Drawing. Filed Apr. 8, 1966, Ser. No. 541,080  
9 Claims. (Cl. 260—683.2)

An olefinic hydrocarbon is isomerized utilizing a catalyst comprising at least one active catalytic component, preferably platinum, on an alumina support have dispersed therein less than about 20 weight percent of a finely divided crystalline aluminosilicate.

3,409,700

## METHOD FOR DEHYDROGENATING AND CRACKING ALKANES AND OLEFINS

Charles R. Noddings, Midland, and Ronald G. Gates, Breckenridge, Mich., assignors to Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Continuation-in-part of applications Ser. No. 335,901 and Ser. No. 335,930, Jan. 6, 1964. This application Dec. 27, 1966, Ser. No. 604,623  
6 Claims. (Cl. 260—683)

This invention concerns catalytic materials which are coprecipitated zinc-nickel or nickel-zinc phosphate catalysts having respectively 6 to 12 atoms of zinc per atom of nickel and 6 to 12 atoms of nickel per atom of zinc, and a process employing these catalysts for the dehydrogenation and cracking of aliphatic hydrocarbons, primarily paraffins and olefins having three or more and preferably four carbon atoms in the carbon chain to form the corresponding unsaturated hydrocarbons, e.g., olefins and conjugated dienes, as well as the lower carbon chain compounds, such as the two and three carbon chain compounds.

3,409,701

## CATALYST AND METHOD FOR DEHYDROGENATING AND CRACKING ALKANES AND OLEFINS

Charles R. Noddings and Andrew J. Dietzler, Midland, and Ronald G. Gates, Breckenridge, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Continuation-in-part of applications Ser. No. 335,775, Ser. No. 335,784, Ser. No. 335,810, and Ser. No. 335,841, Jan. 6, 1964. This application Dec. 27, 1966, Ser. No. 604,661  
5 Claims. (Cl. 260—683)

This invention concerns new phosphate catalysts containing nickel or nickel and chromium and a process employing these catalysts for the dehydrogenation and/or cracking of aliphatic hydrocarbons, primarily paraffins and olefins, having three or more carbon atoms in the molecule. It pertains especially to novel catalysts prepared by precipitating nickel with a phosphate ion or coprecipitating chromium and nickel with phosphate ions, the lat-

ter coprecipitation being carried out to produce a material having from 6 to 12 atoms of chromium per atom of nickel on one hand or 6 to 12 atoms of nickel per atom of chromium on the other hand.

3,409,702

## CATALYTIC OLEFIN ISOMERIZATION PROCESS

Larry Plonsker, Troy, and John M. McEuen, Ann Arbor, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia  
No Drawing. Continuation-in-part of application Ser. No. 422,520, Dec. 31, 1964. This application Sept. 21, 1967, Ser. No. 669,369  
2 Claims. (Cl. 260—683.2)

A process is described for isomerizing  $\alpha$ -olefins to  $\beta$ -olefins using, as the catalyst, mixtures of Group VIII metals on an inert support. The isomerization is carried out at elevated temperatures;  $\alpha$ -olefins having from 4 to 24 carbon atoms are effectively isomerized. Useful Group VIII metals are rhodium, palladium, ruthenium and platinum; charcoal is an example of a useful carrier.

3,409,703

## PROCESS FOR PREPARING OLEFIN HYDROCARBONS FOR DETERGENT USE

Robert M. Engelbrecht, St. Louis, Raymond A. Franz, Kirkwood, Richard N. Moore, St. Louis, James M. Schuck, Webster Groves, and Robert G. Schultz, Vinita Park, Mo., assignors to Monsanto Company, a corporation of Delaware  
No Drawing. Filed Nov. 26, 1963, Ser. No. 326,197  
9 Claims. (Cl. 260—683.15)

1. A process for the preparation of olefin hydrocarbons suitable for the preparation of alkyl aromatic compounds susceptible to biological decomposition which comprises subjecting in a first polymerization zone normally gaseous mono-olefin hydrocarbons to temperatures of from approximately 250° C. to the cracking temperature of the hydrocarbon in the feed and pressures of greater than 200 p.s.i.g. in a thermal reaction zone and in the presence of a modifying agent which under the conditions of the thermal reaction zone will form a compound selected from the group consisting of hydrogen chloride, hydrogen bromide, hydrogen iodide, hydrogen sulfide and combination thereof, said modifying agent as a hydrogen halide or hydrogen sulfide being present in the amount of approximately 1:10 to 1:500 moles of the modifying agent per mole of mono-olefin hydrocarbon in the feed, thereby forming a polymer fraction, separating said polymer fraction to obtain a fraction comprised of relatively linear dimers of the normally gaseous mono-olefin hydrocarbons, said dimers having 4 to 8 carbon atoms, contacting said relatively linear dimer fraction in a second polymerization zone at a temperature of 0 to 250° C. and a pressure of atmospheric to 2,500 p.s.i.g., with an activated carbon supported cobalt oxide catalyst activated in an inert atmosphere at a temperature of 400 to 575° C. to form a second polymer fraction, said cobalt oxide catalyst containing approximately 2 to 50% by weight of cobalt as an oxide, separating said polymer fraction to obtain a fraction comprised of relatively linear mono-olefin dimers of olefin hydrocarbons in the feed to the second polymer fraction, said dimers being of 8 to 16 carbon atoms.

3,409,704

## POLYCARBONATE COMPOSITIONS

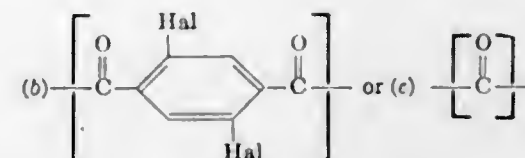
John V. Bailey, New Martinsville, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware  
No Drawing. Filed Oct. 16, 1964, Ser. No. 404,488  
5 Claims. (Cl. 260—860)

Polycarbonate polymers suitable for preparing haze-free film at great thicknesses and having a molecular

weight of at least about 20,000 and the generic formula  $R'(T-G)_nOR'$  wherein T is



and G is



wherein (b) is present in the molecule in an amount of from about 1 to about 25 mol percent based on (a), and (c) is present in the molecule in an amount of from about 99 to about 75 mol percent based on (a), and wherein R is either phenylene, halo-substituted phenylene or alkyl substituted phenylene; X and Y are either hydrogen and/or hydrocarbon radicals free from aliphatic unsaturation and having a maximum of about 12 carbon atoms, but preferably consisting of 1 carbon atom each; Hal is chlorine and/or bromine; R' is either hydrogen,

3,409,705

## PROCESS FOR PREPARING BIPHASE PLASTICS

Donald J. Shields and James M. Hawkins, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
No Drawing. Filed Dec. 4, 1963, Ser. No. 328,057  
3 Claims. (Cl. 260—880)

Biphase plastics are disclosed having a desirable combination of properties including toughness and melt flow. The continuous phase resin should have an inherent viscosity of about 0.5 to 0.7 and the degree of graft should be greater than 12%. A process is described for preparing such biphase plastics by polymerizing at least one ethylenically unsaturated monomer with a rubber suspension employing a catalyst comprising thioglycolic acid and a peroxygen compound. The examples disclose polymerizing styrene and acrylonitrile with polybutadiene using hydrogen peroxide and thioglycolic acid.

3,409,706

## THERMOSTABLE, CHLORINE-CONTAINING PLASTICS MIXTURES

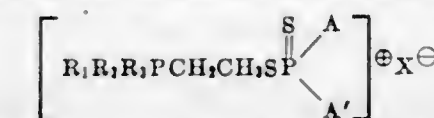
Hans-Helmut Frey and Richard Huth, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany  
No Drawing. Continuation-in-part of application Ser. No. 219,127, Aug. 24, 1962. This application Dec. 28, 1966, Ser. No. 605,164  
6 Claims. (Cl. 260—897)

Thermostable, chlorine-containing plastics mixtures consisting of compatible blends of (I) a chlorinated homopolymer of ethylene or a copolymer of ethylene with a minor amount of an alpha mono-olefin having 3–4 carbon atoms, the chlorinated homo- or co-polymer containing 68–75% by weight of chlorine, and (II) a chlorinated homopolymer of ethylene or a copolymer of ethylene with a minor amount of an olefin having 3–4 carbon atoms, said chlorinated homo- or co-polymer containing 25–50% by weight of chlorine, are disclosed.

3,409,707

DI THIO PHOSPHORUS PHOSPHONIUM SALTS  
Martin Grayson, Norwalk, Patricia Tarpey Keough, Ridgefield, and Michael McKay Rahut, Norwalk, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine  
No Drawing. Application Feb. 12, 1964, Ser. No. 344,224, now Patent No. 3,299,143, dated Jan. 17, 1967, which is a continuation of application Ser. No. 256,124, Feb. 4, 1963. Divided and this application Oct. 30, 1964, Ser. No. 407,873  
4 Claims. (Cl. 260—931)

Phosphonium salt derivatives of the formula



wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, A, A' and X are as hereinafter defined. The compounds are useful as fire retardants in plastics.

3,409,708

## METHOD OF MAKING SOLID PROPELLANT EXPLOSIVE

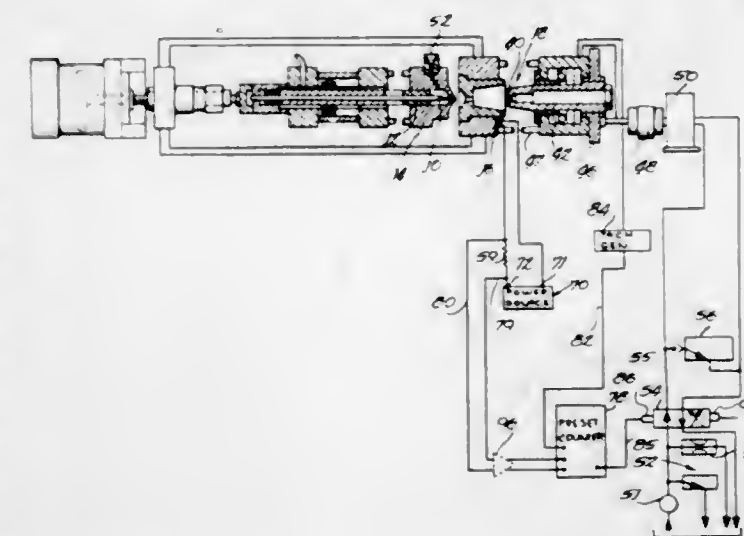
David Pelton Moore, Marlow, N.H.  
(9210 Flower Ave., Silver Spring, Md. 20901)  
No Drawing. Continuation-in-part of application Ser. No. 603,412, Dec. 21, 1966. This application Nov. 21, 1967, Ser. No. 684,634  
2 Claims. (Cl. 264—3)

This is a solid propellant explosive in which the binder is composed of a natural or synthetic rubber and starch, and in which the mass after being stirred to thoroughly combine the two, is heated to 75–85° C., preferably 80° C., to swell the starch and permit the same to be in shape to receive the oxidant, selected from the group of alkali salts consisting of ammonium nitrate, ammonium chlorate, ammonium perchlorate, potassium nitrate, potassium chlorate, potassium perchlorate, sodium nitrate, sodium chlorate and sodium perchlorate, or any combinations thereof to make a solid propellant as well as a substitute for dynamite and TNT.

3,409,709

## FILL POINT DETERMINATION

Kenneth J. Cleermain, Midland, Walter J. Schrenk, Bay City, and Paul C. Woodland, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
Filed July 23, 1964, Ser. No. 384,664  
16 Claims. (Cl. 264—40)



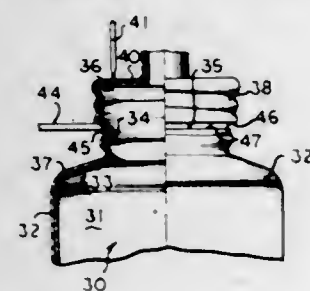
According to the method of the present invention, a thermoplastic article having rotational symmetry with a high multi-direction orientation for high strength in all directions is injected molded by injecting molten thermoplastic into a closed mold with a cavity which defines the



article while applying a rotation force, by means of a hydraulic motor, to one element of the closed mold. A sensing device in the form of an electrode or a thermistor within the mold cavity detects when the mold cavity is filled and generates a signal which is used to activate control means that count the number of revolutions of the rotated elements of the mold. The control means, in turn, generate a signal after a predetermined number of revolutions of the rotated element, which signal is used to operate a valve which controls the fluid flow to the hydraulic motor, to terminate the rotation force. The mold is then opened and the article removed.

### 3,409,710 METHOD OF MOLDING DUAL WALL CONTAINER AND CLOSURE

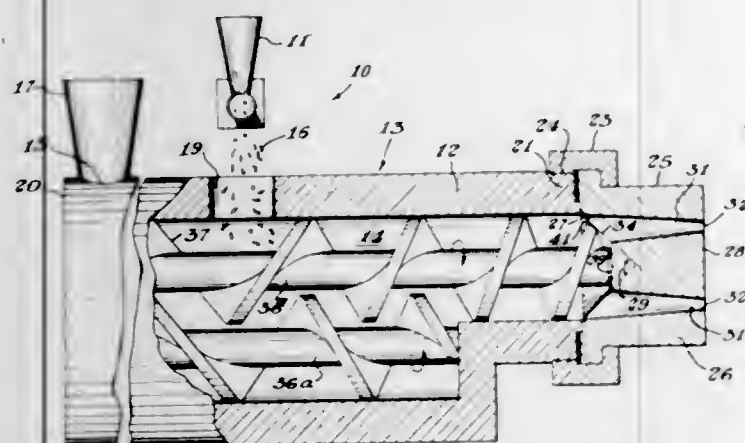
Mindaugas J. Klygis, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York  
Filed Jan. 19, 1965, Ser. No. 426,558  
9 Claims. (Cl. 264-98)



1. A method of producing a multi-wall container comprising the steps of forming at least a pair of coaxial telescopic tubular members, contouring a portion of one of the members to form a closure portion and simultaneously contouring a portion of the other of the members to form a complementary contoured neck portion in generally telescopic relationship with said closure portion, simultaneously forming complementary locking portions in each of the closure and neck portions during the contouring thereof, and removing the closure portion from the remainder of the one member whereby the closure portion is adapted for reapplication upon the neck portion of the other member by the respective disengagement and re-engagement of the locking portions.

### 3,409,711 METHOD AND APPARATUS FOR THE PREPARATION OF FILAMENT REINFORCED SYNTHETIC RESINOUS MATERIAL

Joseph Pashak, Midland, and Walter A. Trumbull, Sanford, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
Filed Nov. 1, 1965, Ser. No. 505,872  
6 Claims. (Cl. 264-143)

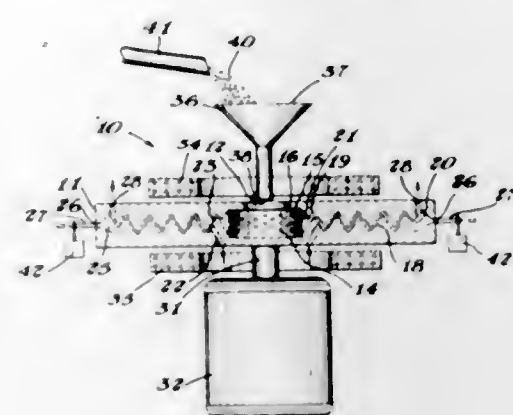


Glass fibers are mixed with a plastic in a twin screw extruder by adding glass fibers through the volatile port. Strands are extruded and cut into particles. Smooth

strands are obtained by extrusion through inwardly tapering die openings and maintaining the terminal portion of the screw within from 0.002 inch to 0.005 inch of the back of the die.

### 3,409,712 METHOD OF DEVOLATILIZATION OF SYNTHETIC RESINOUS THERMOPLASTIC MATERIALS

Douglas S. Chisholm, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
Filed July 22, 1966, Ser. No. 567,167  
8 Claims. (Cl. 264-176)

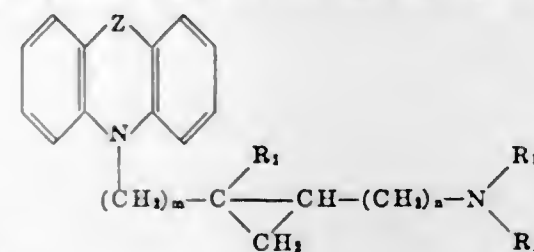


1. A method for devolatilization of synthetic resinous thermoplastic materials, the steps of the method comprising confining a mass of a synthetic resinous thermoplastic material volatile materials therein within a perforate configuration, rotating the configuration at a speed sufficient to cause heat plastified synthetic resinous material to be passed outwardly from the configuration, heating the resinous material to a temperature sufficient to heat plastify the material, spreading heat plastified resinous material by means of centrifugal force into a film, passing a gas over an exposed surface of the film, deforming the film under the influence of centrifugal force into a desired configuration, and subsequently cooling the resinous material below its thermoplastic temperature.

### 3,409,713 PHENOTHIAZINYL AMINOCYCLOPROPANES

Carl Kaiser, Haddon Heights, N.J., and Charles L. Zirkle, Berwyn, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania  
No Drawing. Filed May 8, 1964, Ser. No. 366,148  
11 Claims. (Cl. 260-243)

1. A chemical compound selected from the group consisting of a free base and a salt thereof with a pharmaceutically acceptable acid, said free base having the formula:



in which:

Z is a member selected from the group consisting of S, SO and SO<sub>2</sub>;

Y is a member selected from the group consisting of hydrogen, chlorine, trifluoromethyl, methyl, methoxy and methylthio;

m and n each represent a positive integer of from 0 to 1; R<sub>1</sub> and R<sub>2</sub> are members selected from the group consisting of, when taken individually, hydrogen and lower alkyl of from 1 to 3 carbon atoms, and when taken together with the nitrogen atom to which they are attached, a pyrrolidine, piperidine, N'-methylpiperazine, N'-(β-hydroxyethyl)-piperazine and N'-(β-acetoxyethyl)-piperazine ring; and R<sub>3</sub> is a member selected from the group consisting of hydrogen and methyl.

### 3,409,716 METHOD OF MOLDING SHAPED REFRACTORY BODIES HAVING AN ATTACHED SPACER OF NON-METALLIC SHEET MATERIAL

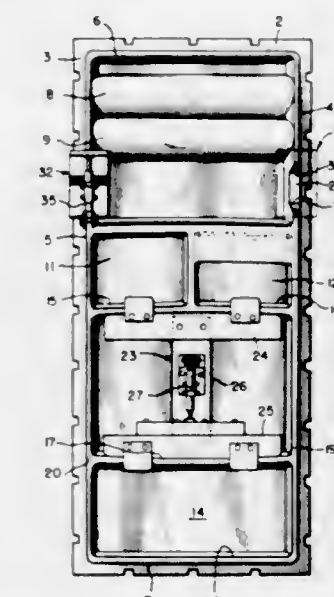
Josef Lubey, Leoben, Styria, Austria, assignor to Veitscher Magnesitwerke-Actien-Gesellschaft, a corporation of Austria  
Filed July 6, 1966, Ser. No. 563,244  
Claims priority, application Austria, July 8, 1965, A 6,191/65  
5 Claims. (Cl. 264-267)



An expendable spacer cover is co-molded with a refractory brick by placing the cover in a recess in the mold wall during molding, the molding pressure being exerted only over the cross section of the molding cavity while the cover is protected against buckling pressure in the recess.

### 3,409,717 PROCESS FOR IMPROVING RESISTANCE OF THERMOPLASTIC MATERIALS TO ENVIRONMENTAL STRESS-INDUCED CRAZING, AND PRODUCT PRODUCED THEREBY

Michio B. Nozaki, La Grange, Ill., assignor to General Electric Company, a corporation of New York  
Filed Nov. 12, 1965, Ser. No. 507,481  
3 Claims. (Cl. 264-291)



1. A process improving the environmental stress resistance of a refrigerator door liner of thermoplastic material which has been vacuum formed from a flat sheet into a desired shape including at least one shelf, said process comprising the steps of:

(a) loading said shelf to provide a tensile stress at the edges thereof sufficient to strain the material beyond its upper yield point by cold-working thereby to effect substantial permanent elongation of the material at the edges, and

### 3,409,714 FUEL TANK

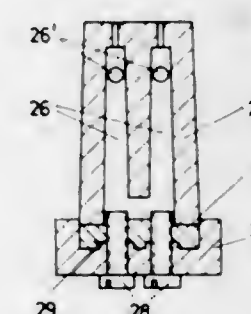
Michael Strugar, Jr., Cuyahoga Falls, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York  
Filed Aug. 9, 1966, Ser. No. 571,242  
6 Claims. (Cl. 264-242)



A fuel tank for a motor vehicle comprising an outer rigid closed container having an inner flexible, collapsible container that is impervious to liquid fuels with such outer container having an opening to atmosphere to facilitate collapse of the inner container upon withdrawal of liquid fuels from such inner container as well as accommodate the refilling of the inner container.

### 3,409,715 METHOD OF CASTING WORKPIECES FROM CASTING RESIN

Leonid Schomann, Wuppertal-Barmen, Germany, assignor of one-half interest to Alfred Eckerfeld, Langenberg/Rhineland, Bokenbusch, Germany  
Filed Oct. 21, 1965, Ser. No. 499,297  
Claims priority, application Germany, Dec. 30, 1964, E 28,444  
1 Claim. (Cl. 264-250)



A method of forming a closed body for an electric water heater having an elongated circuitous passageway wherein a core corresponding in configuration to the passageway is positioned in a first female mold and supported by pins projecting from the sides and bottom of the mold. Epoxy resin is poured into the mold and around the core until it overflows. The resin is cured and the resultant work part is removed from the female mold having an open channel recess formed from the core part and transverse openings formed from the pins. The open channel recess is subsequently closed by inverting the workpart into a shallow second female mold that has been filled with uncured epoxy resin. The resin is cured and the closed body is removed.



- (b) unloading said shelf to relieve said externally caused tensile stress, whereby the edges of said shelf are permanently subjected to substantial compressive stress.

3,409,718

# **METHODS OF REPELLING BIRDS WITH THE RESINOUS AMINATION PRODUCT OF CROTONALDEHYDE AND DIETHYLAMINE**

Andrew J. Reinert, Kenneth E. Cantrel, and Harold R. Deck, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware  
No Drawing. Filed Nov. 29, 1965, Ser. No. 510,401  
5 Claims. (Cl. 424-82)

This invention is concerned with repelling birds with the resinous amination product of crotonaldehyde and diethylamine.

3,409,719

# **DEBRIDEMENT AGENT**

Alfonso F. Noe, Staten Island, N.Y., and Edward J. Beckhorn, Westfield, N.J., assignors to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 445,229, Apr. 2, 1965, which is a continuation-in-part of application Ser. No. 159,748, Dec. 15, 1961. This application May 23, 1967, Ser. No. 640,493  
4 Claims. (Cl. 424-94)

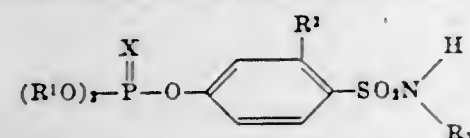
A bacterial enzyme product elaborated by the growth of *Bacillus subtilis* ATCC 6051a, in admixture with a pharmaceutical diluent and useful for the debridement of necrotic tissue.

3,409,720

# **PHOSPHORIC ACID ESTER COMPOSITIONS FOR CONTROLLING ANIMAL PARASITES AND METHODS OF USING THE SAME**

Milton W. Bullock, Hopewell, and George H. Rohrbacher, Jr., Princeton Junction, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine  
No Drawing. Filed Feb. 11, 1963, Ser. No. 257,746  
The portion of the term of the patent subsequent to Mar. 8, 1982, has been disclaimed  
15 Claims. (Cl. 424-211)

1. A composition of matter for controlling parasites attacking warm-blooded animals which comprises as the essential active ingredient about 0.05 to about 500 mg. per kg. of body weight of a compound of the formula:



wherein  $R^1$  and  $R^3$  are lower alkyl, X is a member selected from the group consisting of sulfur and oxygen and  $R^2$  is a member of the group consisting of hydrogen and lower alkyl, and a non-toxic carrier therefor.

3,409,721

# **ORAL DOSAGE SYSTEM EFFECTIVE TO CONTROL THE REPRODUCTION CYCLE**

Norman Applezweig, New York, N.Y., assignor to Neomed Laboratories, Inc., New York, N.Y., a corporation of New York  
Continuation-in part of application Ser. No. 296,888, July 18, 1963, which is a continuation-in-part of application Ser. No. 110,927, May 18, 1961. This application Sept. 15, 1967, Ser. No. 671,917  
9 Claims. (Cl. 424-239)

A method of administering drugs related to the menstrual cycle of a woman and a system for unalterably achieving a prescribed regimen related to the ovarian or menstrual cycle comprises a package containing successively available unit doses, doses 1 to 4 being placebos, doses 5 to 19 containing an estrogen and doses 20 to 24 containing an estrogen and/or a progestogen. Other unit

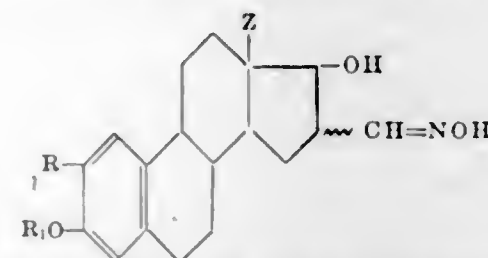
dose combinations of estrogen and progestogens as well as systems with increased numbers of unit doses are provided.

3,409,722

# **NOVEL 16-OXIMIDOMETHYLENE-GONANES**

Daniel Bertin, Montrouge, and Lucien Nedelec, Clichy-sous-Bois, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France  
No Drawing. Filed May 9, 1966, Ser. No. 548,414  
Claims priority, application France, May 14, 1965, 17,103; Aug. 11, 1965, 28,020  
13 Claims. (Cl. 424-243)

1. A 16 $\beta$ -oximidomethylene steroid of the formula



wherein  $R_1$  is selected from the group consisting of hydrogen and lower alkyl of 1 to 7 carbon atoms, R is selected from the group consisting of hydrogen and halogen and Z is alkyl of 1 to 4 carbon atoms.

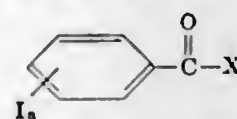
9. A method of treating hypercholesterolemia in mammals which comprises administering to the mammals an effective amount of at least one 16 $\beta$ -oximidomethylene steroid of claim 1.

3,409,723

# **CONTROLLING FUNGI WITH IODOBENZOYL HALIDES**

John S. Adams, Jr., Centerville, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware  
No Drawing. Filed Dec. 21, 1965, Ser. No. 515,463  
4 Claims. (Cl. 424-315)

1. The method of killing fungi or inhibiting the germination of fungi spores which comprises exposing the fungi to an effective quantity of an iodobenzoyl halide



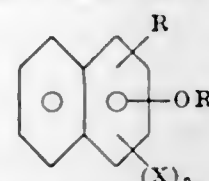
wherein X is halogen with atomic weight greater than 30 and n is an integer of from 1 to 5.

3,409,724

# **METHOD OF CONTROLLING MILDEW WITH NAPHTHYL PHENYLSULFIDES**

Philip S. Magee, San Rafael, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware  
No Drawing. Filed May 19, 1966, Ser. No. 551,229  
6 Claims. (Cl. 424-337)

A method for controlling mildew disease comprising applying compounds of the formula



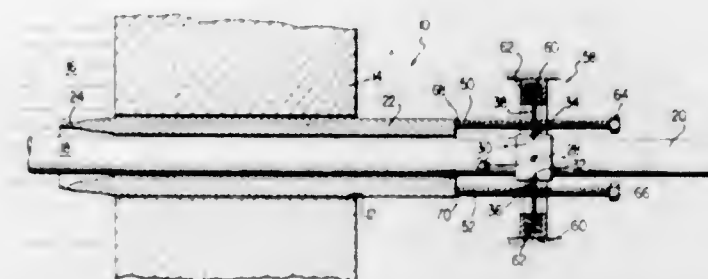
wherein R is a p-halophenylthio group in which the halogen is of atomic number 17 to 35, R' is hydrogen or aliphatic hydrocarbyl having 1 to about 6 carbon atoms, n is an integer from 0 to 2 and X is an electronegative radical. The group OR' is in the 1 or 2 position of the naphthalene nucleus. R is in the 1 position when OR' is in the 2 position and in the 4 position when OR' is in the 1 position.

## **ELECTRICAL**

3,409,725

# **FURNACE ELECTRODE ASSEMBLY**

Harvey Larry Penberthy, 5624 SW. Admiral Way, Seattle, Wash. 98116  
Filed Apr. 20, 1965, Ser. No. 449,590  
14 Claims. (Cl. 13-6)

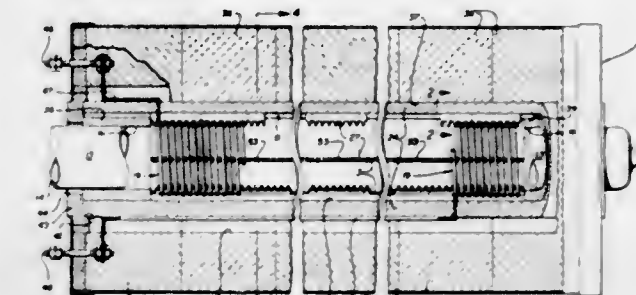


An electrode assembly has a consumable electrode extending through an aperture in the wall of a glass furnace. A sleeve encompasses the electrode and is formed of a material having a higher electrical resistivity than the material forming the furnace wall. The sleeve shields the adjacent furnace wall to prevent corrosion and the formation of cracks therein. The sleeve is mounted for sliding movement into the furnace either concurrently with or relative to the electrode to maintain an electrical shield about the electrode as the inner ends of the sleeve and electrode are consumed in the furnace.

3,409,727

# **DIFFUSION FURNACE**

Gordon P. Hampton, Sunnyvale, Calif., assignor to Electroglas Inc., Menlo Park, Calif., a corporation of California  
Filed June 21, 1967, Ser. No. 647,826  
12 Claims. (Cl. 13-20)

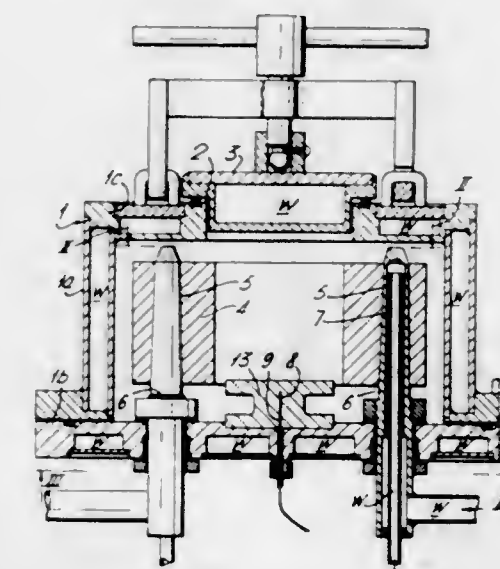


Diffusion furnace having a substantially hollow processing member with a processing zone therein with a helical heating element surrounding the processing member. Means is provided for supporting the heating element which includes a tube and a plurality of circumferentially spaced comb-like members carried by the tube and having teeth which are disposed between the loops of the helical heating element to support the heating element within the tube.

3,409,728

# **ELECTRICAL RESISTANCE FURNACES**

Thomas Arthur John Jaques, Radipole, England, assignor to United Kingdom Atomic Energy Authority, London, England  
Filed Dec. 28, 1966, Ser. No. 605,449  
Claims priority, application Great Britain, Mar. 18, 1966, 12,010/66  
4 Claims. (Cl. 13-25)

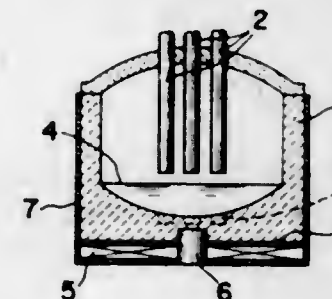


An electrical resistance heating element for a furnace is a tube of graphite or similar material supported by at least two tapering electrode pins which enter correspondingly tapered holes in the tube wall. The tube wall can be formed with longitudinal slots which lie within the wall thickness between the holes so that the current path between the electrodes lies through axially extending webs coextensive with the heated length of the tube.

3,409,726

# **DEVICE FOR STIRRING MOLTEN METAL IN AN ELECTRIC FURNACE**

Jiro Matsumoto, Odawara, Sendai, and Arimichi Abe, Naga-machi, Sendai, Japan, assignors to Tohoku Special Steel Works Limited, Naga-machi, Sendai, Japan  
Filed July 9, 1965, Ser. No. 470,683  
Claims priority, application Japan, Mar. 23, 1965, 40/16,480  
5 Claims. (Cl. 13-11)



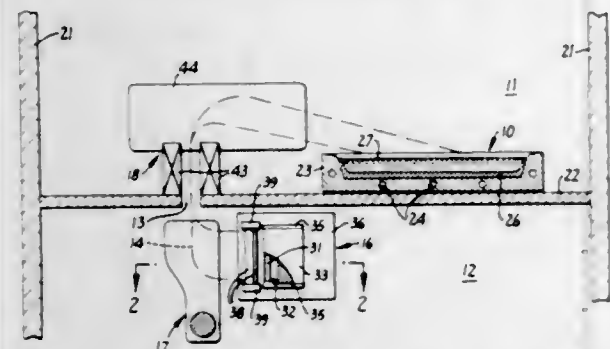
This device for stirring molten metal in an electric furnace has at least one electrode in the furnace to be at the upper surface of the molten metal, and at least one other electrode at the bottom of the furnace for feeding direct currents through the molten metal between the electrodes by connecting the electrodes respectively to D.C. electric power of opposite polarity. A D.C. electromagnet and magnetic material, or two or more D.C. electromagnets of opposite polarity, are mounted respectively at the central portion of the bottom of the furnace and at the side wall of the furnace for producing radial magnetic lines of force through the molten metal between them when the electromagnet, or electromagnets, are excited.



3,409,729

**ELECTRON BEAM FURNACE AND METHOD FOR HEATING A TARGET THEREIN**

Charles W. Hanks and Charles d'A. Hunt, Orinda, Calif., assignors, by mesne assignments, to Air Reduction Company, Incorporated, a corporation of New York  
Filed Dec. 16, 1966, Ser. No. 602,316  
9 Claims. (Cl. 13—31)

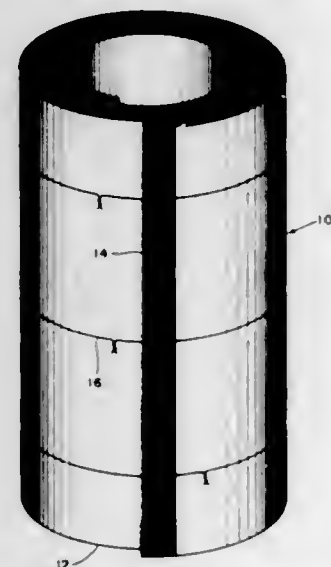


1. A method for heating a target in an electron beam furnace having a first vacuum chamber for containing the target, a second vacuum chamber adjacent said first vacuum chamber, and an opening communicating between the first and second vacuum chambers, said method comprising producing an electron beam in the second vacuum chamber at a position offset from said opening, deflecting and focusing the beam of electrons in the second vacuum chamber so as to cause said beam to pass through the opening and into the first vacuum chamber, and deflecting and focusing the beam of electrons in the first vacuum chamber so as to direct the electron beam against the target.

3,409,730

**THERMAL RADIATION SHIELDING**

Ben T. Ebihara, Strongsville, Ohio, assignor to the United States of America as represented by the Administrator of National Aeronautics and Space Administration  
Filed June 17, 1966, Ser. No. 535,349  
7 Claims. (Cl. 13—35)



Spaced radiation barriers of refractory metal foil encircle an induction furnace. A mat of refractory metal fibers maintain the spacing between these radiation barriers.

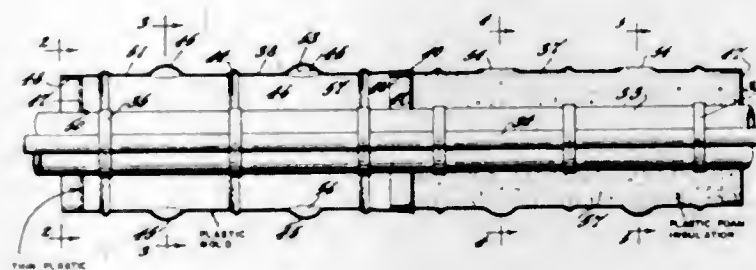
3,409,731

**FORCE-COOLED CABLE SYSTEM**

Lester H. Fink, R.F.D. 1, Doylestown, Pa. 18901, and Frank Kahn, 1865 Edmund Road, Abington, Pa. 19001, and Clement S. Schifreen, Philadelphia, Pa.; Rita F. Schifreen, executrix, of Clement S. Schifreen, deceased, assignor to Rita F. Schifreen  
Filed Mar. 18, 1966, Ser. No. 535,569  
23 Claims. (Cl. 174—15)

A pipe-type electric cable for earth burial is provided having two metallic coolant pipes secured laterally oppo-

site and tangentially to the outside of the cable pipe and making thermally conductive contact therewith. The coolant flows in opposite directions in the coolant pipes which are cross-connected and refrigerated in the manholes at the ends of cable sections. A tubular envelope of thin pliable plastic material, providing a concentric mold space of substantial thickness is applied with appropriate spacers in telescoping short sections about the cable pipes. Rigid

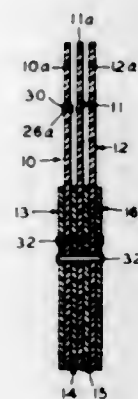


unicellular polyurethane insulation providing both thermal insulation and corrosion protection is foamed into each of the envelope sections through suitable fill openings. In another form of the pipe cable, heat removed from the coolant pipes at the manholes is rejected to earth coolant circulated through another set of coolant pipes buried in the earth external to and along the insulated cable pipe.

3,409,732

**STACKED PRINTED CIRCUIT BOARD**

Victor F. Dahlgren, Chelmsford, Mass., Sidney K. Tally, Nashua, and Thomas H. Stearns, Amherst, N.H., assignors to Electro-Mechanisms, Inc., Methuen, Mass., a corporation of New Hampshire  
Filed Apr. 7, 1966, Ser. No. 540,896  
4 Claims. (Cl. 174—68.5)



As described herein, a rigid stacked printed circuit board comprises a plurality of conductors and one or more flexible printed circuit cables united with the circuit board and extending from its periphery. The extended portions of the flexible cables contain terminals in which components may be placed and to which connections can be made. Further provided within the main portion of the board are a plurality of terminals which extend through the flexible cables and the circuit board and which connect selected conductors in the circuit board to the conductors in the flexible cables.

3,409,733

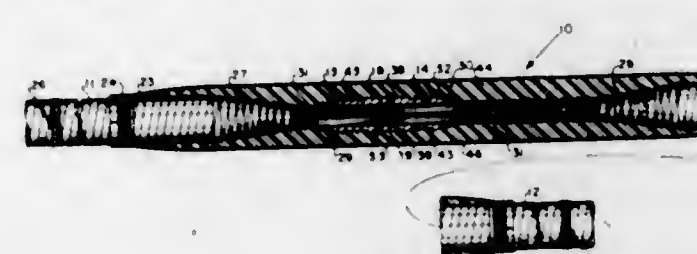
**CABLE SPLICE AND METHOD**

Joseph B. O'Mara, Hastings On Hudson, N.Y., assignor to Anaconda Wire and Cable Company, a corporation of Delaware

Filed Oct. 7, 1966, Ser. No. 585,152  
7 Claims. (Cl. 174—88)

1. A cable splice between two high-voltage cables comprising metal conductors having insulated temperature recording wires within the conductor strands, comprising:  
(A) a tubular dielectric spacer

- (a) abutting the ends of the conductors of both of said cables,
- (b) said spacer having an outer diameter no greater than the diameter of said conductors,
- (c) said spacer having a radial aperture larger than the combined sectional areas of said recording wires,
- (B) lengths of said recording wire projecting from said conductors, the insulation of each of said wires being stripped back a short distance at the ends thereof,

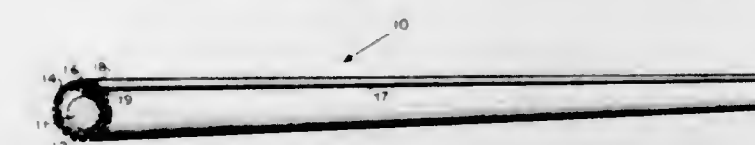


- (C) an electrical connection between said wires within said spacer, and
- (D) a compression sleeve surrounding said spacer and said conductors
- (a) said sleeve being securely compressed onto each of said conductors and free from compression against said spacer.

3,409,734

**TELEPHONE CONDUCTORS WITH LONGITUDINALLY WRAPPED AND BONDED PAPER TAPE INSULATION**

Henry De Vine, Belton, Mo., and William F. Morrison, Sycamore, Ill., assignors to Anaconda Wire and Cable Company, a corporation of Delaware  
Filed June 12, 1967, Ser. No. 645,414  
3 Claims. (Cl. 174—113)

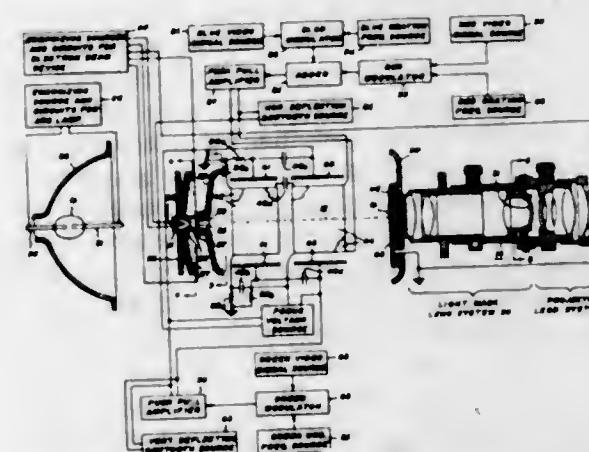


In telephone cables of the type where the conductors have paper wraps with a longitudinal seam, the paper is bonded to itself by means of a narrow band of adhesive close to its edge.

3,409,735

**PROJECTION SYSTEM AND METHOD**

Von C. Campbell, Syracuse, and William E. Good, Liverpool, N.Y., assignors to General Electric Company, a corporation of New York  
Filed Sept. 27, 1965, Ser. No. 490,498  
4 Claims. (Cl. 178—5.4)



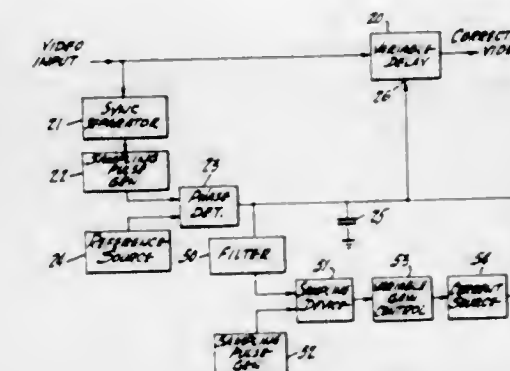
Light valve projection apparatus using a fluid medium deformable by a scanning electron beam into a plurality

of diffraction gratings, each for controlling the light of a respective color. One of the gratings utilizes the raster lines and has a line density considerably smaller than the other gratings with result that its light transmission efficiency is not comparable to the others. The density of the raster line grating is effectively doubled and made comparable to the other gratings by providing a double electron beam or equivalent.

3,409,736

**PHASE AND FREQUENCY CORRECTION SYSTEM**

Robert N. Hurst, Cherry Hill, and Lee V. Hedlund, Cinnaminson, N.J., assignors to Radio Corporation of America, a corporation of Delaware  
Filed May 17, 1965, Ser. No. 456,061  
13 Claims. (Cl. 178—6.6)

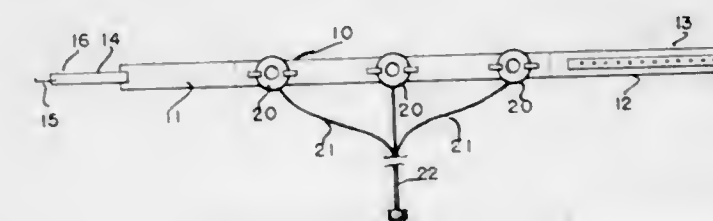


1. A system for correcting frequency and phase errors in a signal of the type containing a component occurring at a reference frequency, said system comprising:
  - (a) a variable delay means for delaying said signal in proportion to a control signal applied to said variable delay means,
  - (b) phase detecting means for periodically measuring the phase error of said component occurring at said reference frequency and for generating an error signal related to said phase error,
  - (c) means responsive to said error signal for changing said error signal during the period between measurements, said change occurring at a rate determined by the phase error measured by said phase detecting means, and
  - (d) means for applying said error signal to said variable delay means to control the delay of said variable delay means.

3,409,737

**FOETAL MONITOR**

Morris Settler, 590 Niagara St., and Bert Settler, 723 Queenston St., both of Winnipeg 9, Manitoba, Canada  
Filed June 24, 1965, Ser. No. 466,634  
1 Claim. (Cl. 179—1)



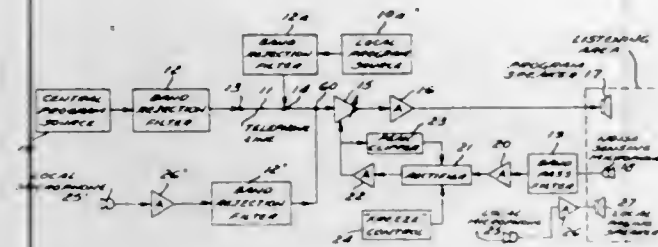
Foetal heartbeat is monitored by a plurality of transducers mounted on an elastic belt. A switch selects which transducer is fed to the amplifier which has a filter for discriminating between the foetal heartbeat and the mother's heartbeat.



### 3,409,738 VOLUME CONTROLLED AUDIO PROGRAM BROADCASTING

Ross M. Heald and Donald L. Hadden, Winnipeg, Manitoba, Canada, assignors to Rimac, Ltd., a corporation of Canada

Filed Apr. 16, 1965, Ser. No. 448,784  
17 Claims. (Cl. 179-1)

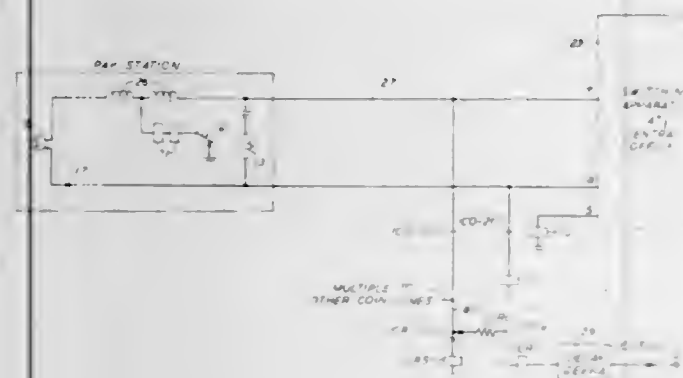


The level of an audio transmission channel is controlled by the ambient noise level at the loudspeaker. A slow attack time and a rapid decay time are used to prevent overcompensation. Feedback is prevented by sampling noise only within a very narrow band of the audio spectrum and using a band rejection filter to eliminate that band from the transmission channel.

### 3,409,739 AUTOMATIC COIN RETURN FOR TELEPHONE PAYSTATIONS

Amos E. Joel, Jr., South Orange, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 9, 1965, Ser. No. 438,319  
11 Claims. (Cl. 179-6.3)



A prepay telephone coin return system in which deposit of a coin immediately initiates the operation of coin return circuitry in the central office regardless of the position of the switchhook. The coin return circuitry will subsequently return the deposited coins after a predetermined delay unless prior to the running of the delay period the cutoff relay operates, indicating that a request has been made to the central office for service, whereupon the operation of the coin return circuitry is aborted. The coin return circuitry may also be enabled only after a continuity test has been made under control of a stepping circuit which allows a pair of lines to be scanned in succession for continuity.

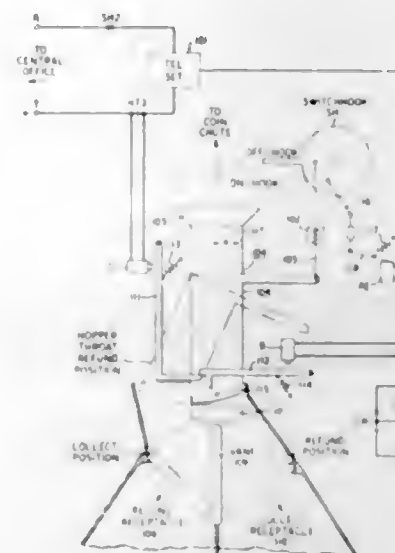
### 3,409,740 COIN TELEPHONE CONTROL APPARATUS

Lawrence A. Strommen, Indianapolis, Ind., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 22, 1965, Ser. No. 489,229  
12 Claims. (Cl. 179-6.3)

A coin control mechanism for coin operated tele-

phones providing automatic refunding of deposited coins if the coins are deposited either while the receiver is

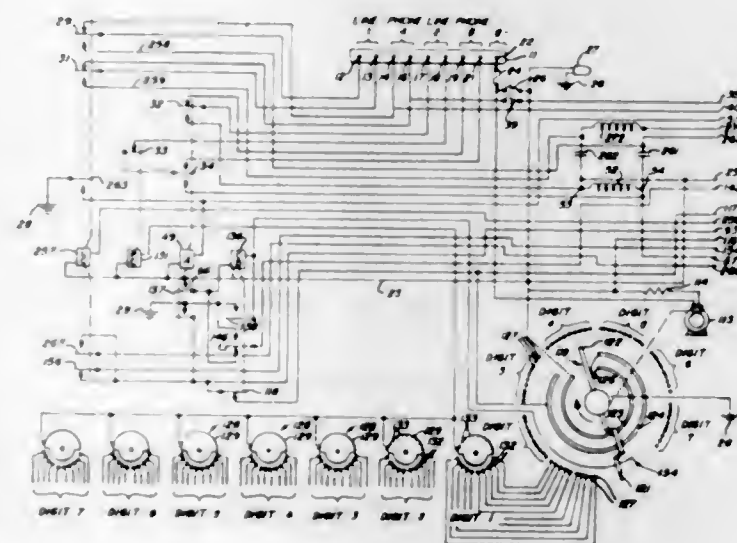


on-hook or before recognition of a service request by the central office equipment.

### 3,409,741 TELEPHONE CALL DIVERTER CONTROL CIRCUIT

Martin A. Odom, Oakland, Calif., assignor to Marcom, Inc., a corporation of California

Filed June 8, 1964, Ser. No. 373,263  
20 Claims. (Cl. 179-18)

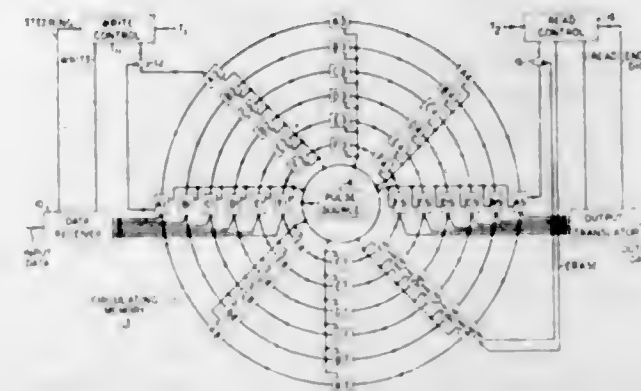


Described herein are an improved supervisory circuit and dial apparatus for use with a call diverter of the type which automatically transfers an incoming call to a preselected remote number. At variance with prior art systems, the circuits herein provide for coupling and decoupling of the calling and called lines by detecting an "answer" and "call termination" independently of "on and off hook" pulses. Particularly, an "answer" by the remote number is sensed by monitoring the cessation of "ring back" signals, while a termination of the forwarded call is detected by periodically momentarily opening one of the lines which will induce an open line signal from central office, e.g., dial tone, when, but only when, the call has been terminated and then sensing such open line signal to effect decoupling of the lines. In general, the subject matter herein deals with advances over the systems disclosed in Patents Nos. 3,268,666 and 3,301,961.

### 3,409,742 DATA CONVERTING BUFFER CIRCUIT

Harry Winter, Franklin Township, Somerset County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Feb. 11, 1965, Ser. No. 431,924  
13 Claims. (Cl. 179-18)

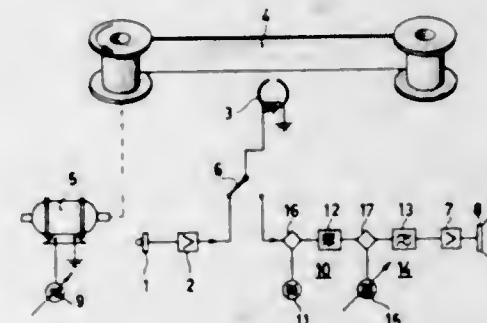


A data converting buffer circuit is disclosed wherein a plurality of stages of a memory are so arranged that information stored in the stages will be read out in the same sequence it was written in, although not necessarily at the same rate. Write-in and read-out controls are responsive to the presence or absence of data in predetermined stages.

### 3,409,743 SYSTEM FOR CHANGING SIGNAL DURATION WITH REPRODUCTION FREQUENCY COMPENSATION

Johannes Anton Greefkes, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 16, 1965, Ser. No. 448,665  
Claims priority, application Netherlands, Apr. 18, 1964, 6404265  
6 Claims. (Cl. 179-100.2)

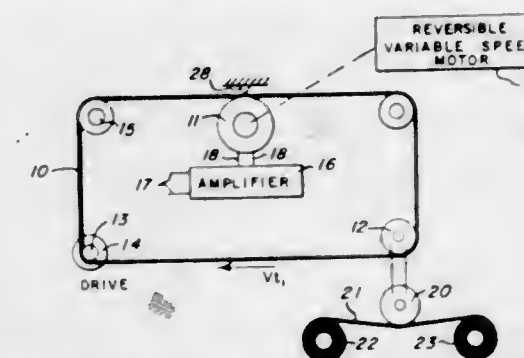


1. A system for changing the time duration of a signal comprising a source of input signals, an output circuit, a series circuit comprising modulator means and demodulator means connected in that order between said source and output circuit, storage system means comprising information storage means for recording information signals on said storage means at a first predetermined rate, and means for reproducing information signals from said storage means at a second predetermined rate, and means for connecting said storage system means in series in said series circuit, said modulator means comprising a source of first oscillations and single sideband modulator means for modulating said signals with said first oscillations to produce a single sideband signal, said demodulator means comprising a source of second oscillations and mixing means for mixing said second oscillations with said single sideband signal to produce an output signal, the frequency of said second oscillations being shifted with respect to the frequency of said first oscillations whereby input signals of a predetermined frequency correspond to output signals of the same frequency.

### 3,409,744 TIME COMPRESSION AND EXPANSION RECORDING SYSTEM

Arie Liberman, Skokie, Ill. (% Talk-A-Phone Company, 5013 N. Kedzie Ave., Chicago, Ill. 60625)

Continuation-in-part of application Ser. No. 14,242, Mar. 11, 1960. This application Aug. 14, 1964, Ser. No. 389,703  
1 Claim. (Cl. 179-100.2)

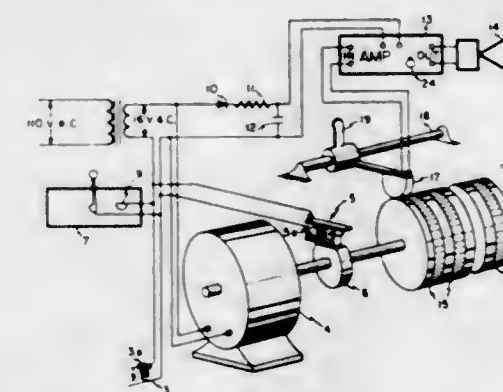


An apparatus for varying the time duration of recorded information. A rotating transducer with a helical gap is used to record the signal on a first moving medium and a fixed transducer is used to reproduce. The reproduced signal is then recorded on a second moving medium which is driven at a velocity during reproduction that results in a signal comprising the original frequencies but of a different time duration.

### 3,409,745 TRANSISTORIZED ANNUNCIATOR WITH A RECORDED MESSAGE

Winston E. Kock, 315 Corrie Road, Ann Arbor, Mich. 48105

Continuation-in-part of application Ser. No. 53,395, Sept. 1, 1960. This application Mar. 22, 1962, Ser. No. 181,570  
8 Claims. (Cl. 179-100.2)



1. An annunciator comprising an instantaneously responsive amplifier, loudspeaker means connected to output of said amplifier, a power supply circuit, a source of electronically generated signals connected to the input of said amplifier, and a single actuating switch for simultaneously activating instantaneously both said amplifier and said signal source by connecting said amplifier and said signal source to said power supply whereby said signals issue immediately as sound from said loudspeaker.

### 3,409,746 MAGNETIC DISC RECORDING AND REPRODUCING MACHINE

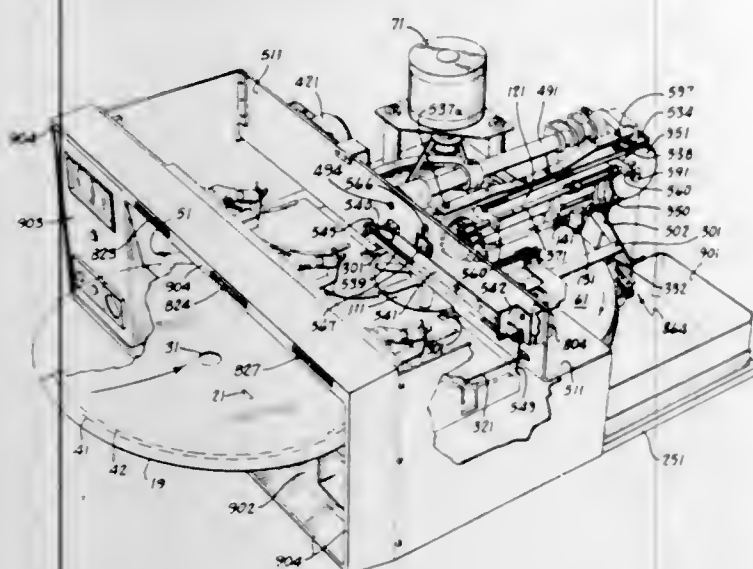
Erling P. Skov, San Mateo, and Charles A. Vogel, Sunnyvale, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Apr. 2, 1964, Ser. No. 356,813  
24 Claims. (Cl. 179-100.2)

A magnetic recording disc is inserted into a slot, tripping an automatic cueing mechanism for rotating the disc to a predetermined orientation. When the operator is

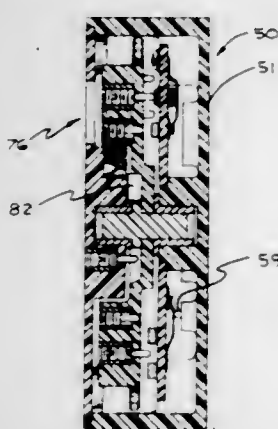


ready, he operates a recording or playing control, which causes the disc to be clamped to a rotating turntable, and a magnetic transducing head to be lowered to engage the disc and to move along a radial path, so as to trace a spiral



track on the disc. Reproduction of a recorded signal always begins instantly and accurately, because the disc has been cued to the same predetermined orientation and to the same initial portion of the same spiral track that was used during recording.

**3,409,747**  
**PROGRAMMABLE THUMBWHEEL SWITCH**  
Raymond Mincone, Plainedge, N.Y.  
(30 Fleetwood Ave., Melville, N.Y. 11746)  
Filed Mar. 6, 1967, Ser. No. 628,206  
10 Claims. (Cl. 200—11)

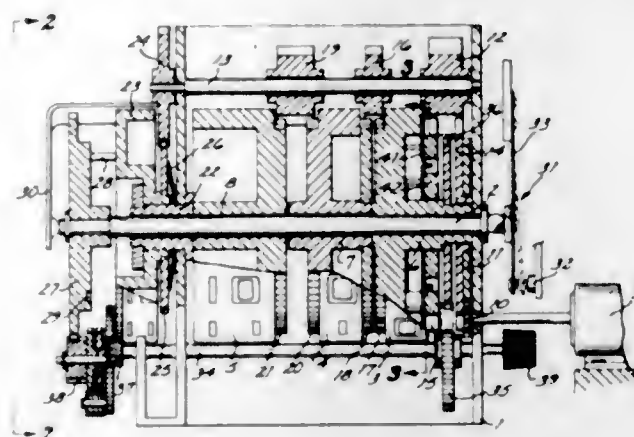


This invention relates to a thumbwheel switch which is adapted to be programmed as desired. The programming is done by adjusting threaded control elements located through oval apertures in a removable cover plate disposed on one side of the switch and adjusting, as required, threaded controls located in the housing on the opposite side to the cover plate. This switch comprises four basic pieces, namely, a slotted cover plate, a thumbwheel, a printed circuit card and a housing.

**3,409,748**  
**TIME SWITCH DEVICE FOR A DIGITAL CLOCK**  
Toshio Kawata, 2050 Sakaidacho, Sakaideshi, Japan  
Filed Mar. 30, 1967, Ser. No. 627,101  
9 Claims. (Cl. 200—36)

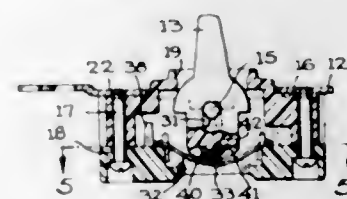
This time switch for a digital clock provides a driving mechanism which includes a continuously rotating disk and this disk, in turn, activating an electrical switch

mechanism. This switch mechanism is adjustable to suit particular requirements, and also the switch mechanism



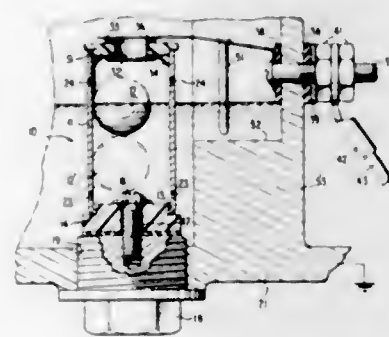
may be adjusted with relation to the digital clock. The timed switch device is activated periodically to suit particular requirements.

**3,409,749**  
**TOGGLE DRIVE MECHANISM**  
Edwin B. Judd, East Greenwich, and Luther M. Sheldon, Cranston, R.I., assignors to General Electric Company, a corporation of New York  
Continuation-in-part of application Ser. No. 496,044, Oct. 14, 1965. This application Aug. 28, 1967, Ser. No. 667,037  
8 Claims. (Cl. 200—67)



A toggle mechanism for a switch is provided which employs a spring for the toggle action such that the longest dimension of the spring lies in the plane of movement of the toggle trigger. A novel bumper action is achieved from the spring which is conventionally obtained by use of rubber bumpers.

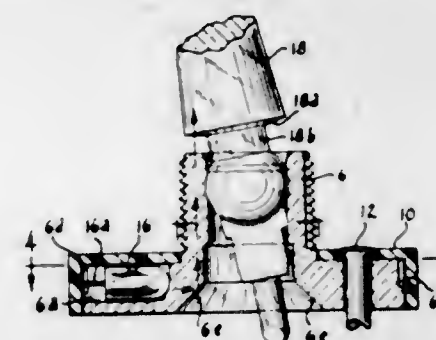
**3,409,750**  
**LIQUID LEVEL FLOAT SWITCH**  
Thomas W. Hathaway, 1844 Brown Ave., Manchester, N.H. 03103  
Filed Aug. 26, 1966, Ser. No. 575,437  
3 Claims. (Cl. 200—84)



A liquid level switch which includes a sleeve made of electrically conducting material which is mounted in a container having a supply of liquid. The bottom of the sleeve is enclosed with an insulating ring which surrounds and separates a metal contact area from the wall of the

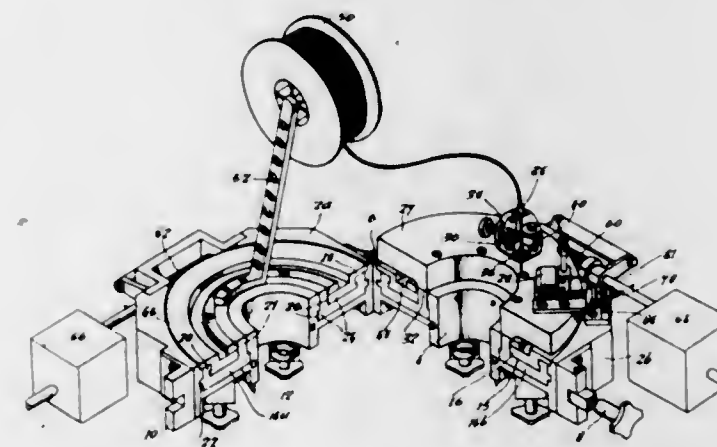
sleeve in order to form a switch gap in the enclosed bottom area. The metal contact area is a bolt which connects the sleeve, the insulating ring and a drain plug positioned in the bottom of the container together so as to form a unitary device. A ball float is positioned inside the sleeve having at least its surface area covered with a conductive material. The ball normally floats above the bolt and therefore does not bridge the gap between the bolt and the wall of the sleeve. When the liquid level reaches a predetermined low level, the ball float bridges the gap between the bolt and the sleeve to close the switch gap. A further improvement includes a device for detecting an improper placement of the drain plug by energization of an alarm circuit.

**3,409,751**  
**TOGGLE SWITCH WITH SUBDUED LIGHT INDICATOR**  
Alvin W. Krieger, Milwaukee, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware  
Filed Sept. 1, 1967, Ser. No. 665,161  
11 Claims. (Cl. 200—167)



A toggle switch has an integral bushing and top plate of light transmitting material. Lamp bulbs and terminal assemblies are retained in slots in the top plate by a thin skirted, opaque cover. Angular surfaces reflect the light upwardly through the bushing as a subdued indicator of switch operation.

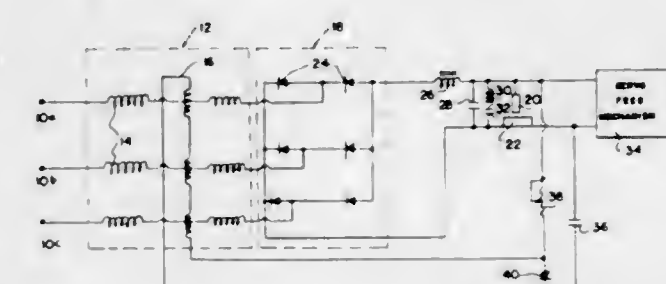
**3,409,752**  
**ORBITAL WELDING APPARATUS**  
Leslie Henderson, Whitley Bay, and Leslie Hasson, Wrexham, Gateshead, England, assignors to Clarke, Chapman & Co. Limited, Gateshead, England, a company of Great Britain and Northern Ireland  
Filed Nov. 14, 1966, Ser. No. 593,829  
Claims priority, application Great Britain, Nov. 15, 1965, 48,465/65  
16 Claims. (Cl. 219—60)



1. Orbital welding apparatus comprising, in combination, a clamp having a bore to embrace a length of tubing

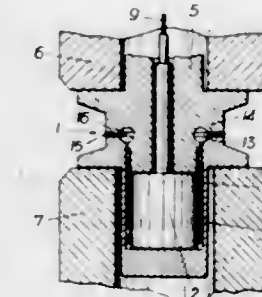
and being divided diametrically across said bore, two diametrically divided drive rings mounted on the clamp co-axially therewith and being independently rotatable about the clamp bore axis, a welding head mounted on a first of the rings and feed means to feed a welding wire to the vicinity of said head being drivingly connected to the second of the rings.

**3,409,753**  
**SATURABLE REACTOR TYPE CONTROL SYSTEM FOR ELECTRICAL DISCHARGE MACHINING APPARATUS**  
Kiyoshi Inoue, 182 Yoga Tamagawa, Setagaya-ku, Tokyo, Japan  
Filed Oct. 5, 1964, Ser. No. 401,308  
4 Claims. (Cl. 219—69)



Current control circuit for controlling electrical discharge machining current level responsive to open circuit or short circuit gap condition. Said circuit comprises: a three-phase source of alternating current potential; a full-wave rectifier connecting each source phase to the gap; a saturable reactor in series with each phase lead; a control winding having in series separate portions, one co-operable with each saturable reactor; and an energizing circuit for the control winding comprising an additional rectifier connected across said winding, and a capacitor and a variable resistor connected in series with the additional rectifier and across the gap.

**3,409,754**  
**ELECTRICAL RESISTANCE-WELDING PROCESS FOR PIEZOELECTRIC DYNAMOMETERS, PARTICULARLY FOR PRESSURE TRANSDUCERS**  
Rudolf Hatschek, Vienna, Austria, assignor to Hans List, Graz, Austria  
Filed May 26, 1964, Ser. No. 370,253  
Claims priority, application Austria, May 28, 1963, A 4,318/63  
2 Claims. (Cl. 219—86)



A piezoelectric dynamometer in which a prestressing sleeve and a connector are joined together with their annular rims and then inserted for welding between hollow electrodes of a resistance welding apparatus with the prestress of the piezoelectric element being continuously measured and used to control the welding operation by



terminating the welding current upon the attainment of a predetermined amount of prestress.

### 3,409,755 DEVICE FOR MEASURING THE TEMPERATURE OF A WELD

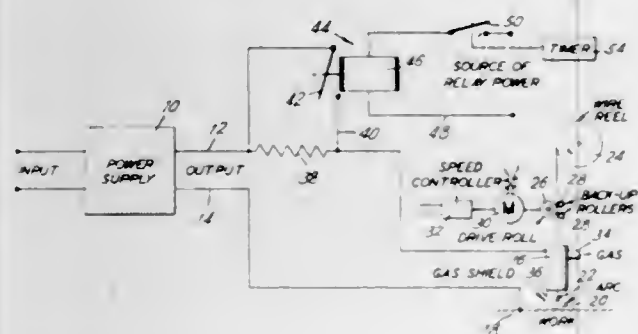
William D. Munro, Taunton, Mass., assignor to The Sippican Corporation, Marion, Mass., a corporation of Massachusetts  
Filed Feb. 8, 1965, Ser. No. 431,125  
17 Claims. (Cl. 219-110)



Apparatus to indicate the strength of a resistance weld by non-destructive means. An electrical analog circuit senses the voltage across the welding electrodes during the formation of the weld and generates a voltage which simulates the temperature of the weld nugget formed. A voltmeter coupled with a peak holding circuit indicates the maximum voltage produced by the analog circuit and thereby indicates the temperature and quality of the weld.

### 3,409,756 METAL ARC WORKING

August F. Manz, Union, N.J., assignor to Union Carbide Corporation, a corporation of New York  
Filed Jan. 27, 1965, Ser. No. 428,380  
5 Claims. (Cl. 219-130)



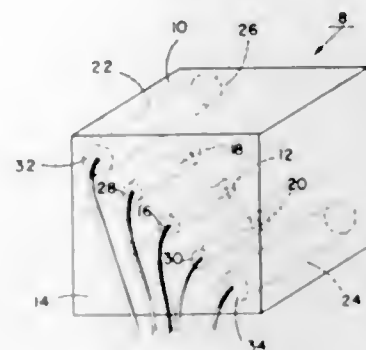
This invention relates to sigma welding in which uniform rippling of the weld is obtained by repeatedly changing the power of the arc while continuously maintaining a spray-type mode of transfer from the electrode to the work to produce better welds of desired bead shape.

### 3,409,757 CONTROLLED THERMAL ENVIRONMENT APPARATUS

James R. McVey, Amarillo, Tex., assignor to the United States of America as represented by the Secretary of the Interior  
Filed Jan. 13, 1966, Ser. No. 521,243  
7 Claims. (Cl. 219-209)

A thermocouple junction temperature controller constituted by an arrangement of heaters in a heat transfer block containing the junction in a central recess and

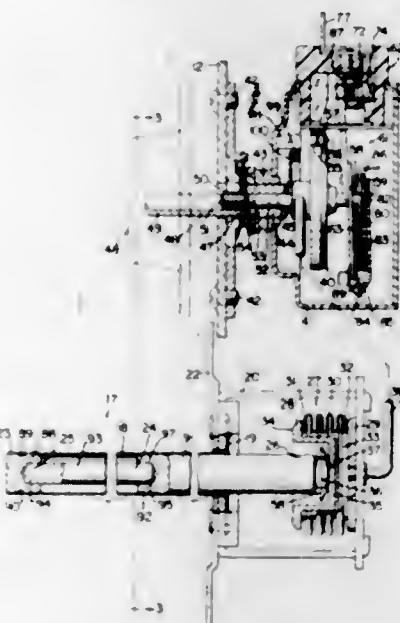
thermistors in other recesses uniformly spaced therefrom. In response to temperature irregularities the thermistors function in control circuitry to switch on an oscillator



circuit which pulses a gate control circuit determining operational intervals for an energization circuit connected to the heaters.

### 3,409,758 OVEN CONTROL MEANS AND PARTS THEREFOR OR THE LIKE

Henry F. Hild and Siegfried E. Manecke, Indiana, Pa., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware  
Filed Mar. 7, 1966, Ser. No. 532,207  
21 Claims. (Cl. 219-413)

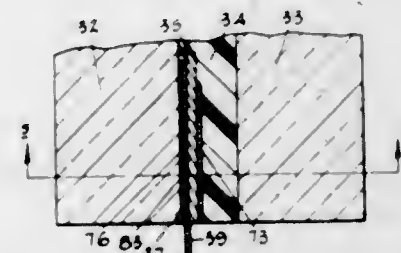


1. In combination, a rod and tube temperature sensing unit having an end movable in response to sensed temperature changes, a first expandable and collapsible pneumatic fluid containing chamber defining means operatively interconnected to said end to be expanded and collapsed in accordance with the corresponding movement of said end frame means remote from said first chamber defining means, a second expandable and collapsible pneumatic fluid containing chamber defining means carried by said frame means, conduit means fluidly interconnecting the chambers of said first and second chamber defining means together so that expansion of said first chamber defining means will cause collapsing of said second chamber defining means and collapsing of said second chamber defining means will cause expansion of said first chamber defining means, electrical switch means connected to said second chamber defining means to be opened and closed in response to expansion and collapsing of said second chamber defining means from a predetermined volumetric condition of said second chamber defining means, and selector means operatively inter-

connected to said second chamber defining means for selectively determining said predetermined volumetric condition of said second chamber defining means.

### 3,409,759 LAMINATED TRANSPARENT PANEL INCORPORATING ELECTRICAL HEATING WIRES AND METHOD OF PRODUCING SAME

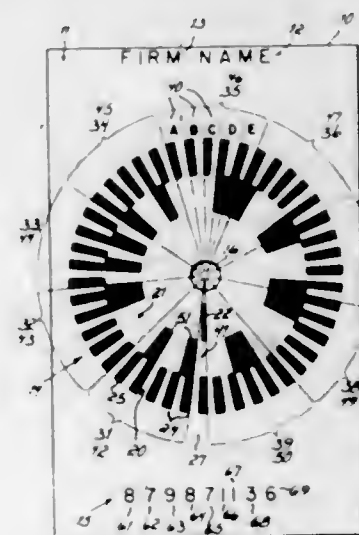
James H. Bokey and Robert L. Livingston, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio  
Filed July 21, 1966, Ser. No. 566,916  
12 Claims. (Cl. 219-522)



1. A heated glazing, comprising at least a pair of glass sheets bonded together through an interposed transparent sheet of thermoplastic material, a pair of spaced electrodes interposed between one of said glass sheets and said thermoplastic sheet, said electrodes comprising a first layer formed by the air-drying of a suspension of finely divided electrically conducting metal particles in an air-dry binder material adhered directly to said thermoplastic material and a second layer comprised of a thin strip of an electrically conducting metal superimposed over said first layer, and a plurality of spaced wires extending between said electrodes, said wires being at least partially embedded in said thermoplastic material with the ends of each of said wires being disposed between said first and second electrode layers and in electrical contact therewith.

### 3,409,760 MACHINE READABLE MERCHANDISE TAG

Paul H. Hamisch, Dayton, Ohio, assignor to The Monarch Marking System Company, Dayton, Ohio, a corporation of Ohio  
Filed Dec. 14, 1966, Ser. No. 601,683  
5 Claims. (Cl. 235-61.12)

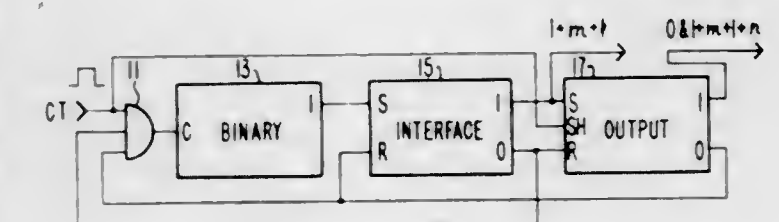


1. A tag adapted to be read by a reader having a probe and a plurality of photo-transducers each mounted for scanning movement in a different concentric circular path centered about said probe, said tag comprising:  
a sheet of printing stock having a print receptive surface thereon,

a first plurality of information mark positions, said positions being located on said print-receptive surface of said tag and adapted to receive photosensible information marks,  
a plurality of photosensible timing marks imprinted on and optically contrasting with said print receptive surface of said tag, said timing marks being equal in number to the number of said information mark positions and arranged in a circular pattern concentric with said information mark pattern for synchronously generating timing signals during the scanning of said information positions,  
a start mark imprinted on and optically contrasting with said print-receptive surface of said tag, said start mark being offset from the center of said concentric circular patterns, and  
an aligner located at the center of said patterns, said aligner being engageable with said probe for aligning said concentric circular reader scanning paths with said respective concentric circular timing and information patterns and start mark, thereby facilitating tag reading of said marks by said phototransducers.

### 3,409,761 COUNTER

Frederick C. Becker, Dearborn Heights, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan  
Filed Oct. 7, 1965, Ser. No. 493,729  
19 Claims. (Cl. 235-92)



1. A counter comprising:  
first, second and third types of counting sections each housing a different form of settable counting stage, an inhibitable input gate connectable between a source of count pulses and said first counting section, said second counting section coupled between said first and third counting sections,  
said second and third counting sections coupled back to said input gate for selectively inhibiting the gate, said third counting section also coupled back to said second counting section for selectively setting the counting stage therein and also connectable to the source of count pulses, and  
output means discretely coupled to said second and third counting sections providing numerically consecutive, non-slivering outputs therefrom.

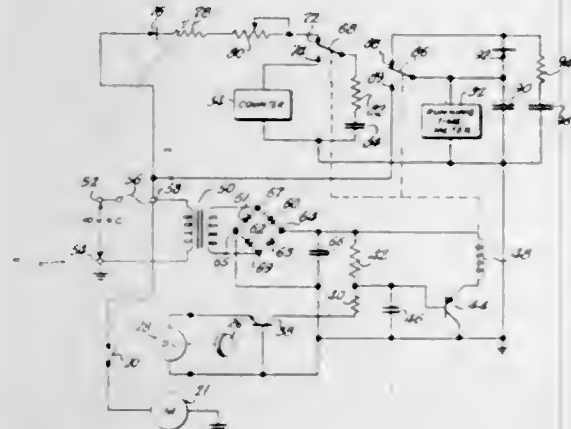
### 3,409,762 PRODUCTION AND QUALITY CONTROL RECORDER FOR TEXTILE MACHINERY

Martin F. O'Brien and Howard F. Moore, Greenville, S.C., assignors to Frontier Electronics, Inc., Greenville, S.C., a corporation of South Carolina  
Filed Dec. 10, 1965, Ser. No. 513,018  
11 Claims. (Cl. 235-92)

11. A recorder system for a textile inspecting machine having cloth moving over an inspection frame comprising in combination: cloth motion detection apparatus mounted above said inspection frame and including a rotary cloth motion sensor in contact with said cloth and electrical generator means mechanically connected to said sensor generating an electrical signal voltage in response



to the movement of said cloth; electrical switch means adapted to be operated to switch from a first operating state to a second operating state; electronic circuit means coupled between said electrical generator means and said switch means producing a switching voltage capable for operating said switch means from said first to said second operating state; input terminals adapted to be coupled to a voltage source; a delay counter circuit including a step counter and a capacitor charging circuit coupled together by said switch means, said switch means being operable to couple said input terminals to said capacitor charging circuit when in said first operating state, but coupling said capacitor charging circuit across said step counter in said second operating state and advancing the count

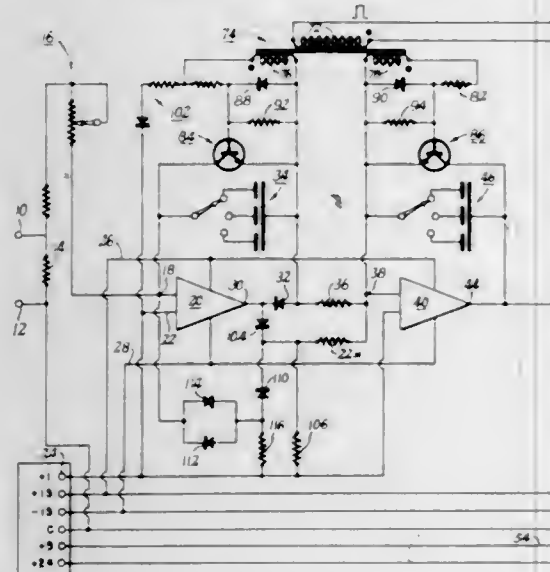


of said step counter only after having remained in said first operating state for a predetermined length of time; a running time meter circuit, including a time meter and a braking circuit having a second capacitor charging circuit, coupled to said switch means, said switch means being operable to couple said time meter and said braking circuit to said input terminals when said switch means is in said second operating state thereby rendering said time meter operative and charging said second charging circuit, but coupling said second charging circuit across said time meter when said switch means is in said first operating state providing a braking action for said time meter by the resulting discharge of said second charging circuit therethrough.

3,409,763

## FLOW TOTALIZING APPARATUS

Edward Schoppe, Jr., Walpole, Richard P. Lawler, Mansfield, and William E. Earle, North Easton, Mass., assignors to The Foxboro Company, Foxboro, Mass.  
Filed Oct. 5, 1964, Ser. No. 401,372  
6 Claims. (Cl. 235—151.34)



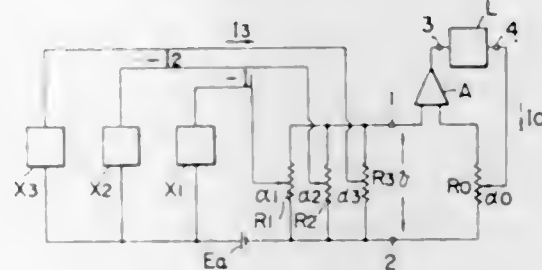
A fluid flow totalizing instrument adapted to receive an electrical flow measurement signal having a square-law characteristic and to produce an output in the form

of a series of pulses each representative of a certain amount of fluid, the instrument being of the type having two cascaded integrating amplifiers followed by a comparator in the form of a differential amplifier arranged to produce a control signal whenever the integrated signal reaches a predetermined level, the output of the differential amplifier being directed to a one-shot multivibrator adapted to deliver a control pulse of predetermined short duration through a transformer and to the control electrodes of a pair of transistors each connected across a respective integrating capacitor of the two amplifiers, thereby to discharge both capacitors simultaneously; the instrument further being provided with a bias circuit arranged to prevent the integration of noise signals when there is no flow.

3,409,764

## ADDITION AND SUBTRACTION COMPUTER

Shinichiro Ogawa, Tokyo, and Ken Shiragaki, Fujisawashi, Japan, assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware  
Filed Dec. 24, 1964, Ser. No. 420,915  
Claims priority, application Japan, Jan. 16, 1964, 39/1,622  
8 Claims. (Cl. 235—193)

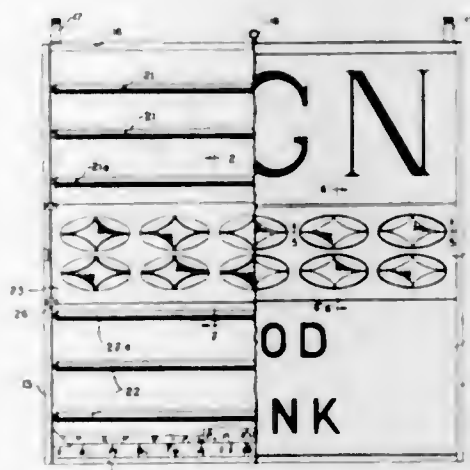


There is provided an analog computing circuit utilizing a plurality of signal transmitters, a plurality of potentiometers connected in parallel to receive signals from the transmitters, and a summing circuit which operates upon the signals supplied by the potentiometers which potentiometers may be varied for selective control.

3,409,765

## SIGN CONSTRUCTION

Charles E. Trame, Shawnee Township, Allen County, Ohio, assignor to Neon Products Inc., Lima, Ohio, a corporation of Ohio  
Filed Oct. 19, 1965, Ser. No. 497,855  
9 Claims. (Cl. 240—1)



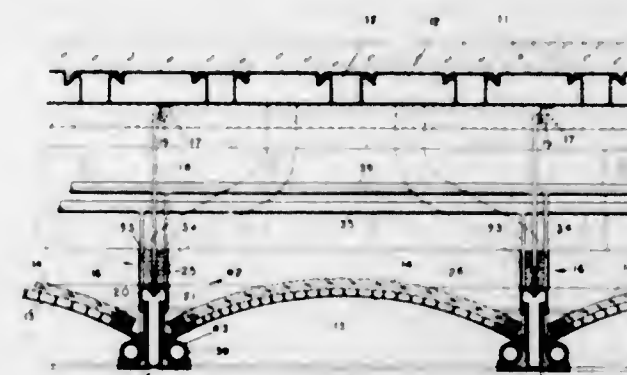
A display sign which includes a transparent sheet of light-piping material, portions of said sheet being deformed out of the plane thereof, a translucent coating on said deformed portions, areas of the transparent sheet surrounding the deformed portions being clear, the sheet

being edge lighted to illuminate the deformed portions, and means for obscuring other areas of the transparent sheet, whereby only the deformed portions are observable.

3,409,766

## COMBINATION LIGHTING AND COOLING SYSTEM

Gershon Meckler, Toledo, Ohio, assignor, by mesne assignments, to Lithonia Lighting, Inc., a corporation of Georgia  
Continuation of application Ser. No. 140,416, Sept. 25, 1961, which is a continuation-in-part of application Ser. No. 31,902, May 26, 1960. This application Jan. 4, 1967, Ser. No. 607,333  
8 Claims. (Cl. 240—47)

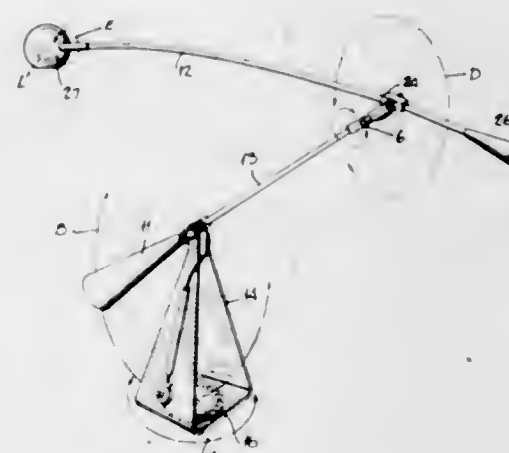


A ceiling system for providing both lighting and space temperature control within a building enclosure. The device comprises a louvered light diffuser disposed beneath light sources that diffuse the light emitted from the light sources, remove the heat from both the light sources and the lighted space, and control the brightness of the light. Heat absorbed by the ceiling panels, reflectors and light diffusers is removed from the ceiling panels and reflectors by cooled water from a cooling tower, and from the light diffusers by lower temperature chilled water.

3,409,767

## ADJUSTABLE LAMP STRUCTURE

Clive Entwistle, 50 Sutton Place S., New York, N.Y. 10022  
Filed Oct. 17, 1966, Ser. No. 587,136  
7 Claims. (Cl. 240—69)

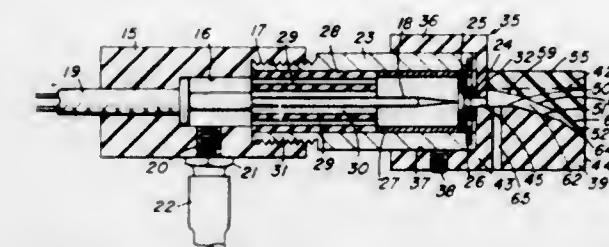


An electric lamp structure formed by a counterbalanced system of major and minor booms that will be essentially stable in any position in which they may be placed. A lamp unit is secured to one end of the major boom whereby its position may be changed with minimal effort.

3,409,768

## LIGHT LOCK FOR AIR IONIZER TO SHIELD PHOTOSENSITIVE MATERIAL

Thomas C. Whitmore and Peter H. Zachmann, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
Filed Apr. 3, 1967, Ser. No. 627,990  
13 Claims. (Cl. 250—49.5)

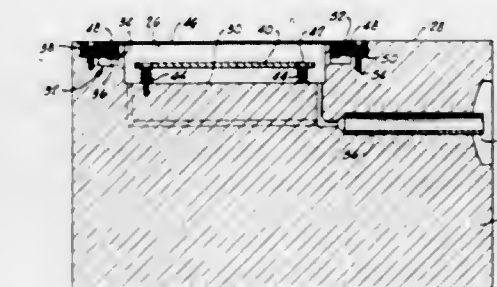


A device for shielding the surface of a photosensitive material from any irradiation generated by a corona discharge means. The device is adapted to be positioned on the discharge end of the corona discharge means and is provided with a passageway that converges in one direction and connects the discharge opening to an orifice displaced from the opening by a distance sufficient to provide a shielding effect.

3,409,769

## X-RAY SPECTROMETER SAMPLE CELL HAVING AN ADJUSTABLE SECONDARY X-RADIATION RADIATOR AND TAUT X-RAY TRANSPARENT WINDOW

Charles N. McKinney, Ponca City, Okla., Harold F. Smith, Arkansas City, Kans., and William K. Pollard, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware  
Filed July 26, 1965, Ser. No. 474,660  
5 Claims. (Cl. 250—51.5)



A sample cell for an X-ray spectrometer, said cell having a chamber containing a secondary X-radiation radiator adjustably mounted at a plurality of points in said chamber and with a cell window stretched tautly across said chamber so as to provide a constant thickness of sample disposed between said cell window and said secondary X-radiation radiator.

3,409,770

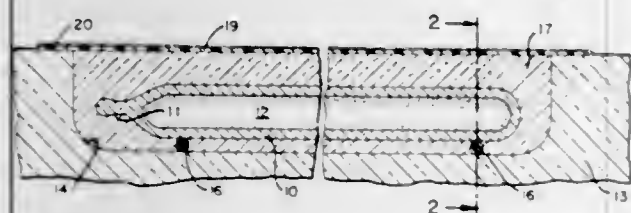
## SELF-LUMINOUS LIGHT-EMITTING UNITS

Charles H. Clapham, Jr., Berwick, Pa., assignor to United States Radium Corporation, Morristown, N.J., a corporation of Delaware  
Filed Sept. 28, 1964, Ser. No. 399,596  
5 Claims. (Cl. 250—71)

A self-luminous light-emitting unit wherein a sealed glass element is filled with a radioactive gas and coated interiorly with a film substantially of phosphoric acid on which is adhered and exposed a particulate phosphor, the element being embedded in shock absorbent trans-



parent elastomeric potting material in a cavity formed in a transparent body within which light passes without



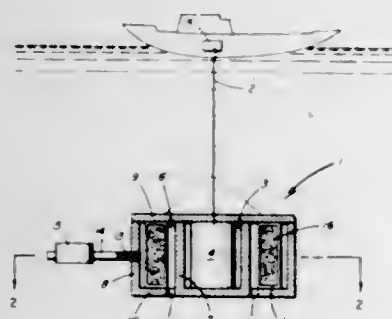
substantial diffusion and which is coated with reflective white paint everywhere but at a window area on its front face.

3,409,771

### SYSTEM FOR MEASURING RADIOACTIVE ISOTOPES IN DILUTE SOLUTION

Gordon K. Riel, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Nov. 3, 1966, Ser. No. 591,934  
3 Claims. (Cl. 250-83)



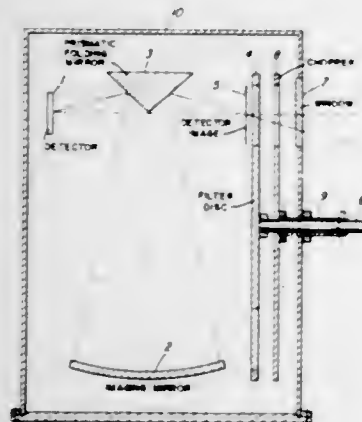
An apparatus for measuring radioactive isotopes in very dilute solutions where the solution is pumped through a porous filter supporting a loosely packed, radioactive isotope extracting resin. A detector positioned adjacent the filter measures the radioactive isotopes trapped by the resin.

3,409,772

### VERTICAL AIR TEMPERATURE GRADIENT DETERMINATION

Eric M. Wormser, Stamford, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware

Filed Sept. 9, 1965, Ser. No. 486,147  
8 Claims. (Cl. 250-83.3)



Infrared radiation coming down vertically through the atmosphere is spectrally scanned from the center of the carbon dioxide absorption band into the atmospheric window. Until the edge of the window is reached, the absorption of carbon dioxide results in radiation being received from near the surface of the earth at the peak absorption of carbon dioxide, for example  $15\mu$ , to radiation

from higher and higher levels as the scan proceeds to shorter wavelengths. When the scan enters the atmospheric window at about  $12.5\mu$  radiation is received from sources which are non-selective emitters, such as clouds. The temperatures in the carbon dioxide region define the lapse rate.

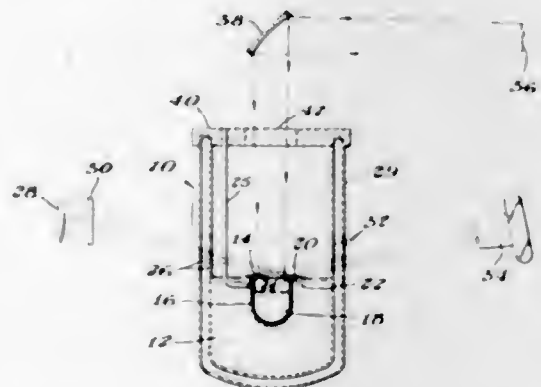
An instrument is also described constituting an infrared detector, collecting optics, a spectral scanning device such as a disc with different interference filters, and if desired, a chopper, the image of the detector passing through the elements recited and being sharply imaged on the scanning disc.

3,409,773

### INFRARED IMAGE DETECTOR USING CRYOGENIC LIQUID

Lyle B. Borst, Buffalo, N.Y., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Apr. 1, 1966, Ser. No. 539,345  
10 Claims. (Cl. 250-83.3)



1. An apparatus for detecting infrared objects which comprises a container, said container being capable of maintaining in the liquid state a cryogenic liquid having a boiling point below about  $273^\circ\text{K}$ , a platen having a black surface positioned in said container, said black surface of said platen being covered with a thin layer of a cryogenic liquid having a boiling point below about  $273^\circ\text{K}$ , a light source positioned such that the cryogenic liquid film covering the black surface of said platen is illuminated, observing means positioned to pick up light reflected from the surface of the film on said platen, and means for focusing an infrared image from an infrared source to be detected onto said cryogenic liquid film covering said black surface of said platen.

3,409,774

### METHOD OF DETERMINING THE THICKNESS OF A COATING ON A METAL BASE AND METHOD OF CALIBRATING THE THICKNESS GAUGE

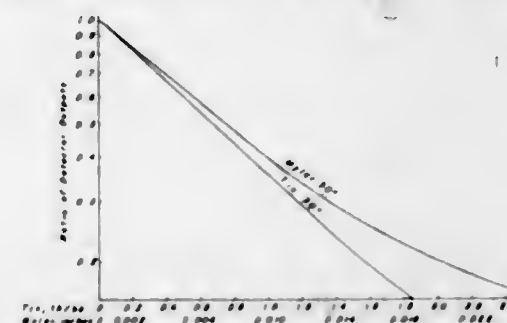
George Dykeman, Dormont Borough, Pa., assignor to United States Steel Corporation, a corporation of Delaware

Continuation-in-part of application Ser. No. 307,853, Sept. 10, 1963. This application May 25, 1966, Ser. No. 574,484

10 Claims. (Cl. 250-83.3)

1. The method of calibrating a gauge for determining the thickness of a coating on a metal base which gauge has means for directing a primary energy beam against the coated metal and means for measuring the intensity of the energy beam produced and returned from said base metal through said coating; which method comprises providing a sample of the base metal having a flat surface, providing a plurality of sheets of a material having absorption characteristics similar to and of known relationship to those of the coating material but which is considerably less dense than the coating material, placing known thicknesses of said sheets of material on said flat surface, directing an energy beam of fixed and known

characteristics against said flat surface, measuring for each known thickness of said material the intensity of the resultant energy beam produced and returned from said



flat surface through said material, and calibrating the intensity measuring means from said measurements so as to obtain coating thickness readings.

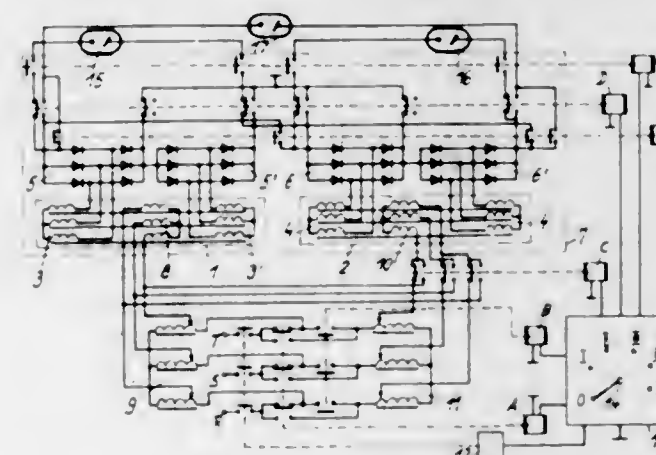
3,409,775

### PLURAL X-RAY TUBE POWER SUPPLY HAVING MEANS FOR ENERGIZING THE TUBES FOR SINGLE OR DOUBLE OPERATION

Herbert Mahler and Johannes Seidel, Erlangen, Germany, assignors to Siemens-Reiniger Werke Aktiengesellschaft, Erlangen, Germany, a corporation of Germany

Filed May 18, 1965, Ser. No. 456,611  
Claims priority, application Germany, May 29, 1964, S 51,283

5 Claims. (Cl. 250-94)



An apparatus for X-ray diagnosis is provided with means which make it possible to operate it with one X-ray tube or with a pair of X-ray tubes which can be set to operate jointly or alternately. These means include two transformers the secondary windings of which are connected with dry rectifier groups. The primary windings of the transformers are connected with regulating transformers which are connected to a three phase current net through a switch-over device and a timing switch. A manually operable selective switch can be set to various positions in which different relay switches are operated to provide selectively parallel operation of two X-ray tubes, eventually with separate high voltage regulation, alternate operation of the two X-ray tubes and operation of one X-ray tube.

3,409,776

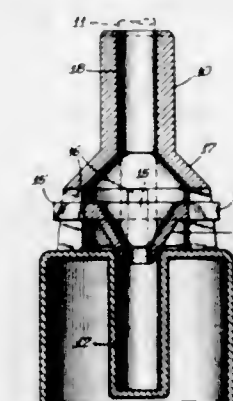
### ADAPTER FOR WELLS OF SCINTILLATION COUNTERS TO PERMIT DIRECT MEASUREMENT OF HIGH LEVELS OF RADIOACTIVITY

Edward W. Pipher, Detroit, Mich., and William P. Grasty, Zion, Ill., assignors to Abbott Laboratories, Chicago, Ill., a corporation of Illinois

Filed May 3, 1965, Ser. No. 452,551  
4 Claims. (Cl. 250-106)

An adapter for wells of scintillation counters arranged to hold a source of radioactivity above the well of scin-

tillation counters and having a plug capable of fitting snugly within the opening of the well. The adapter increases the distance of the source from the well and pro-



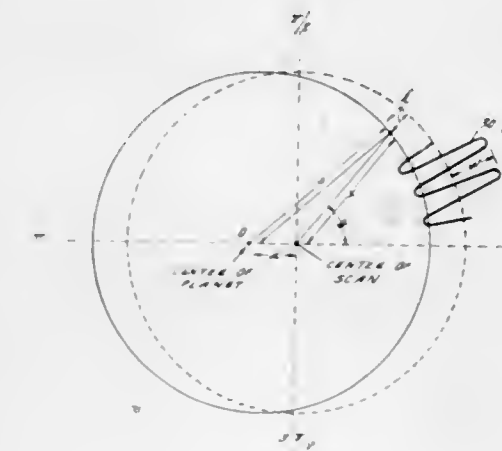
vides shielding to decrease the radioactivity enough to permit measurement in standard well counters and additionally provides a defined geometry so that reproducible measurements can be made.

3,409,777

### CIRCULAR SCANNER HAVING SUPERIMPOSED DITHER

Murray F. Cohen, Roslyn Heights, Irvin S. Englander, Jackson Heights, and Sheldon Girsch, Bayside, N.Y., assignors to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York

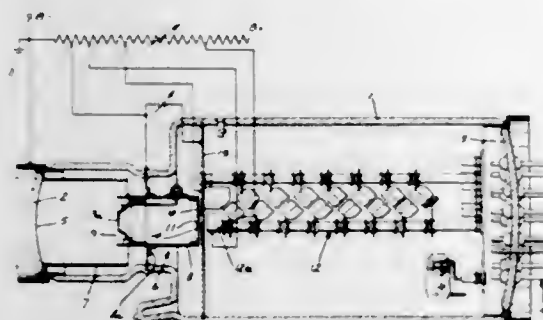
Filed Feb. 8, 1966, Ser. No. 525,927  
9 Claims. (Cl. 250-203)



A tracking device using an image dissector tube for tracking around an illuminated disk, such as a planet, using a circular scanning pattern having a superimposed dither thereon. The tracking device operates in a spiral acquisition mode to acquire the planet or body to be tracked, and after acquisition, is automatically placed in a fine track mode for pointing an axis toward the center of the body being tracked. Radial sizing circuits are provided to adjust the effective scan circle diameter, with the scanning process operable even though an image is in a crescent phase.

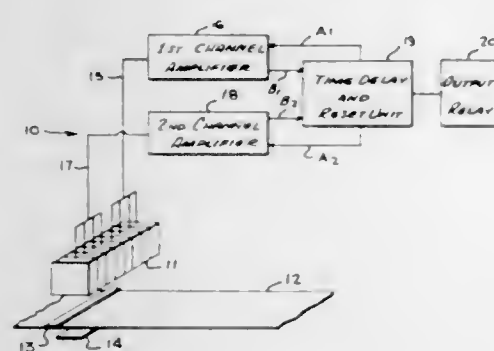


**3,409,778**  
**PHOTOMULTIPLIER TUBE WITH A LOW ENERGY ELECTRON INHIBITOR ELECTRODE**  
 Edward H. Eberhardt, Fort Wayne, Ind., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland  
 Filed May 25, 1966, Ser. No. 552,732  
 7 Claims. (Cl. 250-207)



1. A phototube comprising a photoelectric cathode, a masking electrode provided with an electron-receiving aperture and spaced a predetermined distance from said cathode, electron lens means interposed between said cathode and said masking electrode for accelerating and focusing the electrons emitted by said cathode in an electron image plane which includes said aperture, said electrons being accelerated to a relatively high energy level by said lens means before passing through said aperture, means for collecting the high energy electrons which pass through said aperture, and means inhibiting lower energy electrons from passing through said aperture thereby preventing at least a portion of such lower energy electrons from reaching said collecting means.

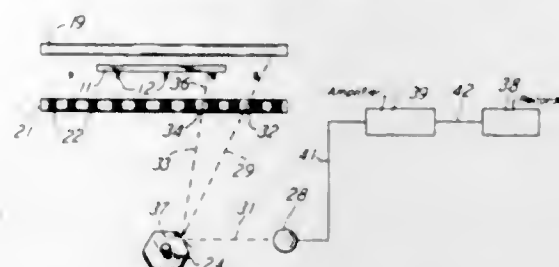
**3,409,779**  
**HOLE DETECTOR HAVING LOGIC CIRCUITRY FOR SEAM SKIPPING**  
 Raymond Baines Fertig, St. Albans, W. Va., assignor to Appalachian Electronic Instruments Incorporated, Ronceverte, W. Va., a corporation of West Virginia  
 Filed Nov. 2, 1965, Ser. No. 506,105  
 9 Claims. (Cl. 250-219)



1. Apparatus for detecting hole flaws in fabric passing along a feed axis, the fabric having transversely spanning seams spaced along said axis causing needle holes adjacent the seams which must be distinguished from hole flaws, comprising a plurality of detector heads, each sensing a detector zone at the fabric and producing a detector signal when a hole occurs in its respective detector zone, said detector heads being arranged in side-by-side relation aligned along a transverse axis relative to the feed axis whereby their detector zones collectively span the width of the fabric, first and second channel amplifiers, each having means for producing a channel signal responsive to detector signals from a selected group of said heads which

channel signal persists until reset, means connecting said first and second channel amplifiers to two different groups of said detector heads to render the amplifiers responsive to holes in two respective regions of the fabric spaced apart transversely of the fabric feed path, output means for providing an output signal signifying hole flaw detection, time delay means responsive to a channel signal from either of said channel amplifiers to activate said output means to produce said output signal a selected time delay interval after occurrence of said channel signal, and means responsive to concurrent production of channel signals by both said channel amplifiers indicating detection of holes in the regions sensed by both of said groups of detector heads in time relationships characteristic of seam needle holes to disable said output means from producing an output signal before completion of said time delay interval.

**3,409,780**  
**RADIATION SENSITIVE METHOD AND MEANS FOR THE DETERMINATION OF AREAS**  
 Thomas W. Fargo, Racine, James W. Fargo, Kenosha, and James J. Wolak, Brookfield, Wis., assignors to Custom Control Products, Inc., Racine, Wis., a corporation of Wisconsin  
 Filed Feb. 24, 1966, Ser. No. 529,679  
 12 Claims. (Cl. 250-223)



4. Apparatus for the detection of items, comprising two spaced-apart ray-emitting sources, a conveyor extending between said sources and being arranged to be free of any significant blocking of rays from said sources and being adapted to support and move an item between said sources, ray-scanning means disposed on one side of said conveyor and arranged and located to receive rays separately and simultaneously from both said sources, means included in the one of said sources on said one side of said conveyor for emitting rays intermittently relative to the scanning rays of said one source, the other of said sources being arranged and located to be blocked in emitting rays to said ray-scanning means when said item passes between said sources, and recording means operatively connected to said ray-scanning means and sensing and recording the alternations of emitting and blocking of rays to said ray-scanning means.

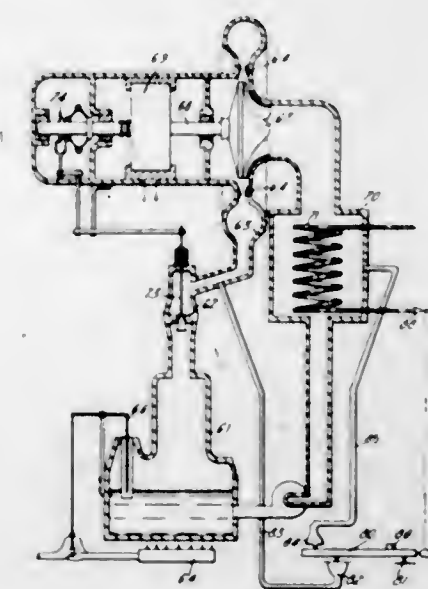
**3,409,781**  
**ELECTRO-OPTICAL ANGLE SENSOR**  
 Anthony Immarco, East Elmhurst, and Jerome E. Dennis, Huntington, N.Y., assignors to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York  
 Filed July 29, 1965, Ser. No. 475,736  
 6 Claims. (Cl. 250-225)



An electro-optical angle sensor is disclosed having an optical array that comprises an optical polarizer, an electro-optical cell and an optical analyzer in successive align-

ment on a common optical axis to respond to a light ray incident upon one end of the array, a source of voltage coupled to the cell for applying an electric field thereto, a photo-sensitive device positioned on the optical axis at the opposite end of the array and an output circuit coupled to the photo-sensitive device to produce an output signal functionally related to the angle of an incident light ray with respect to the optical axis.

**3,409,782**  
**POWER GENERATING UNITS**  
 Lucien Bronicki, Rehovoth, Israel, assignor to State of Israel, Prime Minister's Office, Jerusalem, Israel  
 Filed Oct. 8, 1965, Ser. No. 494,062  
 Claims priority, application Israel, Dec. 25, 1964, 22,670; Apr. 20, 1965, 23,395  
 18 Claims. (Cl. 290-2)

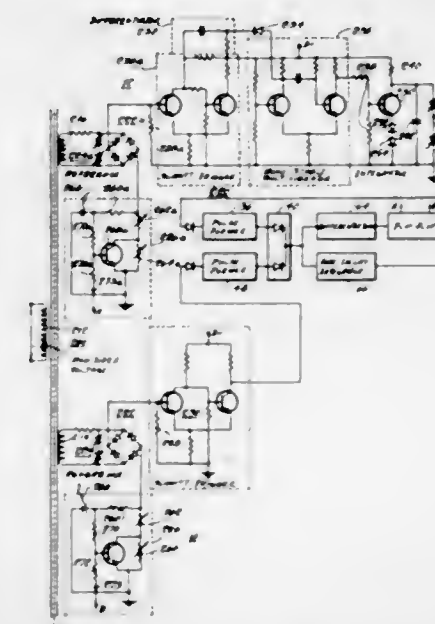


A power generating unit which operates on a closed Rankine cycle. The unit is adapted to drive a load. The unit includes the usual motive fluid, a boiler for evaporating the fluid to a vapor, a turbine having a turbine shaft and at least one primary nozzle to which the boiler vapor is fed and a condenser for condensing the exhaust vapor to a liquid which is recycled to the boiler. The improved feature of the unit resides in the inclusion of an arrangement at the exhaust side of the turbine for adjusting the density of the turbine exhaust vapor in accordance with the inlet density such that the exhaust vapor density is co-directional in change with the change in the inlet density. Thus, when the inlet density increases, the exhaust density increases, when the inlet density decreases, the exhaust density likewise decreases and when the inlet density remains constant, the exhaust density, too, remains constant. Thereby a substantial drop of the nozzle efficiency is prevented.

**3,409,783**  
**HIGH-LOW VOLTAGE AMPLITUDE MONITOR**  
 William H. Baehr, Uniondale, Bernard J. Stein, Jamaica, and Milton Weinberg, Plainview, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy  
 Filed Apr. 20, 1965, Ser. No. 449,661  
 3 Claims. (Cl. 307-64)

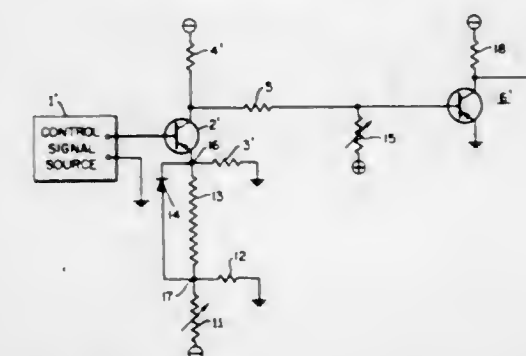
An overvoltage circuit and an undervoltage circuit that separately and continuously monitor the voltage amplitude of an alternating power supply at a generator, load or anywhere between, and more particularly, a voltage monitoring circuit for generating an electrical output that is usable for control purposes, e.g., to switch on a standby power supply substitute for the regular power supply

when the monitored voltage is outside predetermined overvoltage and undervoltage limits. For each voltage peak of either polarity that exceeds a selected overvoltage limit, the overvoltage circuit generates a pulse. On the other hand, when the voltage peaks of either polarity do not come up to the selected undervoltage limit, the undervoltage circuit generates a different output voltage. The overvoltage and undervoltage circuits have a stable operating condition defining predetermined tolerance limits for the amplitude of the monitored voltage and have another operating condition activated when the



monitored voltage falls outside those tolerance limits and defining narrowed tolerance limits for the monitored voltage which must be satisfied before the stable operating condition is restored. In other words the circuits revert to a transitory operating condition following overvoltage or undervoltage of the monitored voltage and perform a control function in the process, and remain in that condition until the continuously monitored voltage stabilized within the narrowed tolerance limits of the other operating condition for a predetermined number of successive peaks at which time the circuits revert to their original stable operating condition.

**3,409,784**  
**VOLTAGE LEVEL DETECTOR**  
 Uwe A. Pommerening, Webster, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware  
 Filed Oct. 5, 1964, Ser. No. 401,551  
 7 Claims. (Cl. 307-237)



A voltage level detector circuit is described including a transistor having base, emitter and collector electrodes with the collector electrode being connected to a voltage source by way of a first resistor. Second impedance means couples a voltage source to the emitter electrode. The impedance of the second means is adapted to decrease as the emitter-collector current increases. The emitter col-

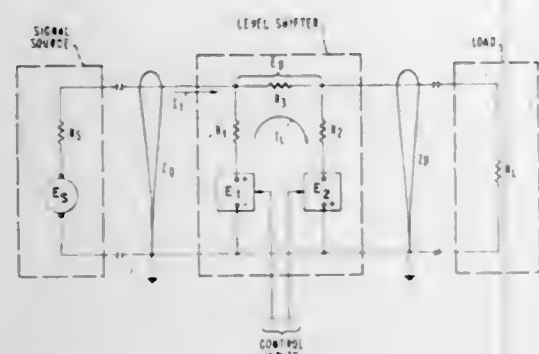


lector current increases in response to a control voltage applied to the base of the transistor whereby a relatively large voltage drop is produced across the first resistor which may be coupled to a threshold level device which produces large voltage level swings in response to the control voltage.

### 3,409,785 WIDE BAND ELECTRONICALLY VARIABLE LEVEL SHIFTER

Paul E. Stuckert, Katonah, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Nov. 10, 1965, Ser. No. 507,200  
7 Claims. (Cl. 307—237)

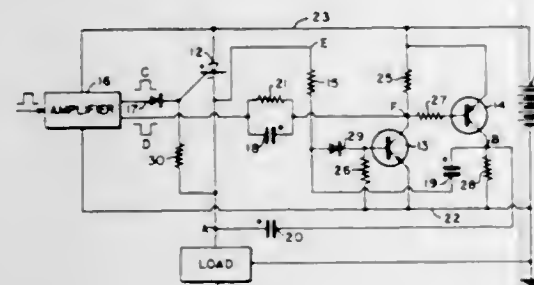


A D.C. level shifter for insertion in a transmission line between a source and load wherein the shift ( $E_0$ ) may be varied at will by concurrently varying two voltage sources of opposite polarity. In a preferred embodiment, the shifter comprises a pi resistance attenuator including three substantially non-reactive resistors, one of which is in series with one side of a transmission line and the other two are in series with said two voltage sources connected respectively across the line at opposite ends of said first resistance.

### 3,409,786 FAST ATTACK-SLOW RELEASE ELECTRONIC RELAY

William E. Nemeth, Cincinnati, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed Apr. 19, 1965, Ser. No. 449,115  
8 Claims. (Cl. 307—247)



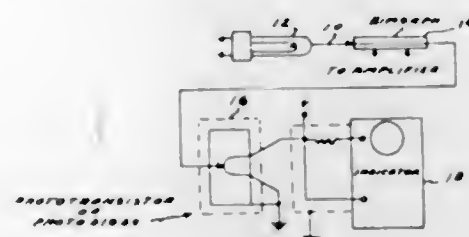
This is an electronic relay which, on command, closes and which, after a predetermined delay following removal of the command, opens. It includes a silicon-controlled rectifier switching device having a gating element, and means for supplying a command for closing the switching device and an order for opening the switching device. It includes further a source of energy and means for opening the switching device at a predetermined time following removal of the command. This means includes a monostable device, means responsive to the order for turning off the monostable device, a resistor in series with

the feedback capacitor in the monostable to constitute a timer, and means responsive to the final "on" condition of the monostable device to open the switching device. The monostable device comprises a pair of transistors arranged in complementary fashion with feedback circuitry including the feedback capacitor. This capacitor is arranged in a series circuit with the switching device and the energy source and the resistor and capacitor are proportioned in such a way that, on removal of the command, the monostable device is held off for a predetermined period of time and then turned on.

### 3,409,787 PIEZOELECTRIC TRANSDUCER SYSTEM

Eugene Agalides and Leslie C. Stewart, Rochester, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force

Filed Nov. 15, 1966, Ser. No. 594,588  
4 Claims. (Cl. 310—8.2)

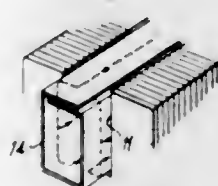


1. A system for stressing a piezoelectric element to provide a mechanical displacement output comprising: a piezoelectric element having electrical-energy receiving input terminals, amplifier means coupled to said input terminals for electrically driving said element to cause its mechanical displacement by energizing said input terminals, means for measuring the displacement of said element from a static position, equivalent network means connected to the input of said amplifier means and having the characteristics of a zero at the same frequency as the pole of the equivalent circuit of said element, said equivalent network means including adjustable means for damping the ringing of said piezoelectric element, and source means coupled to said equivalent network means for introducing an electrical signal proportional to the physical quantity to be measured.

### 3,409,788 SPARK SUPPRESSOR FOR COMMUTATING ELECTRICAL MACHINES

Philip Lester Taylor, Marple, Cheshire, England, assignor to Associated Electrical Industries Limited, London, England, a company of Great Britain

Filed May 18, 1965, Ser. No. 456,637  
Claims priority, application Great Britain, May 26, 1964, 21,717  
7 Claims. (Cl. 310—220)



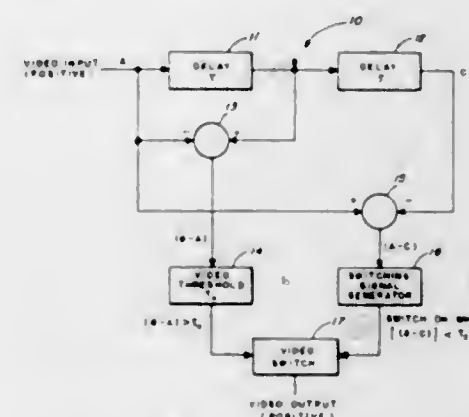
For the commutator type machine having a commutator with armature coils connected thereto, a flux-trapping arrangement for suppressing sparking at the commutator by opposing abrupt changes of flux intensity and pattern and hence of stored energy which would

accompany such sparking if unsuppressed. The arrangement includes a sheet-form conductive material so located in a flux zone surrounding the armature coils as to have eddy currents generated therein by incipient abrupt changes of flux in the zone. The eddy currents tend to oppose such changes and the thickness of the sheet material is such that, when the zone is traversed by flux which changes relatively slowly in normal action of the machine, the presence of the material will have insignificant effect as regards such slow flux changes.

### 3,409,789 ELECTRICAL SPATIAL DISCRIMINATION TECH- NIQUE FOR IMAGE SCANNING SENSORS

Michael J. Cantella, Burlington, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Sept. 30, 1965, Ser. No. 492,365  
4 Claims. (Cl. 328—112)

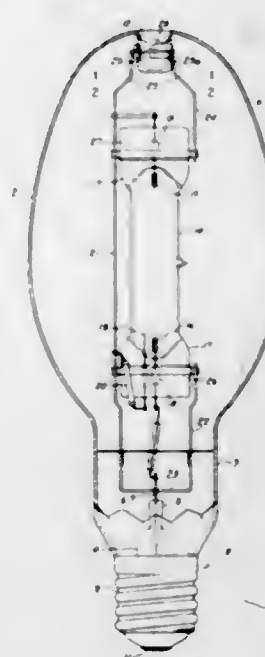


There is disclosed a system which is basically a time domain filter capable of selecting positive pulses which exceed a selectable minimum amplitude and which are narrower than a selectable width, even though these pulses are superimposed on reasonably high level background signals.

### 3,409,790 ARC TUBE MOUNTING

Klaus Gottschalk, Cleveland Heights, Ohio, assignor to General Electric Company, a corporation of New York

Filed Nov. 14, 1966, Ser. No. 594,220  
4 Claims. (Cl. 313—25)



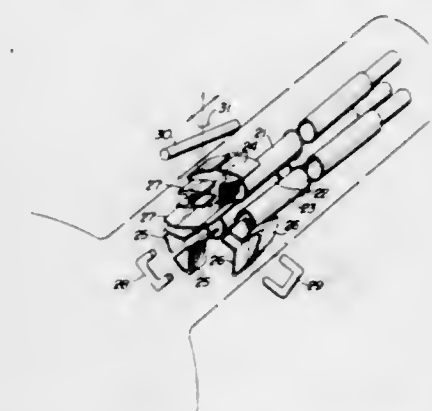
1. A jacketed electric discharge lamp comprising a vitreous outer envelope having a base at one end and an inwardly turned dimple at the other, an inner arc tube within said outer envelope, a frame supporting said arc

tube within said outer envelope and including a transverse portion at said other end, said transverse portion forming a half-loop around said dimple and clear of it, and a springy clip attached to said transverse portion and encircling said dimple except for a narrow gap, said clip being so oriented that the gap faces the inside of said half-loop, said clip providing support to said frame at said other end.

### 3,409,791 COLOR TUBE CONVERGENCE SYSTEM DE- FLECTING BEAM IN TWO DIRECTIONS WITH SINGLE MAGNET

Shigeo Ashizaki, Hirakata-shi, and Masaharu Kaname, Kyoto, Japan, assignors to Matsushita Electronics Corporation, Kadoma-shi, Osaka, Japan, a corporation of Japan

Continuation of application Ser. No. 417,860, Dec. 14, 1964. This application Sept. 14, 1967, Ser. No. 667,865  
Claims priority, application Japan, Dec. 17, 1963, 38/68,634  
5 Claims. (Cl. 313—76)

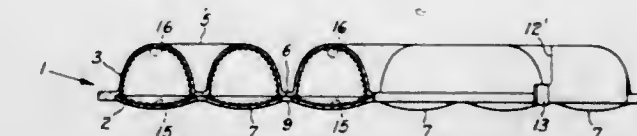


A shadow mask-type color image tube comprising three electron guns in an evacuated envelope with one gun being provided with a pair of horizontal deflecting pole pieces and a pair of vertical deflecting pole pieces made of ferromagnetic material. Magnetizing means are arranged outside of the envelope to magnetize both the pair of horizontal deflecting pole pieces and the pair of vertical deflecting pole pieces. The magnetizing means comprises only one magnet so mounted that the magnetic lines of force of the magnet act on both pairs of deflecting pole pieces.

### 3,409,792 FLUORESCENT PANEL LAMPS WITH WHITE EMITTING PHOSPHOR COATED ON ENVE- LOPE BACKPLATE AND RED EMITTING PHOSPHOR COATED ON ENVELOPE FACE- PLATE

William C. Martyn, Lyndhurst, and Percy J. Underwood, Mentor-on-the-Lake, Ohio, assignors to General Electric Company, a corporation of New York

Filed Nov. 15, 1965, Ser. No. 507,892  
3 Claims. (Cl. 313—109)



To achieve a desired color rendition in a panel fluorescent lamp having appreciably more surface area in the backplate than in the faceplate, it is preferable to coat different phosphors on the backplate and the faceplate and allow the light to blend, rather than to mix the phosphors and coat both plates with the mixture. The phosphor which is more efficient or less expensive than the other is coated more thickly on the backplate which operates

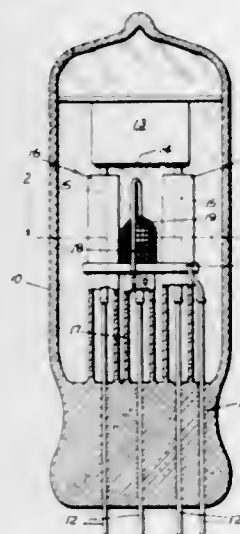


in part as a reflector, and the other is coated more thinly on the faceplate which operates primarily to transmit light. This arrangement permits a gain in efficiency or a reduction in cost.

**3,409,793**  
**GAS-FILLED DISCHARGE DEVICE HAVING A GRID WITH AN ELEMENT PARTICULARLY SPACED FROM THE CATHODE**

Paul W. Stutsman, Needham, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware  
Original application June 25, 1949, Ser. No. 101,279.  
Divided and this application May 22, 1951, Ser. No. 227,693

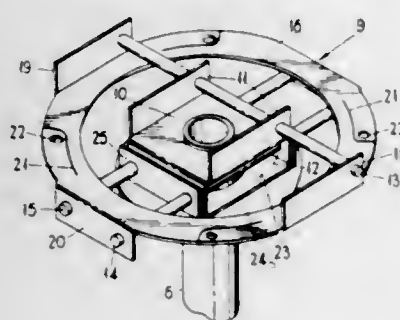
5 Claims. (Cl. 313—193)



1. An electron discharge device comprising a gas-filled envelope containing an anode, a cathode, and a grid structure interposed between said anode and said cathode, said grid structure shielding said anode from said cathode and having an additional element thereof positioned at substantially the minimum breakdown distance from said cathode.

**3,409,794**  
**SUPPORT ARRANGEMENT FOR THE ELECTRODES OF AN ELECTRIC DISCHARGE DEVICE**  
Vincent A. Heathcote, Fulham, London, England, assignor to The M-O Valve Company Limited, London, England, a British company  
Filed Dec. 22, 1965, Ser. No. 515,578  
Claims priority, application Great Britain, Dec. 31, 1964, 53,039/64

5 Claims. (Cl. 313—261)

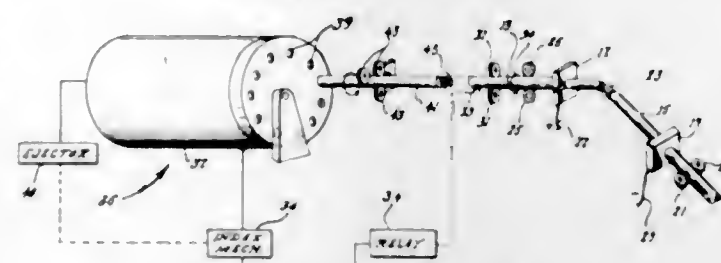


An electric discharge device including two tubular electrodes supported one within the other by a support arrangement comprising at least two rods each of which fits slidingly through at least one aperture in each of two members which are respectively rigidly fixed to the two tubular electrodes, the axes of the rods extending in directions which are parallel to a plane transverse to the axes of the electrodes and being at an appreciable angle to one another so that relative movement between the electrodes at least in a direction perpendicular to their axes is prevented.

**3,409,795**  
**CONTINUOUS BURNING HIGH-INTENSITY ARC LAMP**

Carl Lauxen, Haddonfield, and John B. Long, Jr., Medford, N.J., assignors, by mesne assignments, to the United States of America  
Continuation-in-part of application Ser. No. 324,899, Nov. 19, 1963. This application Dec. 27, 1966, Ser. No. 605,109

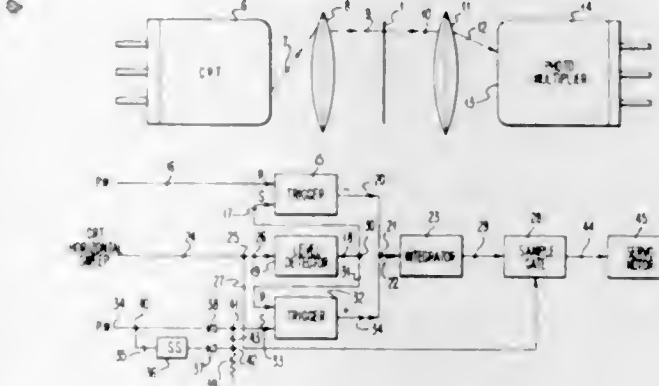
4 Claims. (Cl. 314—1)



1. In a continuous burning high-intensity arc lamp including a pair of arcing electrodes, a plurality of drive rollers for feeding said electrodes toward a common arc point, guide and jaw means for applying potentials of opposite polarity to each of said arcing electrodes, a first pair of rotation rollers for slowly rotating the arcing electrode of positive polarity in a clockwise direction, said positive electrode having an inside threaded rearward end, means for providing a continuous supply of electrodes to said lamp comprising, detecting means for signalling the approach of the rearward end of said positive electrode, a rotating magazine for storing and urging unused electrodes forward into contact with the rearward end of said positive electrode in response to the signal from said detecting means, a second pair of rotation rollers pivotally mounted for rotating the unused electrode from said magazine clockwise at a faster rate than the slowly rotating positive electrode, said unused electrode having an outside threaded forward end arranged to engage the threads in the rearward end of said positive electrode, the relative difference in rotation causing said unused electrode to be threaded into said positive electrode and becoming an integral part thereof.

**3,409,796**  
**CATHODE RAY TUBE MICROFILM INDEXING SYSTEM**  
James B. Money, San Jose, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Oct. 14, 1964, Ser. No. 403,862

6 Claims. (Cl. 315—10)

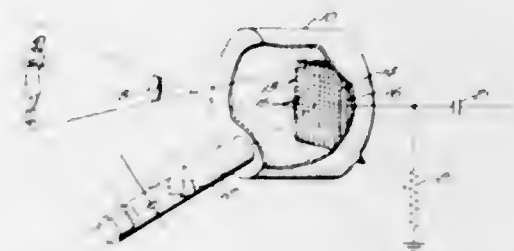


A selected frame on a length of non-sprocketed microfilm is moved into approximate alignment with an optical station. The two edges of the border are swept by a cathode ray tube spot. A photomultiplier converts the modulated light from the edges of the border into a voltage. A pulse is generated at the midpoint of the horizontal sweep of the cathode ray tube. The falling edge of the initial photomultiplier output is used to set a trigger to a plus state. The trigger is reset by the center pulse of the CRT

sweep. The center pulse also sets another trigger to a minus state of equal amplitude and this trigger is reset by the leading edge of the second photomultiplier output. Both trigger outputs are fed into an integrating circuit. The value of the integral is representative of positional error with respect to the center of the cathode ray tube. An associated servo motor is then operated to null this error.

**3,409,797**  
**IMAGE TRANSDUCING DEVICE**  
Bernd Ross, Arcadia, Calif., assignor, by mesne assignments, to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware  
Filed Apr. 26, 1966, Ser. No. 545,339

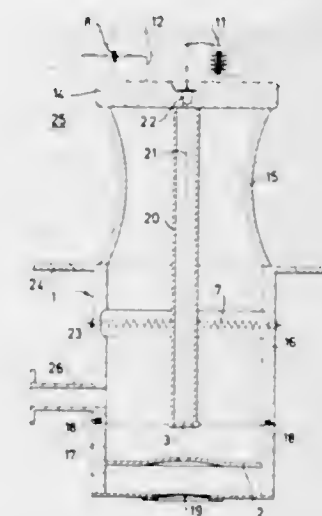
4 Claims. (Cl. 315—10)



An image transducing device, including among other elements a sensing device and scanning means, for translating an image into electrical signals. The sensing device comprises a semiconductor wafer of a first conductivity having on one face of the wafer a great number of photo diodes which are areas or islands of a second conductivity separated from the wafer by a PN junction and having conductor means on another face of the wafer. The photo diodes or islands are formed in a predetermined relationship to one another and overall may be formed in a pattern which is a function of indicia to be sensed. The scanning means and conductor means develop a signal dependent upon the light intensity on the photo diodes.

**3,409,798**  
**ELECTRON IRRADIATION MACHINE**  
John David McCann, Abingdon, England, assignor to United Kingdom Atomic Energy Authority, London, England  
Filed July 31, 1967, Ser. No. 657,163  
Claims priority, application Great Britain, Aug. 8, 1966, 35,437/66

2 Claims. (Cl. 315—14)

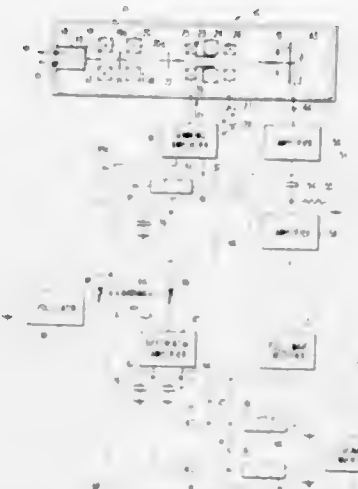


An electron irradiation machine comprising an evacuated envelope having a diode, which regulates an A.C. voltage source, for controlling the electron flow from an emitter cathode to a remote apertured anode. The emitter cathode is mounted on a hollow conducting stem and the diode has an anode, which is the stem, and a cathode surrounding the stem.

856 O.G.—9

**3,409,799**  
**AUTOMATIC FOCUSING SYSTEM FOR BEAM DEVICES**  
Fred Kurzweil, Jr., Saratoga, Robert R. Barber, San Jose, and Martin H. Dost, Los Gatos, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Aug. 29, 1966, Ser. No. 575,730

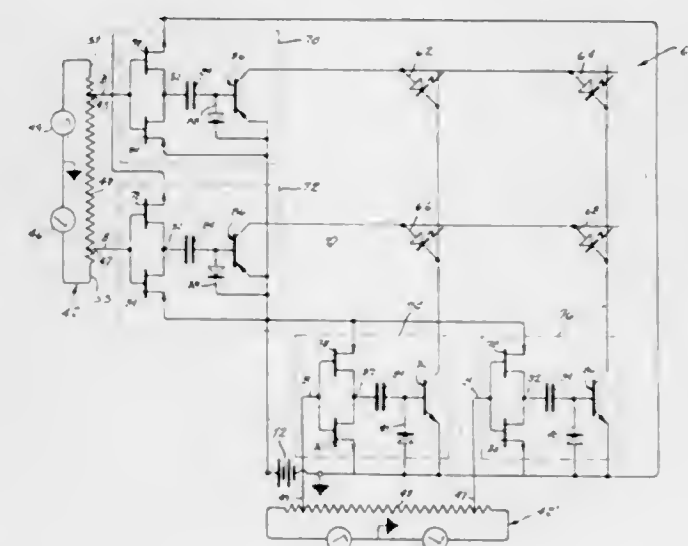
8 Claims. (Cl. 315—31)



A beam focusing device wherein the beam is scanned across an alternately transparent and opaque target and an average indication of the rise time of the beam intensity is measured at a point beyond the target as the beam moves past to generate an electrical signal, which signal is differentiated and peak detected to gain an indication of the beam focus condition. By dithering the beam focus and synchronously comparing the signals, a continuous differential signal is generated for resetting the beam focus until the focus conditions at each end of the dither are equalized, thereby indicating the beam is focused to a minimum spot size at the target.

**3,409,800**  
**FIELD EFFECT TRANSISTOR CONTROL CIRCUITRY FOR MULTI-AXIS DISPLAY SYSTEMS**  
William C. Myers, Ballwin, and David L. Granteer, Overland, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
Continuation-in-part of application Ser. No. 510,639, Nov. 30, 1965. This application July 1, 1966, Ser. No. 562,326

8 Claims. (Cl. 315—169)



A double-axis array of electroluminescent devices, each connected in series circuit with the collector-emitter path of a switching transistor and a D.C. power supply. Each transistor has its base coupled by means of a capacitor to



a circuit consisting of the series connection of enhancement and depletion type field-effect transistors, whose gate electrodes are connected to a common control voltage source. Separate control voltage sources are provided for each axis of the array so that the control circuits associated with each axis may be sequentially and synchronously actuated to produce a T.V. type scanning of the electro-luminescent devices.

3,409,801

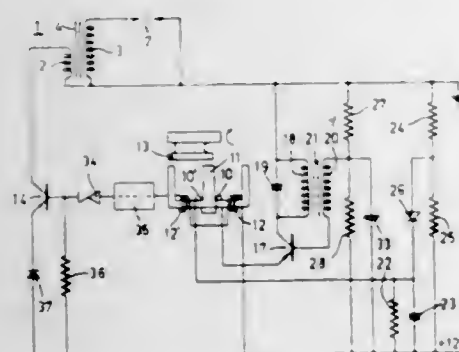
**IGNITION DEVICE FOR COMBUSTION ENGINES**

Hugo Georg Bruijning and Johan Leonard Baartman, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed July 6, 1964, Ser. No. 380,336

Claims priority, application Netherlands, July 4, 1963, 294,935

14 Claims. (Cl. 315-209)



1. An ignition system for an internal combustion engine having at least one spark plug coupled to a high voltage ignition coil comprising, a three-limbed core of ferromagnetic material comprising a central limb and a pair of outer limbs, a first bipartite winding comprising a first winding section mounted on one of said outer limbs and a second winding section mounted on the other of said outer limbs, a second bipartite winding comprising a first winding section mounted on one of said outer limbs and a second winding section mounted on the other of said outer limbs, the first and second winding sections of one of said bipartite windings being wound in opposite directions, a source of alternating voltage coupled to said first bipartite winding and having a frequency which is high relative to the maximum engine speed, a ferromagnetic armature rotated in synchronism with the engine and positioned adjacent the limbs of said core so as to bridge no more than one pair of limbs at any given instant during said rotation, said armature being operative to periodically vary the reluctance of the magnetic circuit comprising the central limb and at least one of said outer limbs of the core so that the alternating voltage applied to said first bipartite winding induces discrete voltage pulses in said second bipartite winding, and means responsive to said induced pulses for energizing said ignition coil to produce high voltage electric ignition pulses for said sparkplug in synchronism with the engine rotation.

3,409,802

**UNDERVOLTAGE AND OVERCURRENT BATTERY PROTECTIONS CIRCUIT**

John W. Savage, Bethesda, Md., assignor to The Susquehanna Corporation, a corporation of Delaware

Filed May 2, 1966, Ser. No. 546,833

10 Claims. (Cl. 317-31)

An embodiment of this battery-protection circuit includes two transistors which are connected regeneratively to function as a fast-acting switch. An RC path is provided to turn the switch on so that current flows through this switch to the load. A Zener diode, which functions as a

voltage level sensor, is connected in the base circuit of one of the transistors. If the input drops to the Zener voltage either because of a drop in battery voltage or be-



cause of a short circuit across the load, the current to the base of this latter transistor is insufficient to support saturation and the switch regeneratively turns off, terminating all current flow from the battery.

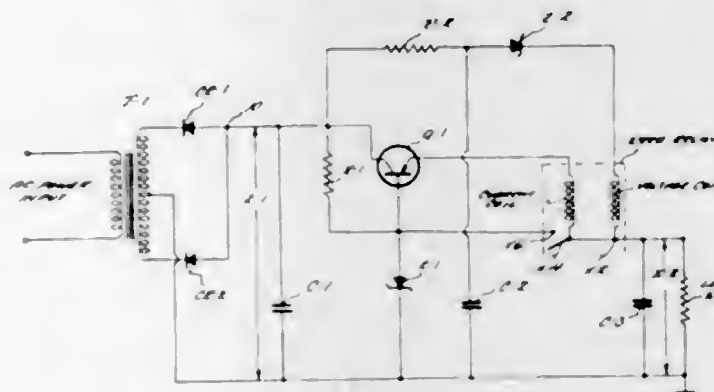
3,409,803

**PROTECTIVE CIRCUIT FOR SOLID STATE REGULATED POWER SUPPLIES**

John H. De Witt, Jr., 3602 Hood Hill Road, Nashville, Tenn. 37215

Filed Nov. 16, 1966, Ser. No. 594,919

7 Claims. (Cl. 317-33)



Circuitry for protecting a current carrying regulator transistor against overload, the circuitry including a high speed reed relay which responds to overload current to immediately terminate the conduction of the transistor and which maintains the transistor in its non-conducting state.

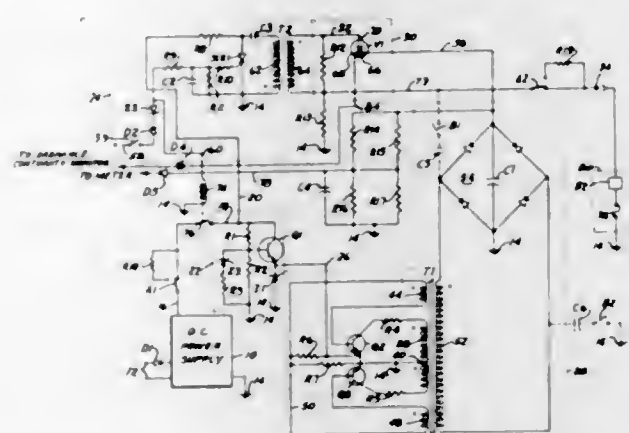
3,409,804

**ORDNANCE CONTROL CIRCUIT**

Weldon S. Bankston, Jr., Fountain Valley, Calif., assignor to HI-Shear Corporation, Torrance, Calif., a corporation of California

Filed Aug. 25, 1966, Ser. No. 574,986

16 Claims. (Cl. 317-80)



1. A circuit for exploding a bridgewire, said bridgewire forming a portion of a safetied ordnance device capable of being switched to a first impedance by application of a predetermined current and to a second impedance by application of a predetermined voltage, said second impedance being substantially less than said

first impedance, said circuit comprising: a D.C. source; terminal means adapted to be connected to said bridgewire; converter means connected to said source for supplying a D.C. voltage having a value capable of exploding said bridgewire; firing means connected to said converter means for supplying said D.C. voltage to said terminal means at a predetermined time; and first conditioning means connected to said firing means for applying said predetermined voltage to said ordnance device to switch said ordnance device to its second impedance.

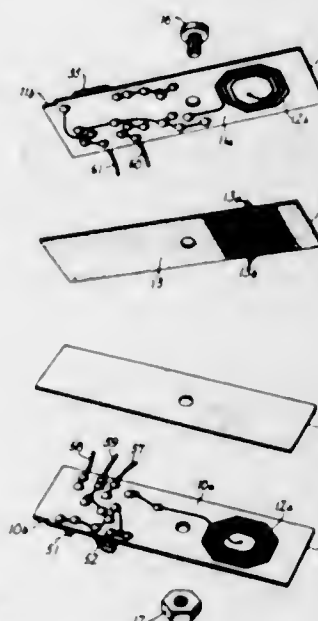
3,409,805

**PRINTED-CIRCUIT BOARD COUPLING CIRCUIT WITH D-C ISOLATION**

Willard E. Whipple, Wrentham, Edward Schoppe, Jr., Walpole, and William E. Earle, N. Easton, Mass., assignors to The Foxboro Company, Foxboro, Mass.

Filed Aug. 12, 1965, Ser. No. 479,238

11 Claims. (Cl. 317-101)



A printed circuit construction providing conductively isolated coupling between a signal circuit and a receiving circuit, the construction including a pair of parallel circuit boards having spiral windings in axial alignment to permit inductive coupling therebetween, one circuit board carrying circuitry for generating an A-C signal in the respective winding, the other circuit board including a rectifier-circuit producing a D-C signal in response to any A-C voltage induced in its spiral winding, there being an electrostatic shield between the two windings in the form of a plurality of elongate strips of conductive material positioned side-by-side but not touching one another except at one end thereof, thereby to permit inductive coupling between the spiral windings.

3,409,806

**ELECTROMAGNETIC DEVICES WITH GREAT MAGNETOMOTIVE FORCES**

Lothar Fritz, Cologne-Braunsfeld, Germany, assignor to Steinert Elektromagnetbau, Cologne-Braunsfeld, Germany

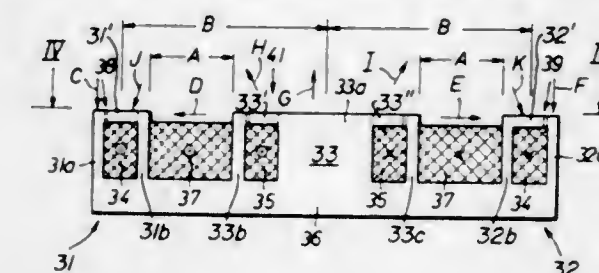
Filed Oct. 14, 1965, Ser. No. 495,903

Claims priority, application Germany, Dec. 15, 1964, St 23,085

31 Claims. (Cl. 317-155.5)

An electromagnet having main pole portions magnetically insulated from each other. The pole portions are subdivided into a number of partial poles enclosing an auxiliary coil. The auxiliary coil and a principal coil generate the same polarity in each of these partial poles. The latter are connected by a bridge-member of low

magnetic resistance, so that the pole face is enlarged. The resulting lines of magnetic force extend largely in a substantially perpendicular direction thereto. With the



resulting enlargement of the pole face larger effective forces are realized for a given predetermined magnitude of current through the electromagnet.

3,409,807

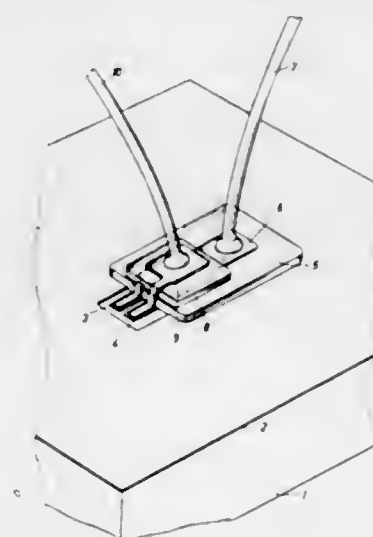
**SEMICONDUCTOR ARRANGEMENT WITH CAPACITATIVE SHIELDING MEANS BETWEEN CONDUCTIVE STRIPS AND SEMICONDUCTOR BODY**

Dieter Gerstner, Heilbronn, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany

Filed Jan. 7, 1965, Ser. No. 424,089

Claims priority, application Germany, Jan. 8, 1964, T 25,387

4 Claims. (Cl. 317-234)



1. A semiconductor arrangement comprising, in combination:

- (a) a semiconductor transistor body having emitter, collector and base electrodes;
- (b) an insulating layer covering said transistor body;
- (c) a metallic coating on said insulating layer;
- (d) a further insulating layer on said metallic coating; and
- (e) two conductive strips for contacting two of said electrodes, each conductive strip having a portion lying on said further insulating layer, said metallic coating between said two insulating layers thus acting as a means forming a capacitive shield between said portions of said two conductive strips and said transistor body.

3,409,808

**HIGH VOLTAGE DIODE FOR LOW PRESSURE APPLICATIONS**

Edward J. Diebold, Palos Verdes Estates, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California

Filed Mar. 12, 1965, Ser. No. 439,251

10 Claims. (Cl. 317-234)

1. A high voltage diode comprising a housing body for housing and completely enclosing a semiconductor wafer,



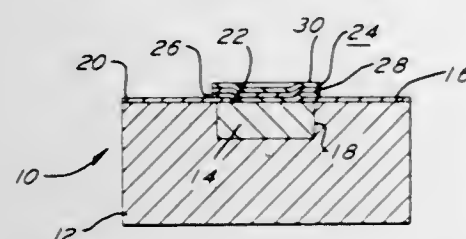
a conductive end member connected across one end of said housing body and extending beyond the periphery of said housing body to define an end flange; an extending lead extending from the other end of said housing body and connected to a first portion of said semiconductor wafer; a second portion of said semiconductor wafer connected to said conductive end member; and an insulation sheath; said insulation sheath having a generally tubular



shape and surrounding said housing body and said extending lead; a first end of said insulation sheath being directly secured to the surface of said flange facing said housing body; the other end of said sheath being directly connected to and around said extending lead; the interior surface of said insulation sheath being intimately secured to the adjacent exterior surfaces of said housing body and said extending lead.

### 3,409,809 SEMICONDUCTOR OR WRITE TRI-LAYERED METAL CONTACT

Donald S. Diehl, Southampton, Pa., assignor to IRC, Inc., Philadelphia, Pa.  
Filed Apr. 6, 1966, Ser. No. 540,745  
4 Claims. (Cl. 317-234)



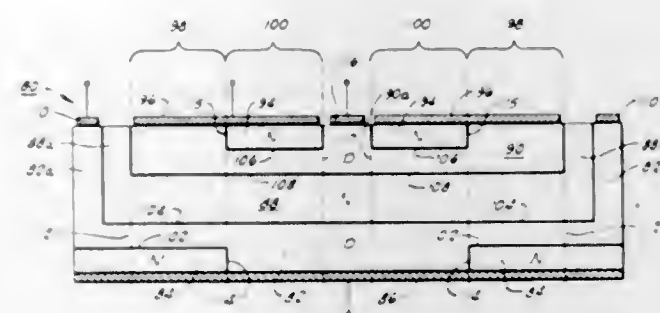
The invention provides a semiconductor and an ohmic contact on its surface. The contact comprises three superposed layers of different metals in the form of coatings applied one over another.

### 3,409,810 GATED SYMMETRICAL FIVE LAYER SWITCH WITH SHORTED EMITTERS

Walter T. Matzen, Jr., Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware  
Filed Mar. 31, 1964, Ser. No. 356,195  
5 Claims. (Cl. 317-235)

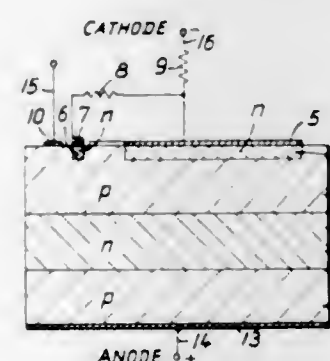
1. A gated semiconductor switching device comprising a semiconductor body having:  
a first n-type semiconductor region;  
substantially coextensive first and second p-type semiconductor regions on each side of the first n-type semiconductor region forming junctions therewith;  
second and third n-type semiconductor regions adjacent the first and second p-type semiconductor regions, respectively, forming first and second emitter-base junction areas over portions of the respective

first and second p-type semiconductor regions which are not coextensive leaving exposed portions of the respective p-type semiconductor regions;  
two n-region terminal means, one connected to the second and one connected to the third n-type semiconductor regions;  
two p-region terminal means, one connected to the first and one connected to the second p-type semiconductor regions;  
two conductor means such connecting an n-region terminal to its adjacent p-region terminal, and



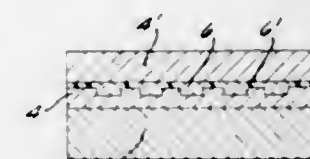
gate terminal means connected to the respective p-type semiconductor regions for introducing a gate current in each of the p-type semiconductor regions at an edge of the emitter-base junction opposite from the shorted edge of the respective emitter-base junction such that the gate current will flow either through the respective emitter-base junction or flow transversely through the respective p-type semiconductor region before it reaches the shorted junction and forward bias the emitter-base junction causing it to conduct and trigger the device "on."

3,409,811  
FOUR-ZONE SEMICONDUCTOR RECTIFIER WITH SPACED REGIONS IN ONE OUTER ZONE  
Willi Gerlach, Frankfurt am Main-Eschersheim, Germany, assignor to Licentia-Patentverwaltungs-G.m.b.H., Frankfurt am Main, Germany  
Filed Nov. 29, 1965, Ser. No. 510,333  
Claims priority, application Germany, Nov. 28, 1964, L. 49,404; Apr. 27, 1965, L. 50,587  
6 Claims. (Cl. 317-235)



A controllable semiconductor rectifier having four zones of alternately opposite conductivity types, the two outer zones carrying main electrodes and a layer adjacent one of the outer layers carrying a control electrode, the ability of the rectifier to conduct large currents at short switch-on times being improved by forming one of the outer layers so that it defines a main region on which its associated main electrode is entirely disposed and a secondary region disposed closer to the control electrode than is the main region and separated from the main region by an electrical resistance.

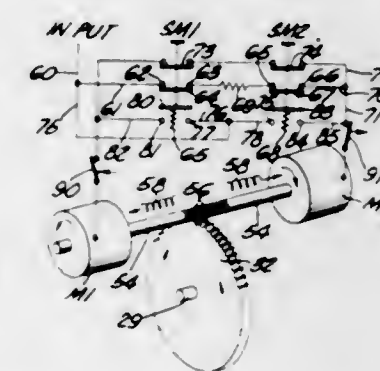
3,409,812  
SPACE-CHARGE-LIMITED CURRENT TRIODE DEVICE  
Rainer Zuleeg, Newport Beach, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware  
Continuation-in-part of application Ser. No. 507,337, Nov. 12, 1965. This application July 11, 1966, Ser. No. 575,480  
7 Claims. (Cl. 317-235)



A space-charge-limited current triode comprising a control layer or grid of substantially intrinsic semiconductor material embedded in a semiconductor body so as to separate it into two high-resistivity regions.

### 3,409,813 MOTOR OPERATED ADJUSTOR MECHANISM UTILIZING PLURAL MOTORS AND CLUTCH MEANS

Don Heyer, 1019 N. Raymond Ave., Fullerton, Calif., 92631  
Filed Apr. 27, 1965, Ser. No. 451,146  
16 Claims. (Cl. 318-8)



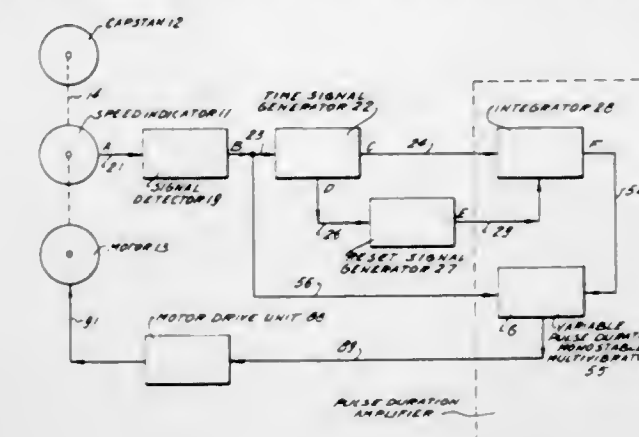
Motor operated adjustor mechanism for selectively effecting rotation of an adjustor member in opposite directions by means of two unidirectional motors having their shafts axially aligned and being reciprocable towards each other in response to shifting movement of the motor rotors when the motors are energized to bring clutch means thereon into driving engagement with a common gear, and reciprocable away from each other under urging springs to disengage the clutch means. The control is arranged to selectively energize the motors for effecting the desired direction of rotation of the adjustor member, and for energizing both motors so as to be drivingly clutched to the gear, but due to their tendency to rotate the gear in opposite directions will lock and hold the gear against retrograde movement from an adjusted position of the adjustor member. Indicating means are drivingly coupled with the gear for indicating the extent of adjustment.

### 3,409,814 VARIABLE PULSE SYSTEM FOR CONTROLLING DC MOTOR SPEED BY VARIATION OF SUPPLIED CURRENT

Yasuo Azuma and Tamotu Takeuchi, Kawasaki-shi, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan  
Filed Mar. 9, 1966, Ser. No. 533,019  
Claims priority, application Japan, Mar. 17, 1965, 40/15,774  
5 Claims. (Cl. 318-341)

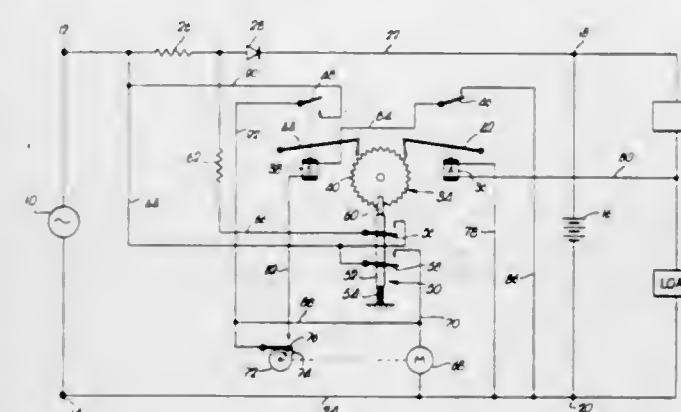
A speed indicator produces a speed signal having a plurality of spaced pulses and intervals between adjacent

pulses varying inversely in duration with the speed of rotation of a motor. A time signal is produced from the speed signal and has a plurality of spaced time pulses of one polarity having equal pulse durations. The time pulses are spaced by pulses of the opposite polarity having pulse durations corresponding to the intervals between adjacent pulses of the speed signals. A pulse duration amplifier proportionally extends the durations of the oppo-



site polarity pulses to produce a control signal having a plurality of pulses having pulse durations corresponding to the intervals between adjacent pulses of the speed signal and extended in duration over the durations of the opposite polarity pulses. A motor control supplies current to the motor and controls the current supplied to the motor by varying the rate of flow of current to the motor in accordance with the durations of the pulses of the control signal.

3,409,815  
DUAL RATE BATTERY CHARGER WITH HIGH RATE CONTROLLED BY AMOUNT OF DISCHARGE  
Robert L. Wright and Philip G. Chance, Centralia, Mo., assignors to A. B. Chance Company, Centralia, Mo., a corporation of Missouri  
Filed May 3, 1966, Ser. No. 547,214  
6 Claims. (Cl. 320-10)



A battery charger utilizes a constant current source to trickle charge a storage battery to compensate for self-discharge. Each demand for load current from the battery is registered by a totalizer in the form of a stepper relay having add and subtract solenoids that operate a ratchet wheel. The add solenoid is energized with each demand, and the subtract solenoid is subsequently energized following a predetermined time period during which increased, high level charging current is delivered to the battery. The totalizer continues to register any subsequent demands and serves as a memory of such demands, the accumulated total being reduced by one each time the subtract solenoid is energized. Therefore, the battery is subjected to the high level charging cur-

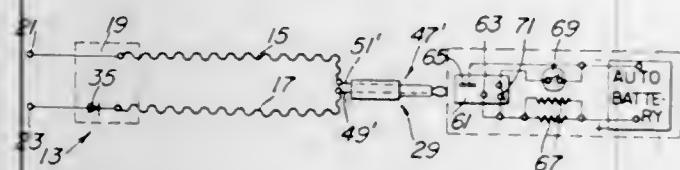


rent for a time duration proportional to the number of demands and until the totalizer is returned to its zero registration condition.

### 3,409,816 CONNECTOR TO CHARGE AUTOMOBILE BATTERY

Merrill Joseph Foster, Fox River Grove, Ill., assignor to Marine Industries Inc., Barrington, Ill., a corporation of Illinois

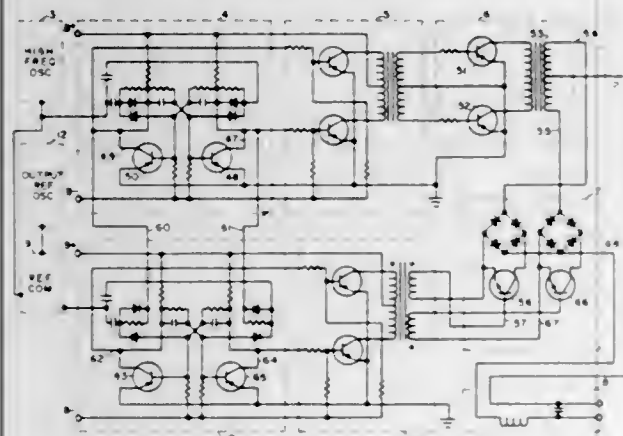
Filed May 19, 1966, Ser. No. 551,322  
2 Claims. (Cl. 320-57)



An electrical converter cord adapted to charge an automobile battery embodying at one end of the cord, an electrical plug body of insulating material showing an axial channel with a diode and a resistor in the channel. The other end of the cord has a means to connect the charging source to the battery—e.g. a jack plug adapted to charge the battery through the car headlights and which simultaneously opens the automobile headlight switch.

### 3,409,817 PHASE DEMODULATED HIGH FREQUENCY INVERTER

Jimmie D. Gillett, Garland, Tex., assignor to Varo, Inc.  
Filed Aug. 10, 1965, Ser. No. 478,595  
16 Claims. (Cl. 321-5)



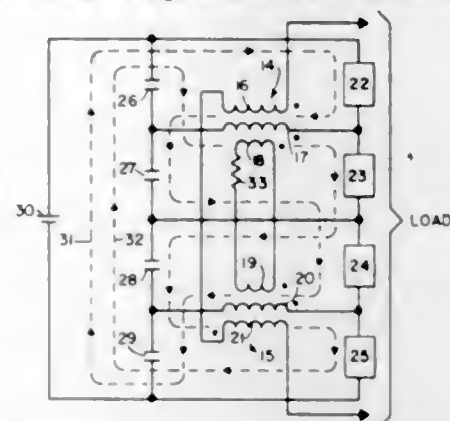
A switching power amplifier or phase demodulated high frequency inverter for converting direct current power to alternating current power. A DC to AC power converter operates at a given rate in a square wave switching mode and generates AC output power stepped up to the required voltage level by its output transformer which also provides isolation between the input and the output. The output is then phase demodulated at the desired output frequency by synchronously switched bilateral switching elements. The resultant output from the demodulator is a square wave at twice the converter operating frequency, deeply time modulated at the selected output frequency.

### 3,409,818 SELF-BALANCING MULTIPLE HALF BRIDGE

Jimmie D. Gillett, Garland, Tex., assignor to Varo, Inc.  
Filed Sept. 14, 1966, Ser. No. 579,277  
2 Claims. (Cl. 321-27)

A self-balancing multiple half bridge circuit which forces a number of series connected bridges to share the input voltage equally. A self-balancing multiple half bridge for use in a power supply to enable the power

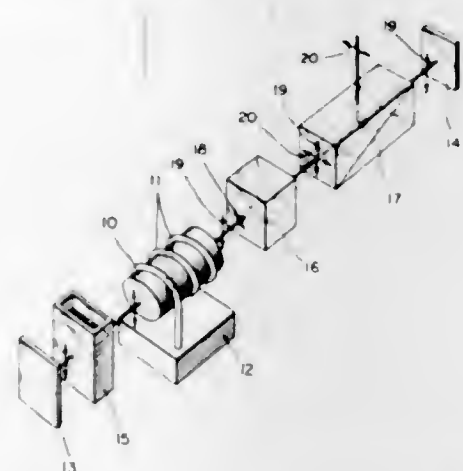
supply to use available semiconductors to convert the high input voltage down to a prescribed lower level. The circuit



reduces voltage stresses across the transformers and overcomes the voltage sharing problem.

### 3,409,819 INTERNAL LASER HARMONIC GENERATOR WITH FREQUENCY SEPARATING PRISM OUTPUT COUPLER

Bernard H. Soffer, Northridge, Calif., assignor to Union Carbide Corporation, a corporation of New York  
Filed Jan. 22, 1965, Ser. No. 427,448  
5 Claims. (Cl. 321-69)

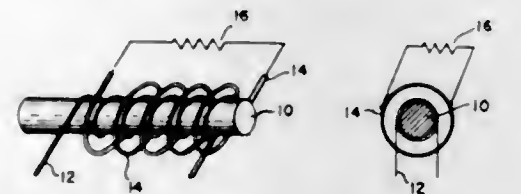


The disclosure contemplates a method and apparatus for generating a harmonic of laser light by employing one hundred percent reflecting end mirrors to provide a very high Q laser cavity together with a non-linear dielectric medium disposed in the cavity to generate the desired harmonic. The fundamental and harmonic are orthogonally polarized with respect to each other and passed through a polarizing prism to deflect the generated harmonic out of the optical cavity, the fundamental light simply passing through the prism between the end mirrors.

### 3,409,820 ELECTRIC POWER APPARATUS

James O. Burke, 4705 Rolfe Road, Richmond, Va. 23226

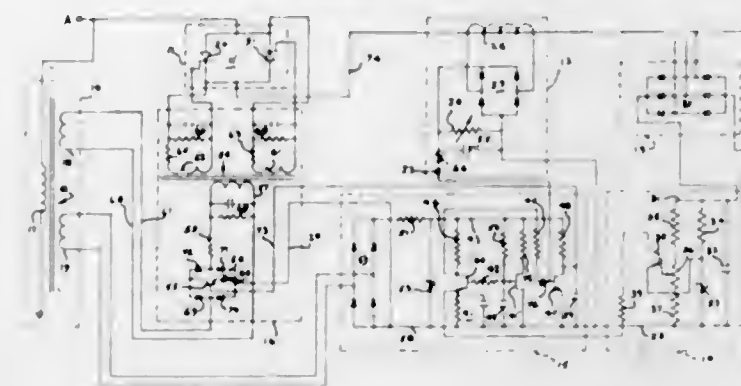
Filed July 10, 1964, Ser. No. 381,754  
8 Claims. (Cl. 322-2)



1. Apparatus for amplifying electric current comprising, a metal core, a primary coil of radioactive material around said core, and a secondary coil of conductive material, positioned over said primary coil, and from which electric current induced thereinto from said metal core and primary coil may be transmitted to a workload.

### 3,409,821 REGULATOR CIRCUIT TO PROVIDE A REGULATED OUTPUT INSENSITIVE TO INPUT PHASE AND FREQUENCY VARIATIONS AND INPUT VOLTAGE AND TRANSIENT CONDITIONS

Donald Watson Bingley, Mechanicsburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.  
Filed Apr. 22, 1965, Ser. No. 450,014  
3 Claims. (Cl. 323-20)

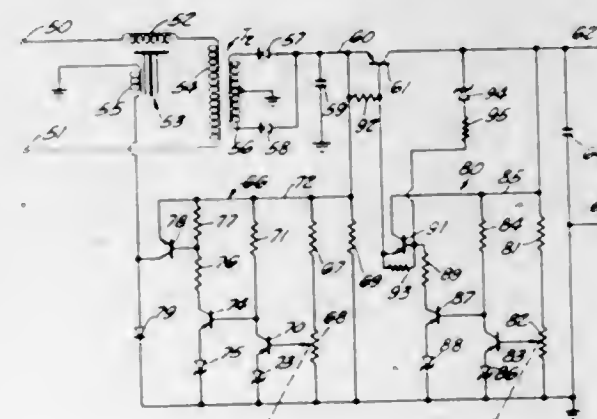


A pair of silicon controlled rectifiers are connected in inverse parallel relationship in a power circuit. Gating pulses are supplied to the rectifiers in response to the voltage and current outputs without any influence by the frequency of the input voltage.

### 3,409,822 VOLTAGE REGULATOR

Cravens L. Wanlass, Santa Ana, Calif., assignor to Wanlass Electric Company, Santa Ana, Calif., a corporation of California

Filed Dec. 14, 1965, Ser. No. 513,752  
16 Claims. (Cl. 323-22)



A voltage regulator employing a variable inductor as a series impedance and a feedback circuit for providing a signal whereby the impedance of said inductor is controlled. The feedback circuit incorporates a pair of transducers whose emitters are connected to ground through Zener diodes, the latter providing the feedback circuit with high gain and good stability as well as a reference potential against which the output is compared.

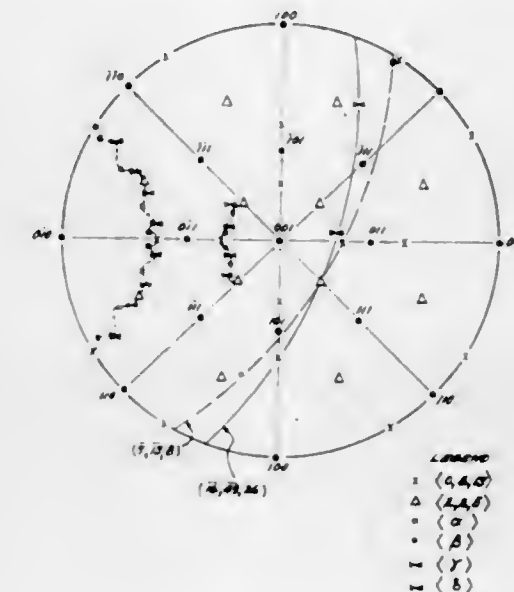
### 3,409,823 METHOD OF ELIMINATING MAGNETOCRYSTALLINE ANISOTROPY EFFECT ON SPIN RESONANCE OF FERRIMAGNETIC MATERIALS

Ernst R. Czerlinsky, Arlington, and Peter D. Glanino, Melrose, Mass., assignors to the United States of America as represented by the Secretary of the United States Air Force

Filed July 1, 1966, Ser. No. 563,338  
2 Claims. (Cl. 324-5)

1. The method of eliminating the effect of magnetocrystalline anisotropy and concomitant temperature influence on the resonance field of single crystals of

ferrimagnetic and ferromagnetic materials comprising the steps of; providing a sample of said material located in a device whereby said sample is immersed in a uni-directional external magnetic biasing field,  $H_{ext}$ , and exposed to an alternating magnetic field having an operating frequency,  $f$ , orienting a sample of the material in

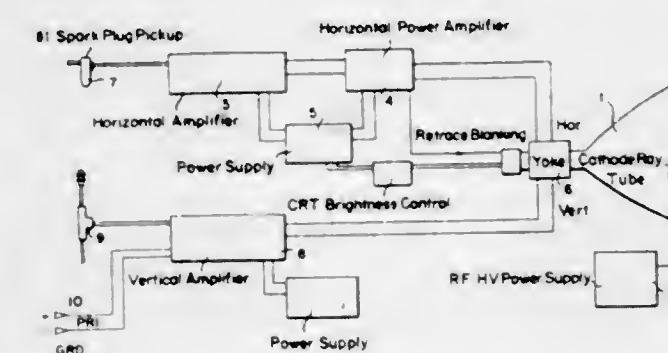


said device in such said manner that the external biasing field,  $H_{ext}$ , lies along any one of a continuous multiplicity of singular directions forming a conelike surface about each  $\langle 100 \rangle$ , and adjusting both the operating frequency of the device and the strength of  $H_{ext}$  to satisfy the mathematical relationship  $f = (\gamma/2\pi)H$ , where  $\gamma$  is the magnetogyric ratio.

### 3,409,824 AUTOMOTIVE IGNITION ANALYZER HAVING LARGE SCREEN PICTURE TUBE

George Makuh, Parma, Ohio, assignor to King Electronics & Manufacturing Corporation, Cleveland, Ohio

Filed Apr. 18, 1966, Ser. No. 543,191  
14 Claims. (Cl. 324-15)



1. An ignition analyzer for testing the ignition system of an internal combustion engine including an ignition coil having primary and secondary circuits and a plurality of spark plugs operatively connected thereto, comprising:  
(A) a magnetic deflection type cathode ray tube having a deflection yoke mounted thereon comprising a horizontal deflection coil and a vertical deflection coil,  
(B) means adapted to generate a sweeping signal comprising a saw-tooth generator, means for deriving a triggering impulse from an electrical lead of said engine, means for amplifying said triggering impulse and applying said amplified impulse to actuate said saw-tooth generator for producing a single sweeping signal for each triggering impulse.

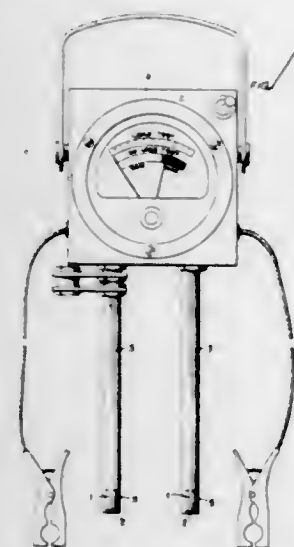


- (C) a power amplifier having its input connected to said sweeping signal generating means and having its output operatively connected to one of said deflection coils for causing the beam of said cathode ray tube to be swept along one set of coordinates,
- (D) an electronic amplifier having its input adapted to be connected alternatively to the primary or secondary of said ignition system and having its output operatively connected to the other of said deflection coils, said amplifier having wave shaping means incorporated therein for correcting the distortion introduced by the characteristics of said deflection coils at the frequencies of oscillations caused by an ignition spark discharge, whereby the visual tracing produced on the screen of said cathode ray tube is a true representation of the signal currents applied to said amplifier.

3,409,825

### MULTICELL STORAGE BATTERY TESTER HAVING SPONGE-LIKE MATERIAL IN CONTACT WITH EACH PROBE

Frederick H. Hommel, Mentor, Ohio, assignor, by mesne assignments, to ESB Incorporated, Philadelphia, Pa., a corporation of Delaware  
Filed Jan. 4, 1966, Ser. No. 518,672  
4 Claims. (Cl. 324-29.5)



A multicell storage battery tester having a pair of probes adapted to be inserted into the electrolyte of adjacent cells of a multicell battery is improved by having a sponge-like absorbent, electrolyte retaining material in contact with each probe. The probes are kept moist during non-use without being immersed in other liquids by electrolyte retained in the material, and creation of a hard sulfate film on the probes is thus prevented. The material may be in cavities in the probes or may be wrapped around each probe.

3,409,826

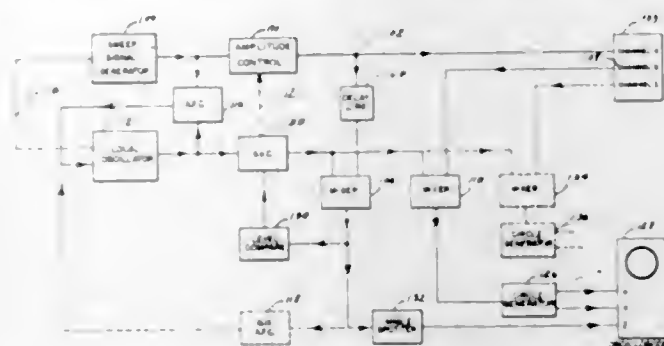
### AUTOMATIC SWEEP FREQUENCY RATIO PLOTTER AND NON-LINEAR MEASUREMENT SYSTEMS

David M. Goodman, 3843 Debra Court, Seaford, N.Y. 11783  
Application Apr. 1, 1960, Ser. No. 19,355, which is a continuation-in-part of application Ser. No. 485,001, Jan. 31, 1955, now Patent No. 2,931,900, dated Apr. 5, 1960. Divided and this application Aug. 5, 1965, Ser. No. 477,519

20 Claims. (Cl. 324-57)

3. A system for measuring the response of a device to a signal that varies in amplitude comprising: means for generating a periodic time varying test signal, means for generating a second periodic time varying signal, means for modulating the amplitude of the test signal with said

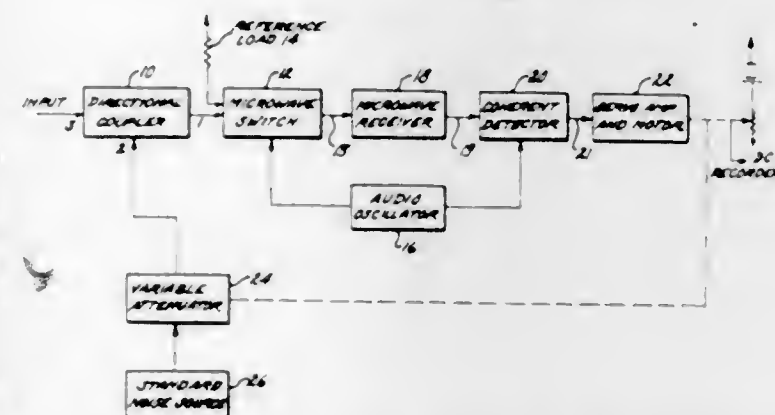
second periodic time varying signal, means for applying the thus amplitude modulated test signal to the device whose response is to be obtained, means for generating a reference signal related to the test signal, first and second product mixers each having a reference signal input, the first product mixer coupled to receive a signal input representative of the amplitude modulated test signal, the second product mixer coupled to receive a signal input representative of the response of the device



3,409,827

### FEEDBACK-STABILIZED MICROWAVE RADIOMETER

William B. Goggins, Jr., Chelmsford, Mass., assignor to the United States of America as represented by the Secretary of the Air Force  
Filed July 22, 1965, Ser. No. 474,191  
7 Claims. (Cl. 324-58.5)



A microwave radiometer utilizing a gain-stabilizing feed-back loop which modifies the total energy received from certain celestial bodies or radio stars by adding a regulatory noise increment whose magnitude is adjustably metered by the servo action of a motor-driven attenuator. A coherent detector senses and compensates for any mismatch between the noise component inherent at the receiver input and the regulatory noise increment.

3,409,828

### APPARATUS FOR TESTING ELECTRICAL CIRCUIT BOARDS

Edward L. Kelsey, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed Oct. 30, 1964, Ser. No. 407,687

1 Claim. (Cl. 324-73)

An electrical circuit board tester is provided with a plurality of terminal connectors for receiving the circuit board to be tested, a plurality of power supplies con-

nected to respective ones of said plurality of terminal connectors to provide operating voltages, a signal source connected to at least one of said terminal connectors, a timer connected between one of said power supplies and

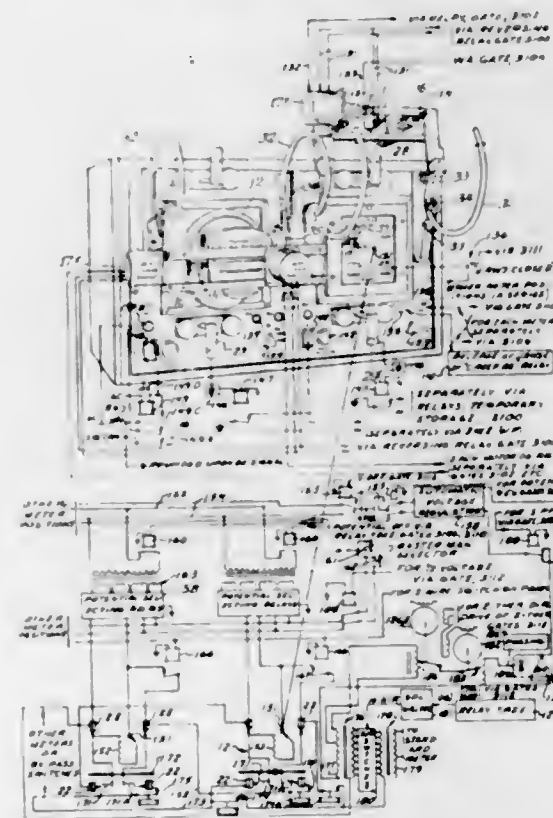


one of said terminal connectors to actuate a relay on said circuit board from a first state to a second state, and a recorder connected to at least one of said terminal connectors.

3,409,829

### COMPUTER-CONTROLLED METER CALIBRATION METHOD AND APPARATUS

David D. Elmore and Harley L. Friend, Lafayette, and Paul E. Pitt, West Lafayette, Ind., assignors to Duncan Electric Company, Inc., a corporation of Indiana  
Filed July 5, 1966, Ser. No. 563,642  
14 Claims. (Cl. 324-74)



5. Apparatus for the automatic calibration of meters including a rack for a plurality of test meters to be calibrated, having, for each meter, jaws for connecting and holding the meter and having associated therewith a standard meter and means for deriving from the standard meter pulses representing the apparent energy measurement thereof, circuitry for energizing all of said meters with accurate correlation for comparison runs with different loadings,

an exchange having a bank of computer-input terminals and a bank of computer-output terminals suitable for connection to a digital computer, each bank including a group of terminals each of which is design-set to correspond to a bit position of a computer word, and additional terminals, including instruction signal terminals;

selective recognition and connection means responsive to signals over one of said groups of terminals to identify selectively any one of a variety of addresses indicated by a computer word received through said group of terminals, and in response to instruction signals make connections from various of said terminals, each directly or indirectly to a specific element by design-set choice, for a specific function of control or signal nature with respect to said rack,

said elements including some elements with which, upon direction by certain address words, are connected by said connection means to conductors of the bit word group of computer input terminals for enabling the computer to obtain a count of standard meter pulses, and to read various settings by an operator, and

said elements also including some elements, individual to each meter position, for response to the position-detecting means for the disk of that meter, for a manually settable visual observation report, for gating on and off each of the calibration motors of said position, for providing a reject indication, and for providing a "Meter O.K." indication;

and said elements also including elements for controlling the direction of drive of calibration adjustment motors, for ratio control of the respective loading on the test meters and the standard meter, for current load adjustment and for power factor choice.

3,409,830

### SYSTEM FOR DETERMINING LOWEST VOLTAGE IN A PLURALITY OF CHANNELS

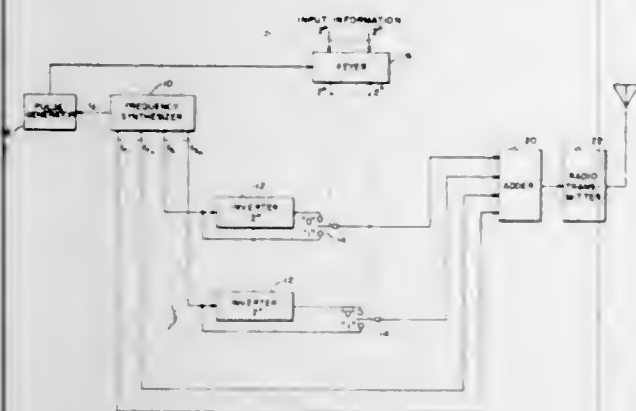
Calvert F. Phillips, Jr., Annapolis, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force  
Filed July 8, 1964, Ser. No. 381,274  
4 Claims. (Cl. 324-103)



The minimum voltage of a plurality of voltages in a plurality of channels is determined by comparing each of the voltages simultaneously with an increasing ramp voltage. Coincidence of one of the voltages, the minimum voltage, operates a switch, which can be operated only once, to gate the channel carrying the voltage having coincidence with the ramp voltage.

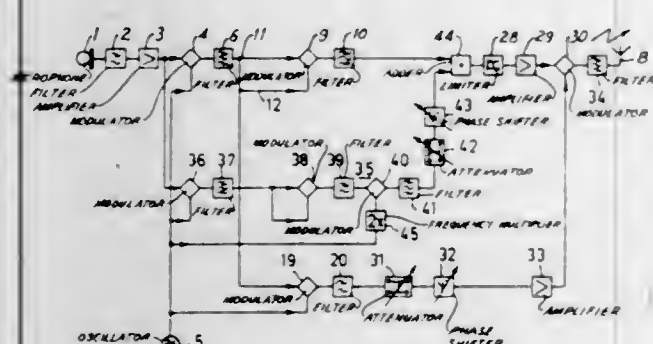


**3,409,831**  
**COMMUNICATIONS SYSTEM UTILIZING CORRELATION DETECTION TECHNIQUES**  
 Watson F. Walker, Pittsford, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware  
 Filed Mar. 9, 1964, Ser. No. 350,383  
 11 Claims. (Cl. 325—65)



A communication system for transmitting and receiving frequency differential phase shift keyed signals which are adapted to be transmitted over a communication link subject to fading, multipath or other distortion between transmission and reception is disclosed. At the receiving terminal modulated information tones and demodulated reference tones are separated and information derived therefrom by correlation detection techniques. Before correlation detection, the spectrum of the modulated and demodulated tones are both broadened by separate compensating filters in channels which pass the received modulated and reference tones. The effect of correlation detection of a broadened signal spectrum is a decrease in error probability below the limiting value of error probability attained by the system at high signal to noise ratios.

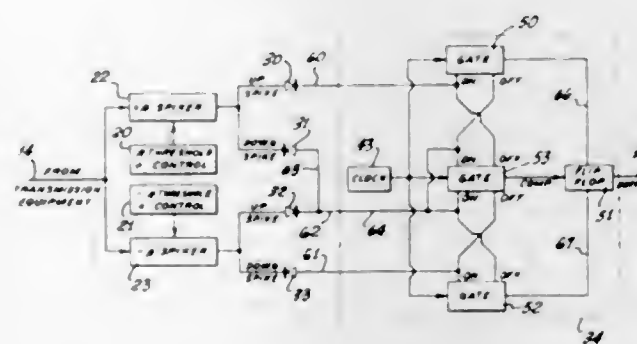
**3,409,832**  
**TRANSMITTING ARRANGEMENTS FOR THE TRANSMISSION OF AMPLITUDE MODULATED OSCILLATIONS**  
 Theodorus Jozef van Kessel, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company Inc., New York, N.Y., a corporation of Delaware  
 Filed Apr. 1, 1966, Ser. No. 539,380  
 Claims priority, application Netherlands, Apr. 17, 1965, 6504930  
 6 Claims. (Cl. 325—137)



A compatible single sideband transmitter of the type in which information signals are modulated on carrier oscillations to produce a first single sideband signal, the first single sideband signals are frequency doubled and amplitude limited, and the limited oscillations are amplitude modulated by the information signals to produce an output single sideband signal. In order to reduce spurious sideband signals, single sideband signals of the

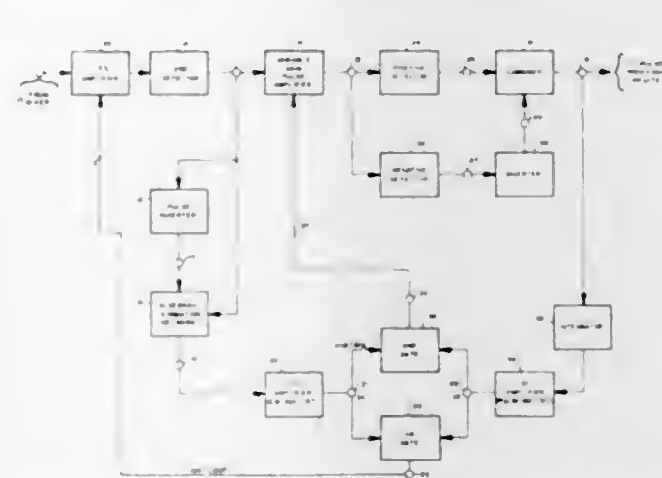
information signals modulated on the carrier oscillations are applied to an amplitude modulator, wherein they are multiplied by themselves to produce signals in the band of the information signals. These latter signals are then modulated on oscillations at twice the carrier frequency, and added to the signals applied to the amplitude limiter.

**3,409,833**  
**SYSTEM FOR DETECTION AND RECONSTRUCTION OF BINARY DATA TRANSMITTED AT RATES UP TO AND EXCEEDING TWICE THE NYQUIST RATE**  
 Edward K. Dalton, Laguna Beach, Calif., assignor to Astrodata, Inc., Anaheim, Calif., a corporation of California  
 Filed Nov. 22, 1965, Ser. No. 508,963  
 11 Claims. (Cl. 325—321)



1. In binary data transmission equipment, first means to establish upper and lower signal amplitude thresholds, and second means to maintain a MARK output when the signal amplitude is above an upper threshold, to maintain a SPACE output when the signal amplitude is below a lower threshold, to provide a MARK output when the signal amplitude traverses a lower threshold toward an upper threshold, and to provide a SPACE output when the signal amplitude traverses an upper threshold toward a lower threshold.

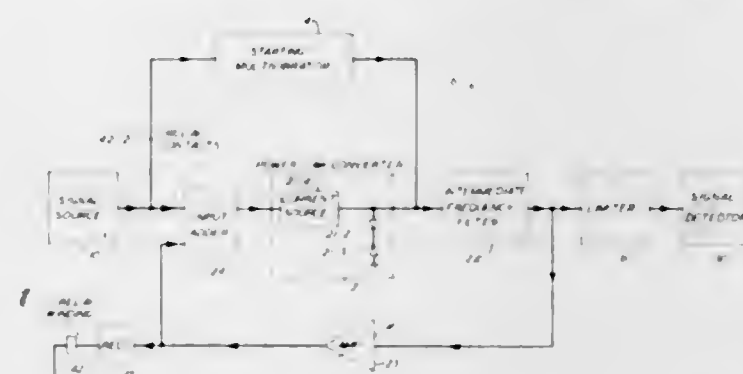
**3,409,834**  
**CW INTERFERENCE REDUCTION NETWORK FOR A PULSE COMMUNICATIONS RECEIVER**  
 Robert N. Cullis, Orlando, and Francis Leon McCormick, Winter Park, Fla., assignors to Martin-Marietta Corporation, Middle River, Md., a corporation of Maryland  
 Filed Apr. 5, 1965, Ser. No. 445,613  
 15 Claims. (Cl. 325—324)



This invention relates to an interference reduction network usable in conjunction with a pulse receiver of a pulse receiving system, which network serves to extend the dynamic range of the pulse receiver when both pulse

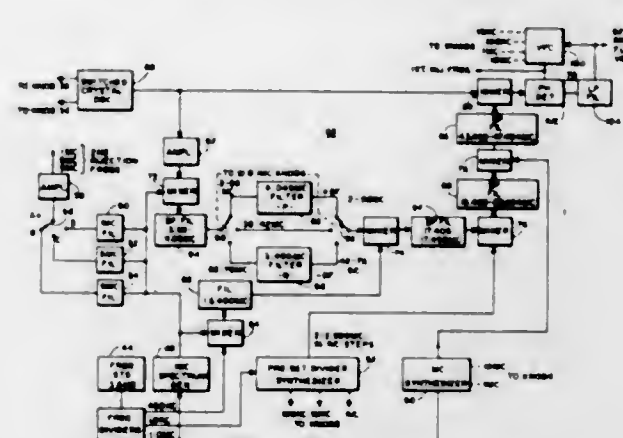
modulated and interfering CW carriers are received, comprising means for dynamically varying in an inverse manner with respect to the variation in gain of the receiving means, the amplitude of the received pulses passed by the network, thus maintaining the amplitude of these pulses at a desired value despite the fact that it was necessary to reduce the gain of the receiver due to the presence of a CW carrier.

**3,409,835**  
**FEEDBACK DEMODULATION EMPLOYING POWER-LAW SIGNAL CONVERTER**  
 Vaclav E. Benes, Chester, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
 Filed Nov. 6, 1964, Ser. No. 409,386  
 10 Claims. (Cl. 325—351)



An FM feedback demodulator for reducing the deviation of an angle modulated wave is constructed with a selected power-law signal converter and an adder in place of the conventional harmonic oscillator and mixer.

**3,409,836**  
**FREQUENCY SYNTHESIZER FOR COMMUNICATION SYSTEMS**  
 Richard A. Wallett, Rochester, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware  
 Filed Aug. 17, 1964, Ser. No. 390,110  
 11 Claims. (Cl. 325—421)

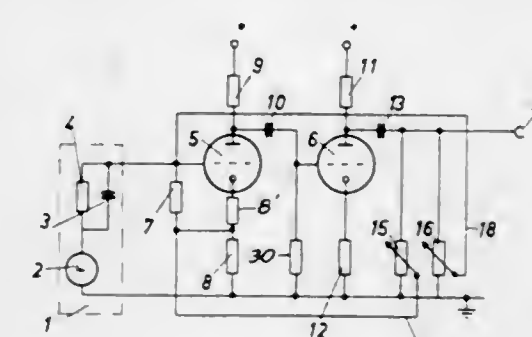


A communication system is described having an RF and IF channel. A frequency synthesizer provides injection signals for translating RF signals into IF signals or vice versa. The synthesizer is controlled in part by a digital frequency counter, the input of which is connected to a reference frequency signal generator and the output of which is connected to a mixer. The counter is controlled by the frequency selection knobs which select the lower order digits of a number which represents the frequency to which the system is to be tuned (100 kc.,

10 kc. and 1 kc. digits), such that the mixer receives a frequency having the selected lower order digits. The synthesizer also includes a switched crystal oscillator, the output of which is connected to an error canceling loop which includes the mixer to which the portion of the synthesizer having the digital frequency counter is connected. Other mixers are provided in the error canceling loop in which signals from the reference frequency generator are combined to provide the output injection signal from an output mixer in the error canceling loop. Selectable filters are included in the loop for reversing the direction of error cancellation therein, whereby to double the number of frequencies which are generated. The injections to the other mixers in the loop are controlled by the tuning controls of the system so that lower order digits of the frequency of the output injection signal are variable by the lower order digit counter controls independently of any variation in the higher order digit controls.

**ERRATUM**  
 For Class 328—112 sec:  
 Patent No. 3,409,789

**3,409,837**  
**AMPLIFIER NETWORK**  
 Fritz König, Wuppertal-Barmen, and Roland Kuhnert, Düsseldorf-Nord, Germany, assignors to Losenhausenwerk Düsseldorf Maschinenbau A.G., Düsseldorf, Germany  
 Filed Feb. 1, 1965, Ser. No. 429,331  
 7 Claims. (Cl. 328—162)



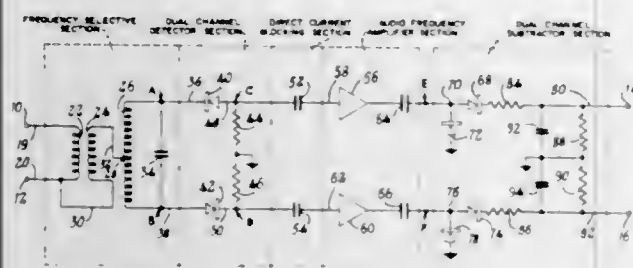
An amplifier for a high internal impedance pickup has a voltage divider between the grid of the first tube and the output of the second tube to obtain a positive voltage feedback to the grid. From the tap of the voltage divider a negative voltage feedback connection is made to the emitter of the first tube, with the negative voltage feedback being at least as great as the positive feedback.

**3,409,838**  
**DEMODULATOR FOR FREQUENCY MODULATED WAVES**  
 Francis D. McLeod, Jr., Scotia, N.Y., assignor to Mennen-Greatbatch Electronics, Inc., Clarence, N.Y., a corporation of New York  
 Filed Oct. 23, 1965, Ser. No. 504,006  
 11 Claims. (Cl. 329—137)

A demodulator for frequency shifted signals comprising: (A) a frequency selected circuit tuned to the input carrier signal and having two output channels providing a signal in each channel having an amplitude which changes from a selected magnitude in opposite polarity sense from the signal in the other channel as a function of the extent of the frequency shift of the Doppler signal component of the input signal from the carrier signal; (B) a dual channel detector coupled to the dual output of the



frequency selected circuit of (A) providing an audio frequency signal in each channel having an amplitude corresponding to the Doppler shift which changes in opposite polarity sense from the signal in the other channel and also for rectifying the carrier signal to a D.C. voltage; (C) a circuit in each channel for removing the carrier



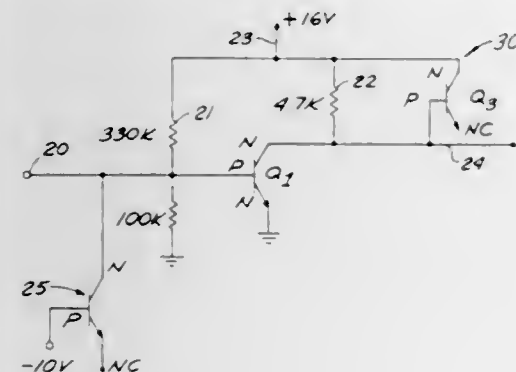
rectified D.C. voltage output from (B); and (D) differential dual channel circuits coupled to (C) for subtracting the input signals thereto so as to provide an output therefrom which varies in magnitude and sense directly with frequency shift of the Doppler signal from the carrier as applied to the input side of (A).

3,409,839

#### METHOD AND APPARATUS FOR MINIMIZING THE EFFECTS OF IONIZING RADIATION ON SEMICONDUCTOR CIRCUITS

John W. Crowe, Woodland Hills, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed Aug. 4, 1965, Ser. No. 477,269  
10 Claims. (Cl. 330—33)



1. A method for at least partially eliminating the effects of a photocurrent induced in a semiconductor junction in a circuit by ionizing radiation incident thereon comprising the steps of generating a compensating current in response to ionizing radiation which is essentially equal to said induced photocurrent and introducing said compensating current into said circuit to essentially neutralize the effects of said induced photocurrent current in said semiconductor.

3,409,840

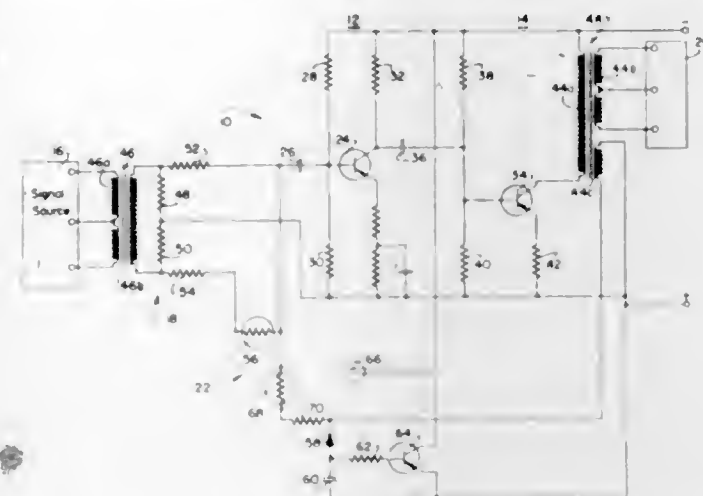
#### CONSTANT LEVEL, PHOTON CONTROLLED AMPLIFIER CIRCUIT

Richard H. Campbell, Rockford, Ill., assignor, by mesne assignments, to Webster Electric Company, Inc., Racine, Wis., a corporation of Delaware

Continuation of application Ser. No. 308,700, Sept. 13, 1963. This application June 28, 1967, Ser. No. 650,168  
5 Claims. (Cl. 330—59)

A normally unbalanced resistive bridge having one arm including a photoresistor and a constant value resistance connected in series couples a signal source to the input terminals of an amplifier. A secondary winding on the

amplifier output transformer develops a signal proportional to the amplifier output signal, which signal is rectified by a diode and applied to a capacitor which is charged in accordance with the average value of the output signals. The capacitor is connected to control the gain of a transistor amplifier for energizing a lamp when the aver-



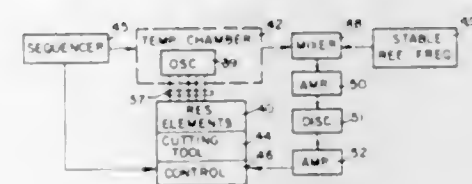
age value of the output signals exceed a predetermined level. Above this level the light acts on the photoresistor and tends to balance the bridge to achieve a compression action without substantially affecting the amplifier input impedance and without distortion. A second photoresistor, also controlled by the lamp, provides a negative feedback potential.

3,409,841

#### METHOD OF TEMPERATURE COMPENSATING A CRYSTAL OSCILLATOR

Robert J. Munn, Hillside, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Feb. 9, 1967, Ser. No. 614,990  
4 Claims. (Cl. 331—44)



An oscillator having a temperature compensating network wherein at least one fixed impedance element is adjusted to reduce the frequency error versus temperature to a minimum value. The temperature of the oscillator is stabilized at a desired value and the output signal therefrom is mixed with a reference signal. The mixing process produces an error signal proportional to the frequency difference between the oscillator output signal and the reference signal. The value of the impedance element is changed to reduce the error signal to a minimum value. The method can be used to permanently alter the value of fixed components and can also be automated.

3,409,842

#### PROTECTION SYSTEMS AND APPARATUS

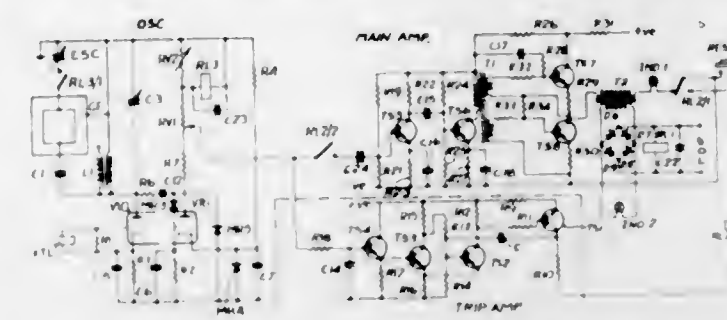
Kenneth Harry Embling and Leonard Cameron Lebar, Thornton Heath, England, assignors to Electronic Machine Control (Sales) Limited

Filed June 30, 1967, Ser. No. 650,448  
Claims priority, application Great Britain, July 1, 1966, 29,614/66

7 Claims. (Cl. 331—65)

The specification of this application discloses protection apparatus for protecting machine operators from moving parts of machines which stops or inhibits operation of the machine with which it is used when an operator's hand is placed in an aperture in a guard frame through which access to the moving parts may be had,

the apparatus incorporating self-checking means which ensure that the protective provisions are operating satis-



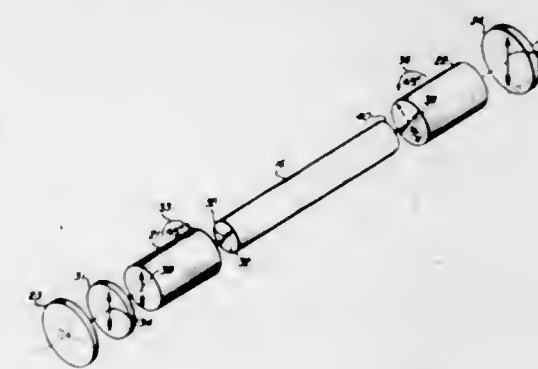
factorily by periodically simulating the effect of the presence of an operator's hand in the guard frame aperture.

3,409,843

#### SINGLE MODE LASER

Colin Bowness, Weston, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed Apr. 2, 1964, Ser. No. 356,844  
4 Claims. (Cl. 331—94.5)



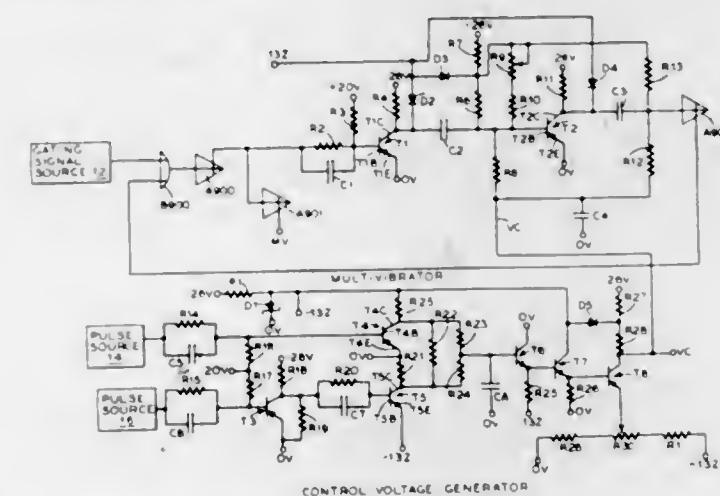
A single mode laser including a reflecting cavity containing a laser element, 45° rotators at each end of the element and a polarizer for plane polarizing the radiation emitted from the ends of the laser element whereby emission from the respective ends of the element will be reflected back into the element and thence again through the system a multiplicity of times as a traveling wave.

3,409,844

#### CONTROLLED PULSE GENERATOR

Eugene Leonard, Sands Point, Edward M. Richards, East Northport, Edgar Wolf, New Hyde Park, Marvin Shapiro, Huntington, and Miles Skrivaneck, Jr., Glenwood Landing, N.Y., assignors to Digitronics Corporation, Albertson, N.Y., a corporation of Delaware

Original application Mar. 19, 1962, Ser. No. 180,435, now Patent No. 3,284,774, dated Nov. 8, 1966. Divided and this application Mar. 16, 1966, Ser. No. 539,247  
2 Claims. (Cl. 331—113)



A controlled pulse generator generates pulses having a controllably variable pulse repetition rate. The pulse gen-

erator comprises a gated multivibrator whose timing resistors are returned to a controllably variable voltage source. The multivibrator emits pulses only when a gating signal is present. The repetition rate of the emitted pulses is controlled by the voltage applied to the timing resistors by the variable voltage source.

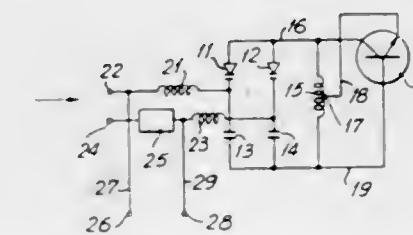
3,409,845

#### FREQUENCY MODULATING CIRCUIT UTILIZING VARIABLE CAPACITY DIODES

Masaka Ogi, Tokyo, Tadashi Sekizawa, Sagami-hara-shi, and Tatsusaburo, Shimoyamada, Kawasaki-shi, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan

Filed Mar. 6, 1967, Ser. No. 620,994  
Claims priority, application Japan, Mar. 7, 1966, 41/14,175

5 Claims. (Cl. 332—30)



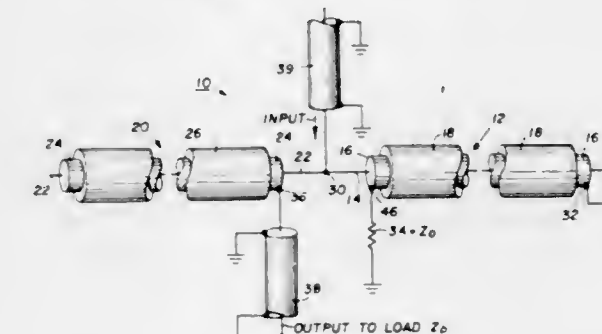
A frequency modulating circuit deviates a frequency out of oscillator with a modulation voltage. The rate of deviation of the modulation frequency relative to the modulation voltage constitutes the differential characteristic. A first variable capacity diode is connected in the resonant circuit of the frequency modulating circuit and operates at a point approximately equal to the maximum value of the differential characteristic of the modulation frequency. A second variable capacity diode is connected in the resonant circuit and operates at a point approximately equal to the minimum value of the differential characteristic of the modulation frequency. The first and second variable capacity diodes are connected in a manner whereby their differential characteristics compensate each other so that when an input signal is supplied to the first and second variable capacity diodes an output signal is derived from the resonant circuit having a differential characteristic which is linear over a wide range.

3,409,846

#### PULSE SHAPER

William E. Bray, Houston, Tex., assignor to Texas Instruments Incorporated, a corporation of Delaware

Filed July 1, 1966, Ser. No. 562,328  
8 Claims. (Cl. 333—20)

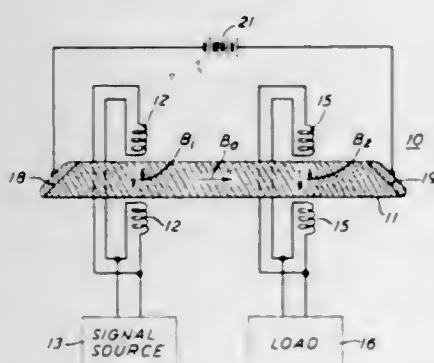


1. A pulse shaper comprising a pair of transmission line stubs having matched characteristic impedances, shields of matched length and first and second ends, the first ends of the conductor of each stub being interconnected to form the input of the pulse shaper, the second



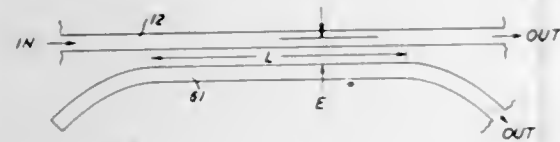
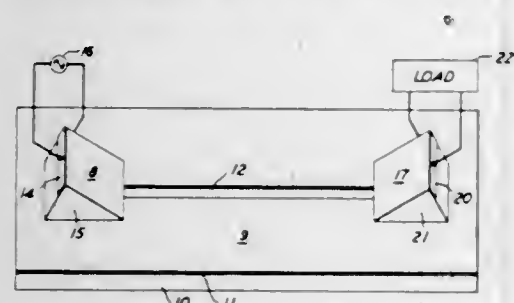
end of one stub being open and the second end of the other stub being shorted between conductor and shield, and a resistor having a matched impedance connecting the first end of the shield of the shorted stub to ground wherein the first end of the shield of the open stub will form the output of the pulse shaper.

**3,409,847**  
**SOLID STATE PLASMA STRUCTURES**  
Cecil A. Nanney, Murray Hill, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Aug. 12, 1964, Ser. No. 389,148  
1 Claim. (Cl. 333-30)



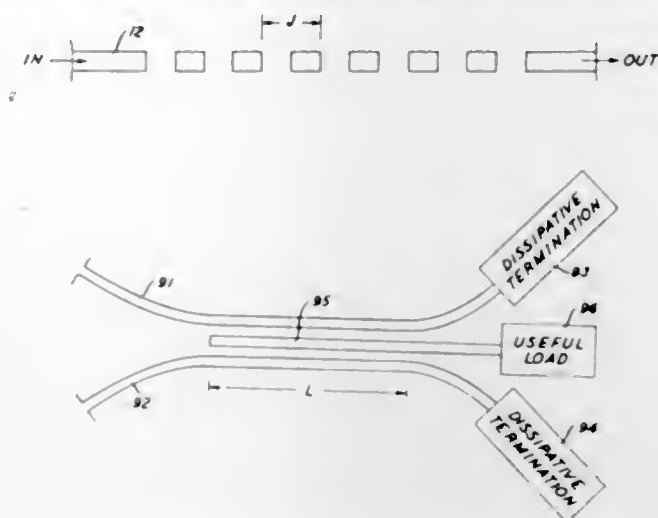
The end surfaces of a helicon wave propagating structure form an angle of 45 degrees with respect to the central axis and an axially directed magnet field for the purpose of reflecting residual wave energy in a direction perpendicular to the magnetic field, thereby causing rapid dissipation of the residual wave energy.

**3,409,848**  
**ELASTIC SURFACE WAVEGUIDE**  
Allen H. Meitzler, Morristown, and Harry F. Tiersten, West Orange, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York  
Filed Oct. 30, 1967, Ser. No. 678,892  
9 Claims. (Cl. 333-71)



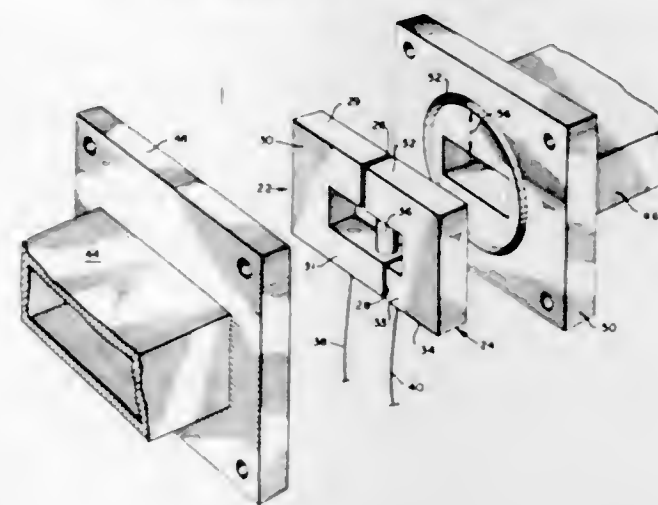
This application discloses a structure for guiding elastic surface waves comprising a guiding slot within an elastic surface wave supporting layered structure. In particular, the layered structure comprises a relatively thick surface wave supporting substrate upon which there is disposed a relatively thin layer of a material whose propagation parameters are so related to those of the

substrate that the surface wave phase velocity of the layered structure is increased. The guiding slot comprises a longitudinally extending slot which is sufficiently deep to penetrate the thin layer and expose the underlying substrate.



strate. These guiding structures eliminate beam spreading and can be readily adapted to form a variety of elastic wave circuit devices, including filters, power dividers and directional couplers.

**3,409,849**  
**DEVICE FOR MOUNTING BIASED ELEMENT IN WAVEGUIDE**  
Donald Neuf, Wantagh, N.Y., assignor to Control Data Corporation, Melville, N.Y., a corporation of Minnesota  
Filed Nov. 8, 1965, Ser. No. 506,698  
4 Claims. (Cl. 333-98)

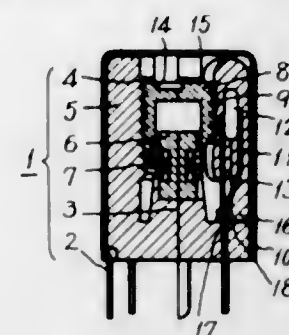


An element to be biased is mounted in a waveguide section which is split longitudinally with the slots in the top and bottom walls of the waveguide being offset from each other so that when the element is mounted across the short waveguide dimension it contacts both of the waveguide sections. Since the two sections are insulated from each other, a DC voltage can be applied to the respective sections and thus across the element. The split waveguide may be connected by choke joints to a standard waveguide.

**3,409,850**  
**MINIATURE INDUCTANCE DEVICE FOR COMMUNICATION**  
Masao Oshima, 34, Saitobuncho, Kanagawa-ku, Yokohama-shi, Japan  
Filed Oct. 28, 1965, Ser. No. 505,505  
4 Claims. (Cl. 334-76)

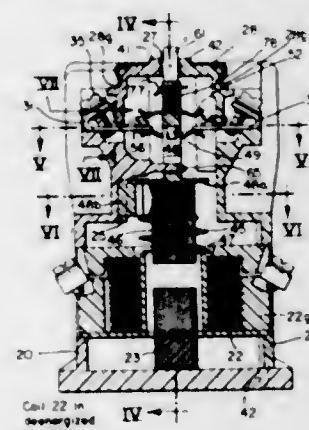
1. A miniature inductance device for communication comprising a main element, said main element consisting of a bottom portion, a plurality of opposed upstand-

ing pieces having screw-threads formed in the opposed inner surfaces thereof which have been provided integrally with said bottom portion by molding an insulating plastic material, a movable pot magnetic core member having screw-threads to be meshed with those of said upstanding pieces and a drum-type magnetic core



member having wound thereon a coil and attached to the base portion, a metal shield case enclosing therein said main element, an insulating elastic spacer disposed in the space defined by the upstanding pieces, the movable pot magnetic core member and said metal shield case, and a capacitor wrapped in said spacer.

**3,409,851**  
**MULTIPOLE ELECTROMAGNETIC CONTACTOR**  
John Scheib, Jr., Elmsford, and Carl Ehmann, Yonkers, N.Y., assignors of one-half interest to Ward Leonard Electric Co., Mount Vernon, N.Y., a corporation of New York, and one-half interest to Struthers-Dunn, Inc., Pitman, N.J., a corporation of Pennsylvania  
Filed Nov. 3, 1966, Ser. No. 591,760  
15 Claims. (Cl. 335-126)

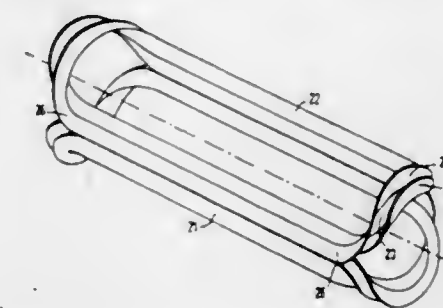


A multipole electromagnetically operable contactor is disclosed designed for ready and simple assembly, and for ready conversion from normally open to normally closed contacts, or vice versa. The contactor includes a movable contact carrier having slots therein for receiving normally open and normally closed movable contact assemblies. The assemblies include movable contact bars, biasing springs and spring retainers. Fixed projections from the housing fit into the slots of the movable contact carrier for receiving the load of at least some of the spring biased movable contacts for reducing the strength required of the return springs.

**3,409,852**  
**ELECTROMAGNET COIL CONSTRUCTION**  
Helmut Uhlmann, Erlangen, and Georg Adam, Berlin, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany  
Filed Apr. 12, 1966, Ser. No. 542,144  
Claims priority, application Germany, Apr. 17, 1965, S 96,602  
11 Claims. (Cl. 335-216)

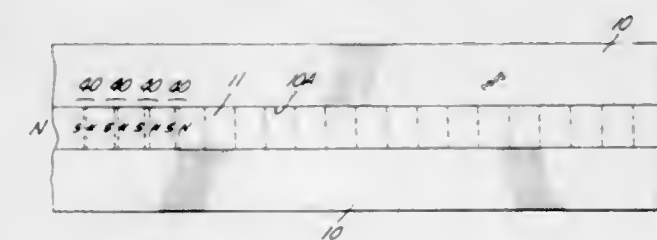
An electromagnet having an elongated coil provided with longitudinally extending parallel sides and curved

ends of saddle-shaped configuration, with the coil composed of a plurality of layers, a layer-receiving means defining a groove which receives the winding layers and which has elongated parallel sides and saddle-shaped ends conforming to the configuration of the winding layers.



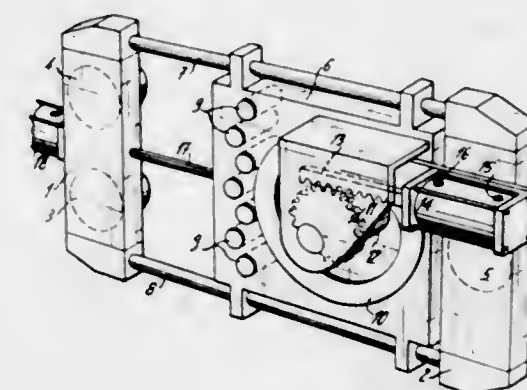
fining a groove which receives the winding layers and which has elongated parallel sides and saddle-shaped ends conforming to the configuration of the winding layers.

**3,409,853**  
**METHOD AND APPARATUS FOR PRODUCING DUPLICATE MAGNETIZED ARTICLES AND ARTICLES PRODUCED THEREBY**  
Fritz A. Guerth, San Pedro, Calif., assignor to G. L. Collins Corporation, a corporation of California  
Filed Oct. 14, 1966, Ser. No. 591,370  
13 Claims. (Cl. 335-284)



A measurement standard, like a ruler, is produced by magnetizing accurately spaced regions of an elongated rigid magnetizable medium. Duplicates of such standard so made may be produced by juxtapositioning a like rigid magnetizable medium on such standard to correspondingly magnetize regions on such duplicate using a magnetic "printing" technique.

**3,409,854**  
**DEVICE FOR MOVING A WORKING APPARATUS ON A SUPPORT SURFACE**  
Sven Arild Swallert, 11 Rue Michel Chauvet, Geneva, Switzerland  
Filed May 12, 1966, Ser. No. 549,708  
Claims priority, application Sweden, May 14, 1965, 6,361  
5 Claims. (Cl. 335-289)



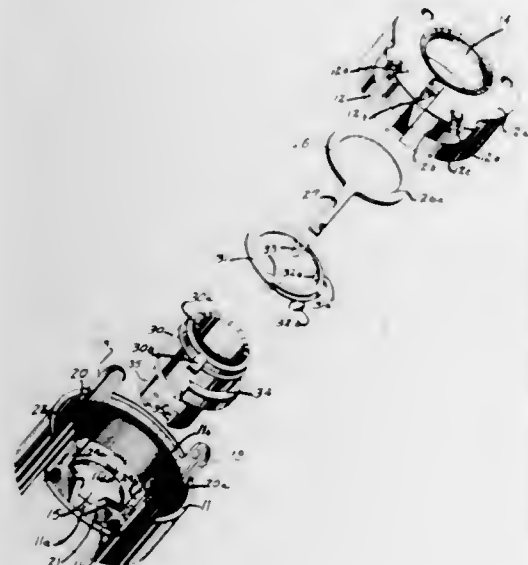
An apparatus for moving a working apparatus over a supporting surface, particularly where the supporting surface is steeply inclined or even vertical. The appara-



tus includes first and second frames which are reciprocally movable relative to each other in response to a control means. Each of the frames includes a means for selectively securing the respective frame to a supporting surface. When one of the frames is secured to the supporting surface, movement of one of the frames relative to the other in response to the control means results in movement of such frame relative to the supporting surface as well. Thereafter, the just-moved frame may be secured to the supporting surface and the other one released therefrom so that further movement of a frame relative to the other frame now results in movement of the other frame relative to the supporting surface. As a consequence, the entire apparatus may be moved along the surface. A further means is provided for securing a portion of one of the frames to the supporting surface and then rotating the remainder of that frame together with the other frame, about the secured portion, thereby permitting an effective transverse motion of the entire apparatus over the supporting surface.

3,409,855

**VARIABLE RESISTANCE CONTROL UTILIZING METAL FOIL TO WIRE TURNS**  
Stanley O. Bender, Berne, and Robert E. Eash, Decatur, Ind., assignors to CTS Corporation, Elkhart, Ind., a corporation of Indiana  
Filed Mar. 14, 1966, Ser. No. 533,878  
6 Claims. (Cl. 338-118)



Variable resistance control having wirewound resistance element with shorted end turns. A piece of metal is inserted at each end between several end turns of the resistance element and a winding strip to short adjacent turns at each extremity of the resistance element. The pieces of metal are sweated with solder to the resistance element to insure a short circuit condition between adjacent turns at each end of the resistance element.

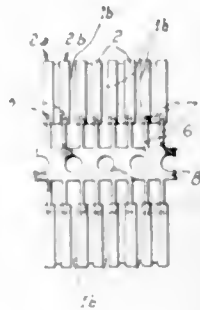
3,409,856

**FIXED VALUE COATED ELECTRICAL RESISTORS**

Angelo Meoni, Paris, France, assignor to Societe Geradin S.A., Mesocco, Switzerland  
Filed July 8, 1965, Ser. No. 470,352  
Claims priority, application France, July 28, 1964, 983,258  
6 Claims. (Cl. 338-312)

Electrical resistors are formed wherein a metallic band includes a plurality of terminal rods extending along its length from opposite edges of the band. The rods along each edge are attached to insulative bases through apertures formed therein. One face of each base is coated

with spaced layers of conductive material, each face electrically coating with a rod. The opposite face is provided with a layer of resistance material which extends over the

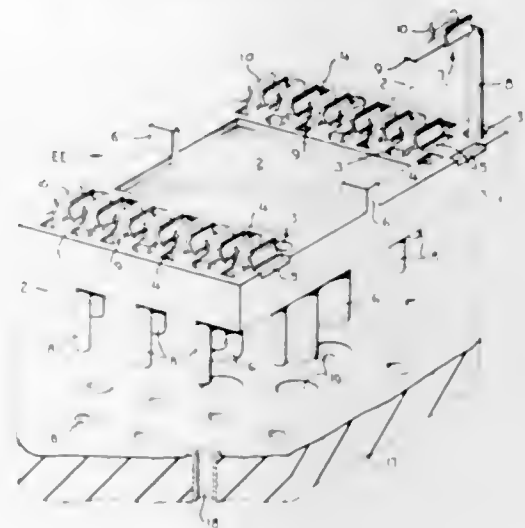


edge to electrically coat with the conductive material. The bases are cut between adjacent pairs of terminal rods and the rods are severed from the band to form resistors.

3,409,857

**ELECTRICAL CONNECTORS FOR TERMINATING LEADS OF MICRO-MODULAR COMPONENTS OR THE LIKE**

Richard John O'Neill, Camp Hill, and Robert John Kin-kaid, New Cumberland, Pa., assignors to AMP Incorporated, Harrisburg, Pa.  
Filed Aug. 23, 1965, Ser. No. 481,663  
11 Claims. (Cl. 339-17)



An electrical connector for terminating a series of leads of a micro-modular electrical component with the leads extending out from at least two sides of the component and being closely spaced together along each of the two sides, the electrical connector comprises a dielectric carrier having one surface along which the electrical component is disposed, electrical terminals are disposed in the dielectric carrier and they include U-shaped ferrule members positioned so as to receive the closely-spaced series of leads for crimpable engagement therewith and connecting sections which extend outwardly from another surface of the carrier, and means are provided by the carrier and the electrical terminals thereby securing the terminals in the carrier so that the ferrules are properly positioned to receive the leads of the electrical component.

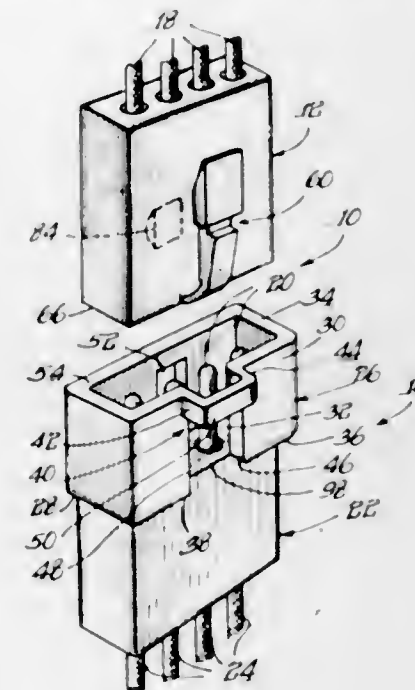
3,409,858

**ELECTRICAL CONNECTOR HAVING RESILIENT ARCUATELY BENDABLE LOCKING MEANS**  
John H. Krehbiel, Downers Grove, Ill., assignor to Molex Products Company, Downers Grove, Ill., a corporation of Illinois

Filed Aug. 29, 1966, Ser. No. 575,697  
6 Claims. (Cl. 339-91)

An electrical connector including a mating receptacle and plug. The receptacle includes, in one wall thereof, a slot having a bar extending transversely across the slot,

and the plug includes, on a corresponding wall, a latch lever which is integrally formed with the plug. The lever is normally in a relaxed position, extending outwardly from the wall at an offset angle thereto and, prior to insertion of the plug into the receptacle, is bent about its attached end to a tensioned position wherein it extends substantially parallel to the wall of the plug. When the plug is inserted into the receptacle, the lever is released

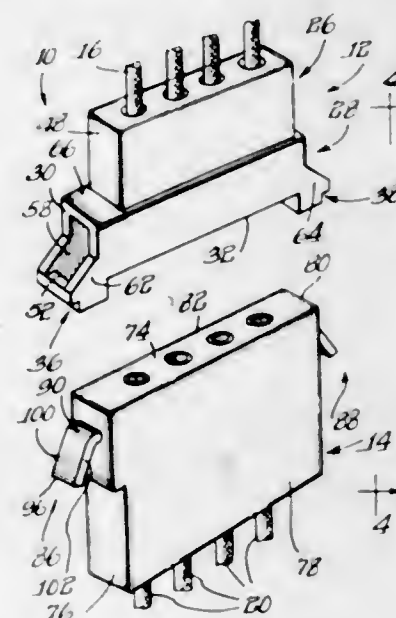


and, still being under tension, is forced against the latch bar with which it mates to retain the plug and receptacle interlocked. In a preferred embodiment, a cam lug is provided on the plug on the wall opposite from the lever. The cam lug fits into a recess in a corresponding wall of the receptacle upon being joined with the plug. The cam lug is forced into and held in the recess by the force provided by the tensioned lever to further secure the plug and receptacle in an interlocked position.

3,409,859

**SEPARABLE ELECTRICAL CONNECTOR HAVING REARWARDLY DIRECTED LATCH FINGERS**  
John H. Krehbiel, Brookfield, Ill., assignor to Molex Products Company, Downers Grove, Ill., a corporation of Illinois

Filed Aug. 29, 1966, Ser. No. 575,698  
6 Claims. (Cl. 339-91)



A two-piece molded plastic, separable connector; the plug has, adjacent its entering face, a pair of rearwardly and outwardly directed integral flexible latch members

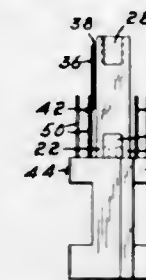
which are cammed inwardly upon assembly with the receptacle, and snap out into latch recess means of the receptacle for semi-permanent assembly of the plug and receptacle.

3,409,860

**SLIDABLE TEST JACK**

Edward Kirby, Los Angeles, Calif., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware

Filed May 11, 1966, Ser. No. 549,421  
3 Claims. (Cl. 339-121)



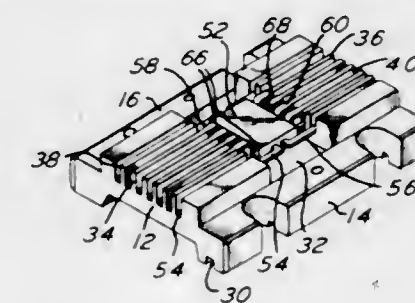
A test jack carrying a contact member and having an insulating body slidably engageable with the insulating body of a connector unit. The contact member of the test jack having a terminal element electrically engageable with selected contact member carried by the connector body.

3,409,861

**INTEGRATED CIRCUIT CARRIER**

James W. Barnes, Drexel Hill, and Lane K. Jarvis, Lansdowne, Pa., assignors to Barnes Corporation, a corporation of Pennsylvania

Filed Sept. 28, 1967, Ser. No. 671,322  
12 Claims. (Cl. 339-174)



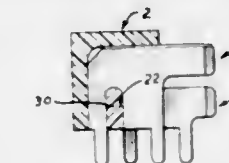
A one-piece carrier for a flat pack integrated circuit having integral resilient, stepped retention clips. Retention clips are positioned to expose one entire surface of flat pack integrated circuit.

3,409,862

**ELECTRICAL CONNECTOR HAVING IMPROVED CONTACT RETENTION MEANS**

James E. Lynch, Harrisburg, and Ronald C. Morehart, York Haven, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Filed Sept. 8, 1966, Ser. No. 577,892  
5 Claims. (Cl. 339-196)



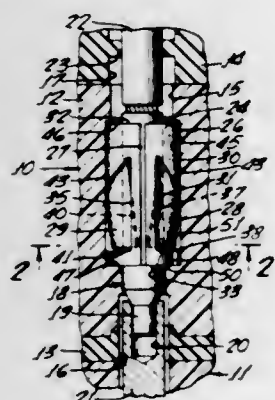
Electrical connector comprises housing having elongated slot extending for full length thereof on one side. A plurality of transverse slots extend inwardly on the one side



and a side adjacent to the one side. Transverse slots intersect axially extending slot and contact terminals are mounted in these transverse slots. A retaining member of compressible insulating material is force fitted in the axially extending slot to retain the contacts in the housing.

### 3,409,863 ELECTRICAL JUNCTION DEVICE

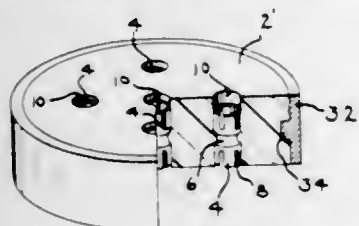
Perrin C. Culver, Banning, Calif., assignor to The Deutsch Company Electronic Components Division, Banning, Calif., a corporation of California  
Filed Oct. 11, 1966, Ser. No. 585,929  
8 Claims. (Cl. 339-217)



An electrical connector including a body of dielectric material having a bore, a contact in the bore, and a retainer member in the bore, the retainer member being a tubular member having at least one tab inclined inwardly toward the contact, the tab having a substantially radial edge to fit adjacent the shoulder on the contact to prevent rearward movement of the contact, and a substantially longitudinal edge extending from the shoulder to the line of connection to the tubular member.

### 3,409,864 SEALED ELECTRICAL CONNECTING DEVICE

Norman E. Hoffman, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.  
Filed Sept. 23, 1965, Ser. No. 489,697  
2 Claims. (Cl. 339-220)



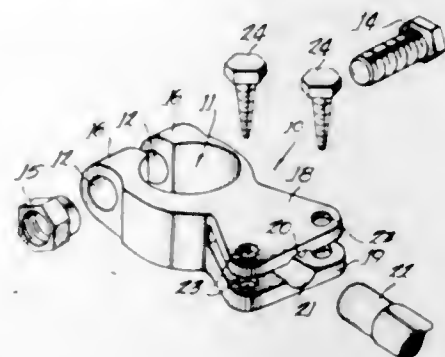
A sealed assembly is provided and comprises a member formed of thermoplastic material having memory characteristics. An opening extends through the member for receiving an electrical contact, which contact is sealed in place by internal forces within the thermoplastic member. Additional means are provided for surrounding the member and for providing a seal therebetween due to thermal expansion of the member.

### 3,409,865 BATTERY TERMINAL CLAMP

John K. Shannon, Kenosha, Wis., assignor to Quick Cable Corporation, Racine, Wis., a corporation of Wisconsin  
Filed July 21, 1966, Ser. No. 566,875  
4 Claims. (Cl. 339-227)

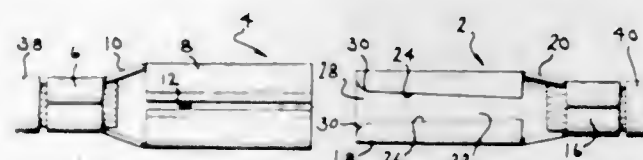
A battery terminal clamp including a hard metal skeleton member stamped from a single piece of material, such as steel, and shaped to the general configuration of

the battery terminal clamp. The skeleton member thereafter is surrounded with a soft noncorrosive metal such as lead to form a battery terminal clamp with the corrosive-resisting characteristics of the exterior soft metal and yet



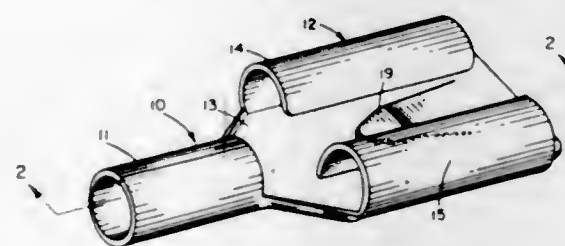
the residual strength of the skeleton member. The skeleton member further has a clamping structure integrally formed with it for affixing the battery terminal clamp to a battery cable.

3,409,866  
OPEN SEAM PLUG AND SOCKET CONNECTOR  
Franciscus Cornelis Roggeveen, Eindhoven, Netherlands, assignor to AMP Incorporated, Harrisburg, Pa.  
Filed Mar. 9, 1966, Ser. No. 532,905  
Claims priority, application Great Britain, Mar. 19, 1965, 11,698/65  
8 Claims. (Cl. 339-256)



A plug and socket connector assembly comprises a plug connector member having a plug contact portion formed as a split tubular sleeve having an open longitudinal seam with a pair of opposed edges and a mating socket connector member having a socket contact portion also formed as a split tubular sleeve provided with an open longitudinal seal with edges along the seam inwardly turned to form inwardly directed opposed flange portions, the plug contact portion slidably fitting within the socket contact portion with the opposed edges of the plug contact portion engaging respective flanges of the socket contact portion at remote sides of the flanges and an outer surface portion of the plug contact portion engaging an inner surface portion of the socket contact portion at least at locations remote from the flanges.

3,409,867  
DETACHABLE ELECTRICAL CONNECTORS  
William J. Lessner, Cleveland, Ohio, assignor to EFC Incorporated, Cleveland, Ohio, a corporation of Ohio  
Filed July 25, 1966, Ser. No. 567,689  
3 Claims. (Cl. 339-258)

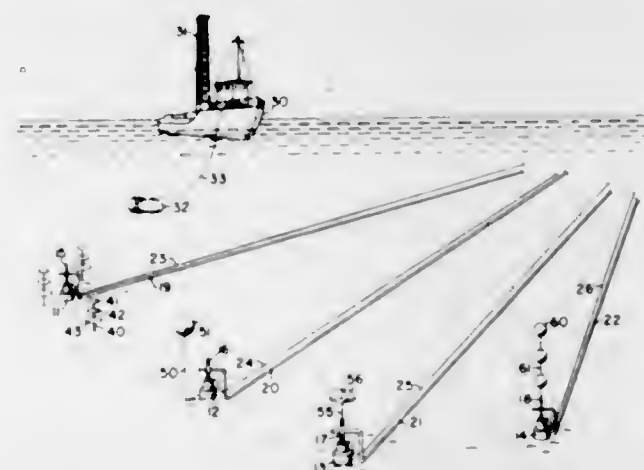


A quick-disconnect electrical connector for receiving and releasably retaining a male tab connector. The quick-disconnect connector includes a floor portion and overlying ear portions. A portion of the floor is struck out to

provide a tongue which extends upwardly from the floor and then downwardly toward the floor. The tongue has an end portion which is initially spaced from a detent member on the floor so that when a male tab member is inserted within the connector, the tongue portion will be flexed downwardly until the downwardly turned end portion of the tongue engages and is stopped by the detent.

### 3,409,868 SYSTEM FOR LOCATING UNDERWATER OBJECTS

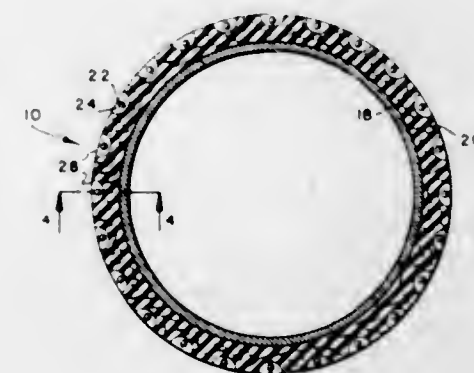
Richard A. Salathiel, Houston, Tex., assignor to Esso Production Research Company, a corporation of Delaware  
Filed Mar. 10, 1967, Ser. No. 622,231  
9 Claims. (Cl. 340-3)



Submerged wellheads and other underwater facilities are located and identified by transmitting acoustic impulses into the water and detecting distinctive pulses returned by reflectors mounted adjacent said facilities.

### 3,409,869 DEEP SUBMERGENCE ACOUSTIC TRANSDUCER ARRAY CONSTRUCTION

John M. McCool, Altadena, and Shelby F. Sullivan, Arcadia, Calif., assignors to the United States of America as represented by the Secretary of the Navy  
Filed July 21, 1965, Ser. No. 474,541  
1 Claim. (Cl. 340-9)

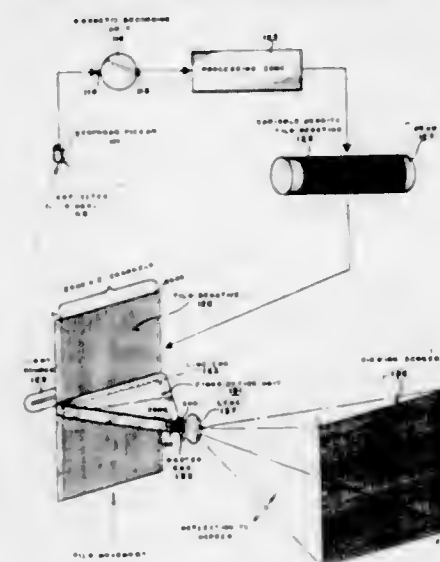


A basic underwater acoustic transducer array construction consisting of a rubbery acoustic lossy material layer

over a rigid reinforcing structure, pockets of rubbery material having good acoustic transmission properties formed in the outer face of the lossy layer, and the individual transducer elements imbedded in the pockets of acoustic transmitting material. The transducer elements are spaced apart by  $\lambda/2$  or less. The lossy and transmitting materials have acoustic impedances approximating that of water.

### 3,409,870 SEISMIC EXPLORATION METHOD FOR DELINEATING AN AREA OF A SEISMIC WAVE REFLECTING EARTH INTERFACE

Whitman D. Mounce, John D. Ball, and Tobias Flatow, Houston, Tex., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware  
Filed Jan. 18, 1965, Ser. No. 426,102  
8 Claims. (Cl. 340-15.5)



1. The method of seismic surveying comprising: performing a plurality of seismic observations at a plurality of seismic wave terminus locations disposed over an area of the earth's surface; from said seismic observations, producing a composite reproducible seismogram comprising a plurality of lineal multitrace sections each corresponding to a line of reflection points on a subsurface reflecting horizon; with said seismogram, varying light impingement on one end of an array of a plurality of linearly arranged elongated light-transmitting wave guide elements, each trace of said seismogram modulating light impingement on at least one given element of said array; and directing light from the other end of said light-transmitting array at a two-dimensional display so that light from each given element of said array illuminates an areal portion of the display corresponding to a location on said display to the location of a reflection point on said reflecting horizon.

### 3,409,871 ELIMINATION OF MULTIPLE EVENTS ON SEISMOGRAMS OBTAINED AT WATER-COVERED AREAS OF THE EARTH

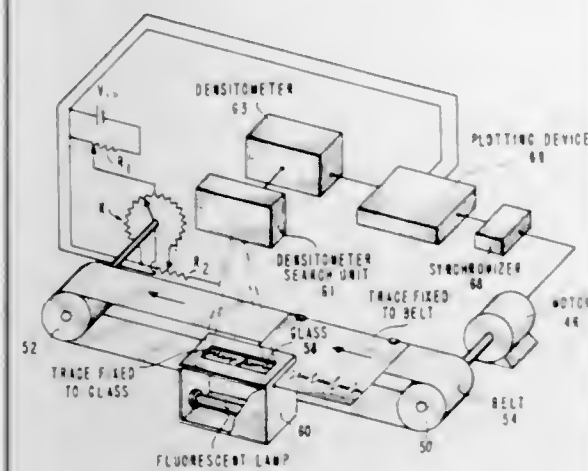
Harland H. Heffring, Calgary, Alberta, Canada, assignor to Esso Production Research Company, a corporation of Delaware

Filed Oct. 12, 1966, Ser. No. 586,075  
7 Claims. (Cl. 340-15.5)

Ring events are eliminated from a trace of a reproducible seismogram taken at marine locations by adjustably attenuating electrical signals produced from a trace, delaying the trace by an amount equal to the seismic wave travel time through the water layer beneath the source, and adding the original signal to the unde-



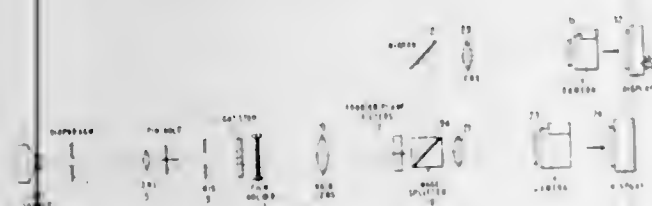
laid and unattenuated signal. This process is repeated using a delay equal to the travel time of waves in the water layer beneath the seismic wave detector. The ap-



propriate attenuation and time delay is determined by autocorrelation of traces produced by vertically traveling seismic waves at the ends of a geophone spread.

3,409,872

**OPTICAL DIFFRACTION SYSTEM FOR ANALYZING AND PROCESSING SEISMIC DATA**  
John E. Hogg, Ernest K. Shaw, and George W. Smith, Calgary, Alberta, Canada, assignors to Esso Production Research Company, a corporation of Delaware  
Filed Dec. 5, 1966, Ser. No. 599,092  
7 Claims. (Cl. 340-15.5)



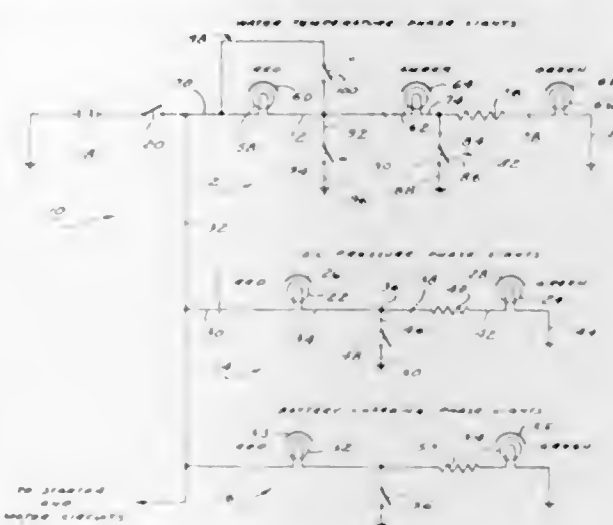
In an apparatus for optically processing seismic data, monochromatic light is passed from a substantially point source to a first positive lens through a variable light transmissivity seismogram and light stop means is positioned in the Fourier transform plane of the positive lens on the opposite side of the lens from the source to block out selected light rays impinging on the Fourier transform plane. Display means is positioned on the opposite side of the light stop means from the lens to display light rays impinging thereon. Preferably, an image splitter is positioned between the light stop means and the display means to divide the filtered light into two paths, and a second positive lens is positioned to intercept light from the image splitter that is not directed to the display means. A second display means positioned in the Fourier transform plane of the second positive lens permits display of the Fourier transform of the filtered seismogram so that the Fourier transform and the filtered seismogram itself can be simultaneously viewed.

3,409,873

**SELF-MONITORING AUTOMOTIVE CONDITION-WARNING SYSTEM**  
John J. Duffy, 157 Mile Square Road, Yonkers, N.Y. 10701  
Filed Dec. 16, 1965, Ser. No. 514,323  
10 Claims. (Cl. 340-52)

1. A self-monitoring automotive system for signalling regarding a condition in the automobile and including a battery, an ignition switch, a string of lamps including a first incandescent phase lamp and an endmost second in-

candescent phase lamp, optical coloring means of a different color for each of the lamps, means connecting the battery, ignition switch and lamps in a series circuit including a return leg between the battery and the endmost lamp, the first lamp having characteristics such that it will light when the full battery voltage is applied thereto and is unlit when in said series circuit and the second lamp having characteristics such that it will light when in said series circuit, and first grounding circuit means including a switch movable between open and closed positions in response to, respectively, one or another phase of the

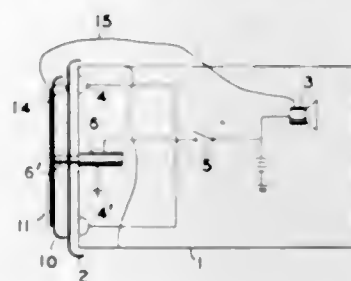


said condition in the automobile, said grounding circuit means running from between the lamps to the return leg, whereby when the ignition switch is closed and the phase responsive switch is closed only the first phase lamp is lit and when the ignition switch is closed and the phase responsive switch is open only the second phase lamp is lit whereby the lighting of a specific lamp indicates the existence of one or the other phase of the condition and so that the extinguishment of all phase lamps, when the ignition switch is closed, indicates that at least one of the lamps is not properly functioning.

3,409,874

**BACK UP WARNING SWITCH MEANS FOR VEHICLES**

Robert P. Bowler, 154 Clearmeadow Drive, East Meadow, N.Y. 11554, and James P. Malone, 1 Odell Court, Syosset, N.Y. 11791  
Filed Apr. 11, 1966, Ser. No. 541,669  
4 Claims. (Cl. 340-61)



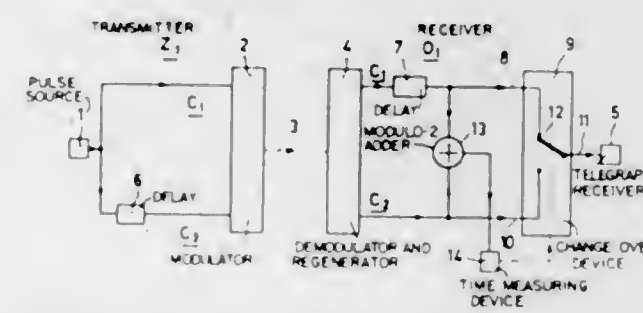
1. Back up warning switch means for a vehicle having a warning means comprising,  
a movable member mounted adjacent the rear bumper,  
means to move said member rearwardly of said bumper,  
a flexible member mounted on the end of said movable member,  
said flexible member extending generally parallel to said rear bumper when said moving means is moved rearwardly,  
said flexible member being adapted to be retracted when said moving means is not energized,

a tape type switch mounted on said flexible member, one side of said tape switch being connected to vehicle ground, the other end of said tape switch being connected to said warning means, said moving means being connected to be energized when said vehicle is being backed up.

3,409,875

**TRANSMISSION SYSTEM FOR TRANSMITTING PULSES**

Frank De Jager, Leo Eduard Zegers, and Jan Kuilman, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware  
Filed Mar. 4, 1965, Ser. No. 437,181  
Claims priority, application Netherlands, Mar. 5, 1964, 6402192  
7 Claims. (Cl. 340-146.1)

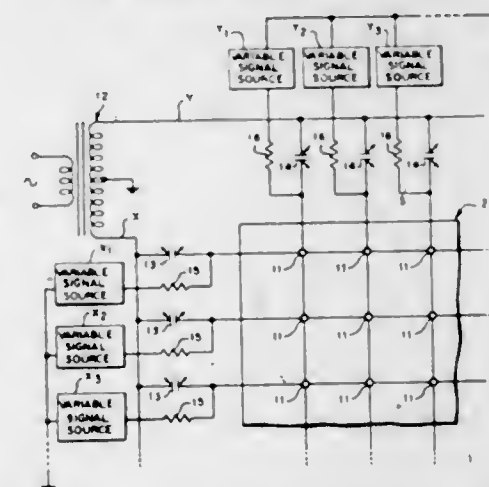


In a pulse transmission system, pulses are applied to two transmitting channels, one of which includes a delay. The received signals are applied to two corresponding receiving channels, one of which includes a delay, so that the outputs of the receiving channels are the same. The outputs of the receiving channels are applied to an output device by way of a change over switch. The switch is controlled by an error responsive device responsive to unequal signals at the outputs of the receiving channels, so that upon detection of unequal signals the output device is held connected to receiving channel having a delay device for a predetermined time, then is connected to the other receiving channel for a predetermined time, and then is returned to its connection with the original channel. The system corrects for bursts of interference in the transmission path.

3,409,876

**ELECTROLUMINESCENT GRID CONTROL BY VOLTAGE VARIABLE CAPACITORS**

Frank B. Uphoff, Churchville, Pa., assignor to the United States of America as represented by the Secretary of the Navy  
Filed May 28, 1965, Ser. No. 459,962  
6 Claims. (Cl. 340-166)



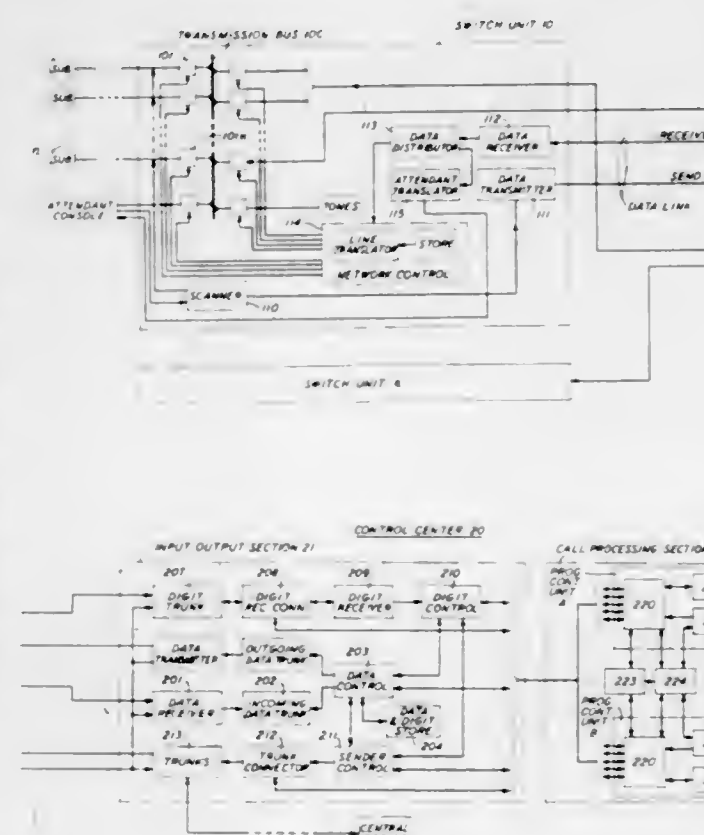
A driver circuit comprising a resistance and a variable capacitance is connected one each to a respective conductor of a plurality of electroluminescent elements at

right angles to each other in matrix form. An alternating signal is continuously applied across all of the horizontal and vertical elements of the matrix and variable signal sources are provided for varying the capacitance of a selected pair of variable capacitors one of which is connected to a selected horizontal conductor and the other of which is connected to a selected vertical conductor such that only one electroluminescent element may be lighted. The variable signal sources may be preselectively varied thereby to vary the intensity of the electroluminescent element.

3,409,877

**AUTOMATIC MAINTENANCE ARRANGEMENT FOR DATA PROCESSING SYSTEMS**

Michael E. Alterman, Matawan Township, Monmouth County, Donald W. Huffman, Shrewsbury, and Frank S. Vigilante, Piscataway Township, Middlesex County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Nov. 27, 1964, Ser. No. 414,365  
13 Claims. (Cl. 340-172.5)



A stored program controlled data processing system is disclosed in which components are duplicated to provide an active "on-line" unit and a standby "off-line" unit. A maintenance program contained in the active program store tests the active and standby units simultaneously and serves to interchange active and standby components upon detection of a fault in the active unit coupled with the absence of a fault in the standby unit.

3,409,878

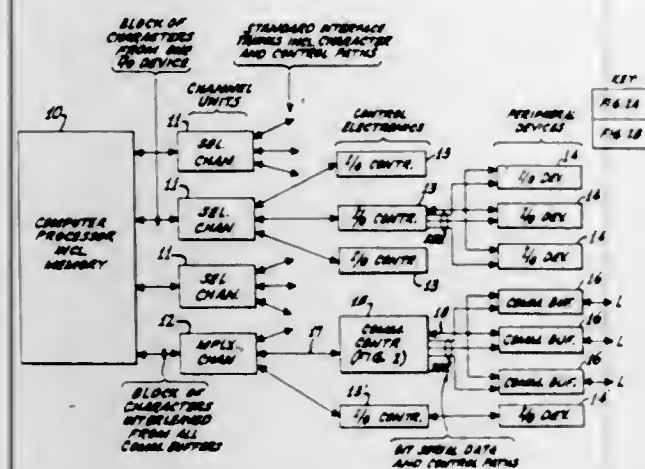
**CONTROLLING INTERCHANGES BETWEEN A COMPUTER AND MANY COMMUNICATIONS LINES**

Joseph L. Lindinger and Yehuda Rachovitsky, Philadelphia, Pa., assignors to Radio Corporation of America, a corporation of Delaware  
Filed Mar. 18, 1966, Ser. No. 535,586  
4 Claims. (Cl. 340-172.5)

A communications control unit, which is itself a small computer, for use between a main computer and many diverse bit-serial communication line buffers. The communications control unit includes a communications re-



porting logic unit for sending message-protection reports from the communications control unit to the main computer. The occurrence of a message protection control character in the data path of the communications control unit causes accessing of an operation word for the performance of message-protection procedures. If the pro-



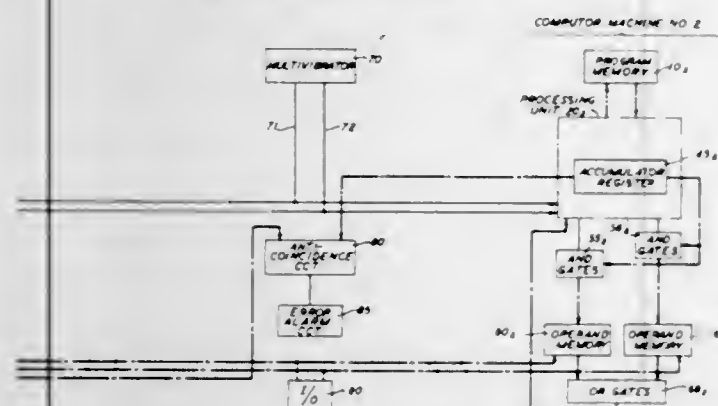
cedure requires action by the main computer, a communications reporting byte is generated and sent to the main computer to inform it of the complex communications control situation existing. The report is sent to the main computer over the standard interface trunk without the need for additional non-standard connecting lines.

3,409,879

#### COMPUTER ORGANIZATION EMPLOYING PLURAL OPERAND STORAGE

William Keister, Short Hills, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 30, 1966, Ser. No. 538,677  
10 Claims. (Cl. 340—172.5)



A computing system is disclosed which includes a central processing unit connected to a program memory and two operand memories. The central processing unit, in turn, comprises two instruction location counters for respectively operating on the two operand memories in accordance with the contents of the program memory. That is, the central processing unit operates alternately in conjunction with each operand memory.

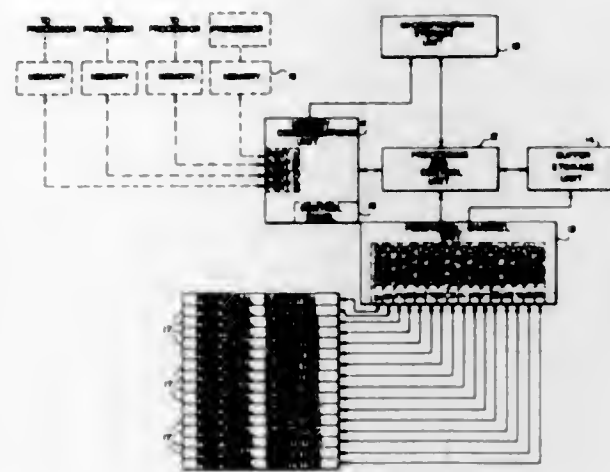
3,409,880

#### APPARATUS FOR PROCESSING DATA RECORDS IN A COMPUTER SYSTEM

Gerald M. Galler, Washington, D.C., and Ernest J. Porcelli and Laszlo L. Rakoczi, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York  
Filed May 26, 1966, Ser. No. 553,250  
6 Claims. (Cl. 340—172.5)

1. In a computer system including data handling means for storing a plurality of records, each of said records comprising a predetermined quantity of information items,

the combination comprising: control means for controlling the operation of said data handling means, means for providing a command item, said command item including an operation designation and a record count designation, means included in said control means responsive to said command item for causing said data handling means to initiate the operation designated by said command item, means included in said control means and responsive to said command item for storing the record count designa-



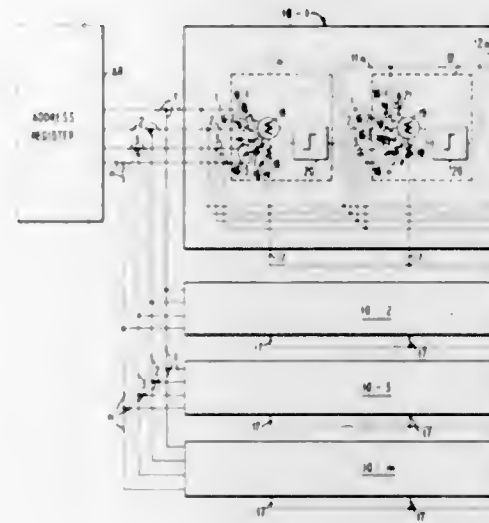
tion of said command item and for modifying the record count each time the operation is performed on one record by said data handling means, means responsive to said command item and to said record count designation for causing said data handling means to repeat the designated operation until the record count reaches a predetermined state, and means responsive to the predetermined state of the record count for causing said data handling means to terminate the designated operation.

3,409,881

#### NONDESTRUCTIVE READ-OUT STORAGE DEVICE WITH THRESHOLD LOGIC UNITS

Mitchell P. Marcus, Binghamton, and Cyril J. Tunis, Endwell, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Aug. 8, 1966, Ser. No. 570,928  
6 Claims. (Cl. 340—172.5)



1. In a nondestructive read-out storage device of the type providing  $2^n$  words each comprising  $m$  bits of binary indicia, where  $n$  represents the number of parallel inputs to the device from an address register, the combination of:

$m$  separate logic means, one for each of the  $m$  bit posi-

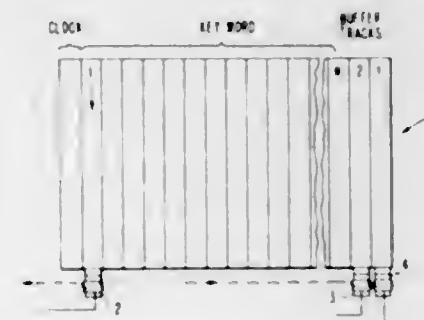
tions and each implementing a Boolean expression solely for that bit position and containing at least one Boolean term of  $n$  variables, each term corresponding to a respective input address wherein the corresponding word in such bit position contains a logical "1" so as to provide a predetermined output signal whenever and only when there is a logical "1" in that particular bit position of the word corresponding to the selected input address, and means for conveying the  $n$  address inputs in parallel directly to each of said logic means.

3,409,882

#### DIGITAL CONCEPT COORDINATION INFORMATION RETRIEVAL SYSTEM

James R. Sweet and Louis D. Stevens, Saratoga, and Jack O. Hildebrand, San Jose, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 29, 1965, Ser. No. 517,311  
8 Claims. (Cl. 340—172.5)



A search system in which lengthwise tracks on an endless magnetic belt are assigned to keywords and the positions lengthwise along the tracks correspond to document numbers. If a document contains a keyword, the portion of the keyword track corresponding to that document is saturated in the positive direction. Two buffer tracks may be used during searching in the system. In the conventional concept coordination application a single buffer track is saturated positively at all document bit positions prior to the start of a search. A movable magnetic head is positioned over the first keyword track and the belt rotated past the head and, where no bit is encountered, the corresponding document bit in the buffer track is erased. The movable head is then moved to the next keyword track and the operation repeated. After the appropriate keywords have been searched, the documents containing all of the keywords will be indicated on the buffer track by a positive one bit.

In a second embodiment two buffer tracks are utilized and the AND function implemented with a single buffer track is supplemented by the NOT and OR functions. The NOT function is implemented by a simple inversion, while the OR function is implemented by converting an OR statement into an AND statement through utilization of De Morgan's theorem.

3,409,883

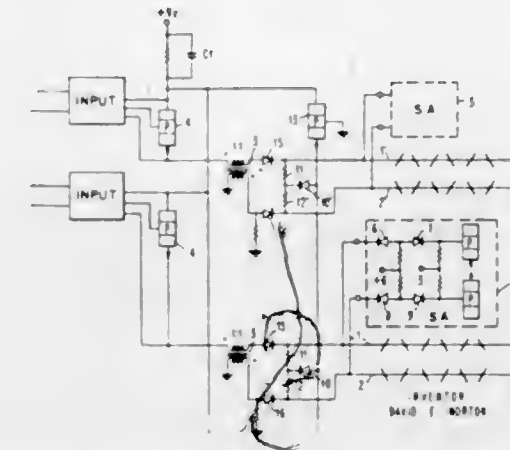
#### BALANCED COMMON INHIBIT SENSE SYSTEM

David E. Norton, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Apr. 6, 1964, Ser. No. 357,360  
13 Claims. (Cl. 340—174)

This circuit discloses the use of a transformer to balance the drive currents on two inhibit sense core windings connected in series across the input of a sense amplifier. The primary transformer is connected in series with one of the inhibit-sense core windings and the

driver, and the secondary of the transformer is connected in series with the other inhibit-sense core winding so



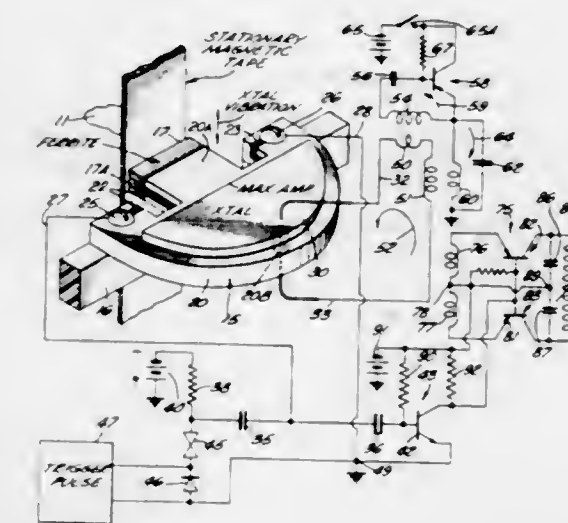
that the inhibit current pulses on each of the core windings are equalized by the transformer coupling.

3,409,884

#### POSITION DETERMINING SYSTEM UTILIZING MAGNETIC RECORDING

Fritz A. Guerth, San Pedro, Calif., assignor to G.L. Collins Corporation, a corporation of California

Filed Oct. 23, 1965, Ser. No. 504,047  
11 Claims. (Cl. 340—174.1)



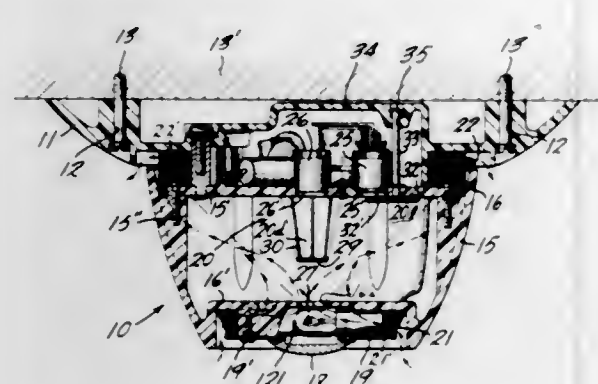
A position determining system involves a magnetic tape of standard construction and is maintained stationarily on a body whose position is to be accurately established and re-established. Incorporated with such magnetic tape is a vibrating ferrite structure, vibrated at a supersonic frequency by a crystal having that inherent frequency. The ferrite structure includes a grooved portion within which there is a wire extending transversely of the magnetic tape. Initially, a positioning marker is established on the tape by passing a current through the wire in a non-vibrating condition of the ferrite structure. This positioning marker is subsequently used in conjunction with the same wire, but now in a vibrating condition to relocate accurately the position of the body on which the tape is mounted. For this latter purpose, the wire is connected to detecting apparatus which is sensitive both to the frequency of vibration and also to the voltage generated in the wire to accurately relocate the position marker with respect to that wire which was initially used in establishing the position marker.



3,409,885

**SMOKE DETECTION APPARATUS**

Robert A. Hall, Danbury, Conn., assignor, by mesne assignments, to Guardian Industries, Inc., Springfield, N.J., a corporation of New Jersey  
Filed Mar. 26, 1964, Ser. No. 355,046  
10 Claims. (Cl. 88—14)

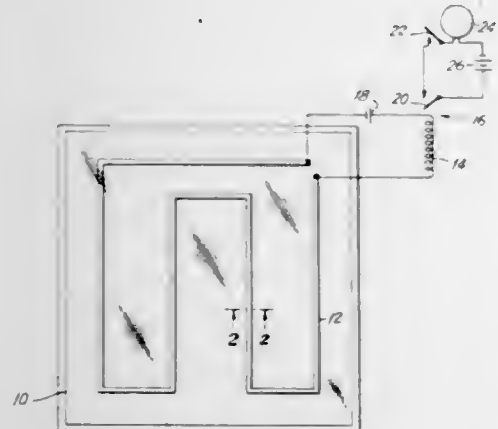


A smoke detector is provided with a pair of photoelectric cells electrically connected in an offset bridge, one cell being mounted in a normally-dark region surrounded by a "wall of radiation" from a light source and the other cell being mounted so as to be irradiated by the light source. Smoke particles, if present in the detector, reflect light onto the normally-dark cell, and an electric switch connected to the cells actuates an alarm when the two cells are balanced. A filter and an adjustable shield facilitate adjustment of the light impinging on the normally-light cell so that the alarm is given at any predetermined smoke density. In one embodiment, thermistors are substituted for the photoelectric cells to produce a gas detector or temperature rate-of-rise or rate-of-drop detector.

3,409,886

**BURGLAR ALARM SYSTEM INCLUDING PROTECTIVE TAPE**

Harold B. Davis, Flushing, and Richard G. Terker, Scarsdale, N.Y., assignors to Security Tape Corporation, Flushing, N.Y., a corporation of New York  
Filed Dec. 26, 1967, Ser. No. 693,518  
5 Claims. (Cl. 340—273)

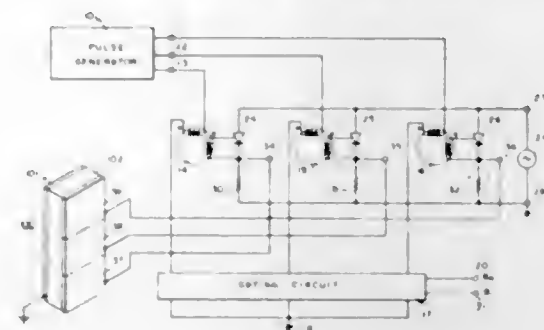


An alarm system using a continuous non-interrupted conductive strip, any disruption thereof producing an alarm response, a protective covering over said strip comprising a tape continuous with and overlying said strip, the central portion of the tape being free of any adhesive and directly covering the strip, the outer portions being coated with a pressure-sensitive adhesive and disposed to adhere to the strip supporting surface.

3,409,887

**SOLID STATE DRIVING CIRCUIT**

Hans G. Blank, Bronx, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware  
Filed Dec. 1, 1965, Ser. No. 510,839  
5 Claims. (Cl. 340—324)



1. A solid state driving circuit for a segmented display device wherein the segment corresponding to the magnitude of a coded signal and all lower segments are concurrently energized which comprises:

- a first plurality of four-layer semiconductor elements having first, second and third electrodes, each of said elements being maintained in a continuously conductive state by the application of a series of pulses to its second electrode;
- a first plurality of impedances, each of said impedances being coupled to the third electrode of one of said semiconductor elements;
- first means for applying a voltage across each combination of semiconductor element and impedance, said voltage appearing substantially across the corresponding impedance when said element is conductive;
- a first plurality of driving circuit output terminals, each of said terminals being coupled to the junction of the third electrode of one of said elements and the corresponding impedance, a first driving signal appearing at each output terminal during the interval that the corresponding semiconductor element is rendered conductive, said output terminals being coupled to the segments of said display device;
- a plurality of transformers, each of said transformers having a primary winding and a secondary winding, each of said secondary windings being coupled between the second and third electrodes of a corresponding semiconductor element whereby the load on a secondary winding is comprised of a diode formed by adjacent layers of the corresponding semiconductor element;
- a pulse generator for continuously providing a series of pulses at its output terminals, each output terminal of said pulse generator being coupled to a primary winding of one of said transformers; and
- a gating circuit coupled between the primary windings of said transformers and a reference potential, said gating circuits being responsive to the coded input signal whereby the pulses from said generator are supplied to selected transformers and maintain the corresponding semiconductor elements continuously conductive.

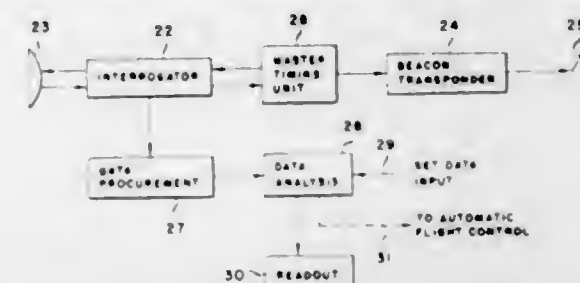
3,409,888

**STATION KEEPING AND NAVIGATION AID SYSTEM**

Thompson K. Speer, Sr., Smyrna, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.  
Filed Aug. 15, 1966, Ser. No. 572,366  
16 Claims. (Cl. 343—6.5)

A station keeping and navigation aid system for use with aircraft and other vehicles to facilitate formation flying and navigation with respect to a known fixed location. Each vehicle is equipped with a radar tracking

system and a beacon transponder. The radar system tracks a selected beacon transponder to provide distance and angular information of the vehicle position relative to such transponder, and this information is broken into selected orthogonal distance components. These measured components may be compared with signals indicating a desired position of the vehicle; comparison between the measured and desired signals indicates any mispositioning



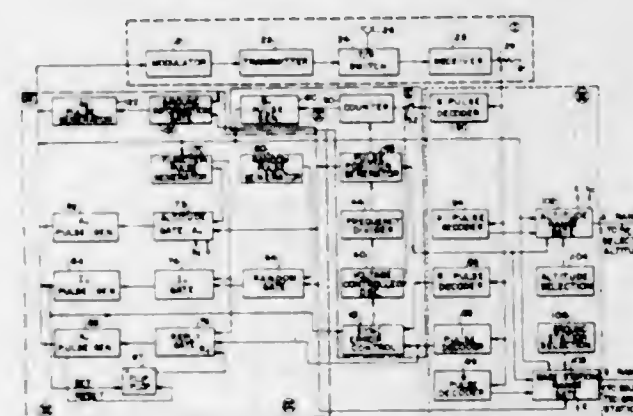
of the vehicle relative to the desired location. The vehicle beacon transponder enables other similarly equipped vehicles to keep a predetermined formation flight position and each vehicle in a formation flight is assigned a time slot in accordance with a cyclically repetitive timing system. The system also can be used for navigation with respect to a ground-based transponder for various navigation operations.

3,409,889

**SYNCHRONIZED COMMUNICATIONS SYSTEM**

Walton Graham, Roslyn, N.Y., assignor to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota  
Continuation-in-part of application Ser. No. 328,655, Dec. 6, 1963. This application July 18, 1966, Ser. No. 565,779

11 Claims. (Cl. 343—7.5)



Improvements in synchronized communications systems in which the number of interrogation signals used for synchronizing purposes transmitted by a first station is adjusted by the number of signals received from other stations during a given period of time; different types of stations are assigned predetermined times at which to transmit signals; and synchronization of one station is achieved only with stations within a predetermined range.

**ERRATUM**

For Class 343—7.5 see:  
Patent No. 3,409,898

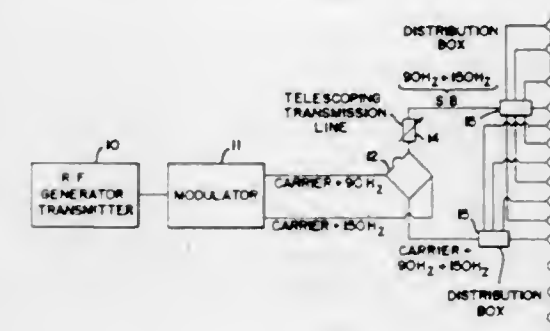
3,409,890

**LANDING SYSTEM FOR AIRCRAFT**

Robert Walter Redlich, Jannali, New South Wales, Australia, assignor to The University of Sydney, Sydney, New South Wales, Australia, a body corporate  
Filed Dec. 28, 1966, Ser. No. 605,458  
8 Claims. (Cl. 343—108)

A phase reference glide path system for aircraft utilizes a generated radio frequency signal divided into two chan-

nels, one amplitude modulates at a frequency  $f_1$  and the other at a frequency  $f_2$ , and two outputs arranged by combining the two modulated waves, one output a carrier wave modulated with both frequencies  $f_1$  and  $f_2$  and the second output, a sideband wave containing an unmodulated carrier wave. The system includes a sideband antenna array for transmitting a sideband signal and a separate carrier antenna array for transmitting a carrier wave, there being substantially no reflected radiation of

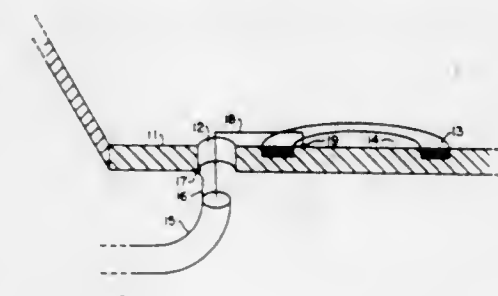


the transmitted radiation within the guidance region. The said pair of arrays are arranged with their centers separated by a distance that causes the phase difference between the sideband signal and the carrier signal to increase linearly with an elevation angle of an aircraft receiving said signals and to indicate the elevation of the aircraft by producing a preponderance of the frequency  $f_2$  below the optimum glide path angle and the frequency  $f_1$  above the optimum glide path angle.

3,409,891

**SURFACE ANTENNA**

Tenny D. Lode, Madison, Wis., assignor to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota  
Filed Sept. 20, 1965, Ser. No. 488,691  
4 Claims. (Cl. 343—708)



Antenna constructions on a metal conducting sheet such as a portion of the outer metal skin of an aircraft. The constructions have resistive or magnetic isolation means attached to the surface which partially isolates an area of the metal sheet with respect to surface currents in the sheet. The isolated area is connected to a transmission cable and serves as the antenna receiving and/or radiating surface.

3,409,892

**COMPACT ANTENNA FOLDING FOR SEARCH ANTENNA**

David H. Mooney, Jr., Severna Park, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army  
Filed Jan. 17, 1967, Ser. No. 609,970  
8 Claims. (Cl. 343—713)

A transportable folding antenna system including a pair of receiver antenna elements each having a transmitting antenna mounted adjacent thereto. The antennas are sup-



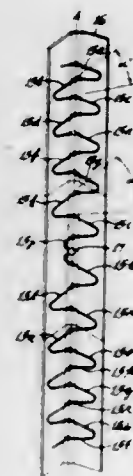
ported on a rotatable pedestal carried on a vehicle. The receiver antenna elements are comprised of a plurality of members hinged together to permit folding of the elements for the transporting thereof. The receiver elements



are mounted on a common base in back-to-back relation and extend upward therefrom, in inclined relation, for mating engagement of the receiver elements at the top portions thereof, in its operating position.

3,409,893

**ZIGZAG RADIATOR WITH PANEL REFLECTOR**  
Matti S. O. Siukola, Westmont, N.J., assignor to Radio Corporation of America, a corporation of Delaware  
Filed Oct. 29, 1965, Ser. No. 505,623  
9 Claims. (Cl. 343-836)



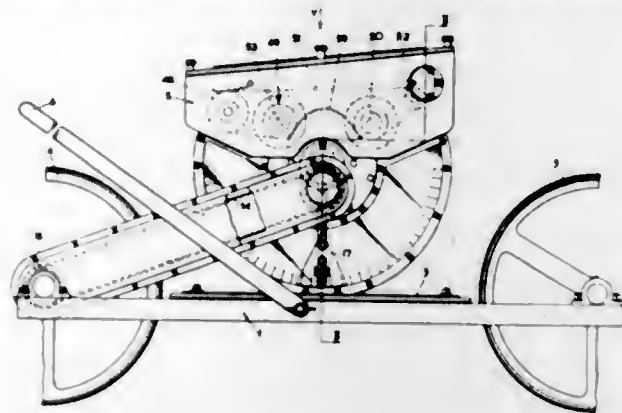
A unidirectional panel type antenna constructed of a reflector panel and a zigzag radiator conductor a plurality of wavelengths long at the operating frequency. The reflector panel is also several wavelengths long at the operating frequency and is placed collaterally along the zigzag conductor and the associated panel are both bent about the center vertical axis of the zigzag conductor so that the dihedral angle formed by the two planes of the reflector panel and the two planes of the zigzag conductor are both on the order of 120 degree angles.

3,409,894

**GRADIENT DELINEATORS**  
Herbert Oliver Nelson, The Old Manor House,  
Southampton Road, Lympington, England  
Filed Oct. 25, 1966, Ser. No. 589,248  
7 Claims. (Cl. 346-7)

A gradient delineator or profile recorder which can be wheeled over the terrain to be surveyed in order to record its contour comprises a ball resolver, the drive to

which is mounted on a pendulum and the take-off drives from which move with the body of the instrument according to the slope of the terrain. Means are provided for recording the information from the take-off drives, in the form of a record of the profile of the terrain.

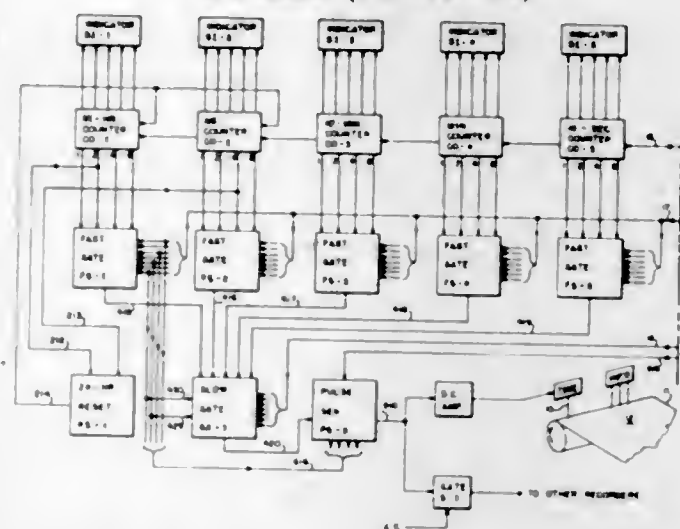


ording to the slope of the terrain. Means are provided for recording the information from the take-off drives, in the form of a record of the profile of the terrain.

3,409,895

TIME RECORDING SYSTEM

Leonard O. Hayden, Accokeek, Md., assignor to the United States of America as represented by the Secretary of the Navy  
Filed Dec. 6, 1966, Ser. No. 600,000  
8 Claims. (Cl. 346-20)



A system for visibly recording time along a single track of a multichannel recorder. The time in hours, minutes, seconds and fractions thereof is recorded as a series of binary-coded decimal digits indicated by deflections of a single trace on a multichannel record medium. The digits recorded are generated by a system of counters and gating means which accept uniformly spaced timing pulses and produce serial binary-coded decimal digits. Each decimal digit is indicated by a reference marker and a plurality of binary value markers spaced at predetermined intervals thereafter.

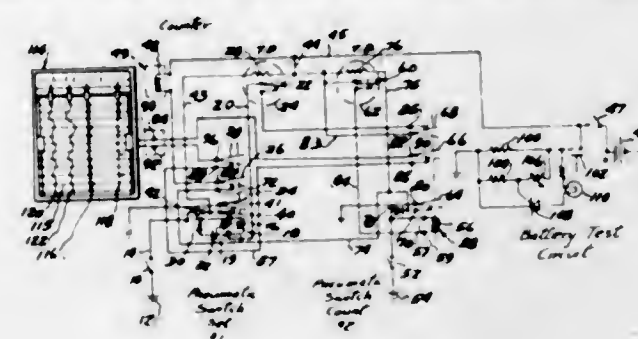
3,409,896

AIRCRAFT TRAFFIC COUNTER

Martin F. Schultz, 2521 Lafayette Ave. 48906, and John R. Eva, 5013 Alpha 48910, both of Lansing, Mich.  
Filed June 15, 1966, Ser. No. 557,813  
5 Claims. (Cl. 346-33)

An airport aircraft traffic counter which prevents multiple count for each taxiing aircraft, irrespective of the number of wheels of such aircraft, by having a first relay activated by the passage of the first wheel of the aircraft over a relay tripping member, such relay being arranged to start a time delay permitting a second relay to operate if actuated during the period of time predetermined by the time delay. Upon actuating of the second relay, a count is recorded, and a second time delay is set preventing subsequent counts during a second predetermined period of time as set by the second time delay, such

that no count is recorded in spite of the successive passage of the aircraft's other wheels upon the tripping mechanism. Additionally, a chart recorder may be connected to



the traffic counter so as to supply a graphic representation of aircraft traffic in function of time and relatively to other information such as meteorological information and the like.

3,409,897

**RECORDER FOR DETECTING AND LOCATING LEAKS IN PIPELINES BY ULTRASONIC VIBRATION**

Hendrik Boeselaar and Arnoldus J. Van Rieksdijk, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware  
Filed Dec. 19, 1966, Ser. No. 602,628  
5 Claims. (Cl. 346-33)

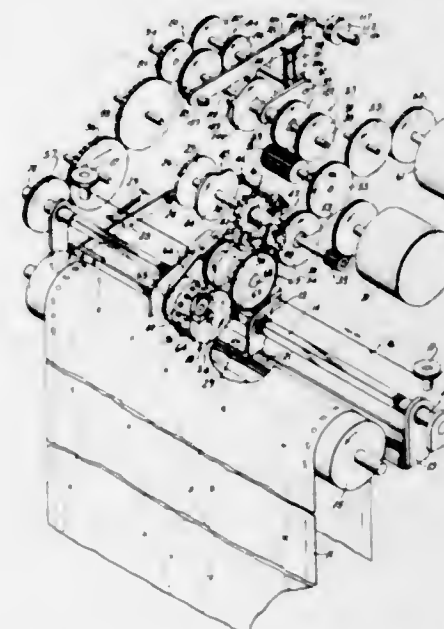


An apparatus for detecting and locating leaks in a pipeline wherein an instrument housing is transported through the pipeline by the fluid flow. The instrument housing contains means for detecting the vibrations caused by fluid leaking from the pipeline and suitable means for amplifying and recording the vibrations that occur in the ultrasonic range.

3,409,898

MULTI-POINT RECORDER

Everett H. Davies, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois  
Filed June 19, 1967, Ser. No. 646,997  
11 Claims. (Cl. 346-61)



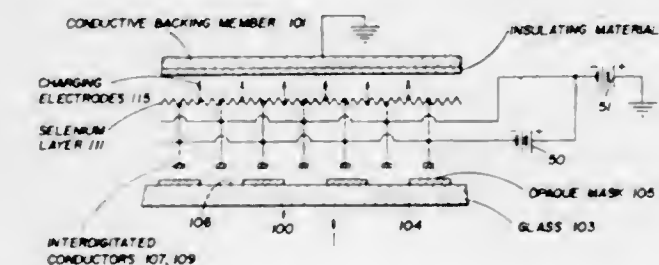
A multi-point recorder having a print wheel which is rotated intermittently through a series of equally spaced steps by a drive mechanism and which is moved into and out of printing contact with a recording chart between

successive steps to print a series of dots indicating the values of a number of measured variables. At periodic intervals, differential gearing overrides the drive mechanism and causes the print wheel to index through one and one-half steps and print not only a dot but also a numeral enabling visual identification of the dots representing a given variable.

3,409,899

**PHOTORESPONSIVE ELECTROSTATIC IMAGE RECORDING APPARATUS WITH CHARGING ELECTRODE MATRIX ARRAY**

Carl E. Cowan and Stephen Michel, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
Filed Sept. 1, 1964, Ser. No. 393,641  
3 Claims. (Cl. 346-74)

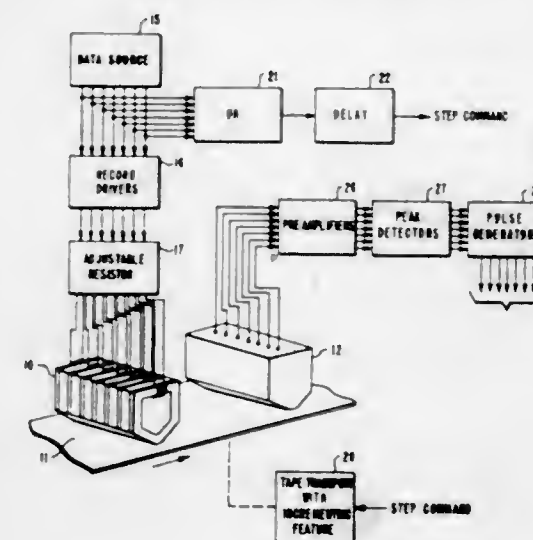


A light-image to charge-image transducer having an interdigitated conductor array with transversely overlying photoresponsive strips, each strip having alternately masked and unmasked portions with a charging electrode at each junction of the masked and unmasked portions forming an electrode matrix array. A potential is applied between adjacent conductors and in response to a light image the photoresponsive strip acts as a voltage divider with the potential on selective electrodes charging to simultaneously effect an image charge pattern on a dielectric record medium inserted between the electrode matrix array and a backing electrode.

3,409,900

GAP SCATTER CORRECTION APPARATUS

Michael J. Markakis, Palo Alto, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California  
Filed Oct. 7, 1965, Ser. No. 493,796  
5 Claims. (Cl. 346-74)



System for recording binary digital signals in parallel on a magnetic tape despite the existence of gap scatter in a multi-channel head assembly, including means for varying the energization level of each head to provide pulse lengths on the magnetic tape which are proportional to



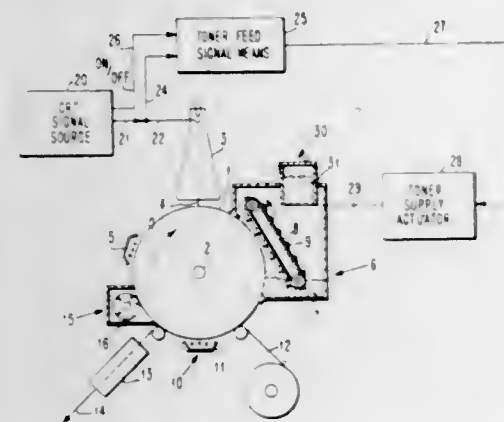
the displacement of the respective head gap from a selected reference line transverse to the direction of the tape movement.

3,409,901

# **AUTOMATIC TONER CONCENTRATION CONTROL FOR USE WITH CRT INPUT**

Martin H. Dost, Los Gatos, and Gerald L. Wiederhold, San Jose, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed July 13, 1967, Ser. No. 653,140  
7 Claims. (Cl. 346-74)



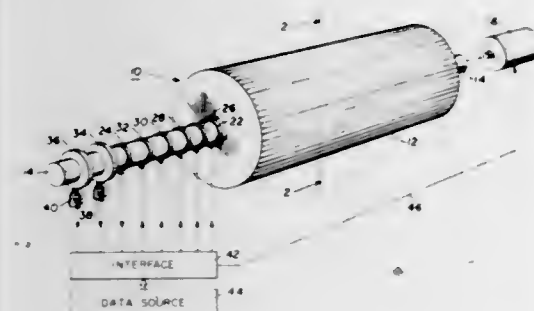
In a xerographic system in which toner is used to develop latent electrostatic images generated by means of a cathode ray tube, a toner concentration control system in which toner is fed to the developing mechanism in proportion to the area and density of print. The beam current of the CRT is integrated and when the total, which is proportional to the print density and area, exceeds a threshold, a batch of toner is released to the developer mechanism and the integrator is reset. The predetermined level may be made variable such that when the toner level in the feed box is high, the threshold which must be exceeded is relatively high, while if the toner level is low the threshold which must be exceeded is relatively low.

3,409,902

# **HIGH SPEED THERMAL PRINTER**

Jerry D. Merryman, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed May 27, 1966, Ser. No. 553,420  
6 Claims. (Cl. 346-76)

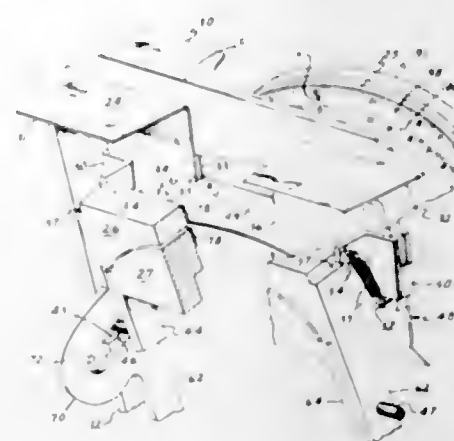


A device adapted for high speed operation as a thermal printer or display device is disclosed including a rotating drum carrying a plurality of thermal print heads. Each of the print heads includes a matrix of selectively energizable elements controlled by information stored in a memory means carried by the rotating drum. The memory means receives serial data and converts the serial data to parallel data at a plurality of outputs associated with individual heating elements to produce preselected patterns of heated elements.

# **ELAPSED TIME RECORDER WITH PRINTING DISK AND CONCENTRICALLY MOUNTED STRIKERS**

La Vergne H. Williams, Columbia, Conn., assignor to Gunver Manufacturing Company, Manchester, Conn., a corporation of Connecticut

Filed Feb. 28, 1967, Ser. No. 619,345  
7 Claims. (Cl. 346-82)



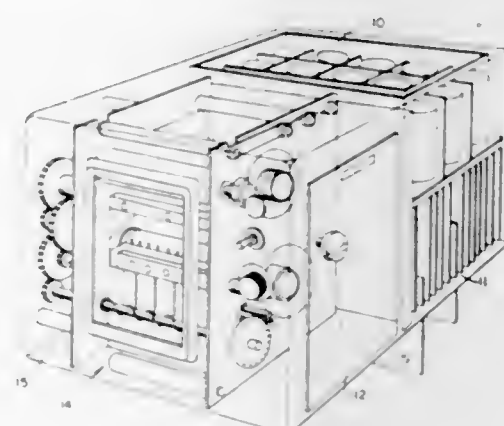
An elapsed-time time clock having a clock mechanism rotating a printing member on which are carried two concentric rings of time indicia, a pair of printing hammers each pivotally disposed to engage respectively one of the concentric rings of indicia, and a card carrier disposed between the printing member and the printing hammers. Means is provided for bringing either of the hammers and the card carrier into printing contact with the printing member whereby sequential operation of said hammers with a time card carried by the card carrier will cause the card to be imprinted with the time of the first hammer operation, the time of the second hammer operation, and the time elapsed between the two operations.

3,409,904

# **PRINTER HAVING PIEZOELECTRIC CRYSTAL PRINTING MEANS**

Karl Maierhofer, Park Ridge, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Dec. 20, 1966, Ser. No. 603,257  
11 Claims. (Cl. 346-101)



A printing device using a piezoelectric crystal including a hammer and a platen having a raised helical portion. Pressure sensitive recording means is positioned between the hammer and the raised helical portion. Actuation of the piezoelectric crystal by an electrical signal causes the crystal to move the hammer against the raised helical portion to produce marks on the pressure sensitive recording means. The platen is rotated to cause said raised helical portion to move across the paper to form a line of

marks across the paper. The paper is moved transversely to the platen to develop a dot field. Selection of the particular dots to be printed at each position, in response to received information signals, causes reproduction of the characters in the information signal.

3,409,905

# **EYELID GALVANOMETER**

John Bemrose and Lauren G. Kilmer, Tulsa, Okla., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 31, 1966, Ser. No. 539,093  
5 Claims. (Cl. 346-109)



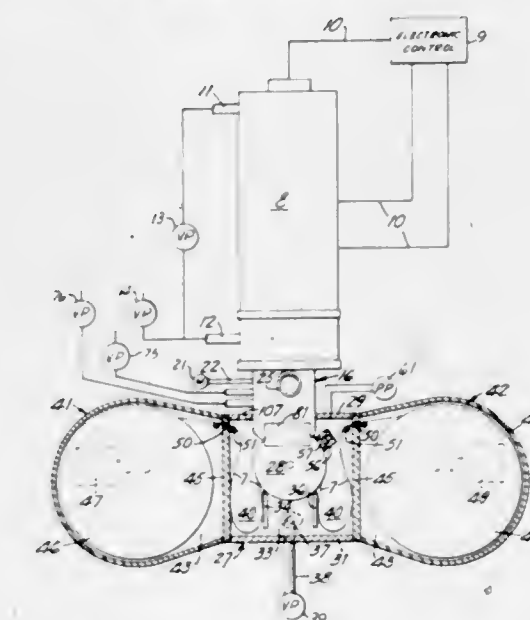
Apparatus for making a variable area photographic record of electrical transients. The electrical signal is applied to a galvanometer to rotate a light shield. Light modulated by the light shield passes out of the galvanometer housing and is applied to a photosensitive medium so that the exposed area of the photosensitive medium is indicative of the electrical signal strength. In one embodiment the light passes into the housing and is reflected by a fixed mirror with the shield comprising a shutter to block a portion of the light inlet or the outlet. In another embodiment the light beam passes into the housing and the light shield comprises a mirror having a concave por-

3,409,906

# **ELECTRON BEAM RECORDER WITH VACUUM SEAL SYSTEM**

Derrick A. Jones, Woodbury Township, Washington County, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Continuation of application Ser. No. 515,049, Dec. 20, 1965. This application June 30, 1967, Ser. No. 667,016  
16 Claims. (Cl. 346-110)



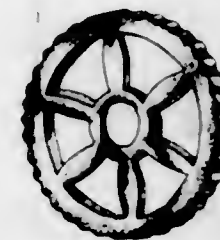
An apparatus for treating a medium in the presence of at least a partial vacuum which apparatus includes a seal for an evacuated treating chamber, which seal is formed by an arcuate face having a treatment aperture leading directly to said chamber, on each side of which are at least partially evacuated cells, and means affording movement of a medium past said aperture on a support member along a path spaced from the arcuate face and concentric thereto.



# DESIGNS

NOVEMBER 5, 1968

**212,580**  
**CEREAL BASE COOKED FOOD SNACK**  
 Philip M. Sautier, Minneapolis, and Gordon H. Wells, Jr.,  
 Hopkins, Minn., assignors to The Pillsbury Company,  
 Minneapolis, Minn., a corporation of Delaware  
 Filed Dec. 5, 1967, Ser. No. 9,635  
 Term of patent 14 years  
 (Cl. D1—11)



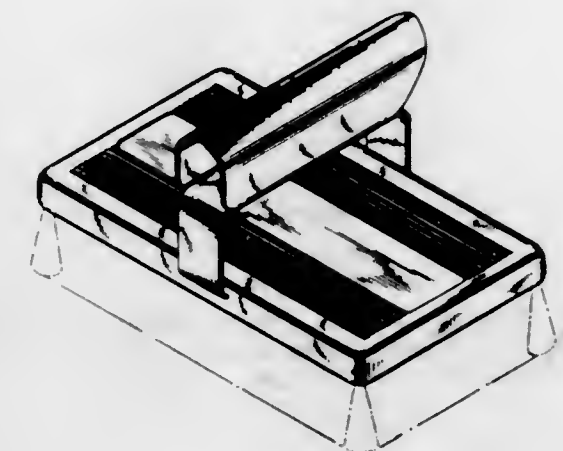
**212,581**  
**BOWLER'S APRON**  
 Stanley F. Ratay, 1738 Juniata St.,  
 Philadelphia, Pa. 19140  
 Filed Jan. 12, 1967, Ser. No. 5,399  
 Term of patent 14 years  
 (Cl. D2—229)



**212,582**  
**VENTILATED SAFETY HELMET OR  
 SIMILAR ARTICLE**  
 Frederick W. Feldmann and Rodney S. Hill, Dover, Del.,  
 assignors to ILC Industries, Inc., Dover, Del., a corpo-  
 ration of Delaware  
 Filed Feb. 6, 1968, Ser. No. 10,464  
 Term of patent 14 years  
 (Cl. D2—231)



**212,583**  
**PAINT BRUSH OR THE LIKE**  
 Willis Lee Stewart, Suffern, N.Y., and Ronald M. Kaplan,  
 Cedar Grove, N.J., assignors to H. & G. Industries, Inc.,  
 Belleville, N.J., a corporation of New Jersey  
 Filed Apr. 9, 1968, Ser. No. 11,374  
 Term of patent 7 years  
 (Cl. D4—38)



**212,584**  
**BOTTLE**  
 James L. Linn, Jr., Maumee, Ohio, assignor to Owens-  
 Illinois, Inc., Toledo, Ohio, a corporation of Ohio  
 Filed Jan. 26, 1968, Ser. No. 10,332  
 Term of patent 14 years  
 (Cl. D9—1)



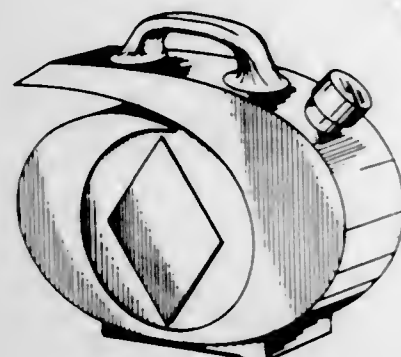
**212,585**  
**BOTTLE**  
 Walter S. Joy, 12 W. 55th St.,  
 New York, N.Y. 10019  
 Filed Sept. 1, 1967, Ser. No. 8,462  
 Term of patent 14 years  
 (Cl. D9—37)



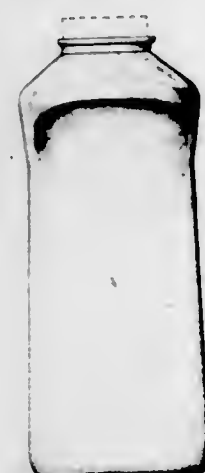


212,586  
JUG

Dale R. Pulver, Mexico City, and Jorge Reynoso, Atizapan de Zaragoza, Mexico, assignors to Diamond Shamrock Corporation, a corporation of Delaware  
Filed July 6, 1967, Ser. No. 7,720  
Term of patent 14 years  
(Cl. D9—53)

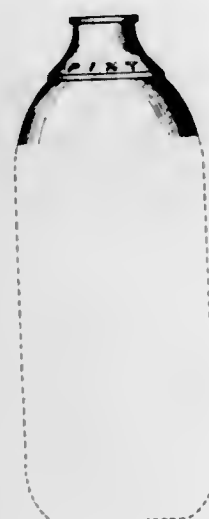
212,587  
BOTTLE

James A. Shepler, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio  
Filed Oct. 18, 1967, Ser. No. 9,055  
Term of patent 14 years  
(Cl. D9—91)

212,588  
BOTTLE

Richard L. Platte, Ann Arbor, Mich., assignor to Hoover Ball and Bearing Company, Saline, Mich.  
Original design application Aug. 3, 1966, Ser. No. 3,330.  
Divided and this application Sept. 25, 1967, Ser. No. 8,730

Term of patent 14 years  
(Cl. D9—100)

212,589  
COMBINED JAR AND DISPENSING CLOSURE

James O. Roberts, Cleveland Heights, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio

Filed Dec. 1, 1967, Ser. No. 9,609  
Term of patent 14 years  
(Cl. D9—131)

212,590  
DECANTER

Ronald A. Kasson, New York, N.Y., assignor to Schenley Industries, Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 18, 1967, Ser. No. 8,316  
Term of patent 14 years  
(Cl. D9—137)

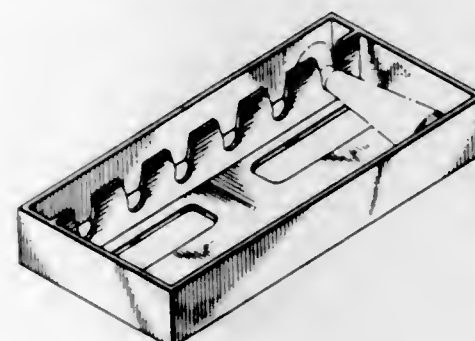


## 212,591

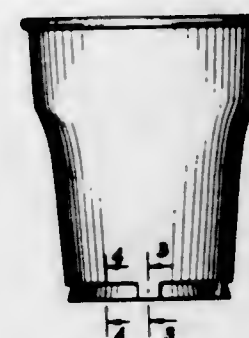
## TRAY FOR DARTS OR THE LIKE

Robert F. Hauck, McKean, Pa., assignor to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York

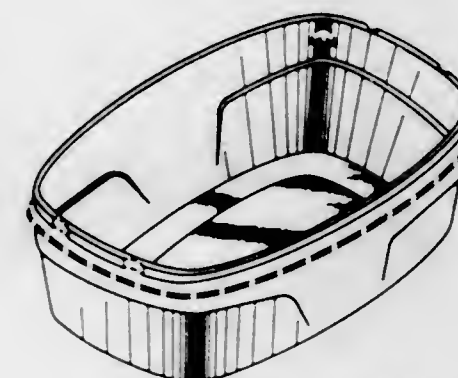
Filed Feb. 27, 1967, Ser. No. 5,948  
Term of patent 14 years  
(Cl. D9—185)

212,592  
DRINKING CUP

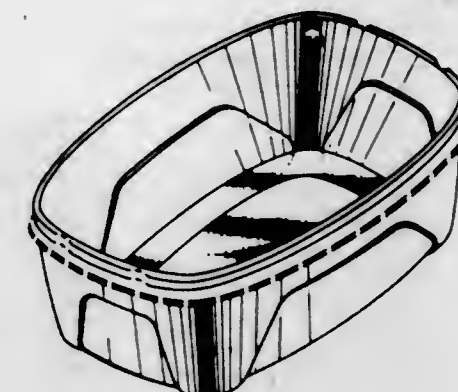
Charles Lewis Metzler, Alpine, N.J., and Henry Albert Holzwarth, Bayside, and John Duncan Wark, Freeport, N.Y., assignors to American Can Company, New York, N.Y., a corporation of New Jersey  
Filed May 17, 1967, Ser. No. 7,155  
Term of patent 14 years  
(Cl. D9—220)



212,593  
PACKAGING CONTAINER OR THE LIKE  
Stafford D. Collie, Kansas City, Mo., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed June 23, 1967, Ser. No. 7,584  
Term of patent 14 years  
(Cl. D9—242)

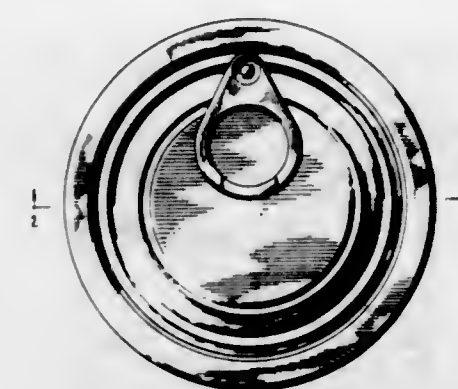


212,594  
PACKAGING CONTAINER OR THE LIKE  
Stafford D. Collie, Kansas City, Mo., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed June 23, 1967, Ser. No. 7,585  
Term of patent 14 years  
(Cl. D9—242)

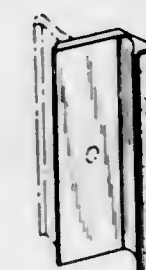
212,595  
END CLOSURE FOR A CONTAINER

William T. Saunders, Weirton, W. Va., assignor to National Steel Corporation, a corporation of Delaware

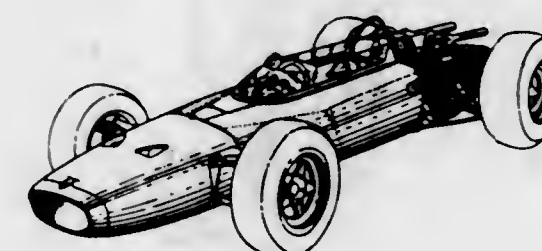
Filed Oct. 5, 1967, Ser. No. 8,880  
Term of patent 14 years  
(Cl. D9—255)



212,596  
HANDLE FOR DOORS, DRAWERS, OR THE LIKE  
Robert G. Plantholt, Rochester, Mich., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware  
Filed Dec. 26, 1967, Ser. No. 9,906  
Term of patent 14 years  
(Cl. D10—8)

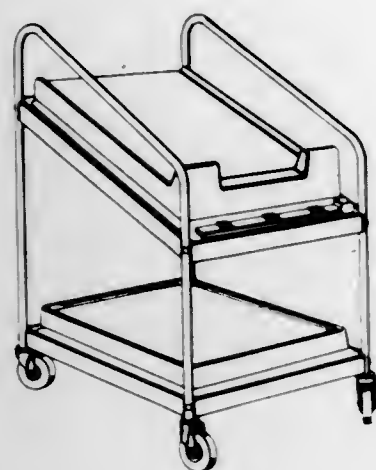


212,597  
RACING CAR  
Anthony Cyril Rudd, Darlaston, England, assignor to Rubery, Owen & Company Limited, Darlaston, England, a British company  
Filed Sept. 30, 1966, Ser. No. 4,109  
Claims priority, application Great Britain Apr. 2, 1966  
Term of patent 3½ years  
(Cl. D14—3)





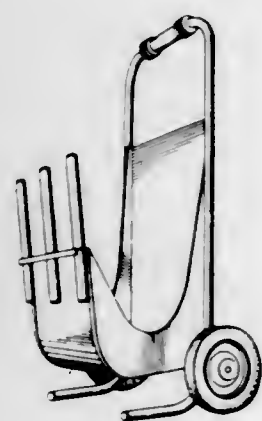
**212,598**  
**PORTABLE STAND FOR ELECTRONIC**  
**EQUIPMENT OR SIMILAR ARTICLE**  
 Allen R. Stakee, 16149 Janine Drive,  
 Whittier, Calif. 90603  
 Filed Dec. 18, 1967, Ser. No. 9,832  
 Term of patent 14 years  
 (Cl. D14—3)



**212,599**  
**TRAILER**  
 George T. Stafford, Jr., P.O. Box 2805,  
 Birmingham, Ala. 35212  
 Filed Jan. 17, 1968, Ser. No. 10,192  
 Term of patent 14 years  
 (Cl. D14—3)



**212,600**  
**CART FOR FIREWOOD**  
 Frank J. Bequette, Jr., 219 Tungsten St.,  
 Henderson, Nev. 89015  
 Filed Feb. 12, 1968, Ser. No. 10,544  
 Term of patent 14 years  
 (Cl. D14—3)



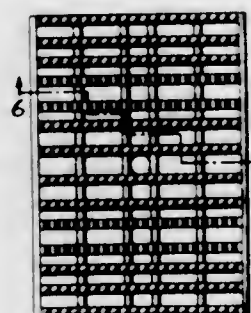
**212,601**  
**CHILD'S ROCKER CHAIR**  
 Morris B. Rubenstein, 521 Woodland Road,  
 Hampton, Va. 23369  
 Filed Apr. 12, 1967, Ser. No. 6,661  
 Term of patent 14 years  
 (Cl. D15—6)



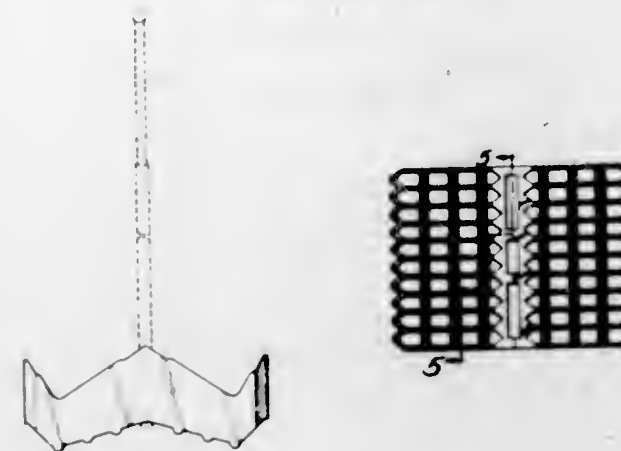
**212,602**  
**SECTIONAL SOFA**  
 Robert A. Gera, 220 Hazel Ave.,  
 Glencoe, Ill. 60022  
 Filed Mar. 14, 1968, Ser. No. 10,973  
 Term of patent 14 years  
 (Cl. D15—11)



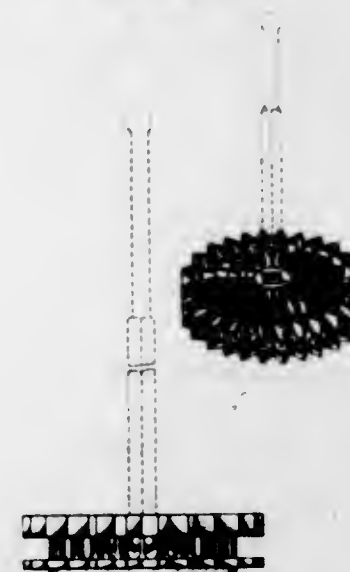
**212,603**  
**DIP BASKET FOR CHEMICALLY**  
**TREATING OBJECTS**  
 Joel A. Elftmann, Bloomington, Minn., assignor to  
 Fluoroware, Inc., Chaska, Minn., a corporation of  
 Minnesota  
 Filed Jan. 23, 1968, Ser. No. 10,270  
 Term of patent 14 years  
 (Cl. D16—1)



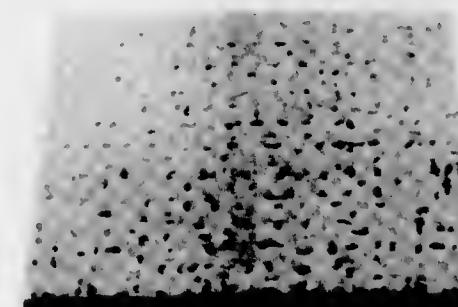
**212,604**  
**DIP BASKET FOR CHEMICALLY**  
**TREATING OBJECTS**  
 Joel A. Elftmann, Bloomington, Minn., assignor to  
 Fluoroware, Inc., Chaska, Minn., a corporation of  
 Minnesota  
 Filed Jan. 23, 1968, Ser. No. 10,281  
 Term of patent 14 years  
 (Cl. D16—1)



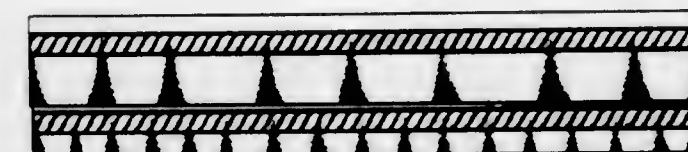
**212,605**  
**DIP BASKET FOR CHEMICALLY**  
**TREATING OBJECTS**  
 Victor C. Wallestad, Edina, Minn., assignor to Fluoro-  
 ware, Inc., Chaska, Minn., a corporation of Minnesota  
 Filed Apr. 22, 1968, Ser. No. 11,561  
 Term of patent 14 years  
 (Cl. D16—1)



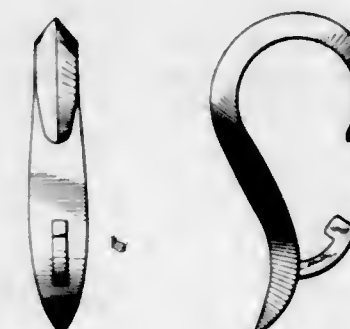
**212,606**  
**CERAMIC WALL TILE**  
 Paul Francis Jones, Clifton, England, assignor to Pilkington's Tiles Limited, Clifton Junction, England, a company of Great Britain  
 Filed Nov. 6, 1967, Ser. No. 9,278  
 Claims priority, application Great Britain Sept. 20, 1967  
 Term of patent 14 years  
 (Cl. D18—2)



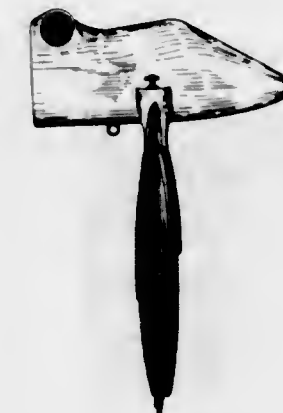
**212,607**  
**CASKET**  
 Richard Rittenhouse, Rosemont, Pa., assignor to Union  
 Casket Company, Wilmington, Del., a corporation of  
 Delaware  
 Filed Mar. 6, 1968, Ser. No. 10,861  
 Term of patent 14 years  
 (Cl. D19—1)



**212,608**  
**SHOWER CURTAIN HOOK**  
 Noel Levine, Hewlett Bay Park, N.Y., assignor to Hygiene  
 Industries, Inc., New York, N.Y., a corporation of New  
 York  
 Filed May 28, 1968, Ser. No. 12,106  
 Term of patent 14 years  
 (Cl. D21—1)



**212,609**  
**FISHING PLUG**  
 Paul C. Lott, 2974 Cheyenne Drive,  
 Owensboro, Ky. 42301  
 Filed Jan. 10, 1968, Ser. No. 10,114  
 Term of patent 14 years  
 (Cl. D22—27)





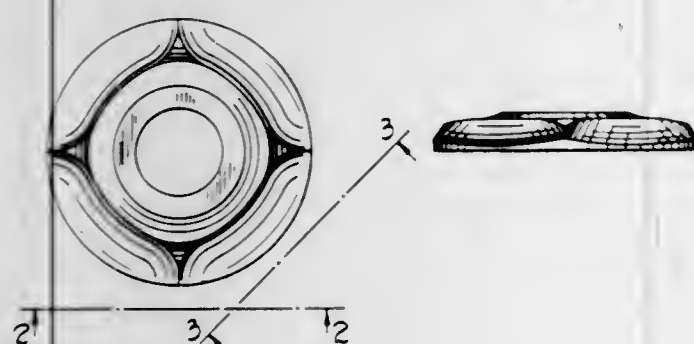
212,610

**HANDLE FOR A SPRAY GUN**  
 Fred W. Wahlin, St. Charles, Ill., assignor to Spraying Systems Co., a corporation of Illinois  
 Filed Jan. 17, 1968, Ser. No. 10,195  
 Term of patent 14 years  
 (Cl. D23-17)



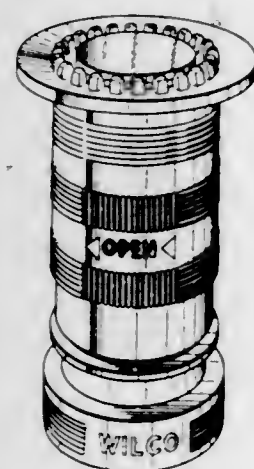
212,611

**ESCUTCHEON FOR A SINGLE LEVER TUB OR SHOWER VALVE**  
 Stephen A. Young, Monticello, Ind. (Flora, Ind. 46929)  
 Filed Nov. 30, 1967, Ser. No. 9,598  
 Term of patent 14 years  
 (Cl. D23-31)



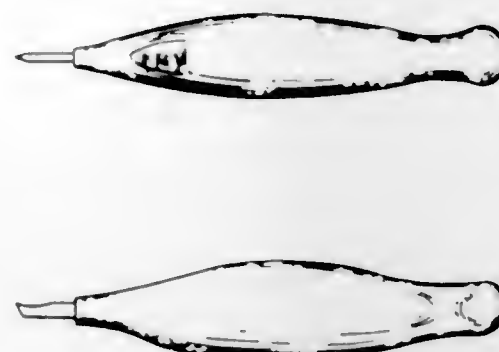
212,612

**FIRE HOSE NOZZLE**  
 Duncan Horatio Campbell, Islington, Ontario, Canada, assignor to Wilson & Cousins Co., Limited, Toronto, Ontario, Canada, a company of Ontario, Canada  
 Filed Aug. 3, 1967, Ser. No. 8,112  
 Term of patent 14 years  
 (Cl. D23-34)



212,613

**DENTAL HAND TOOL OR THE LIKE**  
 Ralph G. Fontana, 7645 Glusti Road, Forestville, Calif. 95436  
 Filed Mar. 15, 1967, Ser. No. 6,225  
 Term of patent 14 years  
 (Cl. D24-1)



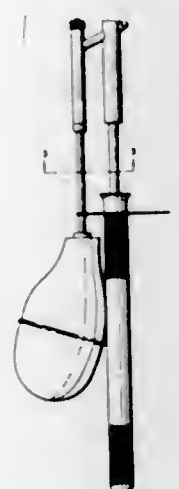
212,614

**TEACHING DEVICE**  
 Gary R. Taylor, 2521 Imperial St., Salt Lake City, Utah 84106  
 Filed Jan. 25, 1968, Ser. No. 10,301  
 Term of patent 14 years  
 (Cl. D25-1)



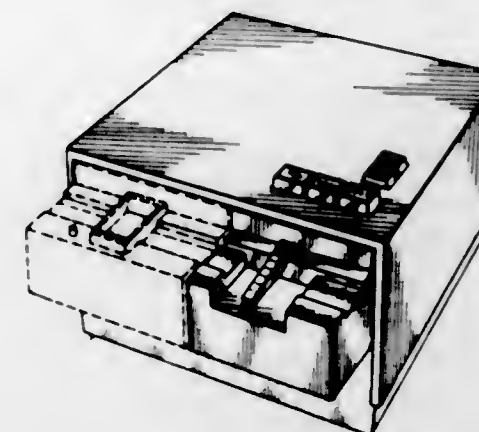
212,615

**SOLDER REMOVER**  
 Charles Sydney Richard Wotton, Worthing, Sussex, England, assignor to Oryx Electrical Laboratories Limited, Worthing, Sussex, England, a British company  
 Filed June 23, 1967, Ser. No. 7,575  
 Claims priority, application Great Britain Apr. 14, 1967  
 Term of patent 14 years  
 (Cl. D26-1)



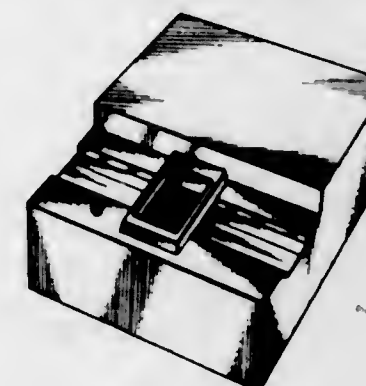
212,616

**TAPE TRANSMITTER**  
 Louis Lucien Lepoix, Baden-Baden, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware  
 Filed Sept. 12, 1966, Ser. No. 3,809  
 Claims priority, application Germany Mar. 15, 1966  
 Term of patent 14 years  
 (Cl. D26-5)



212,617

**TAPE READER**  
 Karl Schöner, Pforzheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware  
 Filed Sept. 12, 1966, Ser. No. 3,811  
 Claims priority, application Germany Mar. 15, 1966  
 Term of patent 14 years  
 (Cl. D26-5)



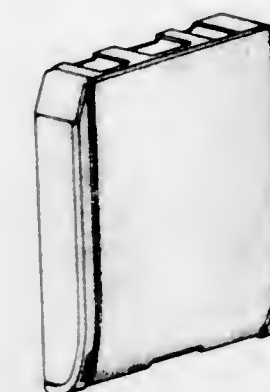
212,618

**JACKETED DISCHARGE LAMP**  
 Thomas J. Kreps, South Euclid, Ohio, assignor to General Electric Company, a corporation of New York  
 Filed Mar. 16, 1966, Ser. No. 1,499  
 Term of patent 14 years  
 (Cl. D26-8)



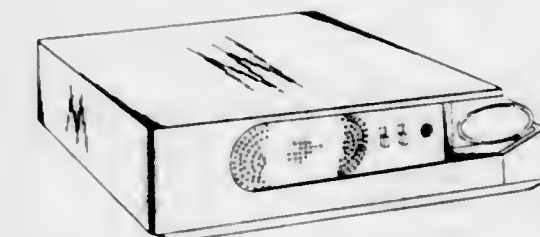
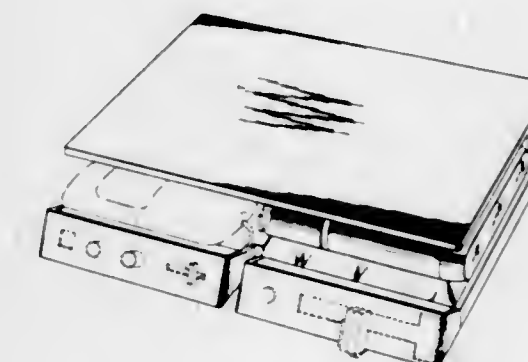
212,619

**CARTRIDGE FOR RECORDING TAPE**  
 Donald D. Merry, Westland, and Carl J. Fuhs, Brighton, Mich., assignors to Quixonic, Inc., Plymouth, Mich., a corporation of Delaware  
 Continuation-in-part of design application Ser. No. 7,017, May 8, 1967. This application Oct. 18, 1967, Ser. No. 9,303  
 Term of patent 14 years  
 (Cl. D26-14)

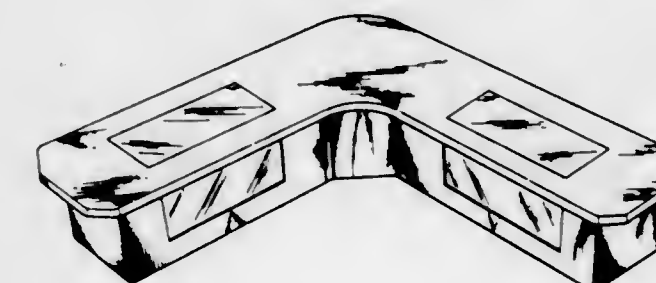


212,620

**Dictating Apparatus or the Like**  
 Elliot F. Noyes, New Canaan, Conn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
 Filed Dec. 7, 1967, Ser. No. 9,696  
 Term of patent 14 years  
 (Cl. D26-14)

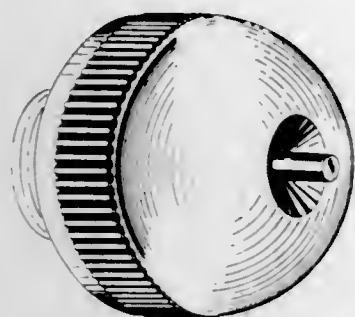


**212,621**  
**COMBINED COFFEE TABLE AND DUAL AQUARIUM UNIT**  
 Jack Hiland, 23545 Brooks Road, Chatsworth, Calif. 91311  
 Filed Feb. 15, 1967, Ser. No. 5,823  
 Term of patent 14 years  
 (Cl. D30-11)

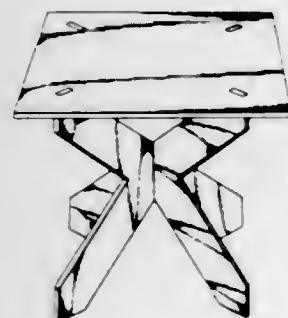




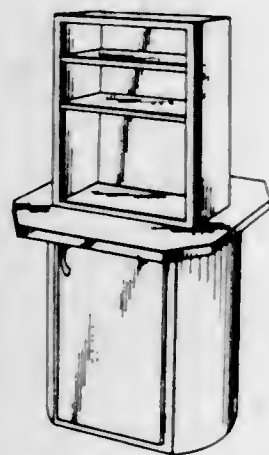
**212,622**  
**ANIMAL DRINKING FOUNTAIN OR THE LIKE**  
 Gerald L. Pochyla, Portage, and William R. Smith, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware  
 Filed Jan. 11, 1968, Ser. No. 10,130  
 Term of patent 14 years  
 (Cl. D30—13)



**212,623**  
**TABLE**  
 Morris B. Rubenstein, 7 Southwind, Hampton, Va. 23369  
 Filed May 19, 1967, Ser. No. 7,198  
 Term of patent 14 years  
 (Cl. D33—14)



**212,624**  
**COMBINED CABINET AND WORK BENCH**  
 Royce F. Evans, 1625 Highway 30 West, New Haven, Ind. 46774  
 Filed July 21, 1967, Ser. No. 7,933  
 Term of patent 14 years  
 (Cl. D33—19)



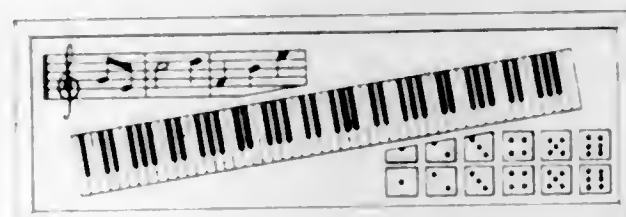
**212,625**  
**ILLUMINATED GAME DISPLAY PANEL OR THE LIKE**  
 William G. Tregurtha, Monroeville, Pa. (371 Mathews Road, Youngstown, Ohio 44512), and Harold J. Greene, 750 Truesdale Road, Youngstown, Ohio 44511  
 Filed Mar. 2, 1967, Ser. No. 6,035  
 Term of patent 7 years  
 (Cl. D34—5)



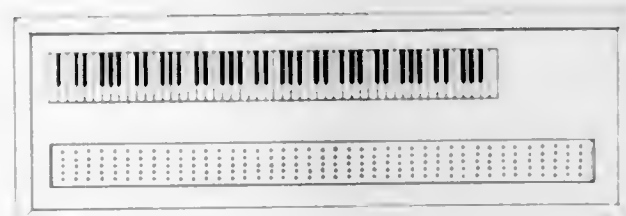
**212,626**  
**ILLUMINATED GAME DISPLAY BOARD OR THE LIKE**  
 William G. Tregurtha, Monroeville, Pa. (371 Mathews Road, Youngstown, Ohio 44512), and Harold J. Greene, 750 Truesdale Road, Youngstown, Ohio 44511  
 Filed Mar. 2, 1967, Ser. No. 6,036  
 Term of patent 7 years  
 (Cl. D34—5)



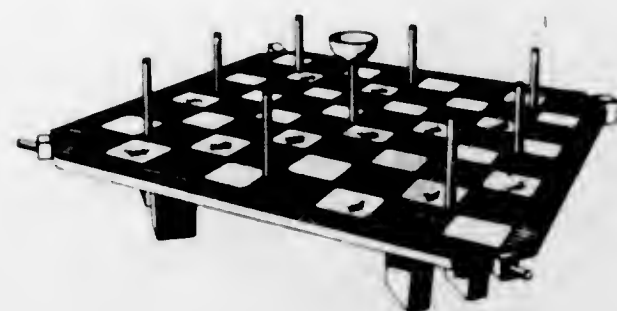
**212,627**  
**ILLUMINATED GAME DISPLAY BOARD OR THE LIKE**  
 William G. Tregurtha, Monroeville, Pa. (371 Mathews Road, Youngstown, Ohio 44512), and Harold J. Greene, 750 Truesdale Road, Youngstown, Ohio 44511  
 Filed Mar. 2, 1967, Ser. No. 6,037  
 Term of patent 7 years  
 (Cl. D34—5)



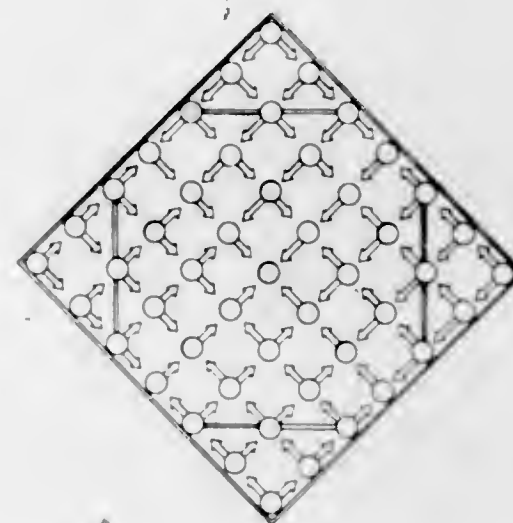
**212,628**  
**ILLUMINATED GAME DISPLAY BOARD OR THE LIKE**  
 William G. Tregurtha, Monroeville, Pa. (371 Mathews Road, Youngstown, Ohio 44512), and Harold J. Greene, 750 Truesdale Road, Youngstown, Ohio 44511  
 Filed Mar. 2, 1967, Ser. No. 6,038  
 Term of patent 7 years  
 (Cl. D34—5)



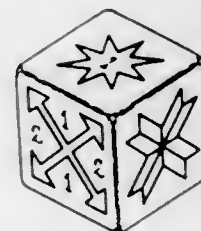
**212,629**  
**GAME BOARD**  
 Edward L. Dickerson, 111 E. 7th St., Antioch, Calif. 94509  
 Filed July 24, 1967, Ser. No. 7,955  
 Term of patent 7 years  
 (Cl. D34—5)



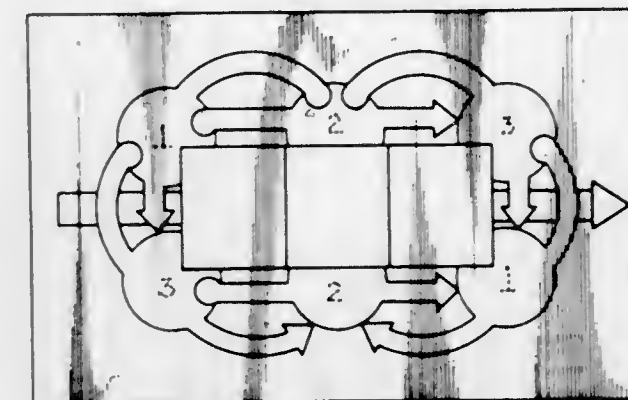
**212,630**  
**GAME BOARD**  
 Michael Vawryk, 19 Evergreen Drive, Lyndora, Pa. 16045  
 Filed Nov. 14, 1967, Ser. No. 9,397  
 Term of patent 14 years  
 (Cl. D34—5)



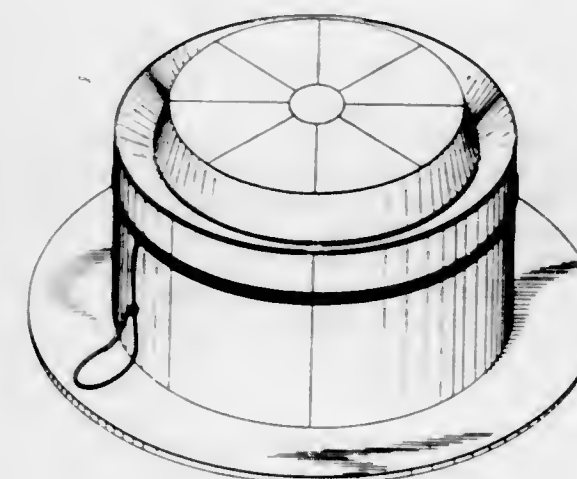
**212,631**  
**DIE FOR A GAME**  
 James Christopher Spiring, Stoneacre, Bentsbrook Park, North Holmwood, Dorking, England  
 Filed Jan. 22, 1968, Ser. No. 10,236  
 Claims priority, application Great Britain Aug. 3, 1967  
 Term of patent 14 years  
 (Cl. D34—5)



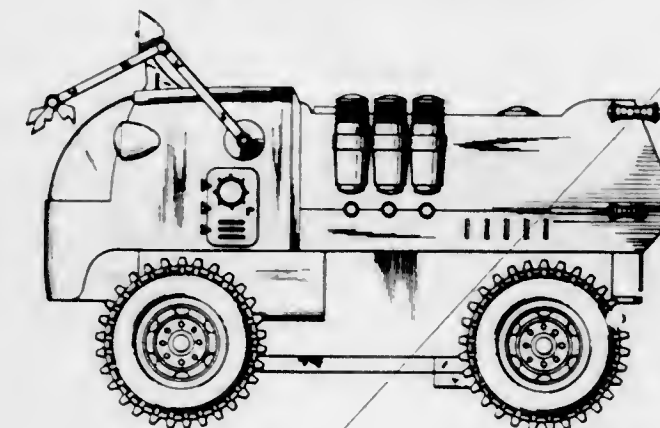
**212,632**  
**GAME BOARD**  
 Charles J. Schultz, P.O. Box 5324, Reno, Nev. 89503  
 Filed Jan. 25, 1968, Ser. No. 10,304  
 Term of patent 14 years  
 (Cl. D34—5)



**212,633**  
**PLAY TABLE WITH CHILD-RETAINING TETHER**  
 Joe Spaulding, 365 West End Ave., New York, N.Y. 10024  
 Filed Sept. 25, 1967, Ser. No. 8,729  
 Term of patent 3½ years  
 (Cl. D34—15)



**212,634**  
**TOY VEHICLE**  
 Frank Fusco, Monroe, Norman Charles Gold, New York, and William Gold, Great Neck, N.Y., assignors to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York  
 Filed Jan. 2, 1968, Ser. No. 10,032  
 Term of patent 14 years  
 (Cl. D34—15)

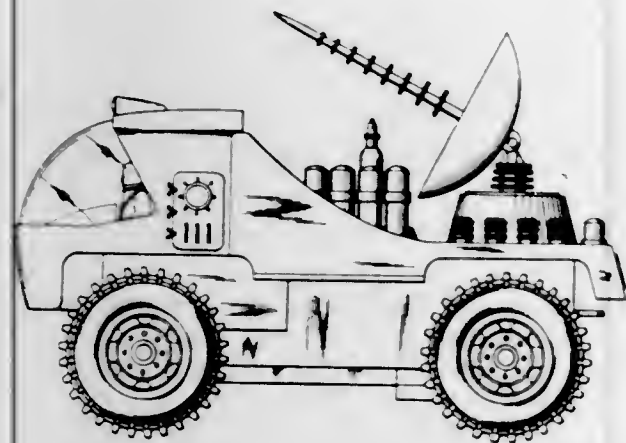




212,635  
TOY VEHICLE

Frank Fusco, Monroe, Norman Charles Gold, New York, and William Gold, Great Neck, N.Y., assignors to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York

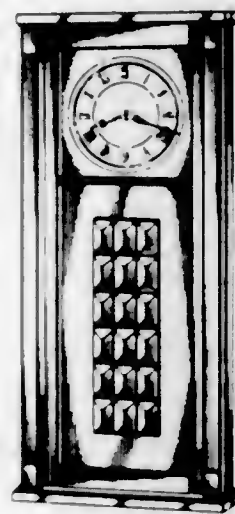
Filed Jan. 2, 1968, Ser. No. 10,034  
Term of patent 14 years  
(Cl. D34—15)



212,637  
CLOCK CASING

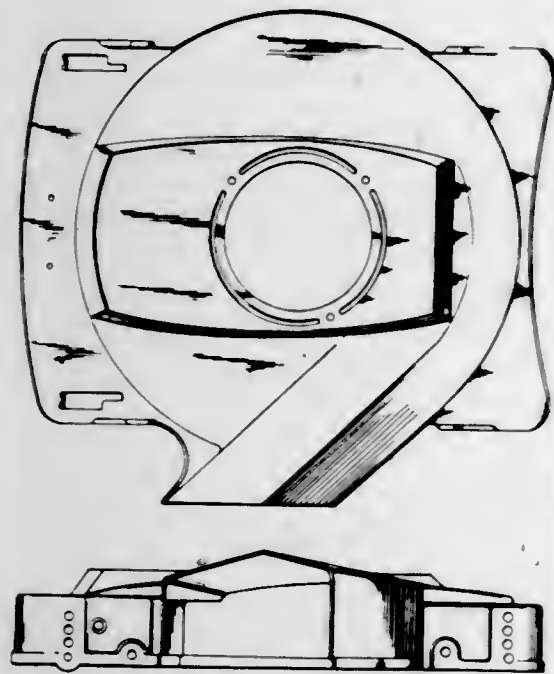
Monte L. Levin, New York, N.Y., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware

Filed Oct. 3, 1967, Ser. No. 8,849  
Term of patent 14 years  
(Cl. D42—7)

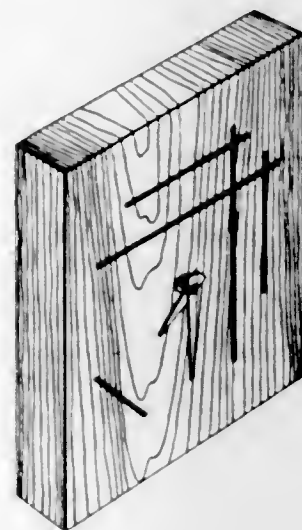


212,636  
HOUSING FOR A ROTARY LAWNMOWER  
Viktor Schreckengost, Cleveland Heights, Ohio, assignor to The Murray Ohio Manufacturing Co., Nashville, Tenn., a corporation of Ohio

Filed Jan. 22, 1968, Ser. No. 10,264  
Term of patent 14 years  
(Cl. D40—1)

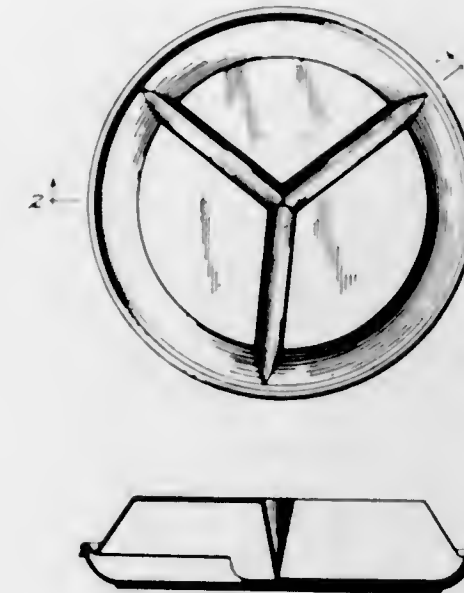


212,638  
CLOCK OR SIMILAR ARTICLE  
Edward D. Glatz, 2025 Maple Road, Williamsville, N.Y. 14221  
Filed Nov. 27, 1967, Ser. No. 9,559  
Term of patent 14 years  
(Cl. D42—7)



212,639  
COVERED FOOD SERVING DISH  
Paul K. Schilling, St. Paul, Minn., assignor, by mesne assignments, to Plastics, Inc., St. Paul, Minn., a corporation of Delaware

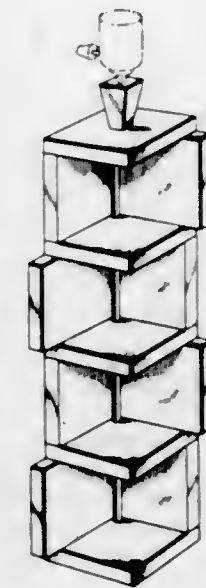
Filed Oct. 25, 1967, Ser. No. 9,165  
Term of patent 14 years  
(Cl. D44—15)



212,640  
WATCH BRACELET  
Emile Bollier, Route de Boujean 46, Bienne, Switzerland  
Filed Dec. 14, 1966, Ser. No. 65,031  
Term of patent 14 years  
(Cl. D45—4)



212,641  
LAMP BASE  
Linda A. Mok and Louis A. Mok, both of 150 N. Arnaz Drive, Beverly Hills, Calif. 90211  
Filed Apr. 22, 1968, Ser. No. 11,539  
Term of patent 14 years  
(Cl. D48—20)



212,642  
SPIN DRYER HOUSING  
Joel A. Elftmann, Bloomington, Minn., assignor to Fluoroware, Inc., Chaska, Minn., a corporation of Minnesota  
Filed Feb. 7, 1968, Ser. No. 10,472  
Term of patent 14 years  
(Cl. D49—1)

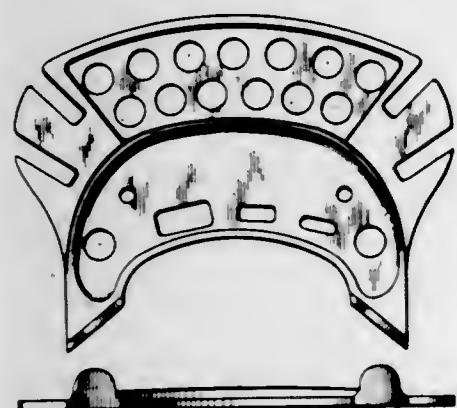




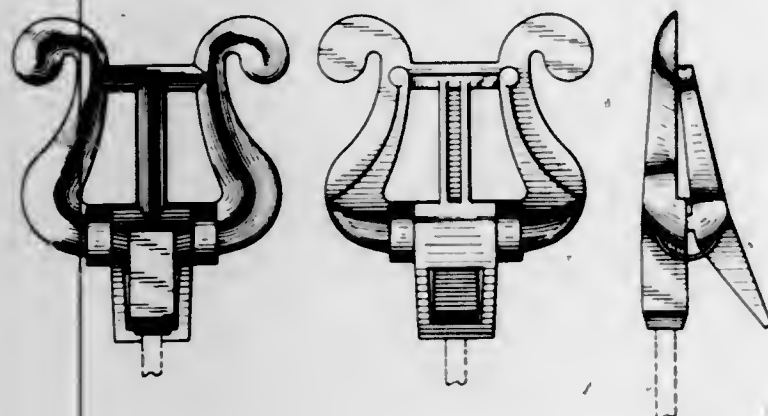
212,643  
**TRASH CAN HOLDER**  
 Clarence C. Braker, P.O. Box 671,  
 Taylor, Tex. 76574  
 Filed Feb. 28, 1968, Ser. No. 10,755  
 Term of patent 14 years  
 (Cl. D49—30)



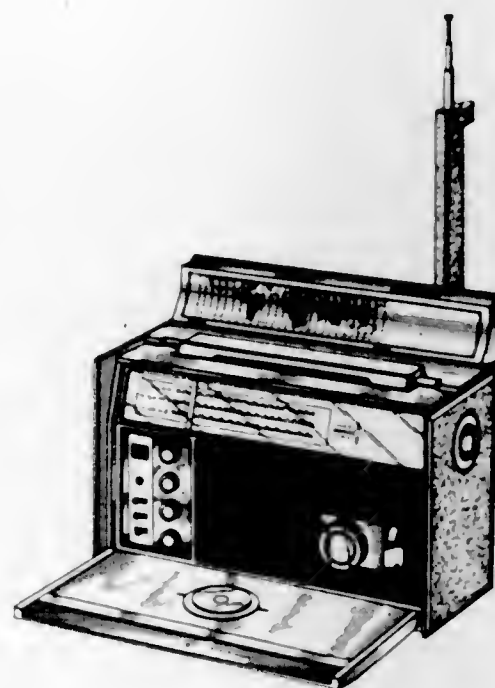
212,644  
**COMBINED TOOL AND ACCESSORY TRAY  
 FOR MACHINE TOOLS**  
 Paul G. Nesteriak, Permain St.,  
 Shelton, Conn. 06484  
 Filed Oct. 23, 1967, Ser. No. 9,098  
 Term of patent 14 years  
 (Cl. D55—1)



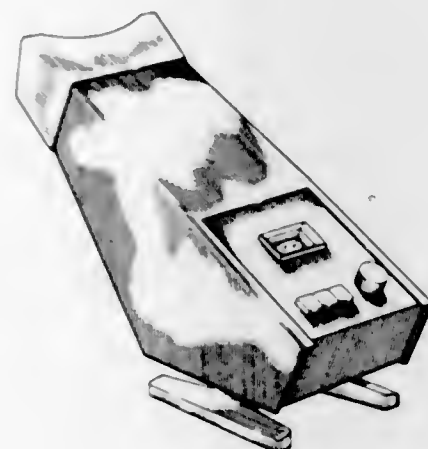
212,645  
**HOLDER FOR SUPPORTING MUSIC ON A BAND  
 INSTRUMENT OR SIMILAR ARTICLE**  
 Donald C. Garvey, Evansville, Ind., assignor to Plastic-  
 Music Company, Evansville, Ind., a corporation of  
 Indiana  
 Filed Sept. 1, 1967, Ser. No. 8,479  
 Term of patent 14 years  
 (Cl. D56—1)



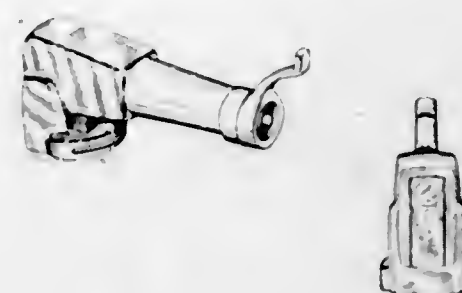
212,646  
**PORTABLE RADIO CABINET**  
 Melvin H. Boldt, Glenview, Ill., assignor to Zenith Radio  
 Corporation, Chicago, Ill., a corporation of Delaware  
 Filed Aug. 21, 1967, Ser. No. 8,324  
 Term of patent 14 years  
 (Cl. D56—4)



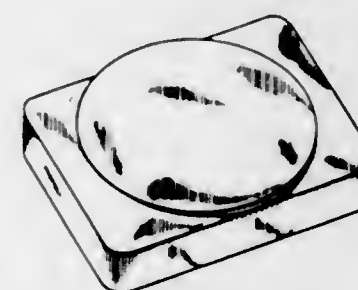
212,647  
**EYE TESTING UNIT**  
 Harold Y. Minas, 2201 23rd Ave.,  
 Sacramento, Calif. 95822  
 Filed Oct. 13, 1967, Ser. No. 8,995  
 Term of patent 14 years  
 (Cl. D57—1)



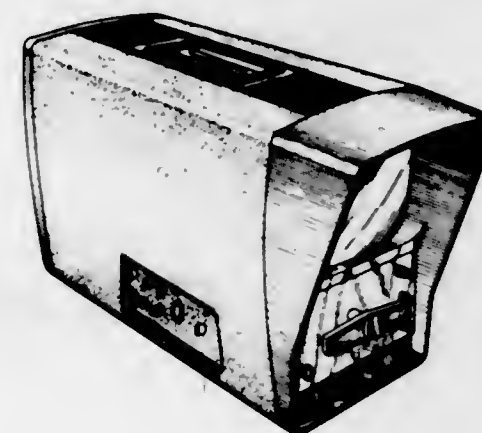
212,648  
**OPHTHALMOSCOPE**  
 John T. Armbruster, Niagara Falls, N.Y., assignor to  
 American Optical Corporation, Southbridge, Mass.,  
 a corporation of Delaware  
 Filed Nov. 24, 1967, Ser. No. 9,534  
 Term of patent 14 years  
 (Cl. D57—1)



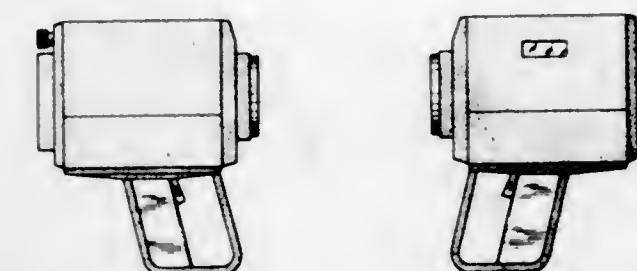
212,649  
**CONTACT LENS CASE**  
 Charles H. Kolbeck, 10570 W. Grantosa Drive,  
 Wauwatosa, Wis. 53222  
 Filed June 28, 1967, Ser. No. 7,627  
 Term of patent 14 years  
 (Cl. D57—1)



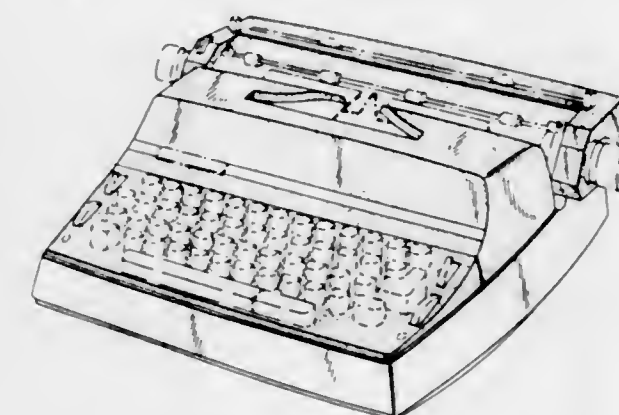
212,650  
**TELEVISION CAMERA**  
 Donald E. Leman, Glen Ellyn, Ill., assignor to Ampex  
 Corporation, Redwood City, Calif., a corporation of  
 California  
 Filed June 7, 1967, Ser. No. 7,395  
 Term of patent 14 years  
 (Cl. D61—1)



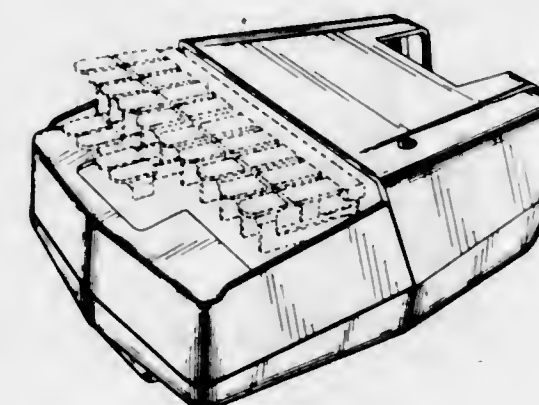
212,651  
**PHOTOGRAPHIC CAMERA**  
 Ohiko Yagi, 3-6 Naka-Magome, 1-chome,  
 Tokyo, Japan  
 Filed Mar. 13, 1968, Ser. No. 10,952  
 Claims priority, application Japan Sept. 18, 1967  
 Term of patent 7 years  
 (Cl. D61—1)



212,652  
**TYPEWRITER OR THE LIKE**  
 Gerhard Dietrich, Furth, Bavaria, and Alfred Mamet,  
 Altenberg, Nuremberg, Germany, assignors to Triumph  
 Werke Nuernberg A.G., Nuremberg, Germany  
 Filed Aug. 14, 1967, Ser. No. 8,881  
 Claims priority, application Germany Feb. 15, 1967  
 Term of patent 14 years  
 (Cl. D64—11)



212,653  
**CASING FOR A STENOGRAPHIC MACHINE**  
 John Kreidich, Arlington Heights, Ill., assignor to The  
 Hedman Company, Chicago, Ill., a corporation of  
 Delaware  
 Filed Jan. 9, 1968, Ser. No. 10,102  
 Term of patent 14 years  
 (Cl. D64—11)

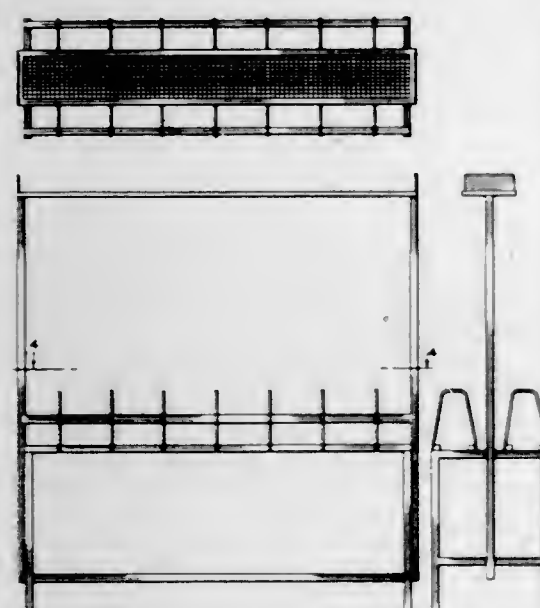




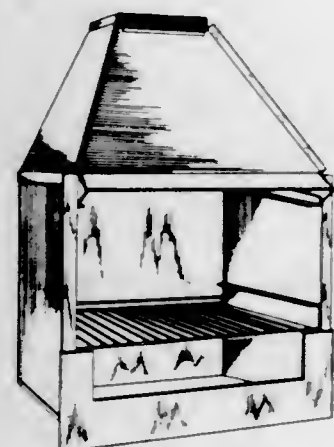
212,654  
**EXTENDABLE WATER BORNE LOADING PLATFORM CONVERTIBLE TO LAND USE**  
 Bernard S. Sain, 6A Creston Ave.,  
 Union, N.J. 07083  
 Filed Sept. 19, 1967, Ser. No. 8,657  
 Term of patent 14 years  
 (Cl. D71-1)



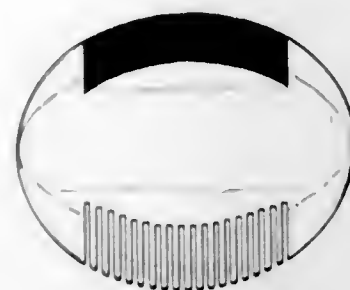
212,655  
**YARD GOODS DISPLAY RACK**  
 John B. Holck, 735 Judson St.,  
 Longmont, Colo. 80501  
 Filed Oct. 16, 1967, Ser. No. 9,005  
 Term of patent 14 years  
 (Cl. D80-10)



212,656  
**INDOOR CHARCOAL GRILL**  
 Russell E. Ihde, 1116 Maple St.,  
 Neenah, Wis. 54956  
 Filed Jan. 8, 1968, Ser. No. 10,086  
 Term of patent 14 years  
 (Cl. D81-10)



212,657  
**ELLIPTICAL COMB**  
 George H. Kress, Newark, N.J., assignor to Amer-  
 ace Corporation, New York, N.Y., a corpora-  
 tion of Delaware  
 Filed Nov. 20, 1967, Ser. No. 9,461  
 Term of patent 14 years  
 (Cl. D86-8)



212,658  
**HAIR COMB OR SIMILAR ARTICLE**  
 George H. Kress, Newark, N.J., assignor to Amer-  
 ace Corporation, New York, N.Y., a corpora-  
 tion of Delaware  
 Filed Nov. 20, 1967, Ser. No. 9,480  
 Term of patent 14 years  
 (Cl. D86-8)



212,659  
**COMB WITH HANDLE**  
 George H. Kress, Newark, N.J., assignor to Amer-  
 ace Corporation, New York, N.Y., a corpora-  
 tion of Delaware  
 Filed Nov. 20, 1967, Ser. No. 9,481  
 Term of patent 14 years  
 (Cl. D86-8)



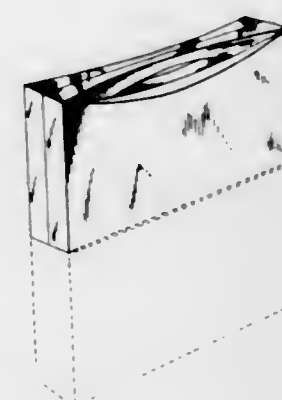
212,660  
**HAIR COMB OR SIMILAR ARTICLE**  
 George H. Kress, Newark, N.J., assignor to Amer-  
 ace Corporation, New York, N.Y., a corpora-  
 tion of Delaware  
 Filed Nov. 20, 1967, Ser. No. 9,482  
 Term of patent 14 years  
 (Cl. D86-8)



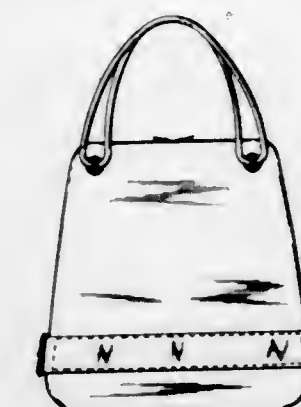
212,661  
**VANITY CASE**  
 Gloria Gigliuto, 19 Kingston St.,  
 Wethersfield, Conn. 06279  
 Filed Aug. 28, 1967, Ser. No. 8,399  
 Term of patent 14 years  
 (Cl. D87-1)



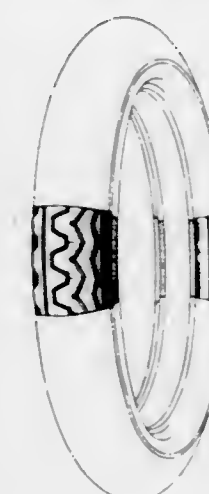
212,662  
**CARRYING CASE FOR TRANSPARENCIES OR SIMILAR ARTICLE**  
 William R. Furniss, Glendale, Wis., assignor to Milprint  
 Inc., Milwaukee, Wis., a corporation of Delaware  
 Filed Aug. 16, 1967, Ser. No. 8,291  
 Term of patent 14 years  
 (Cl. D87-2)



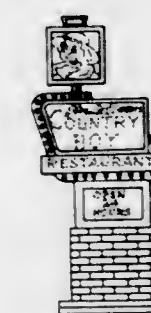
212,663  
**EXPANDABLE CARRYING BAG**  
 Anthony N. D'Elia, Riverdale, and Edward M. Stolarz,  
 Yorktown Heights, N.Y., assignors to Reliable Luggage  
 Incorporated, West Pittsburg, Pa., a corporation of  
 Pennsylvania  
 Filed Dec. 20, 1967, Ser. No. 9,865  
 Term of patent 14 years  
 (Cl. D87-3)



212,664  
**TIRE**  
 Grahame John Barton, Sutton Coldfield, England, assignor  
 to The Dunlop Company Limited, Erdington, England,  
 a British corporation  
 Filed Feb. 13, 1968, Ser. No. 10,555  
 Claims priority, application Great Britain Oct. 27, 1967  
 Term of patent 14 years  
 (Cl. D90-20)



212,665  
**DISPLAY SIGN**  
 James E. Latimer, 208 N. Lafayette Blvd.,  
 Warren, Mich. 48089  
 Filed Aug. 2, 1967, Ser. No. 8,088  
 Term of patent 14 years  
 (Cl. D96-12)





# LIST OF REISSUE PATENTEEES

TO WHOM

PATENTS WERE ISSUED ON THE 5TH DAY OF NOVEMBER, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- Bethlehem Steel Corp.: See—  
 Brosious, Daniel R., and Hollingshead. Re. 26,485.  
 Borg-Warner Corp.: See—  
 Legg, Leo V. Re. 26,483.  
 Bricker, Carl E., and K. P. Hillegass, to The Goodyear Tire & Rubber Co. Wrap-around brake. Re. 26,484, 11-5-68, Cl. 188-077.  
 Brosious, Daniel R., and J. K. Hollingshead, to Bethlehem Steel Corp. Pinhole detectors. Re. 26,485, 11-5-68, Cl. 250-219.  
 Goodyear Tire & Rubber Co., The: See—  
 Bricker, Carl E., and Hillegass. Re. 26,484.  
 Haegert, Clarence B. Battery clamp connectors. Re. 26,486, 11-5-68, Cl. 339-230.  
 Hillegass, Kenneth P.: See—  
 Bricker, Carl E., and Hillegass. Re. 26,484.  
 Hollingshead, James K.: See—  
 Brosious, Daniel R., and Hollingshead. Re. 26,485.  
 Huffman, J. Richard: See—  
 Roberts, Stuart L. Re. 26,482.  
 Legg, Leo V., to Borg-Warner Corp. Control system for power units such as electric motors and the like. Re. 26,483, 11-5-68, Cl. 318-447.  
 Roberts, Stuart L., 1/2 to J. Richard Huffman. Slug inserter for line-casting machines. Re. 26,482, 11-5-68, Cl. 199-61.

# LIST OF DESIGN PATENTEEES

- Amerace Corp.: See—  
 Kress, George H. 212,657.  
 Kress, George H. 212,658.  
 Kress, George H. 212,659.  
 Kress, George H. 212,660.  
 American Can Co.: See—  
 Metzler, Charles L., Holzwarth, and Wark. 212,592.  
 American Optical Corp.: See—  
 Armbruster, John T. 212,648.  
 Ampex Corp.: See—  
 Leman, Donald E. 212,650.  
 Armbruster, John T., to American Optical Corp. Ophthalmoscope. 212,648, 11-5-68, Cl. D57-1.  
 Barton, Grahame J., to The Dunlop Co. Ltd. Tire. 212,664, 11-5-68, Cl. D90-20.  
 Bequette, Frank J., Jr., Cart for firewood. 212,600, 11-5-68, Cl. D14-3.  
 Boldt, Melvin H., to Zenith Radio Corp. Portable radio cabinet. 212,646, 11-5-68, Cl. D56-4.  
 Bollner, Emilie. Watch bracelet. 212,640, 11-5-68, Cl. D45-4.  
 Borg-Warner Corp.: See—  
 Plantholt, Robert G. 212,596.  
 Braker, Clarence C. Trash can holder. 212,643, 11-5-68, Cl. D49-30.  
 Campbell, Duncan H., to Wilson & Cousins Co., Ltd. Fire hose nozzle. 212,612, 11-5-68, Cl. D23-34.  
 Collier, Stafford D., to Phillips Petroleum Co. Packaging container or the like. 212,593, 11-5-68, Cl. D9-242.  
 Collier, Stafford D., to Phillips Petroleum Co. Packaging container or the like. 212,594, 11-5-68, Cl. D9-242.  
 D'Elia, Anthony N., and E. M. Stolarz. Reliable Luggage Inc. Expandable carrying bag. 212,663, 11-5-68, Cl. D87-3.  
 Diamond Shamrock Corp.: See—  
 Pulver, Dale R., and Reynoso. 212,586.  
 Dickerson, Edward L. Game board. 212,629, 11-5-68, Cl. D34-5.  
 Dietrich, Gerhard, and A. Mamet, to Triumph Werke Nuernberg A.G. Typewriter or the like. 212,652, 11-5-68, Cl. D64-11.  
 Dunlop Co. Ltd., The: See—  
 Barton, Grahame J. 212,664.  
 Elftmann, Joel A., to Fluoroware Inc. Dip basket for chemically treating objects. 212,603, 11-5-68, Cl. D16-1.  
 Elftmann, Joel A., to Fluoroware, Inc. Dip basket for chemically treating objects. 212,604, 11-5-68, Cl. D16-1.  
 Elftmann, Joel A., to Fluoroware, Inc. Spin dryer housing. 212,642, 11-5-68, Cl. D49-1.  
 Evans, Royce F., to Tele-Quick Corp. Combined cabinet and work bench. 212,624, 11-5-68, Cl. D33-19.  
 Feldmann, Frederick W., and R. S. Hill, to ILC Industries, Inc. Ventilated safety helmet or similar article. 212,582, 11-5-68, Cl. D2-231.  
 Fluoroware Inc.: See—  
 Elftmann, Joel A. 212,603.  
 Elftmann, Joel A. 212,604.  
 Elftmann, Joel A. 212,642.  
 Wallestad, Victor C. 212,605.  
 Fontana, Ralph G. Dental hand tool or the like. 212,613, 11-5-68, Cl. D24-1.  
 Fuhst, Carl J.: See—  
 Merry, Donald D., and Fuhst. 212,619.  
 Furniss, William R., to Milprint Inc. Carrying case for transparencies or similar article. 212,662, 11-5-68, Cl. D87-2.  
 Fusco, Frank, N. C. and W. Gold, to Louis Marx & Co., Inc. Toy vehicle. 212,634, 11-5-68, Cl. D34-15.  
 Fusco, Frank, N. C. and W. Gold, to Louis Marx & Co., Inc. Toy vehicle. 212,635, 11-5-68, Cl. D34-15.  
 Garvey, Donald C., to Plastic-Music Co. Holder for supporting music on a band instrument or similar article. 212,645, 11-5-68, Cl. D56-1.  
 General Electric Co.: See—  
 Kreps, Thomas J. 212,618.  
 General Time Corp.: See—  
 Levin, Monte L. 212,637.  
 Gera, Robert A. Sectional sofa. 212,602, 11-5-68, Cl. D15-11.  
 Gigluto, Gloria. Vanity case. 212,661, 11-5-68, Cl. D87-1.  
 Glatz, Edward D. Clock or similar article. 212,638, 11-5-68, Cl. D42-7.  
 Gold, Norman C.: See—  
 Fusco, Frank, and N. C. and W. Gold. 212,634.  
 Fusco, Frank, and N. C. and W. Gold. 212,635.  
 Gold, William: See—  
 Fusco, Frank, and N. C. and W. Gold. 212,634.  
 Fusco, Frank, and N. C. and W. Gold. 212,635.  
 Greene, Harold J.: See—  
 Tregurtha, William G., and Greene. 212,625.  
 Tregurtha, William G., and Greene. 212,626.  
 Tregurtha, William G., and Greene. 212,627.  
 Tregurtha, William G., and Greene. 212,628.  
 H. & G. Industries, Inc.: See—  
 Stewart, Willis L., and Kaplan. 212,583.  
 Hauck, Robert F., to Louis Marx & Co., Inc. Tray for darts or the like. 212,591, 11-5-68, Cl. D9-185.  
 Hedman Co., The: See—  
 Kreidich, John. 212,653.  
 Hilland, Jack. Combined coffee table and dual aquarium unit. 212,621, 11-5-68, Cl. D30-11.  
 Hill, Rodney S.: See—  
 Feldmann, Frederick W., and Hill. 212,582.  
 Holck, John B. Yard goods display rack. 212,655, 11-5-68, Cl. D80-10.  
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- Offutt, Elmer B., to The Vendo Co. Rear-hinged drop shelf mechanism for vending machine, 3,409,171, 11-5-68, Cl. 221-90.
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Williams, Howard B. Safety device for motor vehicles. 3,409,101, 11-5-68, Cl. 180-82.

Williams, La Vergne H., to Gunver Mfg. Co. Elapsed time recorder with printing desk and concentrically mounted strikers. 3,409,903, 11-5-68, Cl. 346-82.

Williams, Thomas J.: See—

Widess, Moses B., and Williams. 3,409,355.

Willnek, Charles B., to Portco Corp. Press for making blocks from loose fiber material. 3,408,927, 11-5-68, Cl. 100-215.

Willis, David V. Page marking means. 3,409,312, 11-5-68, Cl. 281-42.

Wilson, Bruce N., to Hooker Chemical Corp. Phenyleneoxy-alkanol-sulfur condensation products. 3,409,676, 11-5-68, Cl. 260-609.

Windmoller & Holscher: See—

Finke, Arno. 3,409,209.

Winke, Douglas F. Composite stereography. 3,409,351, 11-5-68, Cl. 353-7.

Wintner, Harry, to Bell Telephone Laboratories, Inc. Data converting buffer circuit. 3,409,742, 11-5-68, Cl. 179-18.

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Wistart, John D. Internal combustion engines. 3,408,811, 11-5-68, Cl. 60-15.

Witke, Ernest T. Bowling pin impact curtain with displaceable forward edge. 3,409,297, 11-5-68, Cl. 273-53.

Wochnowski, Waldemar, to Hauni-Werke Koerber & Co., K.G. Method and apparatus for treating tobacco leaves. 3,409,025, 11-5-68, Cl. 131-135.

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Fargo, Thomas W., and J. 3,409,780.

Wolf, Edgar: See—

Leonard, Eugene, Richards, Wolf, Shapiro, and Shrivane. 3,409,844.

Wolf, Friedrich, S. Heldenreich, and M. Born, to Veb Farbenfabrik Wolfen. Pesticidal triazinyl phosphoric acid esters. 3,409,617, 11-5-68, Cl. 260-248.

Wolfe, Gerald W. Swimming devices. 3,408,670, 11-5-68, Cl. 9-307.

Wolfslayer, Donald R., to Chrysler Corp. Door latch. 3,409,321, 11-5-68, Cl. 292-216.

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Woods, Gale E., and D. G. 3,409,298.

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Wright, Robert H. Dispensing closures for containers. 3,409,188, 11-5-68, Cl. 222-480.

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Lavander, Edward J. 3,409,357.

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Moorhusen, Robert W., Webb, and Zucker. 3,409,365.

Robertson, Robert, and Handscombe. 3,409,356.

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Yates, George H. Windshield scraper. 3,408,677, 11-5-68, Cl. 15-236.

Yates, James E.: See—

Eccles, Raymond D., Yates, and Matson. 3,409,637.

Yates, Paul C., to E. I. du Pont de Nemours and Co. Nitride refractory metal compositions. 3,409,416, 11-5-68, Cl. 29-182.5.

Yates, Paul C., to E. I. du Pont de Nemours and Co. Metal bonded silicon nitride. 3,409,417, 11-5-68, Cl. 29-182.5.

Yates, Paul C., to E. I. du Pont de Nemours and Co. Dense products of vanadium or zirconium nitride with iron, nickel or cobalt. 3,409,418, 11-5-68, Cl. 29-182.5.

Yates, Paul C., to E. I. du Pont de Nemours and Co. Nitrides plus wear-resistant additives bonded with iron, cobalt or nickel. 3,409,419, 11-5-68, Cl. 29-182.5.

Yearley, Douglas C., and H. H. Stout, Jr., to Phelps Dodge Copper Products Corp. Method of continuously casting tubes using a rotating mandrel. 3,409,068, 11-5-68, Cl. 164-85.

Yoe, Duane O., to The Goodyear Tire and Rubber Co. Method and apparatus for one stage building of radial ply tires. 3,409,492, 11-5-68, Cl. 156-132.

Yoneda, Masahiko, S. Igarashi, A. Imada, I. Nogami, and E. Omura, to Takada Chemical Industries, Ltd. Method for the production of 5'-inosinic acid and inosine. 3,409,507, 11-5-68, Cl. 195-28.

Yonoshige, Takashi. Finger mounted tethered ball apparatus. 3,409,299, 11-5-68, Cl. 273-98.

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Takigawa, Bin, Yoshida, Miyoshi, and Tanaka. 3,409,598.

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Whitmore, Thomas C., and Zachmann. 3,409,768.

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Ziegler, Karl, and H. Dislich: said Dislich, assor., to said Ziegler. Process for improving the wettability of solid metallic surfaces by molten alkali metals. 3,409,465, 11-5-68, Cl. 117-210.

Zillmer, Erich, to Voigtlander A.G. Photographic projector with circular magazine. 3,409,353, 11-5-68, Cl. 353-117.

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Kaiser, Carl, and Zirkle. 3,409,713.

Zitzewitz, Barbara O.: See—

Vischer, Alfred, Jr. 3,409,164.

Zitzewitz, Elmer K.: See—

Vischer, Alfred, Jr. 3,409,164.

Zitzewitz, Gertrude J.: See—

Vischer, Alfred, Jr. 3,409,164.

Zitzewitz, Walter W.: See—

Vischer, Alfred, Jr. 3,409,164.

Zucker, Edwin: See—

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## CLASSIFICATION OF PATENTS

ISSUED NOVEMBER 5, 1968

NOTE.—First number, class; second number, subclass; third number, patent number

2-159	3,408,657	26-51	3,408,709	55-197	3,408,793	74-84	3,408,877	103-149	3,408,946	128-326	3,409,014
209	3,408,658	27-6	3,408,711	282	3,408,794	126	3,408,878		3,408,947	349	3,409,015
3-1	3,408,659	22	3,408,712	354	3,408,795	129	3,408,879	161	3,408,948		3,409,016
2	3,408,660	28-1	3,408,713	403	3,408,796	405	3,408,880	234	3,408,949	486	3,409,017
4-1	3,408,661	21	3,408,714	56-19	3,408,797	505	3,408,881	104-141	3,408,950	131-9	3,409,018
145	3,408,662		3,408,715	25.4	3,408,798	625	3,408,882	172	3,408,951	10.7	3,409,019
185	3,408,663	62	3,408,716	28	3,408,799	822	3,408,883		3,408,952	9	3,409,020
5-82	3,408,664	72	3,408,717	34	3,408,800	75-1	3,409,427	176	3,408,953	15	3,409,021
304	3,408,665	29-1.3	3,408,718	199	3,408,801	175.5	3,409,428	105-34	3,408,954	121	3,409,022
305	3,408,666	25.15	3,408,719	364	3,408,802	81-15.8	3,408,884	197	3,408,955		3,409,023
334	3,408,667	33	3,408,720	400.01	3,408,803	82-36	3,408,885	240	3,408,956	123	3,409,024
6-1	3,408,668	96	3,408,721	57-34	3,408,804	83-9	3,408,886	369	3,408,957	135	3,409,025
8-13	3,409,384	105	3,408,722	35	3,408,805	140	3,408,887	377	3,408,958	140	3,409,026
39	3,409,385	157.3	3,408,723	53	3,408,806	142	3,408,888	447	3,408,959		3,409,027
94.21	3,409,386	182.5	3,409,416	59	3,408,807	599	3,408,889	106-10	3,409,448		3,409,028
116.2	3,409,387		3,409,417	58-23	3,408,808	85-1	3,408,890	30	3,409,449	132-133	3,409,029
9-8	3,408,669		3,409,418	115	3,408,809	10	3,408,891	40	3,409,450	134-1	3,409,030
307	3,408,670		3,409,419	125	3,408,810	86-23	3,408,892	56	3,409,451	123	3,409,031
13-6	3,409,725	263	3,408,724	60-15	3,408,811	87-21	3,408,893	89	3,409,452	169	3,409,032
11	3,409,726	423	3,408,710	39.65	3,408,812	38	3,408,894	203	3,409,453	136-86	3,409,033
20	3,409,727	447	3,408,725	54.5	3,408,813	89-145	3,408,895	300	3,409,454	120	3,409,034
25	3,409,728	450	3,408,726		3,408,814	90-11.64	3,408,896	107-1	3,408,960		3,409,035
31	3,409,729	474.1	3,408,727	6	3,408,815	91-5	3,408,897	12	3,408,961		3,409,036
35	3,409,730	5	3,408,728	240	3,408,816	175	3,408,898	15	3,408,962	203	3,409,037
15-22	3,408,671	493	3,408,729	246	3,408,817	357	3,408,899	17	3,408,963	137-36	3,409,038
97	3,408,672	505	3,408,730	271	3,409,622	372	3,408,900	58	3,408,964	51	3,409,039
98	3,408,673	511	3,408,731	61-13	3,408,818	412	3,408,901	108-91	3,408,965	81.5	3,409,034
104.06	3,408,674	580	3,408,732	35	3,408,819	93-1.3	3,408,902	109-74	3,408,966	242	3,409,035
09	3,408,675	590	3,408,733	45	3,408,820	20	3,408,903	110-7	3,408,967	343	3,409,036
230.11	3,408,676	596	3,408,734	46.5	3,408,821	35	3,408,904	12	3,408,968	514.7	3,409,037
236	3,408,677	610	3,408,735	69	3,408,822	36.8	3,408,905	14	3,408,969	516.15	3,409,038
250.05	3,408,678	30-43.92	3,408,736	72.6	3,408,823	44.1	3,408,906	112-245	3,408,970	29	3,409,039
32	3,408,679	90	3,408,737	62-9	3,408,824	53	3,408,907	114-5	3,408,971	572	3,409,040
42	3,408,680	95	3,408,738	156	3,408,825	61	3,408,908	72	3,408,972	596.2	3,409,041
257.2	3,408,681	32-14	3,408,739	193	3,408,826	95-31	3,408,909	98	3,408,973	603	3,409,042
312	3,408,682	33-3	3,408,740	196	3,408,827	64	3,408,910	148	3,408,974	607	3,409,043
16-51	3,408,683	71	3,408,741	470	3,408,828	86	3,408,911	115-12	3,408,975		3,409,044
145	3,408,684	85	3,408,742	64-9	3,408,829	89	3,408,912	70	3,408,976	614.04	3,409,045
169	3,408,685	194	3,408,744	27	3,408,830	96-27	3,409,429	116-119	3,408,977	615	3,409,046
17-2	3,408,686	203.12	3,408,743	65-25	3,408,831	29	3,409,430	132	3,408,978		3,409,047
34	3,408,687	34-10	3,408,745	65	3,409,422	35.1	3,409,431	117-1.7	3,409,455	635	3,409,048
45	3,408,688	15	3,408,746	65	3,409,423	48	3,409,432	5.1	3,409,456	138-43	3,409,049
18-2	3,408,689	22	3,408,747	66-146	3,408,832	74	3,409,433	36.8	3,409,457	45	3,409,050
4	3,408,690	35-9	3,408,748	178	3,408,833	75	3,409,434	70	3,409,458	139-46	3,409,051
5	3,408,691	29	3,408,749	68-12	3,408,834	94	3,409,435	71	3,409,459	88	3,409,052
	3,408,692	36-2.5	3,408,750	70-156	3,408,835	95	3,409,436	93.31	3,409,460	122	3,409,053
12	3,408,693		3,408,751	181	3,408,836		3,409,437	100	3,409,461	195	3,409,054
39	3,408,694		3,408,752	276	3,408,837		3,409,438	119.6	3,409,462	141-387	3,409,055
65	3,408,695		3,408,753	277	3,408,838	100	3,409,439	143	3,409,463	143-32	3,409,056
156.3	3,408,696	37-138	3,408,754	285	3,408,839	98-30	3,409,440	201	3,409,464	144-208	3,409,057
263	3,408,698	38-143	3,408,755	363	3,408,840	115	3,409,441	210	3,409,465	145-50	3,409,058
21-7	3,408,698	40-86	3,408,756	390	3,408,841	122	3,409,442	212	3,409,466	146-3	3,409,059
56	3,409,389	124.1	3,408,757	424	3,408,842	99-17	3,409,440	217	3,409,467	124	3,409,060
23-2	3,409,390	152	3,408,759	71-70	3,409,444	28	3,409,441	231	3,409,468	148-6.15	3,409,061
23	3,409,391	210	3,408,760	76	3,409,425	92	3,409,442		3,409,469	23	3,409,077
106	3,409,392	121	3,408,760	121	3,409,426	139	3,409,443	118-8	3,408,979		3,409,478
108	3,409,393	42-1	3,408,761	72-42	3,408,843	156	3,409,444	19	3,408,980	103	3,409,479
109	3,409,394	79	3,408,762	150	3,408,844	174	3,409,445	25	3,408,981	112	3,409,480
142	3,409,395	43-3	3,408,763	163	3,408,845	176	3,408,916	49.5	3,408,982	175	3,408,481
	3,409,396	42.09	3,408,764	254	3,408,846		3,408,917	63	3,408,983		3,409,482
190	3,409,397	88	3,408,765	311	3,408,847		3,408,918	259	3,408,984		3,409,483
201	3,409,397	44-4	3,409,420	446	3,408,848	192	3,408,919	629	3,408,985	149-21	3,409,484
203	3,409,398	72	3,409,421	453	3,408,849	210	3,409,446	636	3,408,986		3,409,485
204	3,409,400	65	3,408,766	466	3,408,850	221	3,409,447	119-51	3,408,987		3,409,486
205	3,409,401	80	3,408,767		3,408,851	236	3,408,920	53	3,408,988	150-5	3,409,061
208	3,409,402	81	3,408,768	73-12	3,408,852	295	3,408,921	122-214	3,408,989		3,409,062
209.3	3,409,403	218	3,408,769	23	3,408,853	362	3,408,922	328	3,408,990	3	3,409,063
230	3,409,404	221	3,408,770	1	3,408,854	100-35	3,408,923	123-18	3,408,991	152-209	3,409,064
	3,409,405	49-34	3,408,771	35	3,408,855		3,408,924	75	3,408,992	218	3,409,065
259.5	3,409,406	366	3,408,772	36	3,408,856	45	3,408,925	148	3,408,993	156-13	3,409,487
277	3,409,407	51-103	3,408,773	45.2	3,408,857	49	3,408,926	191	3,408,994	48	3,409,488
283	3,409,408	146	3,408,775		3,408,858	215	3,408,927		3,408,995	60	3,409,489
	3,409,409	163	3,408,776	54	3,408,859	101-35	3,408,928	124-19	3,408,996	123	3,409,490
284	3,409,410	324	3,408,777	73	3,408,860	69	3,408,929	27	3,408,997	126	3,409,491
288	3,409,411	52-1	3,408,778	117.4	3,408,861	93	3,408,930	4	3,408,998	132	3,409,492
300	3,409,412	20	3,408,778	119	3,408,862	318	3,408,931	44	3,408,999	166	3,409,493
324	3,409,413	53	3,408,779	144	3,408,863	368	3,408,932	59.5	3,409,000	515	3,409,494
339	3,409,414	58	3,408,780	170	3,408,864	415.1	3,408,933		3,409,001	157-13	3,409,066
340	3,409,415	122	3,408,781	208	3,408,865	425	3,408,934	120	3,409,002	159-20	3,409,067
	3,408,699	220	3,408,782	228	3,408,866	102-4	3,408,935	190	3,409,003	161-55	3,409,095
24-16	3,409,700	223	3,408,783	339	3,408,867	70	3,408,936		3,409,004	179	3,409,496
66	3,408,700	224	3,408,784	382	3,408,868	2	3,408,937	300	3,409,005	184	3,409,497
73	3,408,701	225	3,408,785	421.5	3,408,869		3,408,938	343.5	3,409,006	252	3,409,498
128	3,408,702	309	3,408,786	432	3,408,870	103-11	3,408,939	128-2.06	3,409,007	162-3	3,409,499
201	3,408,703	53-37	3,408,787	505	3,408,871	25	3,408,940	156	3,409,008	164	3,409,500
	3,408,704	42	3,408,788		3,408,872		3,408,941	249	3,409,009	166	3,409,501
204	3,408,705	315	3,408,789	517	3,408,873	87	3,408,942	260	3,409,010	164-85	3,409,068
230	3,408,706	54-2	3,408,790	74-5	3,408,874	97	3,408,943	263	3,409,011	138	3,409,069
	3,408,707	22	3,408,791	48	3,408,875	114	3,408,944	284	3,409,012	261	3,409,070
245	3,408,708	55-43	3,408,792	61	3,408,876	117	3,408,945	303	3,409,013	274	3,409,071



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165-2	: 3,409,072	204-275	: 3,409,536	229-52	: 3,409,207	259-4	: 3,409,274	260-564	: 3,409,669	302-27	: 3,409,332
9	: 3,409,073	312	: 3,409,537	54	: 3,409,208	260-2	: 3,409,274	570.5	: 3,409,671	52	: 3,409,333
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154	: 3,409,075	17.1	: 3,409,122	55	: 3,409,210	57	: 3,409,276	572	: 3,409,673	10	: 3,409,335
170	: 3,409,076	47	: 3,409,123	56	: 3,409,211	58	: 3,409,277	573	: 3,409,674	11	: 3,409,336
166-11	: 3,409,077	65	: 3,409,124	57	: 3,409,212	59	: 3,409,278	574	: 3,409,675	237	: 3,409,384
21	: 3,409,078	208-59	: 3,409,538	19	: 3,409,214	60	: 3,409,279	575	: 3,409,676	247	: 3,409,385
25	: 3,409,079	60	: 3,409,539	20	: 3,409,215	61	: 3,409,280	576	: 3,409,677	308-187.2	: 3,409,337
31	: 3,409,080	79	: 3,409,540	21	: 3,409,216	62	: 3,409,281	577	: 3,409,678	231	: 3,409,338
35	: 3,409,081	120	: 3,409,541	22	: 3,409,217	63	: 3,409,282	578	: 3,409,679	310-8.2	: 3,409,387
36	: 3,409,082	127	: 3,409,542	23	: 3,409,218	64	: 3,409,283	579	: 3,409,680	220	: 3,409,388
40	: 3,409,083	234	: 3,409,543	24	: 3,409,219	65	: 3,409,284	580	: 3,409,681	312-8	: 3,409,339
86	: 3,409,084	310	: 3,409,544	25	: 3,409,220	66	: 3,409,285	581	: 3,409,682	319	: 3,409,340
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## OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

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## TRADEMARKS

### NOTICES

## Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

**Reg. No. 22,406** (COCA-COLA), The Coca-Cola Company, Tonic, syrup or beverage; **Reg. No. 47,189**, same, Non-alcoholic maltless beverages and the syrups for making such beverages; **Reg. No. 228,145**, same, Beverages and syrups for the manufacture of such beverages; **Reg. No. 238,146**, same; **Reg. No. 415,735** (COKE), same, Nonalcoholic maltless beverages and the syrups for making such beverages, filed July 22, 1968, D.C., S.D.N.Y., Doc. 68-C-2989, *The Coca-Cola Company v. Improv. Inc. Same*, filed Aug. 9, 1968, D.C. W.D. Pa. (Pittsburgh), Doc. 68-934C.A., *The Coca-Cola Company v. Joseph T. Marcus and Helen L. Marcus, doing business as Clark House (Bar), also known as The Clark House. Same*, filed Aug. 9, 1968, D.C., W.D. Pa. (Pittsburgh), Doc. 68-935C.A., *The Coca-Cola Company v. Thomas K. Clayton, doing business as Mercer Diner*.

**Reg. No. 47,189.** (See Reg. No. 22,406.)

**Reg. No. 103,242** (CURITY), The Kendall Company, Absorbent cotton, absorbent gauze, bandages, bandage-rolls, and surgical wadding; **Reg. No. 133,720**, same, Long-cloths, batiste, diaper-cloth, gauze, crinoline, sheetings, pillowcase tubing, tobacco-cloth, cheese-cloth, voiles, nainsooks, muslins, canton-flannels, and towelling; **Reg. No. 403,863** (CURITY AND DESIGN), same, Absorbent gauze, absorbent cotton, absorbent waste cotton, sterilized gauze bandages, bandage rolls, and adhesive plasters; **Reg. No. 409,714** (CURITY) same, Surgical adhesive tape, plaster-of-paris bandages, filled gauze pads, gauze pads, adhesive compresses, elastic bandages, first-aid kits, medicated gauze, surgical masks, cotton applicators, lamb's wool for surgical purposes, crinoline for orthopedic purposes and sutures; **Reg. No. 509,864**, same, Diaper cloth, cheesecloth, and sheetings, all in the piece or in the bolt; **Reg. No. 520,267**, same, Nursery cotton and dental floss; **Reg. No. 501,265**, same, Diapers; **Reg. No. 631,336**, same, Diaper

## CONDITION OF TRADEMARK APPLICATIONS AS OF SEPTEMBER 30, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]..... 15,450  
 Date of oldest new application..... November 17, 1967  
 Date of oldest amended application (filing date)..... January 5, 1965

C. M. WENDT, Director, Trademark Examining Operation		Oldest Application	
TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION		New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B.....		2-9-68	5-3-66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200.....		12-1-67	10-18-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36.....		11-17-67	10-20-65
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107.....		11-27-67	1-5-65
Renewals (All Classes).....		8-19-68	
Sec. 12(c) Publications (All Classes).....		8-26-68	

Applications filed during the month of September 1968—2,238

Registrations Issued ..... 378—No. 859,497 to No. 859,874  
 Renewals Issued ..... 105

For the quarter July 1, 1968 through September 30, 1968

Applications filed..... 7289  
 Registrations issued..... 6017  
 Renewals issued..... 1281  
 Cancellations under Section 8..... 1412

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price \$12.00 per annum, foreign mailing \$4.00 additional; single copies, 25 cents each.

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liners made of paper; **Reg. No. 648,533**, same, Tincture of iodine, skin ointment, castor oil, aromatic spirits of ammonia; **Reg. No. 676,073**, same, Nursers—namely, nursing bottles, caps and sealing discs for nursing bottles, and nipples; **Reg. No. 797,306**, same, Sheets; **Reg. No. 804,726**, same, Kiltwear—namely, infants' and toddlers' shirts, gowns, kimonos, sacques, training pants, coveralls, creepers, sacque and panty sets, loafers, and other garments worn by toddlers and crawling infants, filed June 26, 1968, D.C., S.D.N.Y., Doc. 68-C-2611, *The Kendall Company v. Associated Dry Goods Corporation*.

**Reg. No. 133,720.** (See **Reg. No. 103,242.**)

**Reg. No. 220,747** (HUDSON BAY "POINT"). The Governor and Company of Adventurers of England Trading Into Hudson's Bay, doing business as Hudson's Bay Company, Woolen blankets; **Reg. No. 223,137** (PRO PELLE CUTEM AND DESIGN OF SHIELD), same, Blankets made of wool; **Reg. No. 310,276** (YE OLD HUDSON'S BAY), same, Rum; **Reg. No. 312,230** ("SPECIAL" ETC. AND DESIGN), same, Whiskey; **Reg. No. 312,274** ("HUDSON'S BAY COMPANY" AND DESIGN), same, Brandy; **Reg. No. 376,025** (HUDSON'S BAY 1670), same, Whisky and cognac; **Reg. No. 664,838** (HUDSON'S BAY AND COAT OF ARMS DESIGN), same, Whisky and brandy, filed June 28, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68-1062-AAH, *The Governor and Company of Adventurers of England Trading Into Hudson's Bay v. Hudson's Bay Company of California, Inc.*

**Reg. No. 223,137.** (See **Reg. No. 220,747.**)

**Reg. No. 238,145.** (See **Reg. No. 22,406.**)

**Reg. No. 238,146.** (See **Reg. No. 22,406.**)

**Reg. No. 310,276.** (See **Reg. No. 220,747.**)

**Reg. No. 312,230.** (See **Reg. No. 220,747.**)

**Reg. No. 312,274.** (See **Reg. No. 220,747.**)

**Reg. No. 318,243** (THERMOPANE), Libbey-Owens-Ford Glass Company, Flat glass—namely, window glass, plate glass, safety glass, transparent glass, translucent glass, and opaque glass; **Reg. No. 386,704**, same, Multiple glass sheet glazing units for buildings, display windows, display cases, and the like, filed July 24, 1968, D.C., E.D. Mich. (Detroit), Doc. 31533, *Libbey-Owens-Ford Glass Co. v. Shatterproof Glass Corp. and Thermoproof Glass Co.*

**Reg. No. 376,025.** (See **Reg. No. 220,747.**)

**Reg. No. 386,704.** (See **Reg. No. 318,243.**)

**Reg. No. 403,863.** (See **Reg. No. 103,242.**)

**Reg. No. 409,714.** (See **Reg. No. 103,242.**)

**Reg. No. 415,755.** (See **Reg. No. 22,406.**)

**Reg. No. 509,864.** (See **Reg. No. 103,242.**)

**Reg. No. 513,225** (JULIUS AND DESIGN), Orange Julius Corporation, Compound for the preparation of a nonalcoholic, maltless beverage sold as a soft drink, filed June 24, 1968, D.C., S.D.N.Y., Doc. 68-C-2575, *Orange Julius of America, Inc. et al. v. Richard S. Cohn*.

**Reg. No. 520,267.** (See **Reg. No. 103,242.**)

**Reg. No. 527,347.** (FOOD SERVICE), Ahrens Publishing Company, Inc., Special section of a periodical devoted to food service, its purchase, storage, preparation, sales and control published monthly, filed Jan. 23, 1968, D.C., N.D. Ill. (Chicago), Doc. 68-136, *Electrical Information Publications, Inc. v. C-M Periodicals, Inc.*

**Reg. No. 591,265.** (See **Reg. No. 103,242.**)

**Reg. No. 615,013.** (AVIS), Rent-A-Car System, Inc., Leasing of automobiles and trucks; **Reg. No. 703,700**, same, Avis, Inc., Vehicle rental and leasing services, filed Mar. 7, 1967, D.C., E.D. Mich. (Detroit), Doc. 29656, *Avis Rent-A-Car Sys-*

*tem, Inc. v. Avis Man-Avis Girls, Inc.* Consent judgment, July 22, 1968.

**Reg. No. 628,439** ("JUMBO JACKPOT"), Edward C. Sargent, doing business as Eddie Sargent Enterprises, Advertising services—namely, promoting the sale of goods and services of others through the medium of contests in which cash prizes are awarded to winning contestants, filed July 18, 1968, D.C., N.D. Ill. (Chicago), Doc. 68-1340, *Edward C. Sargent v. Union Oil Company of California and The Reuben H. Don- neley Corporation*

**Reg. No. 631,336.** (See **Reg. No. 103,242.**)

**Reg. No. 648,533.** (See **Reg. No. 103,242.**)

**Reg. No. 664,838.** (See **Reg. No. 220,747.**)

**Reg. No. 676,073.** (See **Reg. No. 103,242.**)

**Reg. No. 703,700.** (See **Reg. No. 615,013.**)

**Reg. No. 709,385** (KIKI), Kiki Undies Corporation, Ladies' panties; **Reg. No. 767,242** (KIKI MAGIC), same; **Reg. No. 767,232** (KIKI KONTROL), same; **Reg. No. 774,624** (KIKI SATINETTE), same, filed June 27, 1968, D.C., Dist. of Col. (Washington), Doc. 1593-68, *Promenade Mills, Inc. v. The Commissioner of Patents*.

**Reg. No. 715,907** (BUDGET RENT-A-CAR), Rent-A-Car Services Corporation, Rental and leasing of motor vehicles, filed June 21, 1968, D.C., E. D. Tenn. (Chattanooga), Doc. 5303, *Budget Rent-A-Car Corp. of America v. Budget Rent-A-Car of Chattanooga, Inc.*

**Reg. No. 737,309** (PREFERRED DRIVER PLAN), California Compensation and Fire Company, Underwriting automobile insurance, filed July 24, 1967, D.C., N.D. Calif. (San Francisco), Doc. 47496, *California Compensation and Fire Company v. Hardicare Mutual Casualty*, Judgment in favor of the plaintiff, with permanent injunction against defendant, using the terms "Preferred Driver," "Preferred Driver Plan," or in any way using the word "Preferred," Oct. 31, 1967, same, filed July 24, 1967, D.C., N.D. Calif. (San Francisco), Doc. 47497, *California Compensation and Fire Company v. Reserve Insurance Company*, Dismissed without prejudice, Jan. 23, 1968.

**Reg. No. 740,005** (DESIGN OF CROSSED SWORDS), Royal Saxe Corporation, Tea and dinnerware sets made of porcelain or china—namely, plates, cups and saucers, vases and decorative serving tea tiles; **Reg. No. 772,301** (PRINCE DE SAXE AND DESIGN), same, Tea and dinnerware sets made of porcelain or china—namely, plates, cups and saucers, glasses and decorative serving tea tiles, filed Dec. 18, 1967, D.C., S.D.N.Y., Doc. 67-C-4954, *D.M. & Antique Import Corp. v. Royal Saxe Corp.*

**Reg. No. 767,232.** (See **Reg. No. 709,385.**)

**Reg. No. 767,242.** (See **Reg. No. 709,385.**)

**Reg. No. 772,301.** (See **Reg. No. 740,005.**)

**Reg. No. 774,624.** (See **Reg. No. 709,385.**)

**Reg. No. 796,308** (AIRCRAFT AND DESIGN), R. G. Reynolds, Fiberglass airboat, filed June 25, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68-1041-R, *Hurricane Fiberglass Products Corp. v. Cushionflight Corp. and Revmaster, Inc.*

**Reg. No. 797,303.** (See **Reg. No. 103,242.**)

**Reg. No. 804,726.** (See **Reg. No. 103,242.**)

**Reg. No. 842,152** (CRAIG'S), Craig's, Ltd., Dresses, suits, coats, skirts, slacks, shorts, sweaters, blouses, pajamas, nightgowns, lingerie, hosiery, socks, and shoes, filed Mar. 14, 1968, D.C., S.D. Tex. (Houston), Doc. 68-H-207, *Craig's, Ltd. v. Craig's, Inc.* Dismissed on stipulation without prejudice, July 22, 1968.

## MARKS PUBLISHED FOR OPPOSITION

### SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105. A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 250,141. Electrical Remote Control Co. Limited, Harlow, Essex, England. Filed July 13, 1966.

### ELREMCO

Owner of British Reg. No. 692,311, dated Sept. 16, 1950.

**Class 21—Electrical Apparatus, Machines, and Supplies**

For A.C. and D.C. Relays and Contactors; Electric Push Buttons and Rotary Switches (Int. Cl. 9).

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Pneumatic Motors; and Parts—Namely, Valves (Int. Cl. 7).

**Class 26—Measuring and Scientific Appliances**

For Electrical and Pneumatic Dial Timers, Camshaft Timers, and Programme Controllers; Electrical Time Switches, Liquid Level Controls; Proximity Switches; Solid-State Timing and Control Devices; Motorized Potentiometers; Electrical and Pneumatic Indicators and Control Panels; and Busbar Installations (Int. Cl. 9).

SN 256,997. Tatetsi Electronics Co., Ukyo-ku, Kyoto, Japan. Filed Oct. 24, 1966.

### OMRON

Owner of Japanese Reg. Nos. 600,087, dated Oct. 29, 1962, 615,473, dated May 30, 1963, 626,228, dated Oct. 9, 1963, and 673,000, dated Apr. 8, 1965; and U.S. Reg. No. 699,341.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Automatic Water Taps (Int. Cl. 11).

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Shunting Apparatus; Electrical Fire Alarms; Electrical Burglar Alarms; Electronic Controls for Parking Garage Elevators and Conveyors; Vehicle Activated Electronic Controls for Traffic Signal Lights; Electronic Automatic Ticket Gates Which Are Operated by Insertion of a Proper Identification Pass (Int. Cl. 9).

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Metal Machining Machines; Loading and Unloading Machines; Sewing Machines; Ticket Issuing Machines; Credit Card, Coin, and/or Bill Operated Vending Machines (Int. Cls. 7 and 9).

**Class 26—Measuring and Scientific Appliances**

For Cathode Ray Tube Meters; Bill and Coin Changers; Electric and Electronic Counters; Computers; Cash Registers; Adding Machines; Photo-Electric Inspecting Units for Indicating, Counting, and Sorting Sheet Articles Such as Cloth, Paper and Metal (Int. Cl. 9).

**Class 44—Dental, Medical, and Surgical Appliances**

For Medical Machines and Instruments—Namely, Electrocardiographs, Phonocardiographs, Electroencephalographs, Electromyographs, Electronystamographs, Electromanom-

eters, Ultrasonic Diagnostic Apparatus, Ultrashortwave Therapeutic Apparatus; Therapeutic Instruments Utilizing Radioactive Material, Namely, Scintiscanners, Pneumotachographs, and Galvanic Skin Reflexometers; and Thermoelectric Therapeutic Instruments (Int. Cl. 10).

SN 263,145. The Wyatt Manufacturing Company, Inc., Salina, Kans. Filed Jan. 23, 1967.



**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Grain Handling Equipment—Namely, Augers, Screw Conveyors, Carrier Augers, Hoppers, Distributing Augers, Bin Unloaders, Bin Sweeps, Unloading Augers; Livestock Feeding Equipment—Namely, Bunk Feeders, Supply Augers, Mills, Blenders, Crimping Machines, Belt, Screw, Pneumatic and Tray Conveyors Used in Handling Grain, Feeds and Other Free Flowing Materials; and Parts and Components of Such Equipment (Int. Cl. 7).

**Class 26—Measuring and Scientific Appliances**

For Feed and Grain Proportioning Machines, Machines for Measuring Amounts of Grain and Feeds, Machines for Metering Predetermined Amounts of Grain and Feeds; and Parts and Components of Such Machines (Int. Cl. 9).

First use during June 1962.

SN 268,916. Belgian Importers Assn., Inc., d.b.a. Belgian Importers, Inc., Burlingame, Calif. Filed Apr. 12, 1967

### B.I.A.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Utensils and Tools for Kitchen and Table Use—Namely, Sauce Pans, Casseroles, Dutch Ovens, Frying Pans, Chestnut Pans, Bakers, Steamers, Bowls for Mixing or Beating, Wire Baskets (for Salad and Frying), Racks, Molds (for Baking, Salad, Ice Cream and Chocolate), Brackets, Hooks, Metal Plates, Metal Platters, Metal Gravy Boats and Plaques (Metal Baking Sheets) (Int. Cl. 21).

First use Apr. 5, 1967.

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Utensils, Cutlery and Tools for Kitchen, Pantry and Table Use—Namely, Forks, Knives, Spoons, Spatulas, Scoops, Ladles, Tongs, Egg Openers, Poachers, Slicers and



Cutters, Mills (for Vegetables, Meats, Pepper, Salt, Spices and Herbs), Wooden Pestles and Mortars, Choppers, Tenderizing Hammers, Graters, Mashers, Skimmers, Wire Wisks (Beaters), Sieves, Meat Holders, Cutting Boards, Butter Curlers and Paddles (Butter-Shell Formers), Swirlers (for Stirring Liquids), Rolling Pins, Scrapers, Prickers, Decorating Pouches, Decorating Syringes, Metal Ends for Decorating Pouches and Syringes, Cork Screws and Bottle Trees (for Holding Bottles During Drying (Int. Cls. 8 and 21)).  
First use Apr. 5, 1967.

#### Class 30—Crockery, Earthenware, and Porcelain

For Utensils and Wares for Kitchen, Pantry and Table Use—Namely, Crockery, Earthenware and Porcelain Plates, Platters, Cups and Saucers, Casseroles, Tureens, Jars, Canisters, Baking Shells, Coffee Pots and Filters (Sold With Coffee Pots as Sets), Teapots, Sugar Pots, Creamers, Pitchers, Bowls, Cream Pots, Juicers, Molds, Bakers, Mortars and Pestles, Serving Tiles, and Vases (Int. Cl. 21).  
First use Apr. 5, 1967.

#### Class 33—Glassware

For Kitchen, Bar and Table Wares—Namely, Glass Cruets, Condiment Sets, Decanters, Goblets, and Stemware (Int. Cl. 21).  
First use Apr. 10, 1967.

SN 269,815. Eastern Shore Laboratories, Inc., Laurel, Del. Filed Apr. 24, 1967.



#### Class 18—Medicines and Pharmaceutical Preparations

For Animal Drugs and Animal Feed Supplements Containing Vitamins and Minerals (Int. Cl. 5).

#### Class 100—Miscellaneous

For Providing of Animal Diagnostic and Vaccinating Services and Sanitized Crews (Pens) To Feed Houses, Growers, Swine Producers, Hatcheries, and Processing Plants (Int. Cl. 42).  
First use Mar. 31, 1966.

SN 272,778. Dresser Industries, Inc., Dallas, Tex. Filed June 1, 1967.

### LOAD LIFTER

Owner of Reg. Nos. 306,297 and 539,161.

#### Class 21—Electrical Apparatus, Machines, and Supplies

For Electrically Driven Lifting, Hoisting, Transporting and Conveying Devices, and Parts, Components and Accessories Thereof (Int. Cl. 7).  
First use Oct. 12, 1966.

#### Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Lifting, Hoisting, Transporting and Conveying Devices and Accessories, Parts and Components Thereof (Int. Cl. 7).  
First use Oct. 5, 1966.

SN 273,388. Fill-R-Up Auto Wash, Inc., Fort Lauderdale, Fla. Filed June 8, 1967.



#### Class 101—Advertising and Business

For Rendering Assistance to Combined Car-Wash and Gasoline Station Operators in the Establishment, Operation and Management of Their Businesses (Int. Cl. 35).  
First use Aug. 2, 1966.

#### Class 103—Construction and Repair

For Combined Automobile Filling Station Services and Car-Wash Services (Int. Cl. 37).  
First use Apr. 8, 1967.

SN 277,730. Taylor Lock Co., Philadelphia, Pa. Filed Aug. 7, 1967.



#### Class 12—Construction Materials

For Door Trim (Int. Cl. 19).

#### Class 13—Hardware and Plumbing and Steam-Fitting Thereof

For Door Knobs (Int. Cl. 6).

#### Class 23—Cutlery, Machinery, and Tools, and Parts

For Key Machines and Locksmith Tools (Int. Cls. 7 and 8).

#### Class 25—Locks and Safes

For Key Blanks, Keys, Night Latches, Dead Locks, Lock Cylinders, Filing Cabinet Locks, Mortise Locks, Rim Locks and Padlocks (Int. Cl. 6).  
First use June 16, 1967.

SN 278,039. Seltzingers, Inc., d.b.a., Evans Metal Co., Atlanta, Ga. Filed Aug. 10, 1967.



#### Class 12—Construction Materials

For Roof Flashings (Int. Cl. 6).

#### Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Lead Pipe and Lead Fittings (Int. Cl. 6).

#### Class 14—Metals and Metal Castings and Forgings

For Sheet Lead and Ingot Lead (Int. Cl. 6).  
First use May 15, 1967.

279,012. Therachemie Chemisch Therapeutische G.m.b.H., d.b.a. Therachemie G.m.b.H., Dusseldorf, Germany. Filed Aug. 24, 1967.

### POLY BLOND

No claim is made to the word "Blond" apart from the mark as shown. Owner of German Reg. No. 756,058, dated Oct. 20, 1960; and U.S. Reg. Nos. 630,610, 825,083, and others.

#### Class 51—Cosmetics and Toilet Preparations

For Hair Lightening Preparation (Int. Cl. 3).

#### Class 52—Detergents and Soaps

For Hair Toning Shampoos (Int. Cl. 3).

SN 283,486. The West Bend Company, West Bend, Wis. Filed Oct. 27, 1967.



### LUMA-CORE

The drawing is lined for the colors blue and violet. Owner of Reg. No. 844,359.

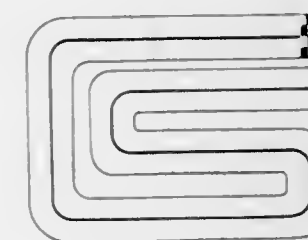
#### Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Stainless Steel Cooking Utensils (Int. Cl. 21).

#### Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Skillets (Int. Cl. 11).  
First use October 1967.

SN 285,786. Shelby American Inc., Los Angeles, Calif. Filed Nov. 29, 1967.



#### Class 19—Vehicles

For Automobile Parts and Accessories—Namely, Wheels, Wheel Covers, and Steering Wheels (Int. Cl. 12).  
First use Apr. 17, 1967.

#### Class 26—Measuring and Scientific Appliances

For Automobile Parts and Accessories—Namely, Electric Tachometers, Oil Gauges and Oil Gauge Sending Units (Int. Cl. 9).  
First use Oct. 13, 1966.

SN 286,458. Magnaflux Corporation, Chicago, Ill. Filed Dec. 8, 1967.

### HY-REZ

#### Class 6—Chemicals and Chemical Compositions

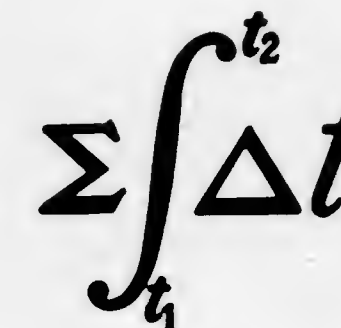
For Liquid Hydrocarbon Compounds for Penetrant Inspection, Both Visible and Fluorescent, Developers and Fixers Thereof (Int. Cl. 1).

#### Class 52—Detergents and Soaps

For Industrial Cleaners Used in Non-Destructive Testing; and Removers for Penetrant Compositions Used in Non-Destructive Testing (Int. Cl. 1).

First use July 13, 1964.

SN 287,483. Hofmeister Company, Park Ridge, Ill. Filed Dec. 26, 1967.



#### Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Manual Rotary Selector Switches for Heating and Ventilating Apparatus (Int. Cl. 9).  
First use at least as early as 1961.

#### Class 34—Heating, Lighting, and Ventilating Apparatus

For Enclosures for Heating and Ventilating Apparatus (Int. Cl. 11).  
First use at least as early as 1965.

SN 287,484. Hofmeister Company, Park Ridge, Ill. Filed Dec. 26, 1967.

### HOFECO

#### Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Manual Rotary Selector Switches for Heating and Ventilating Apparatus (Int. Cl. 9).  
First use at least as early as 1961.

#### Class 34—Heating, Lighting, and Ventilating Apparatus

For Enclosures for Heating and Ventilating Apparatus (Int. Cl. 11).  
First use at least as early as 1965.

SN 288,804. GCA Corporation, Bedford, Mass. Filed Jan. 15, 1968.



Owner of Reg. No. 801,818.

#### Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For General High Vacuum and Ultra-High Vacuum Pumping Systems (Int. Cl. 7).  
First use July 26, 1966.

#### Class 34—Heating, Lighting, and Ventilating Apparatus

For High Vacuum, High Temperature, Cold Wall and Hot Wall Furnaces and Vacuum Inert Welding Systems and Ultra-High Vacuum Evaporator Having a Clean Work Chamber (Int. Cl. 11).  
First use July 30, 1966.



SN 291,488. Block China Company, New York, N.Y. Filed Feb. 20, 1968.

## TRANSITION

### Class 30—Crockery, Earthenware, and Porcelain

For China Dinnerware (Int. Cl. 21).

### Class 33—Glassware

For Table Glassware (Int. Cl. 21).

First use Dec. 20, 1967.

SN 299,060. Continental Machines, Inc., Savage, Minn. Filed May 27, 1968.



Owner of Reg. No. 791,288.

### Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Hydraulic Directional Control Valves (Int. Cl. 6).

### Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Variable Volume Hydraulic Pumps, and Hydraulic Power Units (Int. Cl. 7).

First use May 6, 1968.

SN 303,735. The Gillette Company, Boston, Mass. Filed July 29, 1968.

## CONTAIN

### Class 51—Cosmetics and Toilet Preparations

For Hairspray (Int. Cl. 3).

First use Apr. 10, 1968.

### Class 52—Detergents and Soaps

For Hair Shampoo (Int. Cl. 3).

First use Apr. 11, 1968.

## SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105. A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

### Class 1—Raw or Partly Prepared Materials Class 2—Receptacles

SN 255,067. Hardman Incorporated, Belleville, N.J., by merger from DPR Incorporated, Belleville, N.J. Filed Sept. 26, 1966.

## ISOLENE

For Liquid Rubber Polymers Useful in the Manufacture of Sealants, Caulks, and Potting Compounds (Int. Cl. 17).

First use Sept. 13, 1966.

SN 296,058. Phillips Petroleum Company, Bartlesville, Okla. Filed Dec. 4, 1967.

## QUINTESS

Owner of Reg. Nos. 811,531 and 837,216.

For Synthetic Fiber (Int. Cl. 22).

First use Aug. 25, 1967.

SN 303,241. Tenneco Advanced Materials Inc., Newton Upper Falls, Mass. Filed July 22, 1968.

## TAMRON

For Synthetic Polymeric Sheet Material for General Industrial Use (Int. Cl. 17).

First use on or about May 27, 1968.

SN 303,242. Tenneco Advanced Materials Inc., Newton Upper Falls, Mass. Filed July 22, 1968.

## TENTURA

For Synthetic Polymeric Sheet Material for General Industrial Use (Int. Cl. 17).

First use on or about May 27, 1968.

SN 278,485. Gulf States Paper Corporation, Tuscaloosa, Ala. Filed Aug. 17, 1967.

## E-Z CLOSE

Applicant disclaims the word "Close" apart from the mark as shown. Owner of Reg. Nos. 227,085, 735,109, and others. For Folded Paperboard Cartons (Int. Cl. 16).

First use July 17, 1967.

SN 296,822. Fuslon Rubbermaid Corporation, Statesville, N.C. Filed Apr. 29, 1968.



The word "Litter" is disclaimed apart from the mark as shown.

For Molded Plastic Receptacles, Specifically Trash Containers (Int. Cl. 21).

First use June 29, 1967.

SN 300,325. Peter Berg & Co., Inc., Minneapolis, Minn. Filed June 13, 1968.

## BERG'S QUIK-SNAP

For Foldable Egg Case Cartons (Int. Cl. 16).

First use April 1968.

SN 300,427. Consolidated Papers, Inc., Wisconsin Rapids, Wis. Filed June 14, 1968.

## STANICORE

For Paperboard Tubes or Cores (Int. Cl. 16).

First use March 1967.

SN 300,429. Consolidated Papers, Inc., Wisconsin Rapids, Wis. Filed June 14, 1968.

## PLUSCORE

For Paperboard Tubes or Cores (Int. Cl. 16).

First use March 1967.

SN 300,430. Consolidated Papers, Inc., Wisconsin Rapids, Wis. Filed June 14, 1968.

## BASICORE

For Paperboard Tubes or Cores (Int. Cl. 16).

First use March 1967.

SN 300,431. Consolidated Papers, Inc., Wisconsin Rapids, Wis. Filed June 14, 1968.

## STABLECORE

For Paperboard Tubes or Cores (Int. Cl. 16).

First use March 1967.

SN 300,795. American Can Company, New York, N.Y. Filed June 19, 1968.

## GREEN GROCER

For Foam Polystyrene Fresh Produce Trays (Int. Cl. 20).

First use Nov. 1, 1967.

SN 301,064. Gulf States Paper Corporation, Tuscaloosa, Ala. Filed June 21, 1968.

## E-Z LIVIN'

Owner of Reg. Nos. 227,085, 821,397, and others. For Plates, Bowls, and Trays of Plastic (Int. Cl. 21).

First use June 3, 1968.

SN 301,065. Gulf States Paper Corporation, Tuscaloosa, Ala. Filed June 21, 1968.

## E-Z LIVING

Owner of Reg. Nos. 227,085, 821,397, and others. For Plates, Bowls, and Trays of Plastic (Int. Cl. 21).

First use June 3, 1968.

SN 301,496. Techs, Incorporated, Warren, Pa. Filed June 27, 1968.



For Plastic Containers for Commercial Use and Closures Therefor, Plastic Liners for Containers, and Corrugated Boxes With Plastic Liners (Int. Cl. 20).

First use at least as early as Oct. 28, 1966.

SN 302,374. Allied Chemical Corporation, New York, N.Y. Filed July 10, 1968.

## artisan

For Plastic Dinnerware (Int. Cl. 21).

First use January 1966.

### Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 291,303. Gene Dare Miller, d.b.a. Canine Behavior Institute, West Los Angeles, Calif. Filed Feb. 19, 1968.

## HI-FIDO

For Metallic Chain for Emitting High Frequency Sounds in Training Dogs (Int. Cl. 6).

First use on or before Dec. 31, 1962.

SN 302,532. Seward Luggage Manufacturing Company, Petersburg, Va. Filed July 11, 1968.

## AIR PAK

Owner of Reg. No. 753,116.

For Luggage (Int. Cl. 18).

First use on or about May 18, 1939.

### Class 4—Abrasives and Polishing Materials

SN 290,198. Harold Simpson Ltd., Vancouver, British Columbia, Canada. Filed Feb. 2, 1968.



Owner of Canadian Reg. No. 238/51454, dated Feb. 2, 1931. For Polish for Use on the Porcelain and Chrome of Stoves and Other Appliances (Int. Cl. 3).

### Class 5—Adhesives

SN 278,097. Felt Products Mfg. Co., Skokie, Ill. Filed Aug. 11, 1967.

## FELCO-BOND

Owner of Reg. No. 711,858.

For Liquid Adhesive for General Adhesion (Int. Cl. 1).

First use June 30, 1967.

SN 302,904. Reichhold Chemicals, Inc., White Plains, N.Y. Filed July 17, 1968.

## PLYACRYL

Owner of Reg. Nos. 549,987, 815,687, and 825,147. For Resin Base Adhesive (Int. Cl. 1).

First use Feb. 13, 1968.



**Class 6—Chemicals and Chemical Compositions**

SN 279,631. Daito Chemical Industry Co., Ltd., Higashi-ku, Osaka-shi, Japan. Filed Sept. 5, 1967.

**DAITOPHOR**

Owner of Japanese Reg. No. 602,070, dated Dec. 7, 1962. For Dyestuffs and Pigments (Int. Cl. 2).

SN 284,493. N. Knute Morelli, d.b.a. Numor Products Co., Canton, Ohio. Filed Nov. 9, 1967.

**"LIVELLO"**

For Chemical Addition Agent for Electroplating Solutions (Int. Cl. 1). First use on or about Oct. 2, 1967.

SN 286,033. Racine Industrial Plant, Inc., Racine, Wis. Filed Dec. 1, 1967.

**PROFESSIONAL TOUCH**

For Liquid Spray for Brightening Floor Coverings or the Like (Int. Cl. 1). First use Sept. 24, 1967.

SN 286,551. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed Dec. 8, 1967.

**PENTEL**

For Fluorotelomer Compositions Used To Impart Water and Soil Repellency to Fabrics (Int. Cl. 1). First use May 1966.

SN 293,328. The Udyllite Corporation, Warren, Mich. Filed Mar. 14, 1968.

**Z-BRITE**

For Chemicals for Use in the Electrodeposition of Metals (Int. Cl. 1). First use Mar. 11, 1964.

SN 294,175. Engelhard Minerals & Chemicals Corporation, Newark, N.J. Filed Mar. 26, 1968.

**DEOXO**

Owner of Reg. No. 427,851. For Catalysts (Int. Cl. 1). First use July 8, 1960.

SN 294,221. R. T. Vanderbilt Company, Inc., New York, N.Y. Filed Mar. 26, 1968.

**VANDRIDE**

For Liquid Anhydride Curing Agent for Resins (Int. Cl. 1). First use Dec. 22, 1967.

SN 294,222. R. T. Vanderbilt Company, Inc., New York, N.Y. Filed Mar. 26, 1968.

**VAN GO**

For Promoter for Epoxy Resins (Int. Cl. 1). First use Feb. 8, 1968.

SN 294,270. Faultless Starch Company, Kansas City, Mo. Filed Mar. 27, 1968.

**RAGGEDY ANDY'S**

Owner of Reg. Nos. 829,633 and 829,913. For Laundry Preparation—Namely, a Sizing and Finishing Agent for Fabrics (Int. Cl. 3). First use on or about Mar. 8, 1968.

SN 294,271. Faultless Starch Company, Kansas City, Mo. Filed Mar. 27, 1968.



Owner of Reg. Nos. 829,632 and 829,912. For Laundry Preparation—Namely, a Sizing and Finishing Agent for Fabrics (Int. Cl. 3). First use on or about Mar. 8, 1968.

SN 294,335. Velsicol Chemical Corporation, Chicago, Ill. Filed Mar. 27, 1968.

**DICHLOR-1**

For Fire Retardant Additive (Int. Cl. 1). First use Feb. 8, 1968.

SN 294,505. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Mar. 29, 1968.

**CUPROBOND**

For Chemical Compositions Useful as Rust and Corrosion Inhibitors for Metals (Int. Cl. 2). First use Jan. 26, 1968.

SN 294,613. The Fuller Brush Company, East Hartford, Conn. Filed Apr. 1, 1968.

**OUTSIDE INN**

For Room Freshener (Int. Cl. 5). First use March 1968.

SN 294,809. Canal Industrial Corporation, Rockville, Md. Filed Apr. 3, 1968.

**CONCENTREX**

For Electrolytic Compound (Int. Cl. 1). First use April 1967.

SN 295,128. Eastman Kodak Company, Rochester, N.Y. Filed Apr. 8, 1968.

**EASTOFIX**

For Dyes (Int. Cl. 2). First use Nov. 2, 1954.

SN 295,266. Velsicol Chemical Corporation, Chicago, Ill. Filed Apr. 9, 1968.

**PARTRON**

For Insecticides (Int. Cl. 5). First use Mar. 21, 1968.

SN 295,290. Addressograph Multigraph Corporation, Cleveland, Ohio. Filed Apr. 10, 1968.

**PHOTO-DIRECT**

Owner of Reg. Nos. 797,351 and 821,123. For Chemicals for Processing Photo-Lithographic Plates (Int. Cl. 1). First use on or about Aug. 13, 1962.

SN 297,738. International Dioxide, Inc., New York, N.Y. Filed May 9, 1968.

**CARNEBON**

For Stabilized Chlorine Dioxide (Int. Cl. 1). First use May 1, 1968.

SN 300,661. Stauffer Chemical Company, New York, N.Y. Filed June 18, 1968.

**FYRQUEL**

For Fire Resistant Hydraulic Fluid (Int. Cl. 1). First use at least as early as June 4, 1968.

SN 302,900. Philadelphia Quartz Company, Philadelphia, Pa. Filed July 17, 1968.

**PENTABEAD**

For Soluble Alkali Silicates (Int. Cl. 1). First use on or about June 21, 1968.

**Class 7—Cordage**

SN 259,133. Columbus McKinnon Limited, St. Catharines, Ontario, Canada. Filed Nov. 21, 1966.

**HERCO-WEAVE**

For Slings, Straps, Harnesses and Belts Made of Webbing for Use in Lifting, Moving, Towing and/or Securing Objects (Int. Cl. 22). First use on or about May 25, 1966; in commerce on or about May 25, 1966.

SN 294,299. N.V. Lankhorst Touwfabrieken, Sneek, Netherlands. Filed Mar. 27, 1968.

**IMPALA**

For Baler and Binder Twine (Int. Cl. 22). First use Oct. 14, 1966; in commerce Oct. 14, 1966.

**Class 8—Smokers' Articles, Not Including Tobacco Products**

SN 298,081. Anciens Etablissements Myon & Cie, Damprichard, Doubs, France. Filed May 14, 1968.

**MYON**

Priority claimed under Sec. 44(d) on French Reg. No. 737,267, dated Dec. 8, 1967. For Cigarette Lighters and Pipes (Int. Cl. 34). First use Apr. 1, 1962; in commerce Apr. 1, 1962.

**Class 12—Construction Materials**

SN 265,921. Rolscreen Company, Pella, Iowa. Filed Mar. 3, 1967.

**SLIMSHADE**

For Slat Shade and Double Glazed Window Panel Construction (Int. Cl. 19). First use Sept. 28, 1965.

SN 271,326. Allied Compositions Co., Maspeth, N.Y. Filed May 12, 1967.

**FLEXATRED**

For Thin-Bed Resin Bonded Terrazzo Flooring (Int. Cl. 19). First use Mar. 2, 1954.

SN 274,058. General Clay Products Corp., Columbus, Ohio. Filed June 16, 1967.



No claim is made to the word "Corporation." For Building Bricks (Int. Cl. 19). First use May 18, 1967.

SN 274,059. General Clay Products Corp., Columbus, Ohio. Filed June 16, 1967.



For Building Bricks (Int. Cl. 19). First use May 18, 1967.



SN 279,315. Munters Corporation, Fort Myers, Fla. Filed Aug. 29, 1967.

## CERAMidek

For Cooling Tower Fill Made of Sheets of Ceramic Material (Int. Cl. 17).  
First use Aug. 1, 1967.

SN 281,061. Harry Fox, d.b.a. D.F.C. Enterprises, Beverly Hills, Calif. Filed Sept. 25, 1967.

## DECK-O-CAP

For Pre-Formed Chloride Plastic Expansion Joints (Int. Cl. 17).  
First use Apr. 1, 1964.

SN 282,167. Armstrong Seamless Floors, Inc., Spokane, Wash. Filed Oct. 10, 1967.



For Surface Coatings and Component Materials Including Decorative Resin Chips and a Liquid Resin Vehicle, Including a Kit Containing Such Materials (Int. Cl. 19).  
First use Sept. 13, 1967.

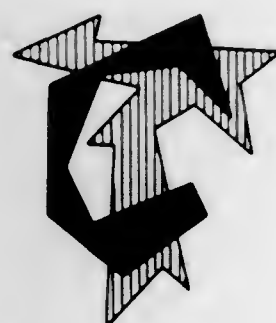
SN 293,199. Kold-Seal, Belmont, Calif. Filed Mar. 14, 1968.

## ZIP-PER STRIP

Applicant disclaims the exclusive right to the word "Strip," except in the combinations shown in the application.

For Pre-Formed Polyvinylchloride Expansion Joint Materials and Pre-Formed Polyvinylchloride Expansion Joint Formers (Int. Cl. 17).  
First use Apr. 27, 1965.

SN 294,471. Chem-Tex Paint Company, Inc., Northfield, Ill. Filed Mar. 29, 1968.



The mark comprises a fanciful representation of the letters "C" and "T." The drawing is lined for red, but color is not claimed as a feature of the mark.

For Wood Filler Material for Filling Seams, Joints, Cracks, and the Like (Int. Cl. 17).  
First use July 24, 1967.

SN 295,716. Bird & Son, Inc., East Walpole, Mass. Filed Apr. 16, 1968.

## WIND SEAL JET

Owner of Reg. No. 652,268.  
For Composition Roofing Shingles (Int. Cl. 19).  
First use Apr. 13, 1967.

SN 303,738. Continental Vinyl Products Corporation, Vernon, Calif. Filed July 29, 1968.

## VINA-CLAD

For Decorative Wood, Particle Board, and Wood Fiber Panels for Wall Paneling in Buildings, and for the Manufacture of Furniture, Cabinets, and Fixtures (Int. Cl. 19).  
First use on or about Dec. 4, 1967.

## Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 268,708. Coupling Frame, Inc., Detroit, Mich. Filed Apr. 10, 1967.



For Tubing, Tubular Connector Couplings and Tubular Corner Piece Connector Couplings for Tubing, Carrying Frames for Tubing, and Components Thereof (Int. Cl. 6).  
First use on or about Jan. 30, 1967.

SN 273,954. Jeffrey L. Fried, d.b.a. Walton-March, Highland Park, Ill. Filed June 15, 1967.

## BIG GRIPPER

For Hookless Holder for Supporting Mops, Brooms, Rakes, and Other Articles Above a Floor Surface (Int. Cl. 21).  
First use Apr. 1, 1967.

SN 275,445. Josam Manufacturing Co., Michigan City, Ind. Filed July 6, 1967.

## WEJLOC

For Drains (Int. Cl. 6).  
First use June 21, 1967.

SN 282,715. R. Nussbaum & Co. AG., Olten, Solothurn, Switzerland. Filed Oct. 17, 1967.



Owner of Swiss Reg. No. 221,556, dated Oct. 11, 1966.  
For Pipe Fittings (Int. Cl. 6).

SN 283,418. Arlan's Dept. Stores, Inc., New York, N.Y. Filed Oct. 26, 1967.

## BETTY JORDAN

"Betty Jordan" is fanciful and does not identify a particular living individual.

For Curtain Hardware, Sold Exclusively in Applicant's own Stores (Int. Cl. 6).  
First use July 1963.

SN 284,975. A Alumina, Lda., Oporto, Portugal. Filed Nov. 16, 1967.

## TAGUS

Owner of U.S. Reg. No. 813,302.  
For Kitchen Utensils of Copper and of Copper and Brass—Namely, Casseroles, Sauce Pans, Food and Spice Canisters and Boxes, Frying Pans, Cups, Creamers, Goblets, Bowls, Mugs, Pitchers, Tea Kettles and Pots, Fondue Sets, Trays, Chafing Dishes, Coffee Pots, Measuring Cups, Racks, Moulds, Finger Bowls, Espresso Makers, Silent Butlers, Plate Warmers and Butter Warmers (Int. Cl. 21).  
First use November 1962; in commerce November 1962.

SN 285,024. Kaga Industries Co., Ltd., Omiya-shi, Saitama-ken, Japan. Filed Nov. 16, 1967.



Applicant disclaims exclusive rights in the outline representation for an industrial chain, apart from the mark as shown.

For All Types of Chains for Industrial Use (Int. Cl. 6).  
First use July 1, 1958; in commerce Oct. 7, 1962.

SN 287,434. Josam Manufacturing Co., Michigan City, Ind. Filed Dec. 22, 1967.

## ECONOTRON

For Plumbing Fixture Carriers and Fittings (Int. Cl. 6).  
First use Nov. 22, 1967.

SN 288,676. Calgon Corporation (Delaware corporation), Pittsburgh, Pa., assignee of Calgon Corporation (Pennsylvania corporation), Pittsburgh, Pa. Filed Jan. 12, 1968.

## INSTAMATIC

For Feeding System for Wetting Agents, in Liquid Form, for Use in the Rinse Cycle of Commercial Dishwashing Machines (Int. Cl. 7).  
First use Oct. 10, 1967.

SN 290,372. Advance Food Service Equipment, Inc., Westbury, N.Y. Filed Feb. 6, 1968.



For Pans and Sinks (Int. Cl. 6).  
First use June 1962.

SN 291,019. Beneke Corporation, Columbus, Miss. Filed Feb. 14, 1968.

## SATIN GLOW

For Toilet Seats (Int. Cl. 11).  
First use January 1965.

SN 291,179. Pan American Trade Development Corp., New York, N.Y. Filed Feb. 15, 1968.

## PAMPA

For Wire Products—Namely, Wire Nails, Barbed Wire, and Wire Fencing (Int. Cl. 6).  
First use Jan. 18, 1968.

SN 291,402. International Telephone and Telegraph Corporation, New York, N.Y. Filed Feb. 19, 1968.

## HYDRO COMMAND

For Control Valves (Int. Cl. 6).  
First use Jan. 2, 1968.

SN 292,285. Piping Specialties, Inc., New York, N.Y. Filed Mar. 1, 1968.

## PSI

Owner of Reg. No. 440,722.  
For Pipe Hangers, Spring Hangers and Expansion Joints (Int. Cl. 6).  
First use Feb. 4, 1947.

SN 292,493. Mueller Co., Decatur, Ill. Filed Mar. 5, 1968.

## MUELLER 110

Owner of Reg. Nos. 64,609, 789,891, and others.  
For Compression Couplings and Connections for Use on Gas, Oil, Water, Steam, and Other Fluid Conducting Lines (Int. Cl. 6).  
First use Feb. 23, 1968.

SN 303,236. Russell, Burdall & Ward Bolt and Nut Company, Port Chester, N.Y. Filed July 22, 1968.



For Metal Threaded Fasteners—Namely, Bolts, Nuts, and Screws (Int. Cl. 6).  
First use Apr. 19, 1968.

## Class 14—Metals and Metal Castings and Forgings

SN 252,985. Xaloy Incorporated, New Brunswick, N.J. Filed Aug. 24, 1966.



Owner of Reg. No. 335,877.  
For Metallic Alloys, Including Ferrous and Non-Ferrous Alloys (Int. Cl. 6).  
First use 1953; May 3, 1935, in a different form.

SN 290,089. Fuji Setetsu Kabushiki Kaisha (Fuji Iron & Steel Co., Ltd.), Chiyoda-ku, Tokyo, Japan. Filed Feb. 1, 1968.

## VECTOR CORE

No claim is made to the use of the word "Core" apart from and in association with the rest of the mark shown.  
For Electrical Steel Sheet (Int. Cl. 6).  
First use April 1965; in commerce in or about August 1966.



**Class 15 — Oils and Greases**

SN 280,182. R. L. Spillman Company, Columbus, Ohio. Filed Sept. 12, 1967.

**SWISS**

For Form Oil Used in Metal Molds for Concrete Products and Concrete Forms (Int. Cl. 4).  
First use at least as early as 1956.

SN 285,812. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. Filed Dec. 13, 1967.

**FLUISIL**

Owner of German Reg. No. 685,933, dated Dec. 27, 1955.  
For Synthetic Lubricant for Refrigerating Equipment, Hydraulic Oil, and Shock-Absorber Oil (Int. Cl. 4).

SN 285,905. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Jan. 15, 1968.

**FRIGI-LUBE**

For Lubricant Especially Adapted for Chain Conveyor Applications (Int. Cl. 4).  
First use Nov. 21, 1967.

SN 290,059. Aldac, Inc., Alice, Tex. Filed Feb. 1, 1968.

**THE MASTER OIL**

No claim is made to the word "Oil" apart from the mark as shown.

For Penetrating Oil (Int. Cl. 4).  
First use on or about July 1, 1967.

**Class 18 — Medicines and Pharmaceutical Preparations**

SN 229,816. Mead Johnson & Company (Delaware corporation), Evansville, Ind., assignee of Mead Johnson & Company (Indiana corporation), Evansville, Ind. Filed Oct. 11, 1965.

**DERMACEUTICAL**

For Medicated Lotions, Creams, Ointments and Emulsions for the Treatment of Skin Disorders, Such as Acne, Seborrhea, Infections, Irritations, and Inflammations (Int. Cl. 5).  
First use on or prior to Aug. 24, 1965.

SN 273,620. Eastern Shore Laboratories, Inc., Laurel, Del. Filed June 12, 1967.

**HYDRA-LYTES**

For Drinking Water Additive To Supply Electrolytes for Poultry (Int. Cl. 5).  
First use May 31, 1966.

SN 277,516. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. Filed Aug. 4, 1967.

**FELAXIN**

For Veterinary Preparation To Dissolve and Remove Intestinal Obstructions (Int. Cl. 5).  
First use May 12, 1967.

SN 277,522. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. Filed Aug. 4, 1967.

**SCORBATE**

For Veterinary Preparation To Control and Treat Vitamin C Deficiency (Int. Cl. 5).  
First use May 2, 1967.

SN 277,533. Burns Pharmaceuticals, Inc., d.b.a. Oxford-Universal, Oakland, Calif. Filed Aug. 4, 1967.

**FIVEX**

For Veterinary Preparation as a Wound Dressing in the Treatment of External Wounds (Int. Cl. 5).  
First use July 24, 1967.

SN 280,304. Robert Earle Company, d.b.a. RE Co., Greeley, Colo. Filed Sept. 14, 1967.



For Vitamin Preparation (Int. Cl. 5).  
First use Aug. 28, 1967.

SN 280,753. Abbott Laboratories, North Chicago, Ill. Filed Sept. 20, 1967.

**SPECTAM**

For Antibiotic Preparation for Poultry and Animal Use (Int. Cl. 5).  
First use Mar. 17, 1965.

SN 281,755. Aktiebolaget Ferrosan, Malmo, Sweden. Filed Oct. 4, 1967.

**SEXOVID**

Owner of Swedish Reg. No. 113,814, dated Aug. 27, 1965.  
For Medicines for Endocrinological Use (Int. Cl. 5).

SN 282,432. Blair Laboratories, Inc., Yonkers, N.Y. Filed Oct. 13, 1967.

**QUIK-STIK**

For Medicated Applicators (Int. Cl. 5).  
First use Oct. 4, 1955.

SN 282,767. Blair Laboratories Inc., Yonkers, N.Y. Filed Oct. 18, 1967.

**THORACOL**

For Cough Medicine (Int. Cl. 5).  
First use May 25, 1967.

SN 283,609. Armour Pharmaceutical Company, Chicago, Ill. Filed Oct. 30, 1967.

**LETTAR**

Owner of Reg. No. 809,166.  
For Pharmaceutical Tablets Containing Sodium Levodopa (Int. Cl. 5).  
First use on or prior to July 8, 1965.

SN 284,005. Clarence E. Fleshman, d.b.a. Fleshman Footade Co., Oak Hill, W. Va. Filed Nov. 2, 1967.

**Fleshman's  
FOOTADE**

For Preparation for Relief of Irritation of Common Athlete's Foot, Ordinary Ringworm of Hands, Arms and Feet, and Callouses on Balls and Heels of Feet (Int. Cl. 5).  
First use 1940.

SN 284,323. Julius Schmid, Inc., New York, N.Y. Filed Nov. 7, 1967.

**CANDECIN**

Owner of Reg. No. 713,406.  
For Dermatological Ointment (Int. Cl. 5).  
First use Sept. 25, 1967.

SN 286,966. W. F. Young, Incorporated, Springfield, Mass. Filed Dec. 14, 1967.

**Absorbine**

Owner of Reg. Nos. 49,322, 279,015, and others.  
For Arthritic Pain Lotion (Int. Cl. 5).  
First use Feb. 14, 1967.

SN 296,072. Janssen Pharmaceutica N.V., Beerse, Belgium. Filed Apr. 22, 1968.

**TRAMISOL**

Owner of Belgian Reg. No. 2,259, dated May 4, 1966.  
For Veterinary Preparations—Namely, Anthelmintics (Int. Cl. 5).

SN 302,903. Smith Kline & French Laboratories, Philadelphia, Pa. Filed July 17, 1968.

**PRESTOLE**

For Anti-Hypertensive Agent (Int. Cl. 5).  
First use before July 2, 1968.

**Class 19—Vehicles**

SN 259,818. Charles Duvicq & Fils, Tosse, Landes, France. Filed Dec. 1, 1966.



Owner of French Reg. No. 628, dated Feb. 18, 1965 (Dax); Natl. Inst. No. 1894.  
For Boat Fenders (Int. Cl. 12).

SN 283,355. Overhead Door Corporation, Dallas, Tex. Filed Oct. 25, 1967.

**ROYALWOOD**

For Floors and Decks of Vehicles, Such as Trucks, Trailers, and Railroad Cars (Int. Cl. 12).  
First use May 26, 1967.

SN 293,652. United States Mobile Homes, Inc., Henderson, N.C. Filed Mar. 19, 1968.

**PARKETTE**

Owner of Reg. No. 759,555.  
For House Trailers (Int. Cl. 12).  
First use Mar. 13, 1968.

SN 294,212. Schwinn Bicycle Company, Chicago, Ill. Filed Mar. 26, 1968.

**FUL-FLOATING**

For Bicycle Saddles and Supports Therefor (Int. Cl. 12).  
First use Mar. 7, 1968.

SN 294,464. C. Itoh & Co. (America), Inc., New York, N.Y. Filed Mar. 29, 1968.

**RINGER**

For Bicycles and Parts Thereof (Int. Cl. 12).  
First use Sept. 1, 1967.

SN 295,026. Highway Trailer Industries, Inc., Edgerton, Wis. Filed Apr. 5, 1968.

**TEMP TITE**

For Truck Trailers (Int. Cl. 12).  
First use June 7, 1966.

**Class 20 — Linoleum and Oiled Cloth**

SN 283,634. Congoleum-Nairn Inc., Kearny, N.J. Filed Oct. 30, 1967.

**BELLAIRE**

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs, and Tiles (Int. Cl. 27).  
First use Sept. 29, 1967.

**Class 21 — Electrical Apparatus, Machines, and Supplies**

SN 251,083. Bauer Electronics Corporation, San Carlos, Calif. Filed 7-26-66.

**Bauer**

For Electronic Equipment Employed in the Radio Broadcasting Industry—Namely, Radio Broadcast Transmitters, Consoles, and Remote-Control Equipment for the Operation of Transmitters at Locations Remote From a Studio or Control Point (Int. Cl. 9).  
First use March 1960.



SN 254,671. Circle F Industries, Inc., Trenton, N.J. Filed Sept. 19, 1966.



Owner of Reg. Nos. 218,681, 841,556, and others.  
For Electrical Switches; Pilot Lights; Pilot Light and Switch Blanks; Switch and Receptacle and Switch and Pilot Light Combinations; Wire Adaptors; Plug Bases; Cube Taps; Electrical Outlet and Outlet Boxes; Wall Plates and Cover Plates; Outlet Plug Caps; Heater and Load Plugs; Electrical Wire Cord Sets; Cord and Connector Sets; Lamp Holders; Electrical Sockets, Receptacles, and Parts Therefor; Electric Sign Receptacles; Switch Mounting Plates; Caps for Fixture Sockets; Fuse Cutouts and Receptacles; Rosettes; Fluorescent Starter Sockets and Starter Socket and Lamp Holder Combinations; Wiring Harnesses; and Ceiling Receptacle Components (Int. Cls. 9 and 11).  
First use Jan. 1, 1908.

SN 255,292. Circle F Industries, Inc., Trenton, N.J. Filed Sept. 28, 1966.



Owner of Reg. Nos. 218,681, 841,556, and others.  
For Electrical Switches; Pilot Lights; Pilot Light and Switch Blanks; Switch and Receptacle and Switch and Pilot Light Combinations; Wire Adaptors; Plug Bases; Cube Taps; Electrical Outlet and Outlet Boxes; Wall Plates and Cover Plates; Outlet Plug Caps; Heater and Load Plugs; Electrical Wire Cord Sets; Cord and Connector Sets; Lamp Holders; Electrical Sockets, Receptacles, and Parts Therefor; Electrical Sign Receptacles; Switch Mounting Plates; Caps for Fixture Sockets; Fuse Cutouts and Receptacles; Rosettes; Fluorescent Starter Sockets and Starter Socket and Lamp Holder Combinations; Wiring Harnesses; and Ceiling Receptacle Components (Int. Cls. 9 and 11).  
First use June 1960; Jan. 1, 1908, in a slightly different form.

SN 255,293. Circle F Industries, Inc., Trenton, N.J. Filed Sept. 28, 1966.

### CIRCLE F

Owner of Reg. Nos. 218,681, 841,556, and others.  
For Electrical Switches; Pilot Lights; Pilot Light and Switch Blanks; Switch and Receptacle and Switch and Pilot Light Combinations; Wire Adaptors; Plug Bases; Cube Taps; Electrical Outlet and Outlet Boxes; Wall Plates and Cover Plates; Outlet Plug Caps; Heater and Load Plugs; Electrical Wire Cord Sets; Cord and Connector Sets; Lamp Holders; Electrical Sockets, Receptacles, and Parts Therefor; Electric Sign Receptacles; Switch Mounting Plates; Caps for Fixture Sockets; Fuse Cutouts and Receptacles; Rosettes; Fluorescent Starter Sockets and Starter Socket and Lamp Holder Combinations; Wiring Harnesses; and Ceiling Receptacle Components (Int. Cls. 9 and 11).  
First use Jan. 1, 1908.

SN 257,731. Square D Company, Park Ridge, Ill. Filed Nov. 1, 1966.

### PYRAMIDAL FEED

For Underfloor Duct Systems, Including Particularly Arranged Duct and Junction Boxes for Housing Electrical Wiring and Adapted To Be Embedded in the Concrete Floors of Buildings (Int. Cl. 9).  
First use Apr. 8, 1965.

SN 257,869. Edward G. LaFontaine, New York, N.Y. Filed Nov. 3, 1966.



The exclusive use of the words "Automotive Security Device" are disclaimed apart from the mark as a whole.  
For Electronic Burglar Alarm for Automobiles and Automobile Accessories (Int. Cl. 9).  
First use June 1, 1966.

SN 260,894. Solar Light Manufacturing Co., Melrose Park, Ill. Filed Mar. 14, 1967.

### SOUNDLUME

For Electric Lighting Fixture Having Sound Absorbing Panels and Containing Air Ducts for Providing Ventilation (Int. Cl. 11).  
First use Sept. 16, 1966.

SN 271,237. EG & G, Inc., Bedford, Mass. Filed May 11, 1967.

### MINACTOR

For Electronic Components—Namely, Oscillators, Filters, and Resonators (Int. Cl. 9).  
First use in or about January 1967.

SN 275,719. Continental Telephone Supply Co., Inc., New York, N.Y. Filed July 11, 1967.

### ASTRO-COM

For Wrist Radio Transmitters (Int. Cl. 9).  
First use Apr. 1, 1967.

SN 276,377. Yankee Metal Products Corp., Norwalk, Conn. Filed July 19, 1967.

### BRITE-VUE

Owner of Reg. No. 828,131.  
For Automobile Accessories—Namely, Back-Up Alarms, Lamps, and Emergency Warning Switches (Int. Cls. 9 and 11).  
First use April 1963.

SN 277,946. Vitramon, Incorporated, Monroe, Conn. Filed Aug. 9, 1967.



For Capacitors (Int. Cl. 9).  
First use on or about Mar. 15, 1967.

SN 286,861. Virginia Electronics Company, Inc., Falls Church, Va. Filed Dec. 13, 1967.



For Electronic Switches To Activate Warning Lights, Sirens, and Similar Emergency Equipment (Int. Cl. 9).  
First use Sept. 15, 1966.

SN 295,890. Kanda Tsushin Kogyo Co., Ltd., Shinagawa-ku, Tokyo, Japan. Filed Apr. 18, 1968.



Owner of Japanese Reg. No. 472,465, dated Oct. 31, 1955.  
For Transceivers—Namely, Walkie Talkie Sets (Int. Cl. 9).  
First use Sept. 30, 1953; in commerce July 13, 1963.

SN 297,931. Vidale Electronics Manufacturing Corp., Freeport, N.Y. Filed May 13, 1968.

### VECOR

For TV Interference and Noise Filters, TV and FM Couplers, Wireless Intercom Systems, Matching Transformers for TV and FM, Signal Attenuators, Vacuum Tube Base Sets, Microphones, Head Sets and Earphones, Line Voltage Regulators for TV and Radio Equipment, and TV Antennas (Int. Cl. 9).  
First use Dec. 1, 1967.

SN 302,901. Sealectro Corporation, Mamaroneck, N.Y. Filed July 17, 1968.



For Three-Piece Terminals (Int. Cl. 9).  
First use Apr. 11, 1968.

SN 303,018. Electro-Nite Co., Philadelphia, Pa. Filed July 18, 1968.

### 911

For Electro-Mechanical Alarm System for Requesting Emergency Assistance from Preselected Sources (Int. Cl. 9).  
First use March 1968.

### Class 22 — Games, Toys, and Sporting Goods

SN 266,267. Trium, Inc., Boulder, Colo. Filed Mar. 8, 1967.



For Aerial Toy in the Nature of a Boomerang (Int. Cl. 28).  
First use Feb. 8, 1967.

SN 276,403. Big Boy Manufacturing Co., Inc., Burbank, Calif. Filed July 20, 1967.

### MOON SKOOT

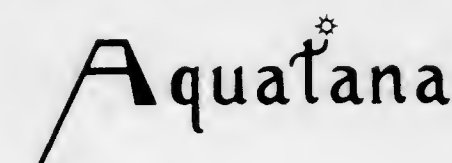
For Toy or Bowl Shaped Discs, for Use by Children and Others, for Sliding on Snowy Slopes and Other Surfaces (Int. Cl. 28).  
First use June 30, 1967.

SN 278,731. Regent Sports Co., New York, N.Y. Filed Aug. 21, 1967.



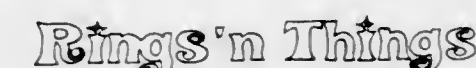
The representations of the golf playing figures are fanciful. Applicant, without waving its common law rights, disclaims the words "Pro Shop" apart from the mark as a whole.  
For Accessories for the Playing of the Game of Golf—Namely, Cart Caddies, Club Covers, Golf Gloves, T's, Golf Purses, Playing and Practice Balls, Golf Shoe Spikes, Golf Spike Wrenches, Cart Racks, Greens Markers, Ball Washers, Practice Putting Discs, Score Keepers, Cart Straps, Ball Retrievers, Golf Clubs, Golf Bag Straps, Ball Pick-Ups, and Golf Tote Bags (Int. Cl. 28).  
First use July 1966.

SN 283,745. Robert M. Channon, Glendale, Calif. Filed Oct. 11, 1967.



For Air Inflatable Mats or Mattresses for Use as Water Floats, Slant Lounges, and for Sun Bathing (Int. Cl. 28).  
First use July 1, 1967.

SN 283,990. De Luxe Topper Corporation, Elizabeth, N.J. Filed Nov. 2, 1967.



No claim of exclusive right is made to "Ring" apart from the mark as shown.  
For Toy Molding Set (Int. Cl. 28).  
First use Oct. 4, 1967.

SN 285,531. Die Casting Machine Tools Limited, London, England. Filed Nov. 24, 1967.

### TREBLE-O-TRAINS

No claim is made to the word "Trains," apart from the mark as a whole without waiver of any common law rights therein or in the mark as a whole. Owner of U.S. Reg. No. 769,108.  
For Toy Trains (Int. Cl. 28).  
First use prior to 1962; in commerce prior to 1962.



SN 286,013. Kamar, Incorporated, Gardena, Calif. Filed Dec. 1, 1967.

## KAMAR'S CANNED CRITTERS

For Toys, Specifically Dolls and Plush Animals (Int. Cl. 28).  
First use December 1966.

SN 294,168. Cragstan Industries, Inc., New York, N.Y. Filed Mar. 26, 1968.

## WILD WHEELS

The term "Wheels" is disclaimed apart from the mark as shown.  
For Toy Automobiles and Trucks (Int. Cl. 28).  
First use Jan. 15, 1968.

SN 294,169. Cragstan Industries, Inc., New York, N.Y. Filed Mar. 26, 1968.

## DETROIT SR.

For Toy Automobiles and Trucks (Int. Cl. 28).  
First use October 1966.

SN 296,282. Wham-O Mfg. Co., San Gabriel, Calif. Filed Apr. 23, 1968.

## WIDDLE WEIRDIES

For Printed Plastic Sheets Containing Various Illustrative Designs for Children's Use as Toys and Other Items of Amusement (Int. Cl. 28).  
First use Apr. 15, 1968.

SN 296,283. Wham-O Mfg. Co., San Gabriel, Calif. Filed Apr. 23, 1968.

## SHRINK MACHINE

Applicant disclaims any registration rights for the word "Machine" apart from the mark as shown, but applicant waives none of its common-law rights in the mark shown or any feature thereof.  
For Toy Receptacle Having a Heat Source and a Platen for Heating Plastic Sheets (Int. Cl. 28).  
First use Feb. 26, 1968.

SN 298,674. Mattel, Inc., Hawthorne, Calif. Filed May 21, 1968.

**Creepy  
Crawlers**

For Toy Kits for Making Plastic Toys, Figures and Dolls, Said Kits Comprising a Heating Unit, Molds, Plastic Forming Materials, Hair, Eyes, and Hardware, and Accessory Packages Comprising the Above Molding and Finishing Materials (Int. Cl. 28).  
First use in or about February 1965.

SN 299,039. Princess Grace Doll, Inc., New York, N.Y. Filed May 24, 1968.

## MADDIE

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).  
First use May 15, 1968.

SN 299,908. Continental Promotions, Inc., Minneapolis, Minn. Filed June 7, 1968.

**SOCK it  
to ME!**

For Equipment for Playing a Parlor Type Game (Int. Cl. 28).  
First use June 3, 1968.

SN 301,488. Fownes Brothers & Co., Incorporated, New York, N.Y. Filed June 27, 1968.



For Golf Gloves (Int. Cl. 28).  
First use Apr. 30, 1968.

## Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 253,131. Entoleter, Inc., Hamden, Conn. Filed Aug. 25, 1966.

## CENTRIDYNE

For Pulverizing Mill-Particle Classifying Machine Combinations and Particle Classifying Machines for the Processing of Natural and Artificial Materials To Be Comminuted (Int. Cl. 7).  
First use in or about August 1964.

SN 258,350. Aktiebolaget Gense, Eskilstuna, Sweden. Filed Nov. 10, 1966.

## ROYAL SWEDISH

Without waiving any of its common-law rights and for the purpose of registration only, applicant makes no exclusive claim to the word "Swedish" apart from the mark as shown.  
For Stainless Steel Flatware (Int. Cl. 8).  
First use Oct. 4, 1966; in commerce Oct. 4, 1966.

SN 262,107. American Dairy Queen Corporation, Minneapolis, Minn. Filed Jan. 9, 1967.



Owner of Reg. No. 816,561.  
For Apparatus for Vending and Dispensing Hot and Cold Beverages (Int. Cl. 9).  
First use Jan. 15, 1964.

SN 260,195. Bombardier Limited, Valcourt, Quebec, Canada, by change of name from Bombardier Snowmobile Ltd., Valcourt, Quebec, Canada. Filed Mar. 8, 1967.

## SW

For Snowplows (Int. Cl. 7).  
First use Nov. 11, 1957; in commerce Sept. 2, 1959.

SN 267,416. Gemco Electric Company, Clawson, Mich. Filed Mar. 23, 1967.

## CATRAC

For Cable and Hose Carriers—Namely, Rolling Multiple Conductor Supports Useful for Connecting Movable Elements of Machinery (Int. Cl. 7).  
First use during September 1965.

SN 274,782. Tapeo Products Company, Inc., Detroit, Mich. Filed June 26, 1967.

**THERM-O-BENDER**

For Metal Bending and Forming Tools (Int. Cl. 7).  
First use on or about Feb. 22, 1967.

SN 282,809. Hermann Kronseder, d.b.a. Hermann Kronseder Maschinenfabrik, Bavaria, Germany. Filed Oct. 18, 1967.

## BONAMATIC

For Labeling Machines (Int. Cl. 7).  
First use June 18, 1967; in commerce June 18, 1967.

SN 286,243. Beloit Corporation, Beloit, Wis. Filed Dec. 5, 1967.

**sta-fit**  
Doctors by BELOIT

No registration rights are claimed for the words "Doctors by Beloit" apart from the mark as shown.  
For Machinery for Doctoring or Removal of Film or Coating Material From Cylindrical Surfaces (Int. Cl. 7).  
First use Nov. 17, 1967.

SN 286,367. Rex Chainbelt Inc., Milwaukee, Wis. Filed Dec. 6, 1967.

## TRU-FLEX

For Shaft Couplings (Int. Cl. 7).  
First use Oct. 23, 1967.

SN 286,431. Russell E. Jones, Kingston, Ohio. Filed Dec. 7, 1967.

## FLOATER

For Agricultural Tractor Chassis and Cab for Transporting and Distributing Fertilizers and Agricultural Materials (Int. Cl. 12).  
First use Apr. 20, 1967.

SN 287,708. U.S. Air Tool Co., Inc., Garden City Park, N.Y. Filed Dec. 28, 1967.



## GLOBAL PNEUMATIC

The word "Pneumatic" is disclaimed apart from the mark as shown.

For Pneumatic Tools, Supplies and Accessories Thereof—Namely, Nutrunners, Screwdrivers, Rivet Squeezers, Drills, Grinders, Holsts, Sand Blast Guns; and Percussion Tools Such as Air Hammers, Chipping Hammers, Rivet Hammers, and Piercing Punches (Int. Cl. 7).  
First use June 19, 1967.

SN 288,314. Hesston Corporation, Inc., Hesston, Kans. Filed Jan. 8, 1968.

## TRIM STEERING

The term "Steering" is disclaimed apart from the mark as shown.  
For Power Steering Control for Farm Implements (Int. Cl. 7).  
First use 1959.

SN 289,602. New Jersey Machine Corporation, Hoboken, N.J. Filed Jan. 25, 1968.

## PONY PACER

Owner of Reg. No. 381,171.  
For Labeling Machines (Int. Cl. 7).  
First use on or about July 14, 1965.

SN 289,792. Economation, Inc., Indianapolis, Ind. Filed Jan. 29, 1968.



For Industrial Conveyor Systems and Apparatus—Namely, Powered Roller Conveyors (Int. Cl. 7).  
First use Apr. 1, 1965.

SN 289,957. Automotive Devices Company of Pennsylvania, Philadelphia, Pa. Filed Jan. 31, 1968.

## ADCO

For Rebuilt Automotive Parts—Namely, Carburetors, Fuel Pumps, Water Pumps, Clutch Assemblies, and Clutch Plates (Int. Cl. 12).  
First use Jan. 31, 1945.

SN 301,598. United States Gear Corporation, Chicago, Ill. Filed June 28, 1968.

GENUINE



Applicant disclaims the words "Genuine" and "Gear" apart from the mark as shown.  
For Spur, Helical, Spiral, Bevel, and Spiral Bevel Gears (Int. Cl. 7).  
First use on or about Sept. 1, 1963.



**Class 26—Measuring and Scientific Appliances**

SN 268,502. Koyu International, Inc., Los Angeles, Calif. Filed Apr. 6, 1967.

**VIXEN**

For Optical Products and Photographic Accessories—Namely, Binoculars, Monoculars, Microscopes, Telescopes, Carrying Cases for Photographic Use, Tripods, Leather Bags for Photographic Use, Lens Filters, Lens Hoods, Camera Timers, Snap Bands, Remote Control Releases, Light Bars, Photographic Flash Units, Photographic Printers, Photographic Masks, Focus Scopes, Film Negative Carriers, Film Clips, and Splitters (Int. Cl. 9).

First use Nov. 30, 1961.

SN 274,457. Polan Industries Incorporated, Huntington, W. Va. Filed June 21, 1967.

**POLAN**

Owner of Reg. Nos. 428,816, 429,208, and 431,130. For Sunglasses and Magnifying Glasses (Int. Cl. 9). First use at least as early as 1945, on magnifying glasses.

SN 275,860. Clifford E. Miller, d.b.a. James Remind-O-Timer Co., Oakland, Calif. Filed July 12, 1967.

**REMINO-TIMER**

For Electrically Operated Interval Timers (Int. Cl. 9). First use June 1953.

SN 276,152. Materials Research Corporation, Orangeburg, N.Y. Filed July 17, 1967.

**MULTIZONE I**

For Apparatus for Zone Refining, Zone Leveling, Normal Freezing and Crystal Growth of Organic and Inorganic Chemicals (Int. Cl. 9). First use Sept. 30, 1966.

SN 276,669. William H. Johnston Laboratories, Inc., Baltimore, Md. Filed July 24, 1967.

**BETA LOGIC**

For Gas Counting Instruments—Namely, Gas Proportional Counters, Guard Ring Counters, and Analyzers (Int. Cl. 9). First use on or about June 20, 1964.

SN 283,150. Phoenix Precision Instrument Company, Philadelphia, Pa. Filed Oct. 23, 1967.

**VARIPUMP**

For Positive Pressure Liquid Proportioning Pumps (Int. Cl. 9). First use Jan. 29, 1965.

SN 283,550. Pavelle Limited, Epsom, Surrey, England. Filed Oct. 27, 1967.

**AUTOMATRON**

Owner of British Reg. No. 910,080, dated May 31, 1967. For Photographic Printers, Photographic Enlargers, Photographic Processors, and Parts and Components Thereof (Int. Cl. 9).

SN 285,947. Sperry Rand Corporation, New York, N.Y. Filed Nov. 30, 1967.

**VIS-U-TRIEVER**

For Mechanized Visual Apparatus for Storing and Retrieving Information (Int. Cl. 9). First use Feb. 6, 1967.

SN 287,368. Lear Siegler, Inc., Grand Rapids, Mich. Filed Dec. 21, 1967.



The words "Failure Free Warranty" are disclaimed apart from the mark as shown, with all common law rights, if any, subsisting in the mark in its entirety hereby reserved.

For Aircraft Heading and Attitude Reference Systems Providing Roll, Pitch and Heading Information Outputs for Aircraft Autopilot, Display, Fire Control, Navigation, Radar, Weapon Delivery, and Like Aircraft Subsystems (Int. Cl. 9). First use during September 1964.

SN 291,203. Standard Memories, Inc., Santa Ana, Calif. Filed Feb. 15, 1968.

**MICRA-STOR**

For Memory Systems for Use in Computer Systems With Cores, Films, or Plated Wire (Int. Cl. 9). First use Feb. 28, 1967.

**Class 27—Horological Instruments**

SN 273,827. Fabrique d'Horlogerie Lemanla Lugrin S.A., d.b.a. Lemanla Watch Co. Lugrin Ltd., Orient, Switzerland. Filed Apr. 25, 1968.

**SNAP MASTER**

Owner of Swiss Reg. No. 223,531, dated Feb. 1, 1967. For Stopwatches (Int. Cl. 14).

SN 281,204. Kabushiki Kaisha Hattori Toketen, Chuo-ku, Tokyo, Japan. Filed Sept. 26, 1967.



For Watches, Clocks, and Parts Thereof (Int. Cl. 14). First use December 1965; in commerce Jan. 21, 1966.

SN 281,205. Kabushiki Kaisha Hattori Toketen, Chuo-ku, Tokyo, Japan. Filed Sept. 26, 1967.



For Watches, Clocks, and Parts Thereof (Int. Cl. 14). First use December 1965; in commerce Jan. 21, 1966.

SN 289,417. Palmer Sales Corporation, New York, N.Y. Filed Jan. 23, 1968.

**CHRONOVAC**

For Watches (Int. Cl. 14). First use Jan. 16, 1968.

SN 289,418. Palmer Sales Corporation, New York, N.Y. Filed Jan. 23, 1968.

**AQUAVAC**

For Watches (Int. Cl. 14). First use Jan. 16, 1968.

SN 290,102. Moskovitz & Gluck, Inc., New York, N.Y. Filed Feb. 1, 1968.



For Watches (Int. Cl. 14). First use July 15, 1967.

SN 296,444. Moskovitz & Gluck, Inc., New York, N.Y. Filed Apr. 24, 1968.

**RIVITA**

For Watches (Int. Cl. 14). First use Jan. 3, 1968.

SN 301,879. Helzberg's Diamond Shops, Inc., Kansas City, Mo. Filed July 3, 1968.



Owner of Reg. No. 852,718. For Watches (Int. Cl. 14). First use May 2, 1968.

**Class 28—Jewelry and Precious-Metal Ware**

SN 264,016. British Silverware Limited, London, England. Filed Feb. 6, 1967.

**ELKINGTON**

Owner of British Reg. No. 4,312, dated Mar. 28, 1876; and U.S. Reg. No. 377,274. For Precious Metal—Namely, Hollow Ware, Tableware, and Flatware (Int. Cls. 8 and 14).

**Class 29—Brooms, Brushes, and Dusters**

SN 269,593. Zenith Radio Corporation, Chicago, Ill. Filed Apr. 19, 1967.

**ZENITH**

Owner of Reg. Nos. 164,341, 828,809, and others. For Phonograph Needle Cleaning Brushes (Int. Cl. 21). First use at least as early as 1963.

SN 290,105. Pellon Corporation, New York, N.Y. Filed Feb. 1, 1968.

**MIGHTY WIPE**

The word "Wipe" is disclaimed apart from the mark as shown. For Chamolite-Like Wiping Cloths and Household Cleaning Cloths (Int. Cl. 21). First use Jan. 22, 1968.

**Class 30—Crockery, Earthenware, and Porcelain**

SN 302,561. M. Fortunoff of Westbury Corp., Westbury, N.Y. Filed July 12, 1968.

**2ND CHOICE**

For Dinnerware and Tableware Made of Ceramic Ware, Earthenware, and Chinaware (Int. Cl. 21). First use on or about Apr. 24, 1968.

**Class 31—Filters and Refrigerators**

SN 262,110. American Dairy Queen Corporation, Minneapolis, Minn. Filed Jan. 9, 1967.



Owner of Reg. No. 814,990. For Refrigerators and Walk-In Cooling Units (Int. Cl. 11). First use Jan. 15, 1964.

SN 266,818. Wix Corporation, Gastonia, N.C. Filed Mar. 15, 1967.

**THE GOLD STANDARD IN FILTRATION**

The word "Filtration" is disclaimed apart from the mark as shown. For Filters for Air and/or Liquids, and Replacement Cartridges for Filters (Int. Cl. 11). First use Feb. 25, 1962.



SN 269,278. Andex Corporation, Rochester, N.Y. Filed Apr. 17, 1967.

## FOR THE HOSTESS OF GOOD TASTE

For Coffee Filters (Int. Cl. 11).  
First use Aug. 20, 1962.

SN 264,949. Tenney Engineering, Inc., Union, N.J. Filed Nov. 15, 1967.

## HERMETICCOOL

For Refrigerators (Int. Cl. 11).  
First use May 1967.

SN 302,599. Neotek Associates, Miami, Fla. Filed July 17, 1968.

## NEOTEK/CRYSTAL SEA

For Aquarium Filters (Int. Cl. 11).  
First use May 22, 1968.

### Class 32 — Furniture and Upholstery

SN 269,235. The Tappan Company, Mansfield, Ohio. Filed Apr. 14, 1967.

## DESIGNER

For Kitchen Cabinets (Int. Cl. 20).  
First use on or about Jan. 1, 1967.

SN 273,503. Jackson Exit Device Corporation, Los Angeles, Calif. Filed June 9, 1967.

## MAGIC-AISLE

For Storage Systems Comprising Movable Cabinets and Shelving (Int. Cl. 20).  
First use Oct. 21, 1966.

SN 279,809. Colonial Latex Cushion Inc., Buffalo, N.Y. Filed Sept. 7, 1967.



For Polyurethane Foam Cushions for Use as Pillows, Padded Beds for Station Wagons, Stadium Cushions or Seat Pads (Int. Cl. 20).  
First use Mar. 1, 1966.

SN 286,881. Estey Corporation, Red Bank, N.J. Filed Dec. 14, 1967.

## VISTABASE

For Office and Institutional Library Equipment, i.e., Bookstacks, Carrels, Card Catalog Cases, and Component Parts Thereof (Int. Cl. 20).  
First use in or about November 1965.

SN 291,287. Re-Ly-On Metal Products, Inc., Brooklyn, N.Y. Filed Feb. 16, 1968.

## PLAYMATE

For Adjustable Table (Int. Cl. 20).  
First use Jan. 2, 1968.

SN 291,288. Re-Ly-On Metal Products, Inc., Brooklyn, N.Y. Filed Feb. 16, 1968.

## VERSA-MAGIC

Owner of Reg. No. 622,713.  
For Adjustable Table (Int. Cl. 20).  
First use Jan. 2, 1968.

SN 291,401. International Factory Sales Service Ltd., Vancouver, British Columbia, Canada. Filed Feb. 19, 1968.



For Sewing Machine Cabinets (Int. Cl. 20).  
First use in or about February 1965; in commerce in or about February 1965.

### Class 33 — Glassware

SN 301,880. Helzberg's Diamond Shops, Inc., Kansas City, Mo. Filed July 3, 1968.



Owner of Reg. No. 852,718.  
For Drinking Glasses (Int. Cl. 21).  
First use Apr. 8, 1968.

### Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 262,109. American Dairy Queen Corporation, Minneapolis, Minn. Filed Jan. 9, 1967.



Owner of Reg. No. 814,990.  
For Frying and Cooking Units, Griddles, Hot Plates, and Food Warmers (Int. Cl. 11).  
First use Jan. 15, 1964.

SN 268,765. Research Products Corporation, Madison, Wis. Filed Apr. 10, 1967.

## WET-PAK

For Removable, Replaceable Gas-Liquid Contact Assembly for Use With Air Conditioning Equipment Such as Humidifiers and Evaporative Coolers (Int. Cl. 11).  
First use Mar. 8, 1967.

SN 271,938. Gulf Oil Corporation, Pittsburgh, Pa. Filed May 19, 1967.



The drawing is lined for the colors orange and blue. Owner of Reg. No. 621,850.  
For Oil Burners and Oil Powered Water Heaters (Int. Cl. 11).  
First use at least as early as Sept. 3, 1964, on oil burners.

SN 272,286. Liquid Carbonic Corporation, Chicago, Ill. Filed May 24, 1967.



For Flux Cored Welding Electrode Wire (Int. Cl. 6).  
First use Dec. 5, 1966.

SN 276,826. Drum Fire, Inc., Tuckahoe, N.Y. Filed July 26, 1967.

## DRUM FIRE

For Electric Flame Simulators for Use in Fireplaces (Int. Cl. 11).  
First use June 1954.

SN 294,238. PPG Industries, Inc., Pittsburgh, Pa., by change of name from Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed Mar. 27, 1968.



Owner of Reg. Nos. 847,608, 848,833, and others.  
For Air Transfer Ducts and Glass-Ceramic Components for Use in Range Tops, Oven Liners and Windows, High Intensity Heater and Lighting Fixture Covers, Heat Exchangers, Surface Heating Units, and the Like (Int. Cl. 11).  
First use at least as early as Feb. 16, 1968.

### Class 36 — Musical Instruments and Supplies

SN 241,156. Antonio Ochoa Lopez, d.b.a. Popo Records, La Puente, Calif. Filed Mar. 16, 1966.



Applicant disclaims the word "Records" apart from the mark as shown. The drawing is lined for the colors blue and grey.  
For Phonograph Records (Int. Cl. 9).  
First use Feb. 17, 1966.

SN 243,240. The Fred Gretsch Company, Inc., New York, N.Y., by assignment and change of name from The Fred. Gretsch Mfg. Co., Brooklyn, N.Y. Filed Apr. 12, 1966.

## TENNESSEAN

For Guitar and Amplifier Therefor (Int. Cls. 9 and 15).  
First use Nov. 25, 1958.

SN 243,241. The Fred Gretsch Company, Inc., New York, N.Y., by assignment and change of name from The Fred. Gretsch Mfg. Co., Brooklyn, N.Y. Filed Apr. 12, 1966.

## NASHVILLE

For Guitar and Amplifier Therefor (Int. Cls. 9 and 15).  
First use Mar. 30, 1966.

SN 262,723. Transcriber Company, Inc., Attleboro, Mass. Filed Jan. 17, 1967.



The word "Diamond" is disclaimed apart from the mark. For Phonograph Needles (Int. Cl. 9).  
First use Nov. 3, 1966.

SN 267,245. Rene Grinan, d.b.a. Recca Records, Hoboken, N.J. Filed Mar. 21, 1967.



Applicant disclaims the word "Records," a name for the goods, and also representations of an outline map over a phonograph record apart from the mark as shown.  
For Phonograph Records (Int. Cl. 9).  
First use Dec. 5, 1966.

### Class 37 — Paper and Stationery

SN 269,471. Swanee Paper Corporation, New York, N.Y. Filed Apr. 18, 1967.

## SEVENTEEN

For Paper Towels and Napkins; Facial and Bathroom Tissue (Int. Cl. 16).  
First use Sept. 24, 1965.

SN 278,866. Brown Company, Holyoke, Mass. Filed Aug. 23, 1967.

## TAROTEXT

For Cover Paper and Text Paper (Int. Cl. 16).  
First use Apr. 4, 1967.

SN 250,214. Curwood, Inc., New London, Wis. Filed Sept. 13, 1967.

## CURLON

For Laminated Packaging Film (Int. Cl. 16).  
First use Sept. 1, 1967.



SN 233,648. Fabrique Suisse de Crayons Caran d'Ache  
Oct. 30, 1967.

**FIBRALO**

Priority claimed under Sec. 44(d) on Swiss Reg. No. 225,455, dated May 19, 1967.  
For Pencils, Leads, Mechanical Pencils, Ball-Point Pens, Fibre-Stylographs, Fibre-Pencils, and Chalk (Int. Cl. 16).

SN 235,551. Industrial-Automotive, Inc., Newark, Ohio. Filed Nov. 24, 1967.



The term "Inc." is disclaimed apart from the mark as shown.  
For Stock Control Cards (Int. Cl. 16).  
First use June 1, 1960.

SN 236,048. Texttron Inc., Providence, R.I. Filed Dec. 1, 1967.

**DECOR**

For Desk Stands for Writing Instruments, Sockets for Said Desk Stands, Fountain Pens, Ballpoint Pens, Mechanical Pencils, and Marking Pens (Int. Cl. 16).  
First use Nov. 15, 1966.

SN 238,143. U.S. Plywood-Champion Papers Inc., Hamilton, Ohio. Filed Jan. 4, 1968.

**KOTE 70**

The term "Kote" is disclaimed except in connection with the mark.  
For Printing Papers—Namely, Coated Printing Papers (Int. Cl. 16).  
First use Dec. 8, 1967.

SN 297,632. Olin Mathieson Chemical Corporation, New York, N.Y. Filed May 8, 1968.

**NĪLO-PAKE**

For Fine Paper (Int. Cl. 16).  
First use May 26, 1967.

**Class 38—Prints and Publications**

SN 278,193. Continental Oil Company, Ponca City, Okla. Filed Aug. 14, 1967.

**BRANDER**

For Company Business Magazine (Int. Cl. 16).  
First use June 27, 1967.

SN 232,579. Jason Halley, d.b.a. Jason Halley Photography, Los Angeles, Calif. Filed Oct. 16, 1967.

**SELECTIVE EYE**

For Photographic Prints and Transparencies, Both Black and White and Color (Int. Cls. 9 and 16).  
First use Nov. 24, 1958.

SN 284,260. Western Art, Inc., Colorado Springs, Colo. Filed Nov. 6, 1967.



For Greeting Cards and Advertising Posters (Int. Cl. 16).  
First use Aug. 24, 1967.

SN 286,174. The Photo-Matic Corporation, Chicago, Ill. Filed Dec. 4, 1967.

**COLORMATIC**

Owner of Reg. Nos. 521,595, 701,402, and 838,405.  
For Color Photographs Used Entirely for Commercial Purposes, Either Singly or in Combination—Namely, Color Prints and Enlargements, Color Photographs, Color, Photo-murals, and Color Photo Tip-Ons (Int. Cl. 16).  
First use Nov. 13, 1967.

SN 286,859. United Technical Publications, Inc., Garden City, N.Y. Filed Dec. 13, 1967.

**ELECTRONIC PRODUCTS**

Owner of Reg. No. 718,958.  
For Magazine (Int. Cl. 16).  
First use March 1960.

SN 290,477. Deere & Company, Moline, Ill. Filed Feb. 7, 1968.

**EL SURCO**

The translation of "El Surco" is "the furrow." Owner of Reg. No. 234,555.  
For Bi-Monthly Trade Magazine (Int. Cl. 16).  
First use on or about Nov. 1, 1957.

SN 291,880. Walter Lantz Productions, Inc., Hollywood, Calif. Filed Feb. 26, 1968.

**WALTER LANTZ**

"Walter Lantz" is a living individual, founder and president of Walter Lantz Productions, Inc., whose consent is of record.  
For Publications, Particularly Children's Books, Cartoon Strips, Cartoon Story Books, Coloring Books, and Picture Cards (Int. Cl. 16).  
First use at least as early as 1944, on cartoon strips.

SN 292,475. Fisher Scientific Company, Pittsburgh, Pa. Filed Mar. 5, 1968.

**LAB REPORTER**

For Periodic Sales Promotional Bulletins Containing Information Regarding Applicant's Products (Int. Cl. 16).  
First use May 1967.

SN 292,476. Fisher Scientific Company, Pittsburgh, Pa. Filed Mar. 5, 1968.

**MED-LAB REPORTER**

For Periodic Sales Promotional Bulletins Containing Information Regarding Applicant's Products (Int. Cl. 16).  
First use May 1967.

SN 292,795. The Lawyers' Co-Operative Publishing Company, Rochester, N.Y. Filed Mar. 8, 1968.

**AQUEDUCT BOOKS**

Applicant disclaims the exclusive right to the word "Books" apart from the mark.  
For Books (Int. Cl. 16).  
First use in or about May 1965.

**Class 39—Clothing**

SN 285,780. Wembley, Inc., New Orleans, La. Filed Nov. 28, 1967.

**EXCHECQUER COLLECTION**

For Neckwear (Int. Cl. 25).  
First use Oct. 4, 1967.

SN 288,651. Toni Lynn Maternities, Inc., New York, N.Y. Filed Jan. 11, 1968.

**TONI LYNN**

The name "Toni Lynn" is fanciful.  
For Women's Dresses and Sportswear—Namely, Shorts, Slacks, Pants, Pants-Tops, Dresses, Skirts, Suits, and Vests, Blouses and Shirts (Int. Cl. 25).  
First use Sept. 8, 1954.

SN 289,159. Trattoria, Inc., New York, N.Y. Filed Jan. 19, 1968.



"Charlie Brown" is the name of the proprietor of the "Railway Tavern" in London, England, now deceased. The lining shown on the drawing forms a part of the mark.  
For Men's Sport and Dress Shirts (Int. Cl. 25).  
First use Dec. 19, 1967.  
Subj. to Intf. with SN 291,930.

SN 289,511. Koret of California, Inc., San Francisco, Calif. Filed Jan. 24, 1968.

**DURAWOOL**

For Women's Garments—Namely, Skirts and Pants (Int. Cl. 25).  
First use Aug. 16, 1967.

SN 290,120. The Woodlin Shirt Corp., New York, N.Y. Filed Feb. 1, 1968.



The word "Fashion" is disclaimed apart from the mark as shown.  
For Men's Shirts, Trousers, Slacks, Neckties, Suits, Handkerchiefs, and Ascots (Int. Cl. 25).  
First use Oct. 31, 1967.

SN 290,631. B. W. Mayer & Cohan, Ltd., Cincinnati, Ohio. Filed Feb. 8, 1968.

**BEAU BRUMMEL**

The name "Beau Brummel" is fanciful; it was a pseudonym of an Englishman whose name was George Bryan Brummel. Owner of Reg. Nos. 521,764, 546,185, and 576,375.  
For Neckties, Hosiery, Comberbunds, Scarfs, Mufflers, Ascots, and Handkerchiefs (Int. Cl. 25).  
First use Dec. 28, 1920, on neckties.

SN 291,930. Woolrich Woolen Mills, Woolrich, Pa. Filed Feb. 26, 1968.

**CHARLEY BROWN**

The name "Charley Brown" is purely fanciful.  
For Lined Outer Shirts (Int. Cl. 25).  
First use Aug. 12, 1966.  
Subj. to Intf. with SN 289,159.

SN 294,976. Silver Mfg. Co., Inc., Michigan City, Ind. Filed Apr. 4, 1968.

**SIL-PREST**

For Men's Trousers (Int. Cl. 25).  
First use prior to August 1966.

SN 295,242. Mamiye Brothers Inc., New York, N.Y. Filed Apr. 9, 1968.

**HADDON HALL**

For Shirts, Pants, Knit Polo Shirts, Pajamas, and Robes (Int. Cl. 25).  
First use May 10, 1967.

SN 295,514. Crestknt (Australia) Proprietary Limited, Hawthorn, Victoria, Australia. Filed Apr. 12, 1968.



No claim is made to the word "Australia" and the representation of the map of Australia, separately and apart from the mark. Owner of U.S. Reg. No. 720,378.

For Men's and Women's Knitted Sweaters, Cardigans and Shirts; Men's Knitted Underwear; Women's Knitted Dresses, Women's Skirts; and Men's and Women's Slacks (Int. Cl. 25).  
First use September 1944; in commerce Aug. 15, 1967.

SN 296,059. Benjamin Harrison Weiss, Inc., New York, N.Y. Filed Apr. 19, 1968.

**"STEP UP TO DOWN!"**

For Gloves, and Men's, Women's and Children's Jackets (Int. Cl. 25).  
First use Jan. 15, 1968.

SN 296,060. Wembley, Inc., New Orleans, La. Filed Apr. 19, 1968.

**BELLY BUSTER**

For Men's Neckwear (Int. Cl. 25).  
First use Feb. 15, 1968.



SN 302,549. Wembley, Inc., New Orleans, La. Filed July 11, 1968.

## PRE-SOLD

For Neckwear (Int. Cl. 25).  
First use Jan. 22, 1952.

SN 303,640. Camp and McInnes, Inc., Reading, Pa. Filed July 26, 1968.

## SHAGGY KNIT

The term "Knit" is disclaimed apart from the mark as shown. Owner of Reg. No. 799,664.  
For Men's Hosiery (Int. Cl. 25).  
First use July 24, 1963.

## Class 40—Fancy Goods, Furnishings, and Notions

SN 301,808. Fashion Tress, Inc., Miami Beach, Fla. Filed July 2, 1968.

## SUPER SIXTY

For Ladies' Wigs and Hairpieces (Int. Cl. 26).  
First use on or about Apr. 1, 1963.

## Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 281,277. Dynacor Manufacturing Company, Evanston, Ill. Filed Sept. 27, 1967.

## DYNACOR

For Linens—Namely, Towels, Bedsheets, Bed Underpads, Pillow Cases, and Blankets (Int. Cl. 24).  
First use on or about May 23, 1967.

SN 289,253. American Combining Company, Arverne, N.Y. Filed Jan. 22, 1968.

## AEROTRON

For Chemically Treated Textile Fabrics for Making Rainwear in the Form of Coats, and Jackets, for Sailcloth, Balloon Cloth and for Upholstery and Drapery Purposes (Int. Cl. 24).  
First use Dec. 26, 1968.

SN 291,133. Chatham Manufacturing Company, Elkin, N.C. Filed Feb. 15, 1968.

## WARMWEAVE

Owner of Reg. No. 721,382.  
For Blankets (Int. Cl. 24).  
First use Jan. 31, 1963.

SN 291,317. Herculex Protective Fabrics Corporation, Newark, N.J. Filed Feb. 19, 1968.

## HERCULEX

Owner of Reg. No. 792,008.  
For Plastic Laminated Synthetic Fabrics for Industrial, Agricultural, Institutional, Commercial, and Household Use (Int. Cl. 24).  
First use at least as early as Jan. 9, 1968.

SN 303,472. Deering Milliken, Inc., New York, N.Y. Filed July 24, 1968.

## MANEATER

For Textile Fabrics Made of Wool, Cotton and Synthetic Fibers, and Combinations Thereof (Int. Cl. 24).  
First use July 18, 1968.

## Class 44—Dental, Medical, and Surgical Appliances

SN 219,325. Clinical Products Inc., Blawnox, Pa. Filed May 20, 1965.

CP

For Mortuary Packs, Enema Sets, Douche Sets, Surgical Preparation Sets, Tube-Feeding Sets, Thermometers and Holders Therefor, Flatus Catch Sets, Fenestrated Towels, Surgical Dressing Sets, Suture Removal Sets, Irrigation Sets, Spinal Anesthesia and Puncture Sets, Gastric Analysis Sets, Aspiration Sets, Tracheotomy Care Sets, Medical Tubing and Accessories Therefor, Underwater Drainage Sets and Accessories, Plastic Containers and Holders Therefor, Catheters and Accessories Therefor, Bladder Irrigation Sets, Urine Specimen Collection Sets, and Catheterization Sets (Int. Cls. 5, 9, and 10).  
First use Mar. 24, 1964.

SN 277,193. Medco Products Company, Inc., Tulsa, Okla. Filed July 31, 1967.

## ACHILLEOMETER

For Electrical Equipment in the Medical Field for Diagnostic Purposes, for Use in Connection With the Body, Especially for the Testing of the Achilles Reflex (Int. Cl. 10).  
First use Nov. 18, 1963.

SN 280,327. Orthopedic Equipment Company, Inc., Bourbon, Ind. Filed Sept. 4, 1967.

## REDI-VACETTE

Owner of Reg. No. 748,121.  
For Apparatus for Draining Wounds by Negative Pressure, and Parts Thereof Comprising a Plastic Deformable Evacuator, Flexible Perforated Tubing, and Connectors (Int. Cl. 10).  
First use May 15, 1967.

SN 286,659. Fisons Pharmaceuticals Limited, Loughborough, England. Filed Dec. 11, 1967.

## SPINHALER

Owner of British Reg. No. BS58,967, dated Jan. 16, 1964.  
For Medical Apparatus—Namely, Inhalers for the Application of Drugs (Int. Cl. 10).

SN 287,461. Rolls Equipment, Inc., Elyria, Ohio. Filed Dec. 22, 1967.

Rolls

For Wheel Chairs, Wheel-Abouts, Walkers, Self-Propelled Carriages, Commodes and Toilet Chairs, as Well as Parts Therefor, for Use by Invalids and Incapacitated Persons (Int. Cls. 10 and 12).  
First use Sept. 25, 1967.

SN 287,870. American White Cross Laboratories, Inc., New Rochelle, N.Y. Filed Jan. 2, 1968.

## SAFETY-CENTER

For Prepared Cut Plastic Strip Bandages (Int. Cl. 5).  
First use Dec. 7, 1966.

SN 289,214. Schick Electric Inc., Lancaster, Pa. Filed Jan. 19, 1968.

## LADY SCHICK

For Facial Sauna (Int. Cl. 11).  
First use on or about June 12, 1967.

SN 290,648. Relaxacizor, Inc., Los Angeles, Calif. Filed Feb. 8, 1968.

Duo

For Battery Operated Electronic Muscle Body Stimulators Which Electronically Stimulate the Body Muscles (Int. Cl. 10).  
First use Nov. 11, 1964.

SN 290,727. Harry M. Devane, d.b.a. Thermapool, Ventura, Calif. Filed Feb. 9, 1968.

## THERMAPOOL

For Water-Operated Hydro-Massage Therapy Pools (Int. Cl. 10).  
First use Jan. 16, 1968.

SN 293,639. Thomas W. Oder, d.b.a. The Joy Co., White Hall, Va. Filed Mar. 19, 1968.

## JOYCO

For Hearing Aid (Int. Cl. 10).  
First use Feb. 1, 1968.

SN 294,506. Howmet Corporation, New York, N.Y. Filed Mar. 29, 1968.

## PORTO-VAC

For Portable Wound Suction Units (Int. Cl. 10).  
First use Mar. 7, 1968.

SN 294,665. Willy Rüsche, Rommelshausen, Germany. Filed Apr. 1, 1968.

## TRACHEOFLEX

Owner of German Reg. No. 841,371, dated Sept. 7, 1967.  
For Cannulas, Blocking Cuffs, Control Balloons, Connectors, Supporting Plates With Plastic Cylinders, Clamping Rings, Guiding Instruments, Cannula Straps, Special Valves, Air Supply Hoses, All Goods for Tracheotomy (Int. Cl. 10).  
First use 1967; in commerce 1967.

SN 295,545. Joseph Mullan, Baltimore, Md. Filed Apr. 12, 1968.

## TAMPETTE

For Tampons (Int. Cl. 5).  
First use October 1967.

SN 295,856. Sterilon Corporation, Braintree, Mass. Filed Apr. 17, 1968.



The drawing is lined for gold or ochre, but color is not claimed as a feature of the mark. Owner of Reg. Nos. 571,050 and 782,932.

For Medical Equipment—Namely, Blood Transfusion Sets, Including Needles; Intravenous Transfusion Sets; Medical Tubing and Plastic Connectors; Catheters; Clinical Packs; Urine Collecting Devices; Scalpels; Razors and Razor Blades; Irrigation and Catheter Trays, Containing Syringes and Gloves; Suture Removal Kits, Containing Forceps and Scissors; and Enema Administration Units (Int. Cl. 10).

First use Jan. 30, 1968; on or about Oct. 1, 1951, as to "Sterilon."

SN 295,956. Caryl Richards, Inc., New York, N.Y. Filed Apr. 18, 1968.

## SOME BUGS FLY / . . . OURS DRY!

For Portable Hair Dryers (Int. Cl. 11).  
First use July 21, 1967.

SN 296,295. Bio-Engineering Company, d.b.a. Berkeley Tonometer Company, Berkeley, Calif. Filed Apr. 23, 1968.

## VACURETTE

For Surgical Appliances—Namely, Vacuum Curettage Apparatus and Parts Therefor (Int. Cl. 10).  
First use Nov. 1, 1967.

## Class 45—Soft Drinks and Carbonated Waters

SN 256,693. Hi-Flavor Packing Corporation, Philadelphia, Pa. Filed Sept. 26, 1966.

PUNCH  
Pyki

The word "Punch" is disclaimed apart from the mark as shown.

For Fruit Juice Drink Comprising Several Natural Fruit Juices (Int. Cl. 32).  
First use at least as early as February 1966.

## Class 46—Foods and Ingredients of Foods

SN 278,085. The Borden Company, New York, N.Y. Filed Aug. 11, 1967.

Chick  
& dees

For Pretzel Snack (Int. Cl. 30).  
First use July 7, 1967.



SN 281,820. Quality Bakery Co., Columbus, Ohio. Filed Oct. 4, 1967.



No claim is made to the words "Frozen Pies." Owner of Reg. No. 769,264.  
For Frozen Fruits Pies and Frozen Mincemeat Pies (Int. Cl. 30).  
First use on or about Oct. 1, 1966.

SN 287,751. A. H. Morse Co., Brookline, Mass. Filed Dec. 28, 1967.

### CHATKA

Applicant claims use for the area comprising the states of Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, and Maine. Owner of Reg. No. 792,344.  
For Canned Seafood (Int. Cl. 29).  
First use on or about July 23, 1959.  
Subj. to concurrent use proceeding with Reg. No. 792,325.

SN 288,751. Mead Johnson & Company, Evansville, Ind. Filed Jan. 15, 1968.

### SKRAMS

For Imitation Scrambled Eggs Mix in Powdered Form (Int. Cl. 29).  
First use on or prior to Nov. 29, 1967.

SN 289,439. Hero Boy, Inc., New York, N.Y. Filed Dec. 28, 1967.



Applicant disclaims the pictorial representation of the goods, apart from the mark shown.  
For Italian-Type Sandwiches, Including a Six-Foot Party Sandwich (Int. Cl. 29).  
First use Mar. 28, 1956.

SN 289,845. Stonington Packing Co., Inc., Stonington, Maine. Filed Jan. 29, 1968.

### R.K.'S

For Canned Fish (Int. Cl. 29).  
First use 1952.

SN 290,322. Geo. I. Pett, Inc., Doylestown, Ohio. Filed Feb. 5, 1968.

### PETIT'S

For Frozen Chicken Pot Pie, Fully Cooked and Refrigerated Bar-B-Queed Chicken and Smoke Flavored Chicken, and Fresh Dressed Young Turkey (Int. Cl. 29).  
First use Sept. 16, 1957.

SN 292,698. The Kroger Co., Cincinnati, Ohio. Filed Mar. 7, 1968.

### STUART WHITNEY

The mark "Stuart Whitney" is entirely fanciful.  
For Candy (Int. Cl. 30).  
First use at least as early as Feb. 6, 1968.

SN 294,367. Black Diamond Cheese Limited, Belleville, Ontario, Canada. Filed Mar. 28, 1968.

### BLACK DIAMOND

Owner of U.S. Reg. Nos. 742,057 and 765,606.  
For Cheese (Int. Cl. 29).  
First use Oct. 24, 1933; in commerce Oct. 24, 1933.

SN 297,343. The Quaker Oats Company, Chicago, Ill. Filed May 6, 1968.



Applicant disclaims the word "Shake" apart from the mark shown. Owner of Reg. Nos. 707,265, 851,567, and others.  
For Ready-To-Eat Cereal in Liquid Form (Int. Cl. 30).  
First use Apr. 22, 1968.

SN 297,344. The Quaker Oats Company, Chicago, Ill. Filed May 6, 1968.



Owner of Reg. Nos. 707,265, 851,567 and others.  
For Ready-To-Eat Cereal in Liquid Form (Int. Cl. 30).  
First use Apr. 22, 1968.

SN 297,737. Diversified Packaging Service, Inc., Alliance, Ohio. Filed May 9, 1968.

### ROYAL GOLD

For Bread Base, Including Flours, Sugar, Yeast, Shortening With Mono and Diglycerides, Whey, Salt, Non-Fat Dry Milk, Egg Yolk, Dry Yeast, Yeast Food and Calcium Propionate; and Bread Made From Said Bread Base (Int. Cl. 30).  
First use Apr. 18, 1968.

SN 298,980. Van Buren Packing Company, Hartford, Mich. Filed May 23, 1968.

### DUTCH UNCLE

For Fresh Vegetables, Specifically Raw Potatoes (Int. Cl. 31).  
First use Mar. 6, 1968.

SN 299,067. The Coca-Cola Company, Atlanta, Ga. Filed May 27, 1968.

### BUTTER-NUT

Owner of Reg. Nos. 154,655, 604,536, and 617,932.  
For Instant Hot Cocoa Mix (Int. Cl. 30).  
First use Oct. 7, 1963.

### Class 49 — Distilled Alcoholic Liquors

SN 301,314. Stitzel-Weller Distillery, Louisville, Ky. Filed June 25, 1968.

### AUDUBON BOTTLE

Applicant disclaims the word "Bottle" apart from the mark as shown.  
For Whiskey (Int. Cl. 33).  
First use Apr. 9, 1968.

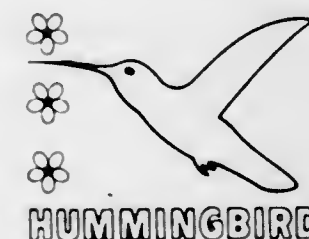
### Class 50 — Merchandise Not Otherwise Classified

SN 293,524. Jifasteners Limited, Brampton, Ontario, Canada. Filed Mar. 18, 1968.



For Bag Closures Which Consist of Resilient Plastic Tags Split on One Side (Int. Cl. 20).  
First use 22, 1968; in commerce Jan. 22, 1968.

SN 295,796. Hawk Model Company, Chicago, Ill. Filed Apr. 17, 1968.



For Hobby or Craft Kits Comprising Prepunched Backing Strips and Striking Materials for Making Decorative Pictures or Plaques (Int. Cl. 28).  
First use Mar. 11, 1968.

### Class 51 — Cosmetics and Toilet Preparations

SN 273,787. Pack Roads, Inc., Westport, Conn. Filed June 13, 1967.

### OLD ENGLISH ELIXIR FOR GENTLEMEN

Applicant disclaims "Elixir for Gentlemen" apart from the mark as shown.  
For Cologne (Int. Cl. 3).  
First use at least as early as Nov. 16, 1966.

SN 276,672. Luxuria Cosmetics, Ltd., New York, N.Y. Filed July 24, 1967.

### OASIS

For Night Cream, Bath Oil, Body Lotion, Moisturizing Cream, Cologne, Perfume, Hand Cream, Lipstick, Skin Lotion for Face and Neck, Face Cream, Cleansing Cream, Astringent for Face and Neck, Toilet Water, and Face Powder (Int. Cl. 3).  
First use July 10, 1967.

SN 278,246. Phillips Roxane Laboratories, Inc., New York, N.Y., assignee of Phillips Roxane, Inc., New York, N.Y. Filed Aug. 14, 1967.

### REMBRANDT SQUARE

For Pre-Shave and After-Shave Lotions (Int. Cl. 3).  
First use July 31, 1967.

SN 280,431. L'Oreal, Paris, France. Filed Sept. 15, 1967.

### SULLEGE

The word "Sullege" has no meaning in the French language, but is fanciful. Owner of French Reg. No. 719,735, dated Feb. 24, 1967.  
For Hair Setting Lotion (Int. Cl. 3).

SN 281,101. Nutrilite Products, Inc., Buena Park, Calif. Filed Sept. 25, 1967.

### CALIBER

Owner of Reg. No. 705,347.  
For Pre-Electric and After Shave Lotion, Shaving Soap, All-Purpose Skin Lotion, Deodorant/Antiperspirant, and Hair Dressing (Int. Cls. 3 and 5).  
First use May 12, 1960.

SN 281,726. Sybil Ives Incorporated, Yonkers, N.Y. Filed Oct. 3, 1967.

structure



Owner of Reg. No. 791,543.  
For Hair Filler (Int. Cl. 3).  
First use May 8, 1964.

SN 283,903. Kenneth Beauty Salons & Products, Inc., New York, N.Y. Filed Nov. 1, 1967.

### ON YOUR MARK

For Blemish Powder (Int. Cl. 3).  
First use Sept. 12, 1967.

SN 286,762. Richard Hudnut, Morris Plains, N.J. Filed Dec. 12, 1967.

### PSYCHEDELIC

For Hair Coloring (Int. Cl. 3).  
First use Dec. 5, 1967.

SN 286,763. Richard Hudnut, Morris Plains, N.J. Filed Dec. 12, 1967.

### PSYCHEDELITE

For Hair Coloring (Int. Cl. 3).  
First use Dec. 5, 1967.



SN 287,991. Constance Carroll Inc., Long Island City, N.Y.  
Filed Jan. 2, 1968.

## CONSTANCE CARROLL

The name "Constance Carroll" is fictitious.  
For Talcum Powder, Dusting Powder, Nail Polish, Eye  
Make-Up, Face Powder, Lipsticks, Mascara, Eyebrow Pencils,  
Cake Make-Up, and Liquid Make-Up (Int. Cl. 3).  
First use Dec. 21, 1967.

SN 291,355. Colgate-Palmolive Company, New York, N.Y.  
Filed Feb. 19, 1968.

## LOOK TWICE

Owner of Reg. No. 805,759.  
For Hair Color (Int. Cl. 3).  
First use Jan. 30, 1968.

SN 292,224. Adele Simpson, Inc., New York, N.Y. Filed  
Feb. 29, 1968.

## ADELE SIMPSON

*College*  
THE FASHION FRAGRANCE

"Adele Simpson" identifies a living individual whose con-  
sent is of record. No claim is made to the word "Fragrance"  
apart from the mark as shown. Owner of Reg. Nos. 810,247  
and 814,666.

For Perfume, Cologne, Perfumed Body Oil, and Talcum  
Powder (Int. Cl. 3).  
First use June 1967.

SN 297,221. Seymour Fox, Inc., New York, N.Y. Filed May  
2, 1968.

## THINKOOL

For Cologne (Int. Cl. 3).  
First use Apr. 5, 1968.

SN 299,075. Chas. Pfizer & Co., Inc., New York, N.Y. Filed  
May 27, 1968.

## LOVE STORY LOOK

For Toilet Water and Make-Up Foundation (Int. Cl. 3).  
First use Apr. 26, 1968.

SN 299,157. "42" Products, Ltd., Inc., Santa Monica, Calif.  
Filed May 27, 1968.

## MR. ROBERTS

For Hair Spray (Int. Cl. 3).  
First use Aug. 27, 1962.

SN 301,444. Parfums Schlaparelli, Inc., New York, N.Y.  
Filed June 26, 1968.

## SPRING 'N SUMMER

Owner of Reg. No. 648,439.  
For Cologne (Int. Cl. 3).  
First use Mar. 7, 1956.

SN 302,894. Elizabeth Hartley, Inc., New York, N.Y. Filed  
July 17, 1968.

## GLEAM TEAM

For Face Make-Up, Eye Make-Up, Nail Polish, Lipstick,  
and Perfume (Int. Cl. 3).  
First use May 1968.

## Class 52 — Detergents and Soaps

SN 281,097. The Maltby Company, Culver City, Calif. Filed  
Sept. 25, 1967.

LIFEGUARD  
**VISION**

For Glass Cleaner (Int. Cl. 3).  
First use May 7, 1967.

SN 284,717. Nutrilite Products, Inc., Buena Park, Calif.  
Filed Nov. 13, 1967.

## CALIBER

Owner of Reg. No. 705,347.  
For Hair Shampoo (Int. Cl. 3).  
First use June 6, 1965.

SN 286,913. The Diversey Corporation, Chicago, Ill. Filed  
Dec. 14, 1967.

## DIVER STEAM

Applicant disclaims the word "Steam" apart from the mark  
as shown. Owner of Reg. No. 744,971.  
For Liquid Steam Cleaner (Int. Cl. 1).  
First use Sept. 21, 1967.

SN 288,043. B. E. Williams, La Grange Park, Ill. Filed Jan.  
3, 1968.

## SHROUD LIFE

Applicant disclaims the word "Shroud" apart from the  
mark as a whole. Owner of Reg. Nos. 773,344, 786,140, and  
792,449.  
For Liquid Cleaner Used in Laundering Shrouds for Animal  
Carcasses and Having Water-Softening, Shroud-Softening, and  
Moisture-Retaining Properties (Int. Cl. 3).  
First use Dec. 21, 1965.

SN 300,234. Premier Industrial Corporation, Cleveland,  
Ohio. Filed June 12, 1968.

## MOLECTRA

For Cleaning Composition for Electric Motors and Parts  
(Int. Cl. 3).  
First use Dec. 13, 1967.

SN 303,744. The Gillette Company, Boston, Mass. Filed  
July 29, 1968.

## ALI BABA

For Dandruff Treatment Shampoo (Int. Cl. 3).  
First use Apr. 11, 1968.

SN 303,856. Creative Development Corp., Wilmington, Del.  
Filed June 13, 1968.

**"Better Way"**



For All-Purpose Household Cleaner (Int. Cl. 3).  
First use Aug. 24, 1967.

## SERVICE MARKS

### Class 100 — Miscellaneous

SN 246,099. Port-O-Fino, Redondo Beach, Calif. Filed May  
19, 1966.

## PORTOFINO

The word "Portofino" which comprises the mark has mean-  
ing in the French, Spanish, Italian and Portuguese languages.  
The English equivalent is the same in each language: "Porto"  
means "harbor" and "Fino" means "fine."

For Small Boat Slip Rental Services and Hotel, Motel,  
Apartments, Lounge, and Restaurant Services in Connection  
Therewith (Int. Cl. 42).  
First use November 1960.

SN 250,538. Thrift Drug Company of Pennsylvania, Pitts-  
burgh, Pa. Filed July 18, 1966.



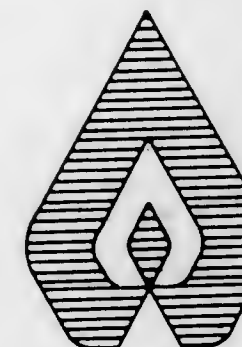
Applicant claims no exclusive rights in the representation  
of the mortar and pestle apart from the mark as shown.  
For Pharmaceutical Prescription Services (Int. Cl. 42).  
First use on or prior to July 25, 1961.

SN 265,094. National Footwear Manufacturers Association,  
New York, N.Y. Filed Feb. 20, 1967.



The drawing is lined for the colors red and gray.  
For Association Services—Namely, Services to Advance the  
Interest of U.S. Manufacturers of Footwear (Int. Cl. 42).  
First use Feb. 1, 1965.

SN 279,521. Atlanta Gas Light Company, Atlanta, Ga. Filed  
Sept. 1, 1967.



The drawing is lined for the color blue.  
For Public Utility Gas Services (Int. Cl. 42).  
First use Apr. 17, 1967.

SN 287,036. National Basketball Association, New York,  
N.Y. Filed Dec. 15, 1967.

## NBA

For Association Services—Namely, Promoting the Interest  
of Basketball Clubs and Promoting Interest in the Game of  
Basketball (Int. Cl. 42).

First use at least as early as Nov. 1, 1954.

SN 288,529. James Restaurants, Inc., Toledo, Ohio. Filed  
Jan. 15, 1968.

## YOUR OASIS IN THE NIGHT

For Restaurant Services (Int. Cl. 42).  
First use Dec. 19, 1962.

SN 303,021. Hotel Circle, Inc., San Diego, Calif. Filed July  
18, 1968.

## LE BARON

For Hotel and Restaurant Services (Int. Cl. 42).  
First use Apr. 18, 1968.

## Class 101 — Advertising and Business

SN 271,476. J & H International Corporation, Chicago, Ill.  
Filed May 15, 1967.

## SPELL GOLD

For Sales Promotion for Retail Establishments through  
the Organization and the Conducting of Promotional Games  
(Int. Cl. 35).  
First use Oct. 21, 1965.

SN 271,477. J & H International Corporation, Chicago, Ill.  
Filed May 15, 1967.

## GANGBUSTERS

For Sales Promotion for Retail Establishments through  
the Organization and the Conducting of Promotional Games  
(Int. Cl. 35).  
First use Sept. 8, 1966.

SN 271,481. J & H International Corporation, Chicago, Ill.  
Filed May 15, 1967.

## PAY DAY

For Sales Promotion for Retail Establishments through  
the Organization and the Conducting of Promotional Games  
(Int. Cl. 35).  
First use Sept. 15, 1966.

SN 271,692. Continental Trading Post, Isabella, Mo. Filed  
May 17, 1967.

## CONTINENTAL TRADING POST

For Importing and Exporting for Others (Int. Cl. 35).  
First use May 19, 1964.



SN 271,800. J & H International Corporation, Chicago, Ill.  
Filed May 18, 1967.

## REWARD

For Sales Promotion for Retail Establishments through the Organization and the Conducting of Promotional Games (Int. Cl. 35).  
First use Mar. 13, 1966.

SN 271,802. J & H International Corporation, Chicago, Ill.  
Filed May 18, 1967.

## WHEEL 'N DEAL

For Sales Promotion for Retail Establishments through the Organization and the Conducting of Promotional Games (Int. Cl. 35).  
First use Mar. 16, 1967.

SN 271,803. J & H International Corporation, Chicago, Ill.  
Filed May 18, 1967.

## FOLDING MONEY

For Sales Promotion for Retail Establishments through the Organization and the Conducting of Promotional Games (Int. Cl. 35).  
First use Jan. 5, 1966.

SN 283,032. Portland Cement Association, Chicago, Ill. Filed Oct. 20, 1967.



For Promoting the Use of Cement and Concrete Manufactured by Members of Applicant's Association by Rendering Technical Assistance to Builders Using the Aforementioned Products (Int. Cl. 35).  
First use at least as early as Dec. 23, 1965.

SN 291,539. Uniltax Systems, Inc., West Palm Beach, Fla.  
Filed Feb. 20, 1968.



The words "Coast to Coast" and "Systems" are disclaimed apart from the mark as shown.  
For Preparation of Tax Returns on a Volume Basis (Int. Cl. 35).  
First use in or about August 1967.  
Subj. to Intf. with SN 287,972.

## Class 102 — Insurance and Financial

SN 271,049. Green Shield, Stratford, N.J. Filed May 9, 1967.



For Financial Services—Namely, Providing Options to Guarantee the Purchase or Selling Price of Public Stock Issues for a Period of Time, Such Options Ordinarily Referred to as Puts and Calls (Int. Cl. 36).  
First use Feb. 1, 1967.

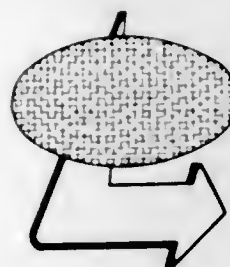
SN 271,176. Reserve Insurance Company, Chicago, Ill. Filed May 10, 1967.



For Insurance Underwriting Services (Int. Cl. 36).  
First use September 1962.

## Class 103 — Construction and Repair

SN 270,244. Midas, Inc., Chicago, Ill. Filed July 18, 1967.



The drawing is lined for the color yellow, and the color is claimed as an integral part of the mark. Owner of Reg. Nos. 726,350, 803,611, and others.

For Adjusting of Brakes of Automobile Vehicles; Adjustment of Automotive Engines and Inspection and Installation of Parts Therefor, Commonly Called Engine Tune-Ups; Alignment and Balancing of Automobile Vehicle Wheels; Inspection and Installation of Automotive Exhaust Systems and Parts Therefor, Automotive Brake Systems and Parts Therefor, Automotive Transmission and Parts Therefor, Positive Crankcase Ventilation Valves and Systems Used in Internal Combustion Engines for Eliminating Crankcase Emissions and Parts Therefor, Front End Parts, Seat Belts and Accompanying Accessories, and Automotive Tires (Int. Cl. 37).  
First use on or about Dec. 19, 1958.

SN 276,245. Midas, Inc., Chicago, Ill. Filed July 18, 1967.

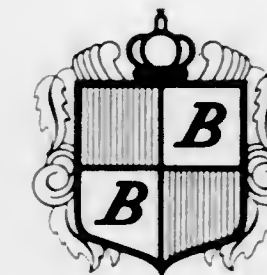
## Class 106 — Material Treatment

SN 278,186. J. H. Baxter & Co., San Francisco, Calif. Filed Aug. 14, 1967.

## HEART-TREATED

Owner of Reg. Nos. 826,098 and 826,099.  
For Processing Service for the Preservation of Wood and Wood Products of Others (Int. Cl. 40).  
First use June 26, 1967.

SN 302,005. Baron Blakeslee, Inc., Chicago, Ill. Filed July 5, 1968.



The lining on the drawing represents a feature of the mark.  
For Solvent Recovery Services (Int. Cl. 40).  
First use Dec. 1, 1964.

Owner of Reg. Nos. 726,350, 803,611, and others.

For Adjusting of Brakes of Automobile Vehicles; Adjustment of Automotive Engines and Inspection and Installation of Parts Therefor, Commonly Called Engine Tune-Ups; Alignment and Balancing of Automobile Vehicle Wheels; Inspection and Installation of Automotive Exhaust Systems and Parts Therefor, Automotive Brake Systems and Parts Therefor, Automotive Transmission and Parts Therefor, Positive Crankcase Ventilation Valves and Systems Used in Internal Combustion Engines for Eliminating Crankcase Emissions and Parts Therefor, Front End Parts, Seat Belts and Accompanying Accessories, and Automotive Tires (Int. Cl. 37).  
First use on or about Dec. 19, 1958.

SN 281,718. Pieper Electric, Inc., Milwaukee, Wis. Filed Oct. 3, 1967.

## PIEPERPOWER

For Electrical Contracting Services (Int. Cl. 37).  
First use Jan. 25, 1967.

SN 283,271. Leonard Press, d.b.a. Cavalon Drapery Cleaners, Dayton, Ohio. Filed Oct. 24, 1967.

## CAVALON

For Drapery Cleaning Service (Int. Cl. 37).  
First use during December 1963.

SN 284,224. Natgun Corporation, Boston, Mass. Filed Nov. 6, 1967.

## NATGUN

For Construction and Repair, Principally in the Field of Reinforced Concrete Structures, Such as Tanks, Domes, and Walls (Int. Cl. 37).  
First use on or about Nov. 1, 1957.

SN 285,690. Josephus Pullen, Jr., d.b.a. J. P. Coach & Co., Chicago, Ill. Filed Oct. 30, 1967.



For Control and Extermination of Pests and Rodents (Int. Cl. 37).  
First use January 1962.

## Class 107 — Education and Entertainment

SN 295,881. The Deerwood Club, Inc., Jacksonville, Fla. Filed Apr. 18, 1968.

## DEERWOOD

For Country Club Services, Specifically Golf, Tennis, Swimming, and Horseback Riding (Int. Cl. 41).  
First use November 1960.

SN 295,883. The Deerwood Club, Inc., Jacksonville, Fla. Filed Apr. 18, 1968.



For Country Club Services, Specifically Golf, Tennis, Swimming, and Horseback Riding (Int. Cl. 41).  
First use January 1963; November 1960 as to the word "Deerwood."

SN 300,209. Miss District of Columbia, Inc., Washington, D.C. Filed June 11, 1968.

## MISS D.C.

For Entertainment Services—Namely, Staging and Conducting Beauty Pageants (Int. Cl. 41).  
First use June 1959.



## COLLECTIVE MEMBERSHIP MARKS

### Class 200

SN 270,524. The Sovereign Byzantine Order Lascaris-Comnenus of Saints Constantine the Great and Helen A.D. 312, Inc., d.b.a. Knights of Constantine, or Knights of Christ, or Ladies of Saint Helen, and Constantine's Knights of Christ, Miami, Fla. Filed Apr. 28, 1967.



The drawing is lined for the color red.  
For Indicating Membership in Applicant.  
First use A.D. 312.

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## TRADEMARK REGISTRATIONS ISSUED PRINCIPAL REGISTER

### Class 1—Raw or Partly Prepared Materials

- 859,497. MAY KING AND DESIGN. Samuel W. Smith, d.b.a. Smith Carter Company, SN 273,800. Pub. 8-20-68. Filed 6-13-67.
- 859,498. MIPOPLAST. Dynamit Nobel Aktiengesellschaft. SN 283,784. Pub. 8-20-68. Filed 10-31-67.
- 859,499. KOTEOL. Ranger Industrial Oil Corporation. SN 284,318. Pub. 8-20-68. Filed 11-7-67.
- 859,500. XYLAFIL. Rexall Drug and Chemical Company, d.b.a. Fiberfil. SN 284,721. Pub. 8-20-68. Filed 11-13-67.
- 859,501. ACETAKRAFT. International Pulp Sales Company. SN 284,822. Pub. 8-20-68. Filed 11-14-67.
- 859,502. PC. Spring Valley Ranch. SN 285,264. Pub. 8-20-68. Filed 11-20-67.
- 859,503. BUNING THE FLORIST INC. AND DESIGN. Buning The Florist, Inc. SN 293,773. Pub. 8-20-68. Filed 1-29-68.
- 859,504. GLO-GEMS. Sterno Industries, Inc. SN 295,566. Pub. 8-20-68. Filed 4-12-68.

### Class 2—Receptades

- 859,505. FLIP 'N SHAKE. Stanley Cokas, d.b.a. Staco Industries. SN 272,808. Pub. 8-20-68. Filed 6-1-67.
- 859,506. ACCU-PAK. Ciba Corporation, d.b.a. Accu-Pak Laboratories. SN 273,036. Pub. 8-20-68. Filed 6-5-67.
- 859,507. FASH'N FLAIR. Sinclair-Koppers Company, d.b.a. National Plastic Company. SN 284,747. Pub. 8-20-68. Filed 11-13-67.
- 859,508. WHEEL OF BEAUTY. Kigu Limited. SN 294,942. Pub. 8-20-68. Filed 4-4-68.
- 859,509. COUNTESS MARA. Countess Mara, Inc. MULTIPLE CLASS (Classes 3, 28, 39, 51, and 52). SN 261,261. Pub. 10-17-67. Filed 12-22-66.

### Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

- 859,510. POWDER RIVER. Associated Dry Goods Corporation, d.b.a. The Denver Dry Goods Company. SN 288,489. Pub. 8-20-68. Filed 1-10-68.
- 859,511. COLLECTOR. Sirco Products Co., Inc. SN 289,722. Pub. 8-20-68. Filed 1-26-68.
- 859,512. ZIP-A-RAMA. Sirco Products Co., Inc. SN 289,723. Pub. 8-20-68. Filed 1-26-68.

### Class 4—Abrasives and Polishing Materials

- 859,513. QUICK LUSTRE. Stanley Home Products, Inc. SN 282,635. Pub. 8-20-68. Filed 10-16-67.
- 859,514. SUPER HARD SHELL. Turtle Wax, Inc. SN 287,238. Pub. 8-20-68. Filed 12-19-67.

### Class 5—Adhesives

- 859,515. CAH AND DESIGN. CAH Industries Incorporated. MULTIPLE CLASS (Classes 5, 6, 16, and 52). SN 263,742. Pub. 8-20-68. Filed 2-1-67.

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### Class 6—Chemicals and Chemical Compositions

- 859,516. EASYPOXY. Conap, Inc. SN 268,945. Pub. 8-20-68. Filed 4-12-67.
- 859,517. GLUINE. Consumers Glue Co., Inc. SN 286,508. Pub. 8-20-68. Filed 12-8-67.
- 859,518. AGWAY. Agway Inc. SN 224,364. Pub. 8-16-66. Filed 7-28-65.
- 859,519. SCUFA. The Dow Chemical Company. SN 269,646. Pub. 8-20-68. Filed 4-20-67.
- 859,520. ETHYL. Ethyl Corporation. SN 269,872. Pub. 8-20-68. Filed 4-24-67.
- 859,521. AJICURE. Ajinomoto Kabushiki Kaisha, d.b.a. Ajinomoto Co., Inc. SN 274,390. Pub. 8-20-68. Filed 6-21-67.
- 859,522. CHEM FISH COLLECTOR. Chemical Insecticide Corporation. SN 275,117. Pub. 8-20-68. Filed 6-30-67.
- 859,523. CHEM RICE. Chemical Insecticide Corporation. SN 275,118. Pub. 8-20-68. Filed 6-30-67.
- 859,524. SEXAUER. J. A. Sexauer Mfg. Co., Inc. SN 277,798. Pub. 8-20-68. Filed 8-8-67.
- 859,525. CERAMER. Petrolite Corporation. SN 279,855. Pub. 8-20-68. Filed 9-7-67.
- 859,526. DIRECT. Madison Chemical Corporation. SN 280,443. Pub. 8-20-68. Filed 9-15-67.
- 859,527. TIZE. Andresen Corporation. SN 283,847. Pub. 8-20-68. Filed 11-1-67.

### Class 7—Cordage

- 859,528. STEM-TEX. Lion Ribbon Company, Inc. SN 278,011. Pub. 8-20-68. Filed 8-10-67.
- 859,529. LASHOOK. Continental Copper & Steel Industries, Inc. SN 288,680. Pub. 8-20-68. Filed 1-12-68.

### Class 8—Smokers' Articles, Not Including Tobacco Products

- 859,530. LARGO. W. Ø. Larsen & Lichtingers Fabriker A/S. MULTIPLE CLASS (Classes 8 and 17). SN 297,235. Pub. 8-20-68. Filed 5-3-68.

### Class 9—Explosives, Firearms, Equipments, and Projectiles

- 859,531. KING KONG. Clpper Pyrotechnic Corp. SN 290,471. Pub. 8-20-68. Filed 2-7-68.

### Class 10—Fertilizers

- 859,532. NITROPHOSKA. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 296,393. Pub. 8-20-68. Filed 4-24-68.

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**Class 12—Construction Materials**

- 859,533. TRYLON AND DESIGN. Trylon Incorporated. SN 189,681-A. Pub. 8-20-68. Filed 3-13-64.
- 859,534. TEMPER RIB. Aluminum Company of America. SN 266,714. Pub. 8-20-68. Filed 3-15-67.
- 859,535. COLEX. Kaiser Aluminum & Chemical Corporation. SN 268,195. Pub. 8-20-68. Filed 4-3-67.
- 859,536. VERAPHON. Vetreria di Vernante S.p.A. SN 268,246. Pub. 8-20-68. Filed 4-3-67.
- 859,537. ALUMAPOOL. Cascade Industries, Inc. SN 273,600. Pub. 8-20-68. Filed 6-12-67.
- 859,538. EFCO AND DESIGN. Economy Forms Corporation. SN 274,053. Pub. 8-20-68. Filed 6-16-67.
- 859,539. TIMBERSEAL. Niedermeyer-Martin Company. SN 278,153. Pub. 8-20-68. Filed 8-14-67.
- 859,540. AKEMI. Akemi Incorporated. SN 280,531. Pub. 8-20-68. Filed 9-18-67.
- 859,541. POOL BY WIRE. Hendon Construction Company. SN 283,660. Pub. 8-20-68. Filed 10-30-67.
- 859,542. MIPODUR. Dynamit Nobel Aktiengesellschaft. SN 283,785. Pub. 8-20-68. Filed 10-31-67.
- 859,543. SADDLET. Grant Wilson, Incorporated. SN 285,478. Pub. 8-20-68. Filed 11-22-67.
- 859,544. DURAPORT. The General Tire & Rubber Company. SN 286,263. Pub. 8-20-68. Filed 12-5-67.
- 859,545. DURA LAST. Dura Last Shingle Corp. SN 287,155. Pub. 8-20-68. Filed 12-18-67.
- 859,546. H AND DESIGN. Honeycomb Products, Inc. SN 290,856. Pub. 8-20-68. Filed 2-12-68.
- 859,547. ACMA AND DESIGN. Acme Highway Products Corporation. SN 292,163. Pub. 8-20-68. Filed 2-29-68.
- 859,548. AQUADOME. Cascade Industries, Inc. SN 292,346. Pub. 8-20-68. Filed 3-4-68.
- 859,549. CLE-FAB AND DESIGN. The Cleveland Fabricating Company. SN 292,347. Pub. 8-20-68. Filed 3-4-68.
- 859,550. A PLAID DESIGN. Minnesota Mining and Manufacturing Company. SN 293,090. Pub. 8-20-68. Filed 3-13-68.
- 859,551. ALUMINEX. Aluminex Incorporated. SN 293,893. Pub. 8-20-68. Filed 3-22-68.
- 859,552. FIN-SEAL. The Schlegel Manufacturing Company. SN 294,319. Pub. 8-20-68. Filed 3-27-68.
- 859,553. STOPPER. Overall Paint, Inc. SN 295,456. Pub. 8-20-68. Filed 4-11-68.
- 859,554. SOLDIER BEAMS AND DESIGN. Potlatch Forests, Inc. SN 296,868. Pub. 8-20-68. Filed 4-29-68.
- 859,555. MINUTEMAN. Philip Carey Corporation. SN 297,135. Pub. 8-20-68. Filed 5-2-68.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

- 859,556. TRI-POINT. Great Lakes Screw Corporation. SN 298,406. Pub. 8-20-68. Filed 4-5-67.
- 859,557. DGK. Hedwin Corporation. SN 276,135. Pub. 8-20-68. Filed 7-17-67.
- 859,558. STATIC MIXER. Kenics Corporation. SN 277,840. Pub. 8-20-68. Filed 8-8-67.
- 859,559. BRADPACK. Bradley Waahfountain Company. SN 282,770. Pub. 8-20-68. Filed 10-18-67.
- 859,560. PACER AND DESIGN. Waterous Company. SN 283,478. Pub. 8-20-68. Filed 10-26-67.
- 859,561. U.B.S. Ford Motor Company. SN 283,516. Pub. 8-20-68. Filed 10-27-67.
- 859,562. MICRO. Hartwell Corporation. SN 283,658. Pub. 8-20-68. Filed 10-30-67.
- 859,563. MICRO-MANUFACTURE. Omark Industries, Inc. SN 283,699. Pub. 8-20-68. Filed 10-30-67.

- 859,564. HI-AD AND DESIGN. Sivaco Wire & Nail Company. SN 284,049. Pub. 8-20-68. Filed 11-2-67.
- 859,565. VCR. Cajon Company. SN 284,445. Pub. 8-20-68. Filed 11-9-67.
- 859,566. VCO. Cajon Company. SN 284,446. Pub. 8-20-68. Filed 11-9-67.
- 859,567. ROTO-FOLD. Hoke Incorporated. SN 284,662. Pub. 8-20-68. Filed 11-13-67.
- 859,568. NBI AND DESIGN. Nippon Bulge Industries, Ltd. SN 284,828. Pub. 8-20-68. Filed 11-14-67.
- 859,569. WATER WHIP. Dynamic Classics, Ltd. SN 294,885. Pub. 8-20-68. Filed 4-4-68.

**Class 14—Metals and Metal Castings and Forgings**

- 859,570. MISCELLANEOUS DESIGN. Alcan Aluminum Corporation. SN 275,500. Pub. 8-20-68. Filed 7-7-67.
- 859,571. BORSIC. United Aircraft Corporation. SN 276,370. Pub. 8-20-68. Filed 7-19-67.
- 859,572. MISCELLANEOUS DESIGN. R. J. Gallagher Company. SN 291,732. Pub. 8-20-68. Filed 2-23-68.

**Class 15—Oils and Greases**

- 859,573. PENN-HARRIS AND DESIGN. Penn Harris Oil Co. SN 261,874. Pub. 10-10-67. Filed 1-3-67.
- 859,574. CUVAN. R. T. Vanderbilt Company, Inc. SN 275,001. Pub. 8-20-68. Filed 6-28-67.
- 859,575. REDSKIN. R. H. Miller Company. SN 285,746. Pub. 8-20-68. Filed 11-28-67.

**Class 16—Protective and Decorative Coatings**

- 859,515. (See Class 3 for this trademark.)
- 859,576. DEDURA. De Mert & Dougherty, Inc., d.b.a. Dedura Paints. SN 276,546. Pub. 8-20-68. Filed 7-21-67.
- 859,577. FLEXSOL. U.S. Plywood-Champion Papers Inc. SN 285,099. Pub. 8-20-68. Filed 11-17-67.

**Class 17—Tobacco Products**

- 859,530. (See Class 8 for this trademark.)

- 859,578. FLYING DUTCHMAN. Theodorius Niemeljer N.V., d.b.a. Theodorius Niemeyer N.V. SN 279,744. Pub. 8-20-68. Filed 9-6-67.

- 859,579. LA MANCHA. Consolidated Cigar Corporation. SN 293,022. Pub. 8-20-68. Filed 3-12-68.

- 859,580. CHOCO BLEND NO. 88. Lane Limited. SN 294,511. Pub. 8-20-68. Filed 3-29-68.

- 859,581. BIG WHEEL AND DESIGN. Conwood Corporation. SN 297,975. Pub. 8-20-68. Filed 5-13-68.

**Class 18—Medicines and Pharmaceutical Preparations**

- 859,582. ACABEL. Chemie Grünenthal G.m.b.H. SN 261,716. Pub. 10-31-67. Filed 12-30-66.
- 859,583. HISTAY. Sandoz, Inc. SN 269,691. Pub. 8-20-68. Filed 4-20-67.

- 859,584. HONEYBLOOM. Richardson-Merrell Inc. SN 270,610. Pub. 8-20-68. Filed 5-3-67.
- 859,585. AUTO-JECT. McNeil Laboratories, Incorporated. SN 270,691. Pub. 8-20-68. Filed 5-4-67.
- 859,586. CUTADAN. USV Pharmaceutical Corporation. SN 272,646. Pub. 8-20-68. Filed 5-29-67.
- 859,587. CUTASEB. USV Pharmaceutical Corporation. SN 272,648. Pub. 8-20-68. Filed 5-29-67.
- 859,588. LINKING CHEMISTRY TO MEDICINE. Mallinckrodt Chemical Works. SN 273,087. Pub. 8-20-68. Filed 6-5-67.
- 859,589. BRONILIDENE. Guardian Chemical Corporation. SN 276,834. Pub. 8-20-68. Filed 7-26-67.
- 859,590. RAGGEN. Evaco Pharmaceutical Co. SN 277,987. Pub. 8-20-68. Filed 8-10-67.
- 859,591. GRASSGEN. Evaco Pharmaceutical Co. SN 277,988. Pub. 8-20-68. Filed 8-10-67.
- 859,592. FLEAGEN. Evaco Pharmaceutical Co. SN 277,989. Pub. 8-20-68. Filed 8-10-67.
- 859,593. WEEDGEN. Evaco Pharmaceutical Co. SN 277,990. Pub. 8-20-68. Filed 8-10-67.
- 859,594. INHALGEN. Evaco Pharmaceutical Co. SN 277,991. Pub. 8-20-68. Filed 8-10-67.
- 859,595. TREGGEN. Evaco Pharmaceutical Co. SN 277,993. Pub. 8-20-68. Filed 8-10-67.
- 859,596. HARTZ MOUNTAIN. Hartz Mountain Products Corp. SN 278,688. Pub. 8-20-68. Filed 8-21-67.
- 859,597. SOMBUCAPS. Rexall Drug and Chemical Company, d.b.a. Riker Laboratories. SN 279,412. Pub. 8-20-68. Filed 8-30-67.
- 859,598. CARDIOTENSIN. Smith, Miller & Patch, Inc. SN 282,482. Pub. 8-20-68. Filed 10-13-67.
- 859,599. FOLBESYN. American Cyanamid Company. SN 283,078. Pub. 8-20-68. Filed 10-23-67.
- 859,600. LED-O-SAN. American Cyanamid Company. SN 283,079. Pub. 8-20-68. Filed 10-23-67.
- 859,601. PUROGENATED. American Cyanamid Company. SN 283,080. Pub. 8-20-68. Filed 10-23-67.
- 859,602. SERET. Pro-Capa Products Inc. SN 283,272. Pub. 8-20-68. Filed 10-24-67.
- 859,603. DAA-O. Chattem Drug & Chemical Company. SN 283,320. Pub. 8-20-68. Filed 10-25-67.
- 859,604. SENOXIN. The Purdue Frederick Company. SN 283,456. Pub. 8-20-68. Filed 10-26-67.
- 859,605. SENOXIME. The Purdue Frederick Company. SN 283,457. Pub. 8-20-68. Filed 10-26-67.
- 859,606. NARESPAN. USV Pharmaceutical Corporation. SN 283,737. Pub. 8-20-68. Filed 10-30-67.
- 859,607. NITROMIST. USV Pharmaceutical Corporation. SN 283,738. Pub. 8-20-68. Filed 10-30-67.
- 859,608. EXIREL. Chas. Pfizer & Co., Inc. SN 283,964. Pub. 8-20-68. Filed 11-2-67.
- 859,609. HR AND DESIGN. Holland-Rantos Company, Inc. SN 298,175. Pub. 8-20-68. Filed 5-15-68.

**Class 19—Vehicles**

- 859,610. S DESIGN. Skyline Corporation. SN 271,291. Pub. 5-28-68. Filed 5-11-67.
- 859,611. EQUA-SCOPE. Precision Stabilizers, Inc. SN 279,773. Pub. 8-20-68. Filed 8-1-67.
- 859,612. SLIMGUARD. Biscayne Manufacturing Corporation. SN 296,066. Pub. 8-20-68. Filed 4-22-68.

**Class 20—Linoleum and Oiled Cloth**

- 859,613. CARIBBEAN. Congoleum-Nairn Inc. SN 283,631. Pub. 8-20-68. Filed 10-30-67.

- 859,614. VENTURIA. Congoleum-Nairn Inc. SN 283,633. Pub. 8-20-68. Filed 10-30-67.

**Class 21—Electrical Apparatus, Machines, and Supplies**

- 859,615. E-Z FOIL. E-Z Por Corporation. MULTIPLE CLASS (Classes 21 and 34). SN 202,360. Pub. 1-4-66. Filed 9-22-64.
- 859,616. IFR AND DESIGN. Instrument Flight Research Corporation, Inc. MULTIPLE CLASS (Classes 21 and 26). SN 249,538. Pub. 8-20-68. Filed 7-5-66.
- 859,617. JOKI AND DESIGN. John Kirkegaard. MULTIPLE CLASS (Classes 21 and 23). SN 256,624. Pub. 6-25-68. Filed 7-27-68.
- 859,618. OSSOMAT. Orthopedic Equipment Company, Inc. SN 269,781. Pub. 8-20-68. Filed 4-21-67.
- 859,619. MCP. United Aircraft Corporation. SN 270,092. Pub. 8-20-68. Filed 4-26-67.
- 859,620. ELECTRO-SHIELD. Electronic Safety Controls, Inc. SN 270,650. Pub. 8-20-68. Filed 5-4-67.
- 859,621. NORTON. Norton Associates, Inc. SN 272,741. Pub. 8-20-68. Filed 5-31-67.
- 859,622. CARAVEL. Thomas Industries Inc. SN 272,758. Pub. 8-20-68. Filed 5-31-67.
- 859,623. NORTHERN ELECTRIC. Northern Electric Company. MULTIPLE CLASS (Classes 21, 29, 34, and 44). SN 273,825. Pub. 8-20-68. Filed 6-14-67.
- 859,624. FLIGHTGUARD. Narco Scientific Industries, Inc. (Delaware corporation), by merger from Narco Scientific Industries, Inc. (New Jersey corporation). SN 280,243. Pub. 7-2-68. Filed 9-13-67.
- 859,625. TEMPROX. Ircon, Inc. SN 281,897. Pub. 8-20-68. Filed 10-5-67.
- 859,626. MOTOR-MINDER. I-T-E Circuit Breaker Company. SN 285,422. Pub. 8-20-68. Filed 11-22-67.
- 859,627. FABICON. Teltron, Inc. SN 286,733. Pub. 8-20-68. Filed 12-11-67.
- 859,628. GTH. Avnet, Inc., assignee of Carol Wire & Cable Corp. SN 288,777. Pub. 8-20-68. Filed 1-15-68.
- 859,629. NCR AND DESIGN. The National Cash Register Company. SN 291,888. Pub. 8-20-68. Filed 2-26-68.
- 859,630. F AND DESIGN. Circle F Industries, Inc. SN 292,078. Pub. 8-20-68. Filed 2-28-68.
- 859,631. LADY MARIAN. Premium Corporation of America, Inc. SN 295,167. Pub. 8-20-68. Filed 4-8-68.
- 859,632. NAUTILUS. The Tappan Company. SN 296,467. Pub. 8-20-68. Filed 4-24-68.
- 859,633. MONOBLOC. Erie Technological Products, Inc. SN 296,820. Pub. 8-20-68. Filed 4-29-68.

**Class 22—Games, Toys, and Sporting Goods**

- 859,634. BOND XX. Edison Giocattoli, S.p.A., assignee of The Ohio Art Company. SN 220,254. Pub. 2-8-66. Filed 4-26-65.
- 859,635. BRITISH GOLF LTD. Willard L. Henry, d.b.a. British Golf Ltd. SN 242,010. Pub. 8-20-68. Filed 3-28-66.
- 859,636. ROYAL. United States Rubber Company. SN 253,803. Pub. 8-20-68. Filed 9-2-66.
- 859,637. SLAZENGER. Slazengers Limited, d.b.a. Challenge House. MULTIPLE CLASS (Classes 22 and 39). SN 266,615. Pub. 8-20-68. Filed 3-14-67.
- 859,638. PECO STREAMLINE. The Pritchard Patent Product Company Limited. SN 266,224. Pub. 8-20-68. Filed 4-3-67.



- 859,638. BLOND. Wright & McGill Co. SN 270,998. Pub. 8-20-68. Filed 5-8-67.
- 859,640. HATS OFF. Kohner Bros., Inc. SN 272,505. Pub. 8-20-68. Filed 5-26-67.
- 859,641. TUPPERWARE TOYS AND DESIGN. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 274,988. Pub. 8-20-68. Filed 6-28-67.
- 859,642. L-BO TRAINER AND DESIGN. Sandspa Corporation. SN 282,397. Pub. 8-20-68. Filed 10-12-67.
- 859,643. CHUTZPAH. What-Cha-Ma-Call-It, Inc. SN 287,329. Pub. 8-20-68. Filed 12-20-67.
- 859,644. MULTIPLE TOYMAKERS. Multiple Products, Inc. SN 288,336. Pub. 8-20-68. Filed 1-8-68.
- 859,645. MIDGIE AND DESIGN. A & E Tool and Gage Co., Inc. SN 293,659. Pub. 8-20-68. Filed 3-20-68.
- 859,646. MISCELLANEOUS DESIGN. A & E Tool and Gage Co., Inc. SN 293,660. Pub. 8-20-68. Filed 3-20-68.
- 859,647. POPPIN HOPPIES. Ideal Toy Corporation. SN 297,339. Pub. 8-20-68. Filed 5-6-68.
- 859,648. JET FIRE. Eldon Industries, Inc. SN 297,919. Pub. 8-20-68. Filed 5-13-68.
- 859,649. BILLY BLASTOFF. Eldon Industries, Inc. SN 297,920. Pub. 8-20-68. Filed 5-13-68.

### Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

- 859,647. (See Class 21 for this trademark.)
- 859,650. SE AND DESIGN. The Superior Electric Company. SN 245,993. Pub. 8-20-68. Filed 5-18-66.
- 859,651. STERN-POWR. Dana Corporation. SN 257,462. Pub. 8-20-68. Filed 10-28-66.
- 859,652. WATER SYSTEMS COUNCIL STANDARDS CERTIFIED PERFORMANCE AND DESIGN. Water Systems Council. SN 257,543. COLLECTIVE MARK. Pub. 8-20-68. Filed 10-28-66.
- 859,653. WATERTITE AND DESIGN. Willard E. Forman, d.b.a. Watertite Gutter Machine Co. SN 267,622. Pub. 1-30-68. Filed 3-27-67.
- 859,654. ELECTROCYLINDER. Crane Co. SN 268,711. Pub. 8-20-68. Filed 4-10-67.
- 859,655. HUYLIFE. Huyck Corporation. SN 268,961. Pub. 8-20-68. Filed 4-12-67.
- 859,656. U.A.D. Lee Wilson Engineering Company, Inc. SN 275,098. Pub. 8-20-68. Filed 6-29-67.
- 859,657. PERMATTACH. Permattach Diamond Tool Corp. SN 279,354. Pub. 8-20-68. Filed 9-7-67.
- 859,658. SSK AND DESIGN. S. S. Kresge Company. SN 281,990. Pub. 8-20-68. Filed 10-6-67.
- 859,659. SURFAERATOR. Ritter Pfaudler Corporation. SN 282,137. Pub. 8-20-68. Filed 10-9-67.
- 859,660. SSK AND DESIGN. S. S. Kresge Company. SN 283,671. Pub. 8-20-68. Filed 10-30-67.
- 859,661. K MART AND DESIGN. S. S. Kresge Company. SN 283,672. Pub. 8-20-68. Filed 10-30-67.
- 859,662. WHEEL-BENCH. The Auto-Soler Company. SN 284,885. Pub. 8-20-68. Filed 11-15-67.
- 859,663. SIMPAK. Bata Shoe Company of Canada, Limited. SN 286,753. Pub. 8-20-68. Filed 12-12-67.
- 859,664. QUIK-HOLD. Millers Falls Company. SN 287,444. Pub. 8-20-68. Filed 12-22-67.
- 859,665. CAGE-LOK. Ivan F. and Julia M. Belknap (joint owners), d.b.a. Van F. Belknap Company. SN 287,717. Pub. 8-20-68. Filed 12-28-67.
- 859,666. NAUTALITE. Winchester Marine Corporation. SN 291,801. Pub. 8-20-68. Filed 2-23-68.
- 859,667. NAUTILUS. The Tappan Company. SN 296,469. Pub. 8-20-68. Filed 4-24-68.

### Class 24 — Laundry Appliances and Machines

- 859,668. ROC-LASTPAD. Rockland Bleach and Dye Works, Inc. SN 276,585. Pub. 8-20-68. Filed 7-21-67.
- 859,669. ROBERTO. Samuel Bingham Company. SN 292,071. Pub. 8-20-68. Filed 2-28-68.

### Class 26 — Measuring and Scientific Appliances

- 859,616. (See Class 21 for this trademark.)
- 859,670. TEMPERFIX. Albert Lins. SN 247,935. Pub. 8-20-68. Filed 6-13-66.
- 859,671. WESTCLOX. General Time Corporation. SN 253,305. Pub. 8-20-68. Filed 5-29-66.
- 859,672. POLYNESIAN. McCall Corporation, assignee, by mesne assignment, of Elsie Millray Ames. SN 258,968. Pub. 8-20-68. Filed 11-18-66.
- 859,673. METROHM AND DESIGN. Metrohm Ltd. SN 259,329. Pub. 8-20-68. Filed 11-23-66.
- 859,674. SCOTT AND DESIGN. "Automatic" Sprinkler Corporation of America, assignee of Scott Industries, Inc. SN 264,274. Pub. 8-20-68. Filed 2-9-67.
- 859,675. OSSIMETER. Orthopedic Equipment Company, Inc. SN 269,782. Pub. 8-20-68. Filed 4-21-67.
- 859,676. CANOMATIC. Canon Camera Kabushiki Kaisha. SN 270,351. Pub. 8-20-68. Filed 5-1-67.
- 859,677. QL. Canon Camera Kabushiki Kaisha. SN 270,352. Pub. 8-20-68. Filed 5-1-67.
- 859,678. TACH-TROL. Airpax Electronics Incorporated. SN 270,465. Pub. 8-20-68. Filed 5-2-67.
- 859,679. RADPAC. North American Rockwell Corporation, by change of name from North American Aviation, Inc. SN 277,565. Pub. 8-20-68. Filed 8-4-67.
- 859,680. POLYRHYTHM. Physio-Control Corporation. SN 281,107. Pub. 8-20-68. Filed 9-25-67.
- 859,681. VOKAM. Shandon Scientific Company Limited. SN 281,926. Pub. 8-20-68. Filed 10-5-67.
- 859,682. RMP ROBERTS MANHATTAN PROCESS AND DESIGN. Roberts Filter Manufacturing Company, Inc. SN 284,506. Pub. 8-20-68. Filed 11-9-67.
- 859,683. VIDEOCOMP. Radio Corporation of America. SN 285,460. Pub. 8-20-68. Filed 11-22-67.
- 859,684. CRESTEC. Crescent Technology Corporation. SN 288,428. Pub. 8-20-68. Filed 1-9-68.
- 859,685. STUDY MATE. Graflex, Inc. SN 289,891. Pub. 8-20-68. Filed 1-30-68.

### Class 27 — Horological Instruments

- 859,686. AQUATIMER. H. E. Homberger, et-al, d.b.a. International Watch Co. SN 280,057. Pub. 8-20-68. Filed 9-11-67.
- 859,687. FAIRVIEW. Robertshaw Controls Company. SN 288,349. Pub. 8-20-68. Filed 1-8-68.

### Class 28 — Jewelry and Precious-Metal Ware

- 859,509. (See Class 3 for this trademark.)
- 859,688. CONTOURA. Feature Ring Co., Inc. SN 269,305. Pub. 8-20-68. Filed 4-17-67.
- 859,689. HANDKRAFT 144 AND DESIGN. David Karp Company, Inc. SN 272,611. Pub. 8-20-68. Filed 5-29-67.
- 859,690. "LUG HEADS." Sidney S. Bell. SN 274,401. Pub. 8-20-68. Filed 6-21-67.

- 859,691. JDS AND DESIGN. John J. De Santo. SN 280,217. Pub. 8-20-68. Filed 9-13-67.

### Class 29 — Brooms, Brushes, and Dusters

- 859,623. (See Class 21 for this trademark.)
- 859,692. DUAL ACTION. Vistron Corporation. SN 288,566. Pub. 8-20-68. Filed 1-10-68.

### Class 31 — Filters and Refrigerators

- 859,693. NUTROILATOR. Keating of Chicago, Inc. SN 262,871. Pub. 8-20-68. Filed 1-19-67.
- 859,694. ION-X-CARTRIDGE. Millipore Corporation. SN 278,983. Pub. 8-20-68. Filed 8-24-67.
- 859,695. E-Z PAK. Super Freeze Company. SN 286,732. Pub. 8-20-68. Filed 12-11-67.

### Class 32 — Furniture and Upholstery

- 859,696. COMFY-DOWN. Direct Mattress Co., Inc., d.b.a. Imperial Bedding Co. SN 285,314. Pub. 8-20-68. Filed 11-21-67.
- 859,697. NAUTILUS. The Tappan Company. SN 296,468. Pub. 8-20-68. Filed 4-24-68.

### Class 34 — Heating, Lighting, and Ventilating Apparatus

- 859,615. (See Class 21 for this trademark.)
- 859,623. (See Class 21 for this trademark.)
- 859,698. SPORTSMAN. The Atlanta Stove Works, Inc. SN 264,503. Pub. 8-20-68. Filed 2-13-67.
- 859,699. ARC DESIGN. The Susquehanna Corporation, by merger from Atlantic Research Corporation. SN 272,688. Pub. 8-20-68. Filed 5-31-67.
- 859,700. MURAPLAX. Muraplast Limited. SN 273,092. Pub. 8-20-68. Filed 6-5-1967.
- 859,701. OSTER. John Oster Manufacturing Co. SN 297,928. Pub. 8-20-68. Filed 5-13-68.

### Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

- 859,702. SPINDO SEAL. Aquaplast, Inc. SN 283,084. Pub. 8-20-68. Filed 10-23-67.
- 859,703. POLYGLAS. The Goodyear Tire & Rubber Company. SN 288,307. Pub. 8-20-68. Filed 1-8-68.
- 859,704. PAYEN AND DESIGN. J. Payen Ltd. SN 289,306. Pub. 8-20-68. Filed 1-22-68.

### Class 36 — Musical Instruments and Supplies

- 859,705. GM PICATO. General Music Strings Limited. SN 263,907. Pub. 8-20-68. Filed 2-3-67.
- 859,706. MARLO. Marlo Ketchum, d.b.a. Marlo Record Co. SN 267,048. Pub. 8-20-68. Filed 3-17-67.

- 859,707. D & D. Vincent Guaraldi, d.b.a. D & D Record Company. SN 277,912. Pub. 8-20-68. Filed 8-9-67.
- 859,708. DELTAPE. Delta Promotions Inc. SN 287,728. Pub. 8-20-68. Filed 12-28-67.
- 859,709. DEARBORN. Dearborn Records, Inc. SN 290,261. Pub. 8-20-68. Filed 2-5-68.
- 859,710. PRAISE. Walter Gravin. SN 298,286. Pub. 8-20-68. Filed 5-16-68.

### Class 37 — Paper and Stationery

- 859,711. KREHALON AND DESIGN. Toyo Boseki Kabushiki Kaisha, d.b.a. Totuboa, Ltd., by merger from Kureba Spinning Company Limited. SN 223,372. Pub. 5-24-66. Filed 7-15-65.
- 859,712. DELICA. Fukui & Company, Ltd. SN 263,825. Pub. 8-20-68. Filed 2-2-67.
- 859,713. EXECULITE. Jerome S. Wittenberg. SN 268,544. Pub. 8-20-68. Filed 4-6-67.
- 859,714. IMPERIAL WASHABLE WALLCOVERINGS AND DESIGN. Imperial Wallpaper Mill, Inc. SN 281,200. Pub. 8-20-68. Filed 9-26-67.
- 859,715. THE DELANEY BOOK. Delaney Books Incorporated. SN 282,275. Pub. 8-20-68. Filed 10-11-67.

### Class 38 — Prints and Publications

- 859,716. MICROWAVE JOURNAL. Horizon House-Microwave, Inc. SN 256,404. Pub. 8-20-68. Filed 9-30-66.
- 859,717. OF COUNSEL. The Mutual Benefit Life Insurance Company. SN 262,956. Pub. 8-20-68. Filed 1-20-67.
- 859,718. CLARENDON PRESS OF NO.-CAROLINA AND DESIGN. William Johnston Cocke, Jr., d.b.a. Clarendon Press of No. Carolina. SN 269,638. Pub. 8-20-68. Filed 4-20-67.
- 859,719. HNH PRODUCT NEWS. Market Publications, Inc. SN 269,907. Pub. 8-20-68. Filed 4-24-67.
- 859,720. SURESIDE NEWS. Surfside News. SN 275,703. Pub. 8-20-68. Filed 7-10-67.
- 859,721. LAB-FAX. The George S. Bond Co. SN 276,404. Pub. 8-20-68. Filed 7-20-67.
- 859,722. FAITH & FORM. The Guild for Religious Architecture. SN 280,315. Pub. 8-20-68. Filed 9-14-67.
- 859,723. BUILDING SERVICES CONTRACTOR. MacNair-Dorland Company. SN 281,903. Pub. 8-20-68. Filed 10-5-67.
- 859,724. UP-BEET. Northern Ohio Sugar Company. SN 282,125. Pub. 8-20-68. Filed 10-9-67.
- 859,725. MINERVA PRESS. The Reader's Digest Association, Inc. SN 282,394. Pub. 8-20-68. Filed 10-12-67.
- 859,726. AVANT GARDE. Avant-Garde Media, Inc. SN 285,711. Pub. 8-20-68. Filed 11-28-67.
- 859,727. MISCELLANEOUS DESIGN. Cyril J. Conway, d.b.a. Greater Rochester Homebuyers Guide. SN 286,000. Pub. 8-20-68. Filed 12-1-67.
- 859,728. IDC MARKET INTERFACE. International Data Corporation. SN 286,937. Pub. 8-20-68. Filed 12-14-67.
- 859,729. FOTOFAX. Fotomat Corporation. SN 298,285. Pub. 8-20-68. Filed 5-16-68.

### Class 39 — Clothing

- 859,509. (See Class 3 for this trademark.)
- 859,637. (See Class 22 for this trademark.)
- 859,730. DANSKIN. Danskin, Inc. SN 199,973. Pub. 3-9-65. Filed 8-17-64.



- 859,731. THE GREAT SOCIETY AND FLAG DESIGN. Robert L. Syphers. SN 212,154. Pub. 2-15-66. Filed 2-16-65.
- 859,732. CLUB. A. Sagner's Son. SN 254,725. Pub. 1-23-68. Filed 9-19-66.
- 859,733. JEANIE BRYAN FASHIONS AND DESIGN. Leroy Bryan, d.b.a. Bryan Manufacturing Company. SN 270,665. Pub. 8-20-68. Filed 5-5-67.
- 859,734. HORN AND DESIGN. Drum Mfg. Co., Inc. SN 273,269. Pub. 8-20-68. Filed 6-7-67.
- 859,735. TOLUCA KNITS OF CALIFORNIA AND DESIGN. Schmelezer Knitting Mills, Inc. SN 274,662. Pub. 8-20-68. Filed 6-23-67.
- 859,736. SWABY'S AND DESIGN. Henry Ow, d.b.a. American Manufacturing Company. SN 276,165. Pub. 8-20-68. Filed 7-17-67.
- 859,737. STANFORD. Weyenberg Shoe Manufacturing Company. SN 278,625. Pub. 8-20-68. Filed S.R. 8-18-67; Am. P.R. 6-12-68.
- 859,738. YES IS THIS SWEATER'S MIDDLE NAME THE YES COMES FROM POLYESTER FIBER. Barringer Knitting Mills, Inc. SN 284,981. Pub. 8-20-68. Filed 11-16-67.
- 859,739. CRISS-CROSS ACTION. Sarong, Inc. SN 285,067. Pub. 8-20-68. Filed 11-16-67.
- 859,740. DOUG SANDERS AND DESIGN. McGregor-Dontger Inc. SN 285,748. Pub. 8-20-68. Filed 11-28-67.
- 859,741. SEA & SKI. Sea & Ski Corporation. SN 286,371. Pub. 8-20-68. Filed 12-6-67.
- 859,742. SWEET APPLE. Puritan Fashions Corporation. SN 286,719. Pub. 8-20-68. Filed 12-11-67.
- 859,743. GOLDEN EMBLEM. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes. SN 287,062. Pub. 8-20-68. Filed 12-18-67.
- 859,744. CLICHE. Interco Incorporated. SN 287,072. Pub. 8-20-68. Filed 12-18-67.
- 859,745. EZEE BREEZEE. Illinois Glove Company. SN 287,735. Pub. 8-20-68. Filed 12-28-67.
- 859,746. BORN FREE. Poirrette Corsets, Inc. SN 287,760. Pub. 8-20-68. Filed 12-28-67.
- 859,747. WEBSTER. Webster Clothes, Inc. SN 287,847. Pub. 8-20-68. Filed 12-29-67.
- 859,748. BERNARDI. Rosenbaum & Hochberg, Inc. SN 290,933. Pub. 8-20-68. Filed 2-13-68.
- 859,749. AQUA-LYLE. The Kandahar Sportswear Co., Inc. SN 295,035. Pub. 8-20-68. Filed 4-5-68.
- 859,750. ULTRA-II. Cooper's, Incorporated. SN 296,916. Pub. 8-20-68. Filed 4-30-68.

### Class 40 — Fancy Goods, Furnishings, and Notions

- 859,751. ELEGANTE. Fashion Tress, Inc. SN 288,686. Pub. 8-20-68. Filed 1-12-68.

### Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

- 859,752. CHROMA-COLOR AND DESIGN. American Associated Companies, Incorporated. SN 288,926. Pub. 8-20-68. Filed 1-17-68.
- 859,753. MASTER LOOMS. Fieldcrest Mills, Inc. SN 230,811. Pub. 5-24-66. Filed 10-21-65.
- 859,754. DURASLEEVE. Albany Felt Company. SN 289,648. Pub. 8-20-68. Filed 1-26-68.
- 859,755. DURAFORM. Albany Felt Company. SN 289,650. Pub. 8-20-68. Filed 1-26-68.
- 859,756. ECONOMI-PAKT. Universal Mayflower Corporation. SN 289,733. Pub. 8-20-68. 1-26-68.

- 859,757. FEATHERLOR "36." Beaunit Corporation. SN 298,082. Pub. 8-20-68. Filed 5-14-68.
- 859,758. TAFF-E-SET. Beaunit Corporation. SN 298,083. Pub. 8-20-68. Filed 5-14-68.

### Class 44 — Dental, Medical, and Surgical Appliances

- 859,759. (See Class 21 for this trademark.)
- 859,759. PANDORA. Setatome Limited. SN 261,527. Pub. 7-2-68. Filed 12-27-66.
- 859,760. MISCELLANEOUS DESIGN. S. James Krygler. SN 265,196. Pub. 8-20-68. Filed 2-21-67.
- 859,761. TOETOTE. Joern J. Olshausen, Ph.D. SN 276,948. Pub. 8-20-68. Filed 7-27-67.
- 859,762. HYDRO-CLAVE. Hydro Research Corporation. SN 285,664. Pub. 8-20-68. Filed 11-27-67.
- 859,763. SPOZASLEEVE. Foremost McKesson, Inc., d.b.a. Gentec Hospital Supply Company. SN 286,921. Pub. 8-20-68. Filed 12-14-67.

### Class 45 — Soft Drinks and Carbonated Waters

- 859,764. MR. SLIM. The Dia-Mel Companies, Inc., by change of name from Dietectic Food Co., Inc. SN 281,560. Pub. 7-23-68. Filed 10-2-67.

### Class 46 — Foods and Ingredients of Foods

- 859,765. NO. 007. Rocket Citrus Products, Inc. SN 238,671. Pub. 11-8-66. Filed 2-11-66.
- 859,766. MISCELLANEOUS DESIGN. International Bakerage, Inc. SN 259,428. Pub. 8-20-68. Filed 11-25-66.
- 859,767. SPLIT. T.F.H. Publications, Inc. SN 267,559. Pub. 8-6-68. Filed 3-24-67.
- 859,768. "GREAT PLAINS." Edward W. Hartman, d.b.a. Bee-Tree Honey. SN 267,752. Pub. 8-20-68. Filed 3-28-67.
- 859,769. WSU (DESIGN). Washington State University. MULTIPLE CLASS (Classes 46 and 107). SN 270,838. Pub. 8-20-68. Filed 5-8-67.
- 859,770. PIONEER AND DESIGN. Forrest D. Hill, d.b.a. Hereford Produce Company. SN 271,367. Pub. 8-20-68. Filed 5-12-67.
- 859,771. GOURMATO. Kelly-Clark, Inc. SN 274,632. Pub. 8-20-68. Filed 6-23-67.
- 859,772. SHIPPAM'S. C. Shippam Limited. SN 281,825. Pub. 8-20-68. Filed 10-4-67.
- 859,773. FESTIVAL. Wilson & Co., Inc. SN 282,647. Pub. 8-20-68. Filed 10-16-67.
- 859,774. DAN-DEE. The Dan Dee Pretzel and Potato Chip Company. SN 287,152. Pub. 8-20-68. Filed 12-18-67.
- 859,775. CREATION. National Biscuit Company. SN 288,968. Pub. 8-20-68. Filed 1-16-68.
- 859,776. NILLA. National Biscuit Company. SN 288,971. Pub. 8-20-68. Filed 1-16-68.
- 859,777. IMPROMPTU. National Biscuit Company. SN 288,972. Pub. 8-20-68. Filed 1-16-68.
- 859,778. GOOD SEASONS AND DESIGN. General Foods Corporation. SN 289,184. Pub. 8-20-68. Filed 1-19-68.
- 859,779. BETSY'S. Stonington Packing Co., Inc. SN 289,843. Pub. 8-20-68. Filed 1-29-68.
- 859,780. COASTAL KITCHEN. Stonington Packing Co. SN 289,846. Pub. 8-20-68. Filed 1-29-68.
- 859,781. MOO. Dean Foods Company. SN 293,981. Pub. 8-20-68. Filed 3-25-68.

- 859,782. TOTE BAR. National Biscuit Company. SN 295,487. Pub. 8-20-68. Filed 4-12-68.

### Class 47 — Wines

- 859,783. VON STIEHL AND DESIGN. Von Stiehl Wine, Inc. SN 249,096. Pub. 8-20-68. Filed 6-27-66.

### Class 50 — Merchandise Not Otherwise Classified

- 859,784. KOR-ODIZED. Greensteel-Korok, Inc. SN 281,792. Pub. 8-20-68. Filed 10-4-67.
- 859,785. HURRICANE AWNING AND FLAG DESIGN. Hurricane Awning Shutter Co., Inc. SN 283,666. Pub. 8-20-68. Filed 10-30-67.

### Class 51 — Cosmetics and Toilet Preparations

- 859,509. (See Class 3 for this trademark.)
- 859,786. LONDON FLUFF. Yardley of London, Inc. SN 252,228. Pub. 1-30-68. Filed 8-11-66.
- 859,787. HANORAH ETC. AND DESIGN. Hanorah Italiana S.p.A. SN 254,051. Pub. 8-20-68. Filed 9-8-66.
- 859,788. PIT STOP. Carroll Shelby Enterprises, Inc. SN 262,070. Pub. 2-13-68. Filed 1-6-67.
- 859,789. SIMPATIA. Les Parfums de Dana, Inc., d.b.a. Dana. SN 265,425. Pub. 10-31-67. Filed 2-24-67.
- 859,790. MUGUET DU BONHEUR. Caron Corporation. SN 269,856. Pub. 8-13-68. Filed 4-24-67.
- 859,791. VAN-DALE. Snyder's Drug Stores, Inc. SN 277,076. Pub. 8-20-68. Filed 7-28-67.
- 859,792. FRESH & WHITE. Bristol-Myers Company. SN 277,253. Pub. 8-20-68. Filed 8-1-67.
- 859,793. BANGALORE. Avon Products, Inc. SN 281,669. Pub. 8-20-68. Filed 10-3-67.
- 859,794. STEEPLECHASE. Avon Products, Inc. SN 281,672. Pub. 8-20-68. Filed 10-3-67.
- 859,795. ON VIEW. Avon Products, Inc. SN 281,676. Pub. 8-20-68. Filed 10-3-67.
- 859,796. MODERN FORM. Sales Affiliates, Inc. SN 282,823. Pub. 8-20-68. Filed 10-18-67.
- 859,797. YOU NEVER LOOKED BETTER IN YOUR LIFE. Bristol-Myers Company. SN 284,587. Pub. 8-20-68. Filed 11-13-67.
- 859,798. SIMPATIA. Les Parfums de Dana, Inc. SN 264,154. Pub. 10-31-67. Filed 2-7-67.

### Class 52 — Detergents and Soaps

- 859,509. (See Class 3 for this trademark.)
- 859,515. (See Class 5 for this trademark.)
- 859,799. COPPERTONE. Plough, Inc. SN 275,298. Pub. 8-20-68. Filed 7-3-67.
- 859,800. FLEURS D'ELLE. Nettle Rosenstein, Inc., d.b.a. Nettle Rosenstein. SN 279,100. Pub. 8-20-68. Filed 8-25-67.
- 859,801. DOUCHE FRIS ANDRELOX. Fabrik van Cosmetische Produkten Andrelox Cosmetics N.V. SN 281,051. Pub. 8-20-68. Filed 9-25-67.
- 859,802. 1,000,000. Sybil Ives Incorporated. SN 281,727. Pub. 8-20-68. Filed 10-3-67.

- 859,803. AUNTY SPOT AND DESIGN. Sargeant Products Corporation, d.b.a. Sargeant Products. SN 282,008. Pub. 8-20-68. Filed 10-6-67.
- 859,804. SHYANNE. J. P. Corrigan, d.b.a. Shyanne Co. SN 283,106. Pub. 8-20-68. Filed 10-23-67.
- 859,805. SOUTH AUDLEY. Beryl Collens. SN 285,201. Pub. 8-20-68. Filed 11-20-67.
- 859,806. DEEEP. The Diversey Corporation. SN 286,912. Pub. 8-20-68. Filed 12-14-67.
- 859,807. STEAM BRITE. The Diversey Corporation. SN 286,915. Pub. 8-20-68. Filed 12-14-67.
- 859,808. PLUNGE. The Drackett Company. SN 286,917. Pub. 8-20-68. Filed 12-14-67.
- 859,809. SOLUENE. Rutley Industries, Inc. SN 288,117. Pub. 8-20-68. Filed 1-4-68.
- 859,810. EXTRA. Armour and Company. SN 288,174. Pub. 8-20-68. Filed 1-5-68.

### Service Marks

### Class 100 — Miscellaneous

- 859,811. "MR. PENSION." Intercontinental Life Insurance Company. SN 236,824. Pub. 8-20-68. Filed 1-19-66.
- 859,812. KAISER. Kaiser Foundation Hospitals. MULTIPLE CLASS (Classes 100 and 106). SN 248,812. Pub. 8-20-68. Filed 6-23-66.
- 859,813. MAXON. Maxon Premix Burner Company, Inc. MULTIPLE CLASS (Classes 100 and 103). SN 269,766. Pub. 8-20-68. Filed 4-21-67.
- 859,814. MR. STEAK. Mr. Steak, Inc. SN 270,937. Pub. 8-20-68. Filed 5-8-67.
- 859,815. MR. STEAK AND DIAMOND DESIGN. Mr. Steak, Inc. SN 270,938. Pub. 8-20-68. Filed 5-8-67.
- 859,816. B AND DESIGN. Midwest Breeders Cooperative. SN 271,165. Pub. 8-20-68. Filed 5-10-67.
- 859,817. SKYLINE AND DESIGN. Virginia Sky-Line Company, Inc. SN 276,898. Pub. 8-20-68. Filed 7-26-67.
- 859,818. SEAGRAVITY. Exploration Surveys, Inc. SN 281,050. Pub. 8-20-68. Filed 9-25-67.

### Class 101 — Advertising and Business

- 859,819. FUNNY FARM. Advico, Inc. SN 264,892. Pub. 8-20-68. Filed 2-17-67.
- 859,820. FOLDERACK. Ralph Pitner, d.b.a. Folderack Distribution Service. SN 264,961. Pub. 8-20-68. Filed 2-17-67.
- 859,821. CONSEL XICOM CONFRONTATION SEARCH LABORATORY AND DESIGN. Xicom Incorporated. SN 271,091. Pub. 8-20-68. Filed 5-9-67.
- 859,822. CAW CAW VARIETY AND DESIGN. Gene Gartman. SN 281,571. Pub. 8-20-68. Filed 10-2-67.
- 859,823. DIAL-A-JOB. Fanning Personnel Agency, Inc. SN 282,562. Pub. 8-20-68. Filed 10-16-67.
- 859,824. LADYBUG. The Villager, Inc. SN 290,422. Pub. 8-20-68. Filed 2-6-68.
- 859,825. SPEEDI CHEK ETC. AND DESIGN. Associated Grocers' Company of St. Louis, Missouri. SN 297,627. Pub. 8-20-68. Filed 5-8-68.

### Class 102 — Insurance and Financial

- 859,826. MNL AND DESIGN. Minnesota National Life Insurance Company. SN 221,398. Pub. 9-27-66. Filed 6-17-65.
- 859,827. MAN WITH CAPE (DESIGN). Hawaii Estates Corporation Ltd. SN 250,757. Pub. 8-20-68. Filed 7-21-66.
- 859,828. FANCIFUL LETTER E. Eurocard Incorporated. SN 262,142. Pub. 8-20-68. Filed 1-9-67.



859,829. THE FEDERAL WHERE PEOPLE COME FIRST. First Federal Savings and Loan Association of Evansville. SN 269,527. Pub. 8-20-68. Filed 4-19-67.

859,830. AMERICAN REPUBLIC. American Republic Insurance Company. SN 279,039. Pub. 8-20-68. Filed 8-25-67.

### Class 103 — Construction and Repair

858,813. (See Class 100 for this trademark.)

859,831. SOUTHWEST. Southwest Irrigation Company. SN 248,555. Pub. 8-20-68. Filed 6-23-66.

859,832. AQUATHERM. Aquatherm Conditioning Corp. SN 263,521. Pub. 8-20-68. Filed 1-30-67.

859,833. CLS. D-A Lubricant Company, Inc. SN 271,230. Pub. 8-20-68. Filed 5-11-67.

859,834. IT TAKES A GENI... US AND DESIGN. Hagopian & Sons. SN 277,043. Pub. 8-20-68. Filed 7-28-67.

859,835. TUBOSCAN. AMF Tuboscope, Inc. SN 278,561. Pub. 8-20-68. Filed 5-18-67.

### Class 106 — Material Treatment

859,812. (See Class 100 for this trademark.)

859,836. GRAPHIC-BLAST. Best Stamp & Manufacturing Company, d.b.a. Best Manufacturing Co. SN 279,798. Pub. 8-20-68. Filed 9-7-67.

## SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

### SECTION 1

(Combined Certificates)

859,846. William E. Hooper and Sons Company, Baltimore, Md. SN 278,930. Filed P.R. 8-24-67; Am. S.R. 8-21-68.

# MOP SHOP

### Class 29 — Brooms, Brushes, and Dusters

For Mops (Int. Cl. 21).

### Class 32 — Furniture and Upholstery

For Display Racks (Int. Cl. 20).

First use Aug. 1, 1967.

### SECTION 2

### Class 22 — Games, Toys, and Sporting Goods Class 32 — Furniture and Upholstery

859,845. Everlast World's Boxing Headquarters Corporation, Bronx, N.Y. SN 272,371. Filed P.R. 5-25-67; Am. S.R. 7-22-68.

859,846. See Section 1 (Combined Certificate).

859,847. Clarin Mfg. Co., Chicago, Ill. SN 278,786. Filed P.R. 8-22-67; Am. S.R. 6-17-68.

### ECLECTIC

For Chairs and Rows of Connected Chairs for Auditoriums, and Classrooms; and Chairs for General Utility Purposes (Int. Cl. 20).

First use June 7, 1967.

### Class 37 — Paper and Stationery

859,848. Zip-Mark Corporation, Bordentown, N.J. SN 279,509. Filed P.R. 8-31-67; Am. S.R. 8-20-68.

### PLAYPENS

For Felt-Tipped Markers (Int. Cl. 16).

First use Feb. 6, 1967.

### Class 29 — Brooms, Brushes, and Dusters

859,846. See Section 1 (Combined Certificate).

859,849. Tileston & Hollingsworth Company, Boston, Mass. SN 286,213. Filed P.R. 12-4-67; Am. S.R. 7-25-68.

859,857. Chicago Association of Commerce and Industry, Chicago, Ill. SN 283,746. Filed P.R. 10-30-67; Am. S.R. 8-12-68.

### AUTHOR'S

For Publishers Papers (Int. Cl. 16).  
First use Oct. 29, 1966.

### Class 38 — Prints and Publications

859,850. Society for Visual Education, Inc., Chicago, Ill. SN 256,602. Filed P.R. 10-17-66; Am. S.R. 8-8-68.

### TALKING PICTURE—STORY STUDY PRINTS

For Classroom Print and Study Data Used With Phonograph Records (Int. Cl. 16).  
First use on or before Sept. 28, 1966.

859,851. TV Time and Channel, Inc., Pen Argyl, Pa. SN 263,627. Filed P.R. 1-30-67; Am. S.R. 8-20-68.

# TV TIME AND CHANNEL

For Weekly Magazine Directed to Television Program Lists and Feature Articles (Int. Cl. 16).  
First use Aug. 30, 1966.

859,852. Lebar-Friedman Publications, Inc., New York, N.Y. SN 264,888. Filed P.R. 2-17-67; Am. S.R. 8-16-68.

### DEPARTMENT STORE NEWS

For Newsletter (Int. Cl. 16).  
First use Feb. 9, 1967.

859,853. Gordon Publications, Inc., Morristown, N.J. SN 274,870. Filed 6-27-67.

### LABORATORY EQUIPMENT

For Trade Magazine (Int. Cl. 16).  
First use at least as early as May 1, 1964.

859,854. McGraw-Hill, Inc., New York, N.Y. SN 279,210. Filed P.R. 8-28-67; Am. S.R. 9-10-68.

### EDUCATION TRENDS

For Bimonthly Newsletter (Int. Cl. 16).  
First use Aug. 3, 1967.

859,855. McGraw-Hill, Inc., New York, N.Y. SN 279,211. Filed P.R. 8-28-67; Am. S.R. 9-10-68.

### EDUCATION WEEK

For Bimonthly Newsletter (Int. Cl. 16).  
First use Aug. 3, 1967.

859,856. Dell Publishing Co., Inc., New York, N.Y. SN 280,151. Filed P.R. 9-12-67; Am. S.R. 9-4-68.

### TV RADIO TALK

For Monthly Magazine (Int. Cl. 16).  
First use Aug. 17, 1967.

### The Executive Sportsman

For Feature Section Relating to Hunting and Fishing Published Monthly in a Magazine Published Monthly (Int. Cl. 16).  
First use Aug. 15, 1966.

859,858. General Features Corporation, New York, N.Y. SN 284,359. Filed P.R. 11-8-67; Am. S.R. 8-15-68.

### FOR BETTER HEALTH

For Newspaper Column (Int. Cl. 16).  
First use Apr. 28, 1948.

859,859. Hayden Microwaves Corporation, New York, N.Y. SN 288,993. Filed P.R. 1-17-68; Am. S.R. 8-28-68.

# laser technology

The drawing is lined for the color red, and such color is claimed as part of the mark.  
For Magazine (Int. Cl. 16).  
First use July 1967.

### Class 39 — Clothing

859,860. Jaymar-Ruby, Inc., Michigan City, Ind. SN 257,492. Filed P.R. 10-28-66; Am. S.R. 8-1-68.

### STA-FRESH

For Men's Slacks (Int. Cl. 25).  
First use July 14, 1966.

859,861. Hanes Corporation, Winston-Salem, N.C. SN 274,428. Filed P.R. 6-21-67; Am. S.R. 8-21-68.

### SNAPTITES

For Ladies' Hosiery (Int. Cl. 25).  
First use June 15, 1967.

859,862. J. R. Rodriguez, S.L., Redondela, Pontevedra, Spain. SN 278,909. Filed P.R. 8-23-67; Am. S.R. 8-23-68.

### DALI

For Hats, Shirts, Blouses, Neckwear, Pants, Beachwear, Bibs, and Handkerchiefs (Int. Cl. 25).  
First use Nov. 18, 1965.

859,863. M. Hyman & Son, Inc., Chicago, Ill. SN 288,821. Filed P.R. 1-15-68; Am. S.R. 7-29-68.

### Tiverton

For Men's Suits, Sport Coats, Topcoats, Overcoats, Dress Trousers, and Raincoats (Int. Cl. 25).  
First use May 1967.



## Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

859,804. J. J. Newberry Co., New York, N.Y. SN 281,311. Filed P.R. 9-27-67; Am. S.R. 8-20-68.

### PRESS-ME-NOT

For Curtains (Int. Cl. 24).  
First use Mar. 24, 1967.

## Class 46—Foods and Ingredients of Foods

859,805. Coronation Company of America, Inc., Indianapolis, Ind. SN 244,308. Filed P.R. 4-26-66; Am. S.R. 8-5-68.



For Vegetable Protein Flavorizer and Tenderizer for Foods Such as Meats and Vegetables (Int. Cl. 30).  
First use Feb. 23, 1966.

859,806. Marvin P. Hallford, d.b.a. Marvin's Food Products Company, Ellenwood, Ga. SN 274,622. Filed P.R. 6-23-67; Am. S.R. 9-30-68.

### WHISTLING KETTLE GOOD

For Barbecue Sauce (Int. Cl. 30).  
First use on or about June 14, 1967.

859,807. Marvin P. Hallford, d.b.a. Marvin's Food Products Company, Ellenwood, Ga. SN 274,623. Filed P.R. 6-23-67; Am. S.R. 9-30-68.

### STEAM KETTLE

For Barbecue Sauce (Int. Cl. 30).  
First use on or about June 14, 1967.

859,808. The Jolly Rancher, Incorporated, Wheatridge, Colo. SN 282,096. Filed P.R. 10-9-67; Am. S.R. 8-6-68.

### GRAPEFRUIT STIX

For Candy (Int. Cl. 30).  
First use on or about July 26, 1967.

## TRADEMARK REGISTRATIONS RENEWED

31,735. VACUUM. Cl. 15 (Int. Cl. 4). 6-21-1898.  
242,410. BRITENOL. Cl. 16 (Int. Cl. 2). 5-22-28.  
243,911. MAGNEX. Cl. 18 (Int. Cl. 1). 7-3-28.  
245,488. CORAX. Cl. 18 (Int. Cl. 5). 8-14-28.  
245,570. ALBOL. Cl. 18 (Int. Cl. 5). 8-14-28.  
245,571. ALBATUM. Cl. 18 (Int. Cl. 5). 8-14-28.  
245,573. BIX. Cl. 51 (Int. Cl. 3). 8-14-28.  
245,930. ALBOMIST. Cl. 18 (Int. Cl. 5). 8-28-28.  
245,932. ALB. Cl. 18 (Int. Cl. 5). 8-28-28.  
245,979. KUMA. Cl. 18 (Int. Cl. 1). 8-28-28.  
245,981. PURSANG. Cl. 18 (Int. Cl. 5). 8-28-28.  
245,982. BAVE. Cl. 18 (Int. Cl. 5). 8-28-28.  
245,983. IBATH. Cl. 18 (Int. Cl. 5). 8-28-28.  
245,986. PURSIN. Cl. 18 (Int. Cl. 5). 8-28-28.  
246,008. ORA. Cl. 51 (Int. Cl. 5). 8-28-28.

246,013. SHAV. Cl. 52 (Int. Cl. 3). 8-28-28.  
246,194. MUSTARX. Cl. 18 (Int. Cl. 5). 9-4-28.  
246,196. BURNTONE. Cl. 18 (Int. Cl. 5). 9-4-28.  
246,230. SOROTONE. Cl. 18 (Int. Cl. 5). 9-4-28.  
246,300. "SILVERLEAF" ETC. AND CARTON DESIGN. Cl. 46 (Int. Cl. 29). 9-4-28.  
246,398. GESTION. Cl. 18 (Int. Cl. 5). 9-4-28.  
246,743. ALBAGAR. Cl. 18 (Int. Cl. 5). 9-11-28.  
246,745. OMAX. Cl. 18 (Int. Cl. 5). 9-11-28.  
247,068. AMERICAN HOME. Cl. 38 (Int. Cl. 16). 9-18-28.  
247,084. "SOUNDEX" ETC. AND DESIGN. Cl. 37 (Int. Cl. 16). 9-18-28.  
247,125. SPORTS OF THE TIMES. Cl. 38 (Int. Cl. 16). 9-18-28.  
248,549. "CHARMIN." Cl. 37 (Int. Cl. 16). 10-23-28.

859,809. Barton Distilling Company, Chicago, Ill. SN 267,796. Filed P.R. 3-29-67; Am. S.R. 9-3-68.

### NICOLET

For Wines (Int. Cl. 33).  
First use Oct. 8, 1962.

## Class 49—Distilled Alcoholic Liquors

859,870. Bohemian Distributing Company, Los Angeles, Calif. SN 278,660. Filed P.R. 8-21-67; Am. S.R. 8-26-68.

### CALCUTTA

For Gin (Int. Cl. 33).  
First use May 22, 1967.

## Class 51—Cosmetics and Toilet Preparations

859,871. Richard Hudnut, Morris Plains, N.J. SN 266,658. Filed P.R. 3-14-67; Am. S.R. 5-21-68.

### FROZEN CHAMPAGNE

For Lipstick (Int. Cl. 3).  
First use Oct. 20, 1966.

859,872. Richard Hudnut, Morris Plains, N.J. SN 266,659. Filed P.R. 3-14-67; Am. S.R. 5-21-68.

### ICED POPPY

For Lipstick (Int. Cl. 3).  
First use Oct. 21, 1966.

859,873. Richard Hudnut, Morris Plains, N.J. SN 266,662. Filed P.R. 3-14-67; Am. S.R. 5-21-68.

### ILLUMINATED PINK

For Compacts Containing Face Powder and Brush Applicator (Int. Cl. 3).  
First use Oct. 18, 1966.

859,874. Richard Hudnut, Morris Plains, N.J. SN 266,764. Filed P.R. 3-15-67; Am. S.R. 5-21-68.

### MAUVE CHILL

For Lipstick (Int. Cl. 3).  
First use Oct. 25, 1966.

250,562. VARSOL. Cl. 16 (Int. Cl. 1). 12-11-28.  
250,866. VARSOL. Cl. 52 (Int. Cl. 3). 12-18-28.  
251,731. BELLA AURORA. Cl. 51 (Int. Cl. 3). 1-15-29.  
252,706. CELADON. Cl. 42 (Int. Cl. 24). 2-12-29.  
253,356. MIMAX. Cl. 16 (Int. Cl. 2). 2-26-29.  
439,052. ALDEX. Cl. 46 (Int. Cl. 3). 6-1-48.  
439,053. OPTIMO. Cl. 46 (Int. Cl. 3). 6-1-48.  
439,350. THE AMBASSADOR. Cl. 38 (Int. Cl. 16). 6-22-48.  
439,510. PLYSTONE. Cl. 12 (Int. Cl. 2). 7-6-48.  
439,859. HELP. Cl. 52 (Int. Cl. 3). 7-27-48.  
440,442. YVAR. Cl. 26 (Int. Cl. 9). 9-7-48.  
440,660. ZEO-REX. Cl. 31 (Int. Cl. 1). 9-14-48.  
440,776. ECHO AND DESIGN. Cl. 26 (Int. Cl. 9). 9-28-48.  
440,873. JUNKKIT. Cl. 22 (Int. Cl. 28). 10-5-48.  
440,886. PN-700 MAKES WATER WETTER AND DESIGN. Cl. 52 (Int. Cl. 3). 10-5-48.  
441,050. GALAMALT. Cl. 18 (Int. Cl. 5). 10-19-48.  
441,748. PROLON. Cl. 2 (Int. Cl. 21). 1-4-49.  
500,845. BERGERE. Cl. 28 (Int. Cl. 14). 7-6-48.  
500,900. BUCO. Cl. 3 (Int. Cl. 12). 7-6-48.  
501,118. BUDGETEX. Cl. 37 (Int. Cl. 16). 7-20-48.  
501,197. CLAYBROOKE. Cl. 39 (Int. Cl. 25). 7-27-48.  
501,248. NEROSOL. Cl. 51 (Int. Cl. 1). 7-27-48.  
501,928. ROTO-TRAY. Cl. 31 (Int. Cl. 11). 8-31-48.  
501,942. BLACK BEAUTY. Cl. 14 (Int. Cl. 6). 8-31-48.  
502,069. COW. Cl. 6 (Int. Cl. 1). 9-14-48.  
502,082. HAPPY MARRIED AND DESIGN. Cl. 42 (Int. Cl. 24). 9-14-48.  
502,119. FOODTEX. Cl. 35 (Int. Cl. 7). 9-14-48.  
502,120. EASTON. Cl. 35 (Int. Cl. 7). 9-14-48.  
502,231. KINTRIM. Cl. 13 (Int. Cls. 6 and 20). 9-21-48.  
502,243. ZEE AND DESIGN. Cl. 37 (Int. Cl. 16). 9-21-48.  
502,278. CRACKERJACK. Cl. 46 (Int. Cl. 29). 9-21-48.  
502,513. JULLIARD. Cl. 42 (Int. Cl. 24). 9-28-48.  
502,647. KAL AND DESIGN. Cl. 6 (Int. Cls. 3 and 5). 10-5-48.  
503,045. SAFESET. Cl. 11 (Int. Cl. 2). 10-19-48.  
503,876. RELIABLE. Cl. 21 (Int. Cl. 9). 11-16-48.  
504,118. JOYCE. Cl. 39 (Int. Cl. 25). 11-23-48.  
504,159. VITRO. Cl. 39 (Int. Cl. 25). 11-23-48.  
504,235. BEST MAN. Cl. 51 (Int. Cl. 3). 11-23-48.  
504,305. REED'S. Cl. 37 (Int. Cl. 16). 11-30-48.  
504,420. WELDO WINDO. Cl. 37 (Int. Cl. 16). 11-30-48.  
504,431. DESIGN OF AN ARROW, STAR, AND ANCHOR. Cl. 44 (Int. Cl. 10). 11-30-48.

504,445. LIFETIME. Cl. 40 (Int. Cl. 26). 11-30-48.  
504,577. JOSTEN'S. Cl. 28 (Int. Cl. 14). 12-7-48.  
504,578. RELIANCE. Cl. 13 (Int. Cl. 6). 12-7-48.  
504,601. RED LION (DESIGN). Cl. 13 (Int. Cl. 6). 12-7-48.  
504,726. GISHOLT. Cl. 26 (Int. Cl. 9). 12-14-48.  
504,844. EVERFAST. Cl. 42 (Int. Cl. 24). 12-14-48.  
504,927. CHAR-LITE MFG. CO. ETC. AND DESIGN. Cl. 1 (Int. Cl. 4). 12-21-48.  
504,990. FORMULA. Cl. 37 (Int. Cl. 16). 12-21-48.  
505,063. MARSH. Cl. 37 (Int. Cl. 16). 12-21-48.  
505,140. HAPPY TOTS. Cl. 39 (Int. Cl. 25). 12-28-48.  
505,199. YUKON. Cl. 39 (Int. Cl. 25). 12-28-48.  
505,200. SANSLIP. Cl. 39 (Int. Cl. 25). 12-28-48.  
505,211. THINGARB. Cl. 39 (Int. Cl. 25). 12-28-48.  
505,242. MOON AND STARS (DESIGN). Cl. 51 (Int. Cls. 1 and 3). 12-28-48.  
505,397. HARGRAVE. Cl. 23 (Int. Cl. 6). 1-4-49.  
505,607. PRYM. Cl. 37 (Int. Cl. 6). 1-11-49.  
505,623. GLOBE IN A TRIANGLE DESIGN. Cl. 100 (Int. Cl. 42). 1-11-49.  
505,768. BONAT. Cl. 51 (Int. Cl. 3). 1-18-49.  
505,919. MODICOL. Cl. 6 (Int. Cl. 1). 1-25-49.  
505,950. FOUKE DRESSING & DYE AND ARROWHEAD DESIGN. Cl. 1 (Int. Cl. 18). 1-25-49.  
505,963. OWENS OVALS. Cl. 33 (Int. Cl. 21). 1-25-49.  
505,983. TREASURE-CRAFT. Cl. 38 (Int. Cl. 16). 1-25-49.  
506,066. MONARK. Cl. 21 (Int. Cl. 9). 1-25-49.  
506,145. WORD FROM WASHINGTON. Cl. 38 (Int. Cl. 16). 2-1-49.  
506,176. ARDMORE. Cl. 43 (Int. Cl. 23). 2-1-49.  
506,177. NEOSPUN. Cl. 43 (Int. Cl. 23). 2-1-49.  
506,189. SUMMERETTES. Cl. 39 (Int. Cl. 25). 2-1-49.  
506,248. SUSSEX BRAND AND REPRESENTATION OF CROWN. Cl. 46 (Int. Cl. 29). 2-1-49.  
506,383. LAUER. Cl. 39 (Int. Cl. 25). 2-1-49.  
506,393. ALKA AND DESIGN. Cl. 16 (Int. Cl. 2). 2-8-49.  
506,398. ALL. Cl. 52 (Int. Cl. 3). 2-8-49.  
506,421. TRISCONIZE. Cl. 6 (Int. Cl. 1). 2-8-49.  
506,560. MANSION HOUSE. Cl. 28 (Int. Cl. 8). 2-8-49.  
506,753. ABINCO. Cl. 6 (Int. Cl. 1). 2-15-49.  
506,873. SWEET GEORGIA BROWN. Cl. 51 (Int. Cls. 3 and 5). 2-22-49.  
506,938. CLEARTYPE. Cl. 38 (Int. Cl. 16). 2-22-49.  
507,005. LOVERA. Cl. 17 (Int. Cl. 34). 2-22-49.

## TRADEMARK REGISTRATIONS CANCELED

### Section 7(d)

105,039. IPANA. Cl. 51.  
243,912. IPANA. Cl. 51.  
560,337. IPANA. Cl. 51.  
580,034. HO-NO-MO. Cl. 6.  
589,028. HO-NO-MORAISES THE DEVIL WITH WEEDS AND DESIGN. Cl. 6.  
666,109. IPANA PLUS. Cl. 51.  
821,573. VOLKSDRILL. Cl. 23.  
833,131. MISCELLANEOUS DESIGN. Cl. 1.

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737,683. BIG VALUE. Cl. 1.  
737,686. CLEAN-A-BAG AND DESIGN. Cl. 2.  
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737,702. ETERNITE. Cl. 6.  
737,711. INN KEEPERS. Cl. 6.  
737,712. BIG-W. Cl. 6.  
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737,716. NATCHEZ. Cl. 9.  
737,717. POSSE. Cl. 9.  
737,719. GRAPE-AID. Cl. 10.  
737,723. SOLIDPLY. Cl. 12.

737,725. MINIT MOUNT. Cl. 12.  
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737,742. ASTAR HEAVY DRIVE. Cl. 13.  
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737,751. FE 6. Cl. 15.  
737,757. PCCO AND DESIGN. Cl. 16.  
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737,771. TEEN GLO. Cl. 18.  
737,773. BIG-W. Cl. 18.  
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737,808. REV-O-SYNC. Cl. 21.  
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737,812. TELESCHEDULE. Cl. 21.



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 737,815. JUMP-O-LIN KING AND DESIGN. Cl. 22.  
 737,817. VEGAS VACATION. Cl. 22.  
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 737,883. PROTECTRON. Cl. 26.  
 737,885. TEMPEN. Cl. 26.  
 737,886. DIGITESTER. Cl. 26.  
 737,888. RCL AND DESIGN. Cl. 26.  
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 737,983. FEATHERTOP. Cl. 46.  
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 802,457. BARRATTS. Cl. 39.  
 804,987. UNIA-VALVE. Cl. 13.  
 813,703. NIGHT & DAY WARDROBE OF LASHES. Cl. 40.  
 815,967. LIDO. Cl. 52.  
 846,276. CONVOY. Cl. 37.

## TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

686,847. TYCO. Cl. 22, 10-20-59. Mantua Metal Products Co., Inc., Woodbury Heights, N.J. Amended: In the statement, column 1, line 1, after "Inc.", *now by change of name Tyco Industries, Inc.* is inserted.  
 712,994. ENCO. Cl. 4, 3-28-61. Humble Oil & Refining Company, by merger from Penola Oil Company, Houston, Tex. Amended: In the statement, column 2, line 7 after "reproduction" *as well as the automotive accessories field* is inserted.  
 713,000. ENCO. Cl. 6, 3-28-61. Humble Oil & Refining Company, by merger from Penola Oil Company, Houston, Tex. Amended: In the statement, column 2, line 8 after "reproduction" *as well as the automotive accessories field* is inserted.  
 719,969. FANCIFUL REPRESENTATION OF GIRL. Cl. 105, 7-25-61. British West Indian Airways Limited, New York, N.Y. Corrected: In the statement, column 1, line 1, "New York" should be deleted and *Trinidad and Tobago* should be inserted.  
 729,944. CPGE. Cl. 12, 4-17-62. Cariboo-P.G.E. Lumber Manufacturers' Association, assignee of Cariboo-P.G.E. Lumber Manufacturers' Association, Vancouver, British Columbia, Canada. Amended: In the statement, column 1 after line 2, *now by change of name Cariboo Lumber Manufacturers' Association* is inserted.



747,806. HB KRONENFILTER ETC. AND DESIGN. Cl. 17, 4-9-63. British-American Tobacco Co. (C.E.) G.m.b.H. B.A.T. Cigaretten-Fabriken G.m.b.H. Amended: In the statement, column 2, lines 2 through 5 are deleted, and the drawing is amended to appear:

803,409. CARIB CUISINE AND DESIGN. Cl. 46, 2-8-66. Harryet Horton, doing business as Carib Cuisine, Marathon, Fla. Corrected: In the statement, column 2, after line 3, *First use May 18, 1964; in commerce May 18, 1964.* should be inserted.

831,472. THE HIRING LINE. Cl. 38, 7-4-67. Affiliated Personnel Service, Inc. of Madison, Madison, Wis. Corrected: In the statement, column 1, line 1, after "Inc." of *Madison* should be inserted.

838,413. HONEYBEE ETC. AND DESIGN. Cl. 39, 11-7-67. Honeybee, Inc., St. Joseph, Mo. Amended: In the statement, column 2, lines 2 through 4, "for sale solely in stores operated by applicant under its corporate name and" is deleted.

854,333. RICE COUNCIL FOR MARKET DEVELOPMENT AND DESIGN. Cl. 100, 8-6-68. Rice Council for Market Development, Houston, Tex. Amended to appear:



856,384. EQUILOID. Cl. 18, 9-10-68. American Home Products Corporation, New York, N.Y. Corrected: In the statement, column 2, line 2, "toxiod" should be deleted and *toxoid* should be inserted.

856,677. LIQUORE GALLIANO AND DESIGN. Cl. 49, 9-10-68. Foremost-McKesson, Inc., by merger and change of name from McKesson & Robbins, Incorporated, New York, N.Y. Corrected: In the statement, column 1, line 5, "Roberts" should be deleted and *Robbins* should be inserted.

## REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1981, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

## Class 1—Raw or Partly Prepared Materials Class 16—Protective and Decorative Coatings

250,260. Dec. 4, 1928. Jeddo-Highland Coal Company, Jeddo, Pa. Pub. by registrant



For Coal (Int. Cl. 4).

206,479. Dec. 1, 1925. The Chicago White Lead & Oil Co., Chicago, Ill. Pub. by Hooker Glass & Paint Mfg. Co., Chicago, Ill.

## GALVIKLING

For Paint for Galvanized Iron and Other Metals.

206,480. Dec. 1, 1925. The Chicago White Lead & Oil Co., Chicago, Ill. Pub. by Hooker Glass & Paint Mfg. Co., Chicago, Ill.



For Paint and Varnish Removers.

## Class 13—Hardware and Plumbing and Steam-Fitting Supplies

439,344. June 22, 1948. Tube Turns, Louisville, Ky. Pub. by Chemetron Corporation, d.b.a. Tube Turns.

## TUBE-TURN

For Metal Pipe Fittings, etc. (Int. Cl. 6).

251,578. Jan. 8, 1929. The Tropical Paint & Oil Company, Cleveland, Ohio. Pub. by Hooker Chemical Corporation, Niagara Falls, N.Y.

## B &amp; P

For Enamel in the Nature of Paint (Int. Cl. 2).

## Class 14—Metals and Metal Castings and Forgings

439,698. July 13, 1948. Nassau Smelting & Refining Company, Incorporated, Staten Island, N.Y. Pub. by registrant.



For Copper Ingots, Copper Ingot Bars, Copper Wire Bars, etc. (Int. Cls. 6 and 9).

## CARDIS

For Oxidized Wax Material for Use in Varnish, etc. (Int. Cl. 1).



**Class 17—Tobacco Products**

70,157. Aug. 4, 1908. Abdulla and Company, Limited, London, England. Pub. by registrant.

**ABDULLA**

For Cigarettes (Int. Cl. 34).

**Class 19—Vehicles**

440,854. Oct. 5, 1948. Taylor Machine Works, Louisville, Miss. Pub. by registrant.

**LOGGERS DREAM**

For Mobile Logging Trucks (Int. Cl. 12).

**Class 22—Games, Toys, and Sporting Goods**

250,005. Nov. 27, 1928. The Enterprise Manufacturing Company, Akron, Ohio. Pub. by Pfueger Corporation, Akron, Ohio.

**MUSKILL**

For Artificial Bait (Int. Cl. 28).

**Class 26—Measuring and Scientific Appliances**

244,454. July 17, 1928. I. G. Farbenindustrie Aktiengesellschaft, Frankfurt-on-the-Main and Berlin, Germany. Pub. by Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany.



For Cameras and Parts Therefor (Int. Cl. 9).

**Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires**

71,487. Nov. 24, 1908. Eureka Fire Hose Manufacturing Company, Jersey City, N.J. Pub. by Uniroyal, Inc., New York, N.Y.



For Fabric Hose (Int. Cl. 17).

242,805. June 5, 1928. Romac Motor Accessories, Limited, London, England. Pub. by Romac Industries Limited, London, England.

**ROMAC**

For Tire and Tube Repair Kits, Blow-Out Patches, Tire Linings, etc. (Int. Cls. 7, 12, and 17).

**Class 39—Clothing**

375,750. Feb. 27, 1940. Wembley, Inc., New Orleans, La. Pub. by registrant.

**VELV-O-FAILLE**

For Men's Neckties and Scarfs.

375,751. Feb. 27, 1940. Wembley, Inc., New Orleans, La. Pub. by registrant.

**VELVAFAILLE**

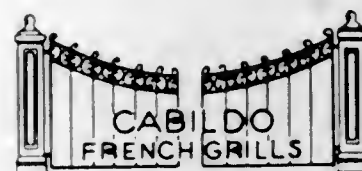
For Men's Neckties and Scarfs.

390,628. Sept. 30, 1941. Wembley, Inc., New Orleans, La. Pub. by registrant.



For Men's Neckties and Scarfs.

392,776. Jan. 13, 1942. Wembley, Inc., New Orleans, La. Pub. by registrant.



For Men's Neckties and Scarfs.

**Class 43—Thread and Yarn**

317,656. Oct. 2, 1934. Carr Manufacturing Corporation, Bristol, R.I. Pub. by Carr-Fulflex, Inc., Bristol, R.I.

**Fulflex**

For Rubber Thread.

**Class 46—Foods and Ingredients of Foods Class 47—Wines**

256,411. May 14, 1929. Old Home Creameries, Incorporated, Minneapolis, Minn. Pub. by Old Home Foods, Inc., St. Paul, Minn.



For Creamed Cottage Cheese.



BARTON & GUESTIER  
BORDEAUX  
FRANCE

For Wines.



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 AMF Tuboscope, Inc., Houston, Tex. 859,835, pub. 8-20-68, Cl. 103.  
 Abdulla & Co. Ltd., London, England. 70,157, 12(c) pub. 11-5-68, Cl. 17.  
 Accu-Pak Laboratories: See—  
 Ciba Corp.  
 Acme Highway Products Corp., Buffalo, N.Y. 859,547, pub. 8-20-68, Cl. 12.  
 Acme-Lite Mfg. Co., Chicago, Ill. 737,795, can. Cl. 21.  
 Advico, Inc., Yakima, Wash. 859,819, pub. 8-20-68, Cl. 101.  
 Affiliated Personnel Service, Inc. of Madison, Madison, Wis. 831,472, cor. Cl. 38.  
 Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 737,876, can. Cl. 26.  
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 I.G. Farbenindustrie Aktiengesellschaft.  
 Agricultural Nitrogen Institute, Memphis, Tenn. 859,843, pub. 8-20-68, Cl. 200.  
 Agway Inc., Syracuse, N.Y. 859,518, pub. 8-16-66, Cl. 6.  
 Alrpax Electronics Inc., Cambridge, Md. 859,678, pub. 8-20-68, Cl. 26.  
 Ajinomoto Co., Inc.: See—  
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 Ajinomoto Kabushiki Kaisha, d.b.a. Ajinomoto Co., Inc., Tokyo, Japan. 859,521, pub. 8-20-68, Cl. 6.  
 Akemi Inc., Charlotte, Mich. 859,540, pub. 8-20-68, Cl. 12.  
 Albany Felt Co., Albany, N.Y. 859,754-5, pub. 8-20-68, Cl. 42.  
 Alcan Aluminum Corp., Cleveland, Ohio. 859,570, pub. 8-20-68, Cl. 14.  
 Aldred, Shirley, & Co. Ltd., Worksop, England. 737,702, can. Cl. 6.  
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 Jones, Alfred W.  
 Allied Building Components Inc., Tacoma, Wash. 737,725, can. Cl. 12.  
 Aluma Products Corp., Detroit, Mich. 737,847, can. Cl. 23.  
 Alumitex Inc., Los Angeles, Calif. 859,551, pub. 8-20-68, Cl. 12.  
 Aluminum Co. of America, Pittsburgh, Pa. 859,534, pub. 8-20-68, Cl. 12.  
 Amano Tokushu Kikai Kabushiki Kaisha, Yokohama, Japan. 737,889-90, can. Cl. 27.  
 Ambassador Publishing Co., Ltd., The: See—  
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 American Associated Companies, Inc., Atlanta, Ga. 859,752, pub. 8-20-68, Cl. 42.  
 American Cyanamid Co., Wayne, N.J. 859,599-601, pub. 8-20-68, Cl. 18.  
 American Home Products Corp., New York, N.Y. 856,384, cor. Cl. 18.  
 American Map Co., Inc., New York, N.Y. 506,938, ren. 11-5-68, Cl. 38.  
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 American Republic Insurance Co., Des Moines, Iowa. 859,830, pub. 8-20-68, Cl. 102.  
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 Buegeleisen, Joseph, Co.  
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 McCall Corp.  
 Anderson, V.D., Co., The, Cleveland, Ohio, to International Basic Economy Corp., New York, N.Y. 504,601, ren. 11-5-68, Cl. 13.  
 Andresen Corp., Chicago, Ill. 859,527, pub. 8-20-68, Cl. 6.  
 Anheuser-Busch, Inc., St. Louis, Mo. 506,753, ren. 11-5-68, Cl. 6.  
 Anken Chemical & Film Corp., Newton, N.J. 737,869, can. Cl. 26.  
 Aquaplanes, Inc., Saugus, Calif. 859,702, pub. 8-20-68, Cl. 35.  
 Aquatherm Conditioning Corp., Long Island City, N.Y. 859,832, pub. 8-20-68, Cl. 103.  
 Armour & Co., Chicago, Ill. 859,810, pub. 8-20-68, Cl. 52.  
 Armour Pharmaceutical Co., Chicago, Ill. 737,780, can. Cl. 18.  
 Associated Dry Goods Corp., d.b.a. The Denver Dry Goods Co., New York, N.Y. 859,510, pub. 8-20-68, Cl. 3.  
 Associated Grocers' Co. of St. Louis, Mo., St. Louis, Mo. 859,825, pub. 8-20-68, Cl. 101.  
 Atlanta Stove Works, Inc., The, Atlanta, Ga. 859,698, pub. 8-20-68, Cl. 34.  
 Atlantic Research Corp.: See—  
 Susquehanna Corp., The.  
 "Automatic" Sprinkler Corp. of America, Cleveland, Ohio, from Scott Industries, Inc., Lancaster, N.Y. 859,674, pub. 8-20-68, Cl. 26.  
 Auto-Soler Co., The, Atlanta, Ga. 859,662, pub. 8-20-68, Cl. 23.  
 Avant-Garde Media, Inc., New York, N.Y. 859,726, pub. 8-20-68, Cl. 38.  
 Avnet, Inc., New York, N.Y., from Carol Wire & Cable Corp., Pawtucket, R.I. 859,628, pub. 8-20-68, Cl. 21.  
 Avon Products, Inc., New York, N.Y. 859,793-5, pub. 8-20-68, Cl. 51.  
 Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. 859,532, pub. 8-20-68, Cl. 10.  
 Balata, Victor, & Textile Belting Co., Easton, Pa. 502,119-20, ren. 11-5-68, Cl. 35.  
 Barbeau, Napoleon A., d.b.a. Barbeau Supply Co., St. Paul, Minn. 738,005, can. Cl. 52.  
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 Barringer Knitting Mills, Inc., Philadelphia, Pa. 859,738, pub. 8-20-68, Cl. 39.  
 Barton Distilling Co., d.b.a. Interleeds & Leeds Distributors, Inc., Chicago, Ill. 859,869, Cl. 47.  
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 Bata Shoe Co. of Canada, Ltd., Batawa, Ontario, Canada. 859,663, pub. 8-20-68, Cl. 23.  
 Baummueller, Heinrich, Fabrik fuer Elektrotechnik, G.m.b.H., Nurnberg, Germany. 737,799, can. Cl. 21.  
 Baxter Laboratories, Inc., Morton Grove, Ill. 737,768-70, can. Cl. 18.  
 Beaulit Corp., New York, N.Y. 859,757-8, pub. 8-20-68, Cl. 42.  
 Beautycraft Furniture Industries, Inc., Miami, Fla. 737,901, can. Cl. 32.  
 Beautykote Co.: See—  
 Goheen Corp. of New Jersey.  
 Bee-Tree Honey: See—  
 Hartman, Edward W.  
 Belknap, Ivan F. and Julia M., d.b.a. Van F. Belknap Co., Detroit, Mich. 859,665, pub. 8-20-68, Cl. 23.  
 Belknap, Van F., Co.: See—  
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 Bell, Sidney S., Tully, N.Y. 859,690, pub. 8-20-68, Cl. 28.  
 Bendix Corp., The, Detroit, Mich. 737,805, can. Cl. 21.  
 Bereman, J. H., d.b.a. Stillman Freckle Cream Co., to The Stillman Co., Aurora, Ill. 251,731, ren. 11-5-68, Cl. 51.  
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 Bingham, Samuel, Co., Chicago, Ill. 859,669, pub. 8-20-68, Cl. 24.  
 Biscayne Mfg. Corp., Miami, Fla. 859,612, pub. 8-20-68, Cl. 19.  
 Bloom, Charles, Inc., New York, N.Y. 502,082, ren. 11-5-68, Cl. 42.  
 Bohemian Distributing Co., d.b.a. Bristol House, Ltd., Los Angeles, Calif. 859,870, Cl. 49.  
 Bonat, Samuel, & Bro., Inc., West Paterson, N.J. 505,768, ren. 11-5-68, Cl. 51.  
 Bond, George S., Co., The, Indianapolis, Ind. 859,721, pub. 8-20-68, Cl. 38.  
 Borg-Warner Corp., Chicago, Ill. 737,867, can. Cl. 26.  
 Bradley Washfountain Co., Menomonee Falls, Wis. 859,539, pub. 8-20-68, Cl. 13.  
 Brand X Corp., The, from Harry H. Chaffin, Jr., d.b.a. The Gleema Co., Cincinnati, Ohio. 738,004, can. Cl. 52.  
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 Bristol-Myers Co., New York, N.Y. 666,109, can. Cl. 51.  
 Bristol-Myers Co., New York, N.Y. 859,792, pub. 8-20-68, Cl. 51.  
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 British West Indian Airways Ltd., New York, N.Y. 719,069, cor. Cl. 105.  
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 Brown Engineering Co., Inc., Huntsville, Ala. 737,812, can. Cl. 21.  
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 Byers Color Laboratory, Inc., Portland, Oreg. 737,928, can. Cl. 38.  
 CAH Industries Inc., Franklin Park, Ill. 859,515, pub. 8-20-68, Multiple Class (Classes 5, 6, 16, and 52).



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 Shelton, Carl M., d.b.a. Plystone Co., Columbia, S.C. 439,510, ren. 11-5-68, Cl. 12.  
 Sherwood, Henry A.: See—  
 U.S. Servicator Corp.  
 Shippam, C. Ltd., Chichester, Sussex, England. 859,772, pub. 8-20-68, Cl. 46.  
 Shoe Corp. of America: See—  
 Schiff Co., The  
 Shyanne Co.: See—  
 Corrigan, J. P.  
 Sinclair-Koppers Co., d.b.a. National Plastics Co., Kansas City, Mo. 859,507, pub. 8-20-68, Cl. 2.  
 Siro Products Co., Inc., Mount Vernon, N.Y. 859,511-12, pub. 8-20-68, Cl. 3.  
 Slat, George W., Kansas City, Mo. 737,863-4, can. Cl. 26.  
 Sivaco Wire & Nail Co., Marleville, Quebec, Canada. 859,564, pub. 8-20-68, Cl. 13.  
 Skyline Corp., Elkhart, Ind. 859,610, pub. 5-28-68, Cl. 19.  
 Slazengers Ltd., d.b.a. Challenge House, Croydon, Surrey, England. 859,637, pub. 8-20-68, Multiple Class (Classes 22 and 39).  
 Smith Carter Co.: See—  
 Smith, Samuel W.  
 Smith, Evelyn L., Philadelphia, Pa. 737,902, can. Cl. 32.  
 Smith, Miller & Patch, Inc., New York, N.Y. 859,598, pub. 8-20-68, Cl. 18.  
 Smith, Samuel W., d.b.a. Smith Carter Co., Sandpoint, Idaho. 859,497, pub. 8-20-68, Cl. 1.  
 Snyder's Drug Stores, Inc., Hopkins, Minn. 859,791, pub. 8-20-68, Cl. 51.  
 Society For Visual Education, Inc., Chicago, Ill. 859,850, Cl. 38.  
 Southwest Irrigation Co., Tulsa, Okla. 859,831, pub. 8-20-68, Cl. 103.  
 Spencer Chemical Co., Kansas City, Mo. 580,034, can. Cl. 6.  
 Spencer Chemical Co., Kansas City, Mo. 589,028, can. Cl. 6.  
 Sperry-Rand Corp.: See—  
 Rand Kardex Service Corp.  
 Spray Specialties Co.: See—  
 "42" Products, Ltd., Inc.  
 Spring Valley Ranch, Volga, Iowa. 859,502, pub. 8-20-68, Cl. 1.  
 Staco Industries: See—  
 Cokas, Stanley.  
 Standard Oil Co. of New Jersey, Wilmington, Del., to Humble Oil & Refining Co., Houston, Tex. 250,562, ren. 11-5-68, Cl. 16.  
 Standard Oil Co. of New Jersey, Wilmington, Del., to Humble Oil & Refining Co., Houston, Tex. 250,866, ren. 11-5-68, Cl. 52.  
 Standard-Coosa-Thatcher Co., Chattanooga, Tenn. 506,176-7, ren. 11-5-68, Cl. 43.  
 Stanley Home Products, Inc., Westfield, Mass. 859,513, pub. 8-20-68, Cl. 4.  
 Steck Co., The, to Steck-Warlick Co., Austin, Tex. 501,118, ren. 11-5-68, Cl. 37.  
 Steck-Warlick Co.: See—  
 Steck Co., The  
 Stereotronics Corp., Los Angeles, Calif. 737,809, can. Cl. 21.  
 Sterling Forest Management Corp., Tuxedo, N.Y. 859,841, pub. 8-20-68, Cl. 107.  
 Sterno Industries, Inc., Harrison, N.J. 859,504, pub. 8-20-68, Cl. 1.  
 Stillman Co., The: See—  
 Bereman, J. H.  
 Stillman Freckle Cream Co.: See—  
 Bereman, J. H.  
 Stone, J. B., & Co. Ltd., Sussex, England. 737,742, can. Cl. 13.  
 Stonington Packing Co., Inc., Stonington, Maine. 859,779-80, pub. 8-20-68, Cl. 46.  
 Sun Chemical Corp., New York, N.Y., by The Western Petrochemical Corp., Chanute, Kans. 440,591, 12(c) pub. 11-5-68, Cl. 16.  
 Sun-Chek Distributing Co., Los Gatos, Calif. 737,758, can. Cl. 16.  
 Super Freeze Co., Burbank, Calif. 859,695, pub. 8-20-68, Cl. 31.  
 Superior Electric Co., The, Bristol, Conn. 859,650, pub. 8-20-68, Cl. 23.  
 Superior Sleeprite Corp., Chicago, Ill. 737,898, can. Cl. 32.  
 Surfside News, Kill Devil Hills, N.C. 859,720, pub. 8-20-68, Cl. 38.  
 Susquehanna Corp., The, from Atlantic Research Corp., Alexandria, Va. 859,699, pub. 8-20-68, Cl. 34.  
 Swift & Co., Chicago, Ill. 246,800, ren. 11-5-68, Cl. 46.  
 Syphers, Robert L., Vista, Calif. 859,731, pub. 2-15-68, Cl. 39.  
 T.F.H. Publications, Inc., Jersey City, N.J. 859,767, pub. 8-20-68, Cl. 46.  
 TV Time & Channel, Inc., Pen Argyl, Pa. 859,851, Cl. 38.  
 Talk O' The Town, Highland Park, Ill. 737,999, can. Cl. 51.  
 Tappan Co., The, Mansfield, Ohio. 859,632, pub. 8-20-68, Cl. 21.  
 Tappan Co., The, Mansfield, Ohio. 859,667, pub. 8-20-68, Cl. 23.  
 Tappan Co., The, Mansfield, Ohio. 859,697, pub. 8-20-68, Cl. 32.  
 Taylor Machine Works, Louisville, Miss. 440,854, 12(c) pub. 11-5-68, Cl. 19.  
 Telecomputing Corp., Los Angeles, Calif. 737,886, can. Cl. 26.  
 Teltron, Inc., Boyertown, Pa. 859,627, pub. 8-20-68, Cl. 21.  
 Texas Scientific Laboratories, Inc., Houston, Tex. 737,771, can. Cl. 18.  
 Textron Inc.: See—  
 Goben Corp. of New Jersey.  
 Thomas Industries Inc., Louisville, Ky. 859,622, pub. 8-20-68, Cl. 21.  
 Tileston & Hollingsworth Co., Boston, Mass. 859,849, Cl. 37.  
 Totobo, Ltd.: See—  
 Toyo Boseki Kabushiki Kaisha.  
 Toyo Boseki Kabushiki Kaisha, d.b.a. Totobo, Ltd., from Kureha Spinning Co. Ltd., Osaka, Japan. 859,711, pub. 5-24-68, Cl. 37.  
 Tropical Paint & Oil Co., The, Cleveland, Ohio, by Hooker Chemical Corp., Niagara Falls, N.Y. 251,578, 12(c) pub. 11-5-68, Cl. 16.  
 Trylon Inc., Elverson, Pa. 859,533, pub. 8-20-68, Cl. 12.  
 Tube Turns, by Chemetron Corp., d.b.a. Tube Turns, Louisville, Ky. 439,344, 12(c) pub. 11-5-68, Cl. 13.  
 Tupperware: See—  
 Rexall Drug & Chemical Co.  
 Turtle Wax, Inc., Chicago, Ill. 859,514, pub. 8-20-68, Cl. 4.  
 USV Pharmaceutical Corp., New York, N.Y. 859,586-7, pub. 8-20-68, Cl. 18.

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USV Pharmaceutical Corp., New York, N.Y. 859,606-7, pub. 8-20-68, Cl. 18.  
 Uniroyal, Inc.: See—  
 Eureka Fire Hose Mfg. Co.  
 United Aircraft Corp., East Hartford, Conn. 859,571, pub. 8-20-68, Cl. 14.  
 United Aircraft Corp., East Hartford, Conn. 859,619, pub. 8-20-68, Cl. 21.  
 United-Hagie Hybrids, Inc., Des Moines, Iowa. 833,131, can. Cl. 1.  
 U.S. Plywood-Champlon Papers Inc., New York, N.Y. 859,577, pub. 8-20-68, Cl. 16.  
 U.S. Rubber Co., New York, N.Y. 859,636, pub. 8-20-68, Cl. 22.  
 U.S. Servicator Corp., Plainville, N.Y., from Henry A. Sherwood, Short Hills, N.J. 737,926, can. Cl. 38.  
 Universal Mayflower Corp., New York, N.Y. 859,756, pub. 8-20-68, Cl. 42.  
 Vacuum Oil Co., Rochester, N.Y., to Mobil Oil Corp., New York, N.Y. 31,735, ren. 11-5-68, Cl. 15.  
 Valmor Products Co., Chicago, Ill. 506,873, ren. 11-5-68, Cl. 51.  
 Value Engineering, Inc., Boston, Mass. 738,019, can. Cl. 100.  
 Vanderbilt, R. T. Co., Inc., New York, N.Y. 859,574, pub. 8-20-68, Cl. 15.  
 Vetreria di Vernante S.p.A., Cuneo-Spinetta, Italy. 859,536, pub. 8-20-68, Cl. 12.  
 Villager, Inc., The, Philadelphia, Pa. 859,824, pub. 8-20-68, Cl. 101.  
 Virginia Sky-Line Co., Inc., Richmond, Va. 859,817, pub. 8-20-68, Cl. 100.  
 Vitron Corp.: See—  
 Pro-Phy-Lac-Tic Brush Co.  
 Vitron Corp., Cleveland, Ohio. 859,692, pub. 8-20-68, Cl. 29.  
 Volkadrihl Sales Co., Inc., New York, N.Y. 821,573, can. Cl. 23.  
 Von Stiehl Wine, Inc., Algoma, Wis. 859,783, pub. 8-20-68, Cl. 47.  
 W-R Chemical Co.: See—  
 Indiana Chemical & Mfg. Co.  
 Warner Bros. Seven Arts, Inc., New York, N.Y. 859,840, pub. 8-20-68, Cl. 107.  
 Warner Bros. Seven Arts, Inc., New York, N.Y. 859,842, pub. 8-20-68, Cl. 107.  
 Washington State University, Pullman, Wash. 859,769, pub. 8-20-68, Multiple Class (Classes 46 and 107).  
 Water Systems Council, Chicago, Ill. 859,652, pub. 8-20-68, Cl. 23.  
 Waterous Co., St. Paul, Minn. 859,560, pub. 8-20-68, Cl. 13.  
 Watertite Gutter Machine Co.: See—  
 Forman, Willard E.  
 Watson, Burr, Toronto, Ontario, Canada. 737,815, can. Cl. 22.  
 Webster Clothes, Inc., Baltimore, Md. 859,747, pub. 8-20-68, Cl. 39.  
 Weinberg Corp., to Oxford Clothes Inc., Chicago, Ill. 505,211, ren. 11-5-68, Cl. 39.  
 Wellcome Foundation, Ltd., The, London, England. 737,774, can. Cl. 18.  
 Wembley, Inc., New Orleans, La. 375,750-1, 12(c) pub. 11-5-68, Cl. 39.  
 Wembley, Inc., New Orleans, La. 390,628, 12(c) pub. 11-5-68, Cl. 39.  
 Wembley, Inc., New Orleans, La. 392,776, 12(c) pub. 11-5-68, Cl. 39.  
 Wen-Mac Corp., Los Angeles, Calif. 737,838, can. Cl. 22.  
 Wester Bros.: See—  
 Wester, Herbert.  
 Wester, Herbert, d.b.a. Wester Bros., New York, N.Y. 504,431, ren. 11-5-68, Cl. 44.  
 Western Petrochemical Corp., The: See—  
 Sun Chemical Corp.  
 Weyenberg Shoe Mfg. Co., Milwaukee, Wis. 859,737, pub. 8-20-68, Cl. 39.  
 What-Cha-Ma-Call-It, Inc., New York, N.Y. 859,643, pub. 8-20-68, Cl. 22.  
 White, J. G., Engineering Corp., The, New York, N.Y. 505,623, ren. 11-5-68, Cl. 100.  
 White Laboratories, Inc., Kenilworth, N.J. 737,787, can. Cl. 18.  
 Wilson & Co., Inc., Chicago, Ill. 859,773, pub. 8-20-68, Cl. 46.  
 Wilson, Grant, Inc., Chicago, Ill. 859,543, pub. 8-20-68, Cl. 12.  
 Wilson, Lee, Engineering Co., Inc., Rocky River, Ohio. 859,656, pub. 8-20-68, Cl. 23.  
 Winchester Marine Corp., Miami, Fla. 859,666, pub. 8-20-68, Cl. 23.  
 Winfrank Stylists, Inc., New York, N.Y. 737,944, can. Cl. 39.  
 Wittenberg, Jerome S., West Orange, N.J. 859,713, pub. 8-20-68, Cl. 37.  
 World Carpet Mills, Inc., Dalton, Ga. 737,967, can. Cl. 42.  
 Wright & McGill Co., Denver, Colo. 859,639, pub. 8-20-68, Cl. 22.  
 Xicom Inc., Tuxedo, N.Y. 859,821, pub. 8-20-68, Cl. 101.  
 Yardley of London, Inc., Totowa, N.J. 859,786, pub. 1-30-68, Cl. 51.  
 You Do, Inc., New York, N.Y. 737,992, can. Cl. 50.  
 Zip-Mark Corp., Bordentown, N.J. 859,848, Cl. 37.



U.S. DEPARTMENT OF COMMERCE  
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

November 12, 1968

Volume 856

Number 2

PATENTS  
NOTICES

Board of Appeals Decisions Rendered in the Month of  
August 1968

Examiner affirmed	146
Examiner affirmed in part	18
Examiner reversed	41
Total	205

Application Correspondence

The Office is experiencing increasing difficulty in matching incoming papers with the application file to which they pertain. This applies especially to amendments, powers of attorney, changes of address, status letters, and requests for extension of time.

Frequently, there are errors in the serial number or in the Group Art Unit number, or the incoming paper uses the old Group Art Unit number where an application has been transferred and acted on by a different Examining Group.

It would be of great assistance to the Office if all incoming papers pertaining to a filed application carried the following items:

1. Serial number (checked for accuracy).
2. Group Art Unit number (copied from most recent Office Action).
3. Name of the Examiner who prepared the most recent Office Action.
4. Title of Invention.

It is further requested that at least 60 days be permitted to elapse before filing any additional papers relating to a newly filed application. If this is done, the original application papers may be completely processed and more easily located when the additional papers are received.

RICHARD A. WAHL,  
Assistant Commissioner.

Oct. 18, 1968.

Adjudicated Patents

(C.A.R.I.) Ronci Patent No. 3,050,877 (37—34), for REINFORCED HEEL AND TAP. Claims 3 and 4 Held invalid. *Ronci v. Eastern Plastic Corp.*, 296 F.2d 890; 158 USPQ 369.

(C.A. Ill.) Edwards Patent No. 3,061,139 (220—44), for SELF-VENTING PACKAGE. Claims 1 and 3 to 13 Held valid and infringed. *Illinois Tool Works, Inc. v. Continental Can Co.*, 397 F.2d 517; 158 USPQ 437.

(C.A. Tex.) Atkinson, Clined and Cunningham Patent No. 3,075,781 (277—83), for BEARING SEAL. Claims 1, 2, 3, 8, and 9 Held valid and infringed. *Smith Industries Intern. v. Hughes Tool Co.*, 396 F.2d 735; 158 USPQ 243.

(C.A. Oreg.) Lindberg Patent No. 3,082,031 (294—111), for TWO POINT LOG GRAPPLE. Held invalid. *Young Corp. v. Jenkins*, 396 F.2d 893; 158 USPQ 442.

(C.A.N.Y.) Celmer Patent No. 3,083,104 (99—103), for METHOD FOR RECOVERING LIQUIDS FROM VEGETABLE MATERIALS. Claims 1, 2, 22 to 25, 30 and 31 Held invalid. *Taylor Wine Co. v. Celmer*, 397 F.2d 784; 158 USPQ 497.

(C.A. Ill.) Dinnerstein and Cummings Patent No. 3,137,122 (58—116), for RESILIENT MEANS FOR DRIVING ESCAPE WHEEL. Held invalid. *Amphenol Corp. v. General Time Corp.*, 397 F.2d 431; 158 USPQ 113.

(C.A. Ill.) Edwards Patent No. 3,139,213 (220—797), for NESTABLE CUP. Claims 1, 5, 6 and 9 Held valid and infringed. *Illinois Tool Works, Inc. v. Continental Can Co.*, 297 F.2d 517; 158 USPQ 437.

Final Rejection—Time for Response

In clarification of the Notice of August 7, 1967, published in the OFFICIAL GAZETTE of August 29, 1967 (841 O.G. 1411), the filing of a timely response after a final rejection is construed as including a request for a one month extension of the shortened statutory period.

If the response is complete but fails to place the application in condition for allowance, the request will be granted. The entry of any further amendments filed during the additional month shall be restricted to those which *prima facie* place the application in condition for allowance.

RICHARD A. WAHL,  
Assistant Commissioner.

Sept. 26, 1968.

Defensive Publication Program

The open season of the New Defensive Publication Program, originally announced in the OFFICIAL GAZETTE of May 7, 1968 (850 O.G. 1) as terminating November 1, 1968, is hereby extended. Accordingly, until January 1, 1969, this program will be open for any pending application awaiting first action by the Patent Office at the time of the request without regard to the filing date of that application.

As originally announced this program will continue to be open until further notice to any applicant having an application awaiting action by the Patent Office and who files a written request no later than eight (8) months after the earliest U.S. effective filing date of the designated application.

RICHARD A. WAHL,  
Assistant Commissioner.

Oct. 1, 1968.

New Applications Received During August 1968

Patents	7445
Designs	371
Plant Patents	6
Reissues	27
Total	7849

Issue—November 12, 1968

Patents	1249—No. 3,409,907 to No. 3,411,155, incl.
Designs	65—No. 212,666 to No. 212,730, incl.
Plant Patents	3—No. 2,844 to No. 2,846, incl.
Reissues	6—No. 26,487 to No. 26,492, incl.
Total	1323



# PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

## CONDITION OF PATENT APPLICATIONS AS OF OCTOBER 21, 1968

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
* Denotes date of oldest application for each Operation.		
<b>CHEMICAL EXAMINING OPERATION</b>		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director..... Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	6-17-66	1-27-64
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director..... Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	5-10-66	*6-10-63
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—L. J. BERCOVITZ, Director..... Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	7-20-66	2-17-64
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Director..... Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*1-24-66	6-17-63
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director..... Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	5-09-66	4-30-64
<b>ELECTRICAL EXAMINING OPERATION</b>		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director..... Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	7-27-66	4-01-64
SECURITY, GROUP 220—S. BOYD, Director..... Ordnance, Firearms and Ammunition; Radar; Underwater Signalling; Directional Radio; Torpedoes; Seismic Exploring; Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	5-18-67	4-27-65
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Director..... Communications; Multiplexing Techniques; Facsimile; Data Processing; Computation and Conversion; Storage Devices and Related Arts.	*10-12-65	*10-23-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director..... Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	1-11-66	8-12-63
PHYSICS, GROUP 280—R. L. EVANS, Director..... Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	10-24-66	4-21-65
DESIGNS, GROUP 290—S. BOYD, Director..... Industrial Arts; Household, Personal and Fine Arts.	2-01-68	4-14-67
<b>MECHANICAL EXAMINING OPERATION</b>		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director..... Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	4-03-67	10-01-65
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director..... Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding; Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Wood-working; Tools; Cutlery; Jacks.	12-02-66	2-11-65
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director..... Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Type-writers; Stationery; Information Dissemination.	12-06-66	7-15-64
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director..... Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	10-06-67	12-28-66
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director..... Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	5-01-67	3-26-65
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director..... Fluid Handling, Including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	*6-01-66	*5-31-63
Total number of pending applications (excluding Designs).....		187,566
Total number of Design applications pending.....		2,527

Expiration of patents: The patents within the range of numbers indicated below expire during November 1968, except those which may have expired earlier due to shortened terms under the provisions of Public Law 650, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 819, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their term curtailed by disclaimer under the provisions of 35 U.S.C. 253.

Patents..... Numbers 2,573,674 to 2,576,908, inclusive

Plant Patents..... Number 1,048

# DEFENSIVE PUBLICATIONS

PUBLISHED NOVEMBER 12, 1968

Published at the request of the applicant or owner in accordance with Notice of Apr. 11, 1968, S49 O.G. 1221. The abstracts are identified by serial number of the applications and arranged in chronological order. The heading of each abstract of application published herein indicates the number of pages of specification, including claims and sheets of drawing contained in the application as originally filed. The files of these applications are available to the public for inspection and reproduction may be purchased for 30 cents a sheet.

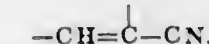
Applications published under the Defensive Publication Program have not been examined as to the merits of alleged invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

**556,009**  
**FORM COATING PROCESS**  
Richard D. Samson, Levittown, Pa., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware  
Original application Jan. 28, 1963, Ser. No. 254,447.  
Divided and this application Apr. 21, 1966, Ser. No. 556,009. Published Nov. 12, 1968  
Class 264—255

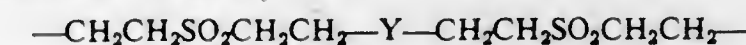
**No Drawing. 8 Pages Specification**  
The invention consists of a process for making so called "dipped articles," such as, girdles, from urethane materials. The process comprises applying to a form at least one layer of a coating composition comprising a solution of partially blocked urethane prepolymer, curing catalyst and curing agent for the prepolymer, air drying the coated form after at least one of the coating layers has been applied to the form, heating the coated form at polymer curing temperatures, and stripping the resulting cured product from the form. The prepolymer has an NCO/active hydrogen blocking ratio of at least about 2 to 10 and an NCO/active hydrogen curing ratio of about 0.7 to 2.

**707,972**  
**TETRAHYDRO-QUINOLINE AND ANILINE BIS SULFONE METHINE DYES**  
John I. Dale II, and Max A. Weaver, both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662  
Continuation-in-part of application Ser. No. 502,360, Oct. 22, 1965. This application Feb. 26, 1968. Published Nov. 12, 1968  
Class 260—287

**No Drawing. 19 Pages Specification**  
Compounds containing two aniline or tetrahydroquinoline groups each of which contain the group



the two aniline or two tetrahydroquinoline groups being joined by the group



which is attached to the aniline or tetrahydroquinoline nitrogen atom, wherein Y is the residue of an active methylene compound. The disclosed compounds are useful as dyes for hydrophobic textile materials giving yellow to reddish yellow dyeing.

**504,062**  
**ETHYLENE SULFIDE POLYMER COATING COMPOSITIONS**  
Frederick L. Walters, Levittown, and John P. Gallagher, Morrisville, Pa., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware  
Filed Oct. 23, 1965. Published Nov. 12, 1968  
Class 260—29.2

**No Drawing. 9 Pages Specification**  
Stable liquid poly(ethylene sulfide) polymer coating compositions which yield substantially uniform, crack-free films and coatings are prepared by

(1) Mechanically comminuting and screening the polymer to a particle size of about 0.1 to about 2.5 microns, preferably to a range of sizes from about 0.2 to about 1.0 micron and

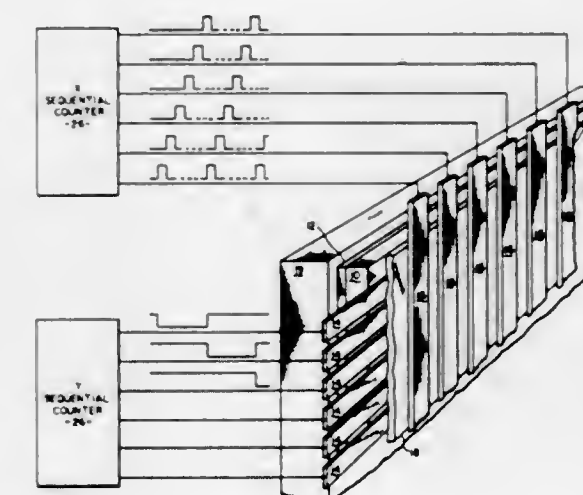
(2) Forming an aqueous colloidal dispersion containing 10 to 40% solids by the addition of water and ionic or non-ionic surface-active agents. Final coatings are obtained by fusing the films on substrates such as metals, ceramics, glass fabrics, asbestos fabrics, woven wire fabrics and heat treated polyacrylonitrile fabrics above the softening point of the polymer, preferably at about 225° C.

**544,596**  
**SOLID STATE OPTICAL DISPLAY FOR DISPLAYING DATA IN COLOR**

Stuart M. Oliver, 424 N. Oakhurst Drive, Beverly Hills, Calif. 90210

Filed Apr. 22, 1966. Published Nov. 12, 1968  
Class 178—5.4

2 Sheets Drawings. 9 Pages Specification



An X-Y display matrix with very high speed switching characteristics which can display data in color or a plurality of colors. The display comprises a panel containing a narrow band optical filter that is paired with a layer of electrochromic material disposed between transparent conductors of an X-Y matrix. When suitable potentials are applied to selected conductors of the matrix, the electrochromic material will exhibit a spectral shift so that its pass band will match that of the filter, whereby a projected light will pass through that portion of the display. If desired, the optical filter may be selected so that it matches the pass band of the ambient electrochromic material and may thus be shifted to mismatch the filter pass band to block a portion of the light projected through the display.



# 586,927 NITROCELLULOSE-ETHYLENE/VINYL ACETATE GEL LACQUERS

William S. Gates, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

Filed Oct. 17, 1966. Published Nov. 12, 1968  
Class 260—17

## No Drawing. 7 Pages Specification

Gel lacquer formulations can be prepared comprising a mixture of 60 to 80% of an alcohol-soluble nitrocellulose and 40 to 20% of an ethylene-vinyl acetate copolymer in a liquid phase comprising a mixture of an aliphatic alcohol and an aromatic hydrocarbon. The alcohol-soluble nitrocellulose includes any nitrocellulose having a maximum of about 11.5% nitrogen and a viscosity characteristic up to about 60 seconds, preferably about 6 seconds or less. The vinyl acetate copolymer can be any such copolymer containing at least 36% vinyl acetate and preferably 36 to 42% vinyl acetate. Such copolymers are readily compatible with nitrocellulose. The alcohol-hydrocarbon mixture is a lean solvent for the nitrocellulose and consists of 68 to 72 parts by weight of an aliphatic alcohol and 32 to 28 parts by weight of an aromatic hydrocarbon. A preferred lean solvent mixture consists of 70 parts isopropyl alcohol and 30 parts toluene.

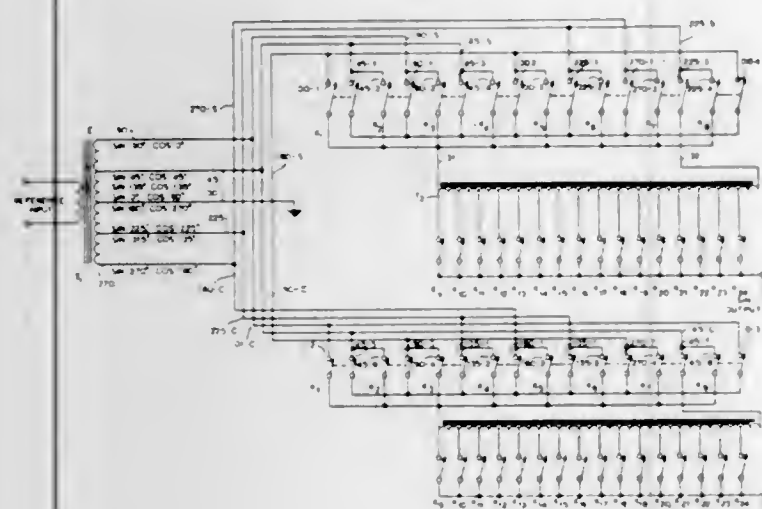
In preparation of the lacquer, the lean solvent mixture is heated to about 70° C. and the nitrocellulose copolymer mixture is added with agitation until dissolution is complete and a homogeneous solution is achieved. The mass is then permitted to cool to room temperature, whereupon gelation takes place. To apply such a lacquer to a substrate, the lacquer is heated until it is flowable and applied to the substrate, usually by hot dipcoating.

# 599,658 DIGITAL TO RESOLVER CONVERTER

Harris G. Prival, Rockville, Md., assignor to General Precision, Inc., a corporation of Delaware

Filed Nov. 7, 1966. Published Nov. 12, 1968  
Class 340—347

## 7 Sheets Drawings. 21 Pages Specification



A transformer with a multi-tapped secondary connected to a plurality of switches comprise circuitry for converting a digital representation of an angle, such as might be supplied by a computer, into two AC voltages suitably phased for positioning a synchro or resolver to that same angle. The taps on the transformer secondary are carefully placed to represent various phase angles. Each tap leads to a two-branch line, representing sine and cosine, and to switches which are used to select particular phase sectors of the transformer secondary. The selected sector is then applied to a multi-tapped inductance which

may be considered as a vernier for dividing the sectors into accurately phased signals for exciting the resolver.

656,370

# THERMAL STABILIZED POLYETHYLENE SULFIDE Ephraim H. Catsiff, Trenton, N.J., and Stephen W. Osborn, Newtown, Pa., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed July 27, 1967. Published Nov. 12, 1968  
Class 260—45.75

## No Drawing. 20 Pages Specification

Ethylene sulfide polymers are made thermally stable by incorporating (1) a tin compound, as for example, the oxides, carbonates, hydroxides, halides and sulfates of tin; alkali metal stannates; hydrocarbyl tin and its hydroxides, oxides, acids and mercaptoesters; hydrocarbyl tin acid salts; and stannous esters of mono- and polycarboxylic acids; and (2) an organic nitrogen compound, examples of which are, the amides, monomeric amines, substituted amines, polyamines and compounds containing nitrogen in ring structure.

Such stabilized polyethylene sulfide resins are useful in the manufacture of molded, extruded and film forms of articles such as rods, pipes and pumps.

665,270

# LAMINATING COMPOSITION OF A BLEND OF LOW MOLECULAR WEIGHT POLYETHYLENES AND ARTICLE OF MANUFACTURE

Raymond E. Sutherland and James G. Strach, both %  
Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662

Filed Sept. 5, 1967. Published Nov. 12, 1968  
Class 260—897

## No Drawing. 8 Pages Specification

Laminated articles and a laminating composition for use therein. The laminating composition is in particulate form of (1) from about 40 to 60 percent by weight of a polyethylene having an average molecular weight of about 15,000 to 25,000 and a melt index of about 15-25, and (2) from about 40 to 60 percent by weight of a polyethylene having an average molecular weight of about 8,000 to 11,000 and a melt index of about 170-230. Each of the polyethylenes have a particle size of about 150-250 microns and the composition has a melt index of about 50 to 90. The composition is particularly suited for laminating fabric materials.

668,665

# CATALYST FOR CONVERTING ACETYLENE TO MONOVINYLACETYLENE

Carl Albert Aufdermarsh, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Sept. 18, 1967. Published Nov. 12, 1968  
Class 252—429

## No Drawing. 8 Pages Specification

A non-aqueous catalyst for converting acetylene to monovinylacetylene, said catalyst comprising essentially two phases made by combining:

- (1) a solution of
  - (a) cuprous chloride,
  - (b) a quaternary ammonium chloride having six to 12 carbon atoms such as butyltrimethylammonium chloride, the molar ratio of said quaternary ammonium chloride to said cuprous chloride being from 0.7:1 to 1.2:1; and
  - (c) from two to 20 percent by weight of said catalyst phase (1) of N-methylpyrrolidone with
- (2) an alkylated aromatic hydrocarbon extender having a single aromatic ring, a boiling point from about 100° C. to about 250° C. and a solubility in said catalyst phase (1) of from one to 20 weight percent, the volume ratio of said catalyst phase (1) to said extender phase (2) being from 1:4 to 4:1.

The aromatic hydrocarbon extender can be tetrahydronaphthalene, diisopropylbenzene (including isomers and mixtures of isomers thereof), cumene, xylene and toluene.

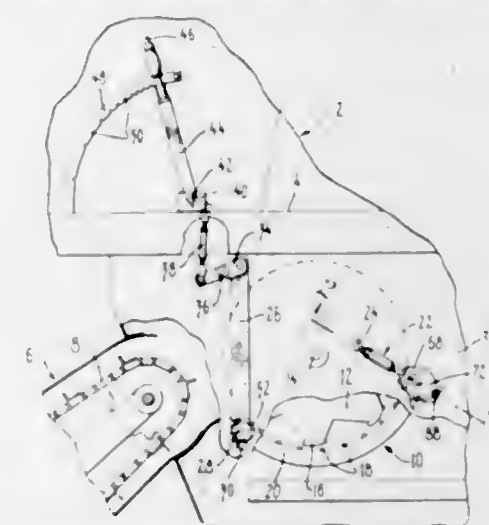
The use of the above catalyst significantly reduces tar buildup in the catalyst phase and results in a tar which can be effectively extracted solely by separating and processing the extender phase.

674,883

# QUICK RELEASE FOR ADJUSTABLE CONCAVE John R. Gerricks, Scarborough, Ontario, and Walter Hirsch and Norman R. Gill, Don Mills, Ontario, Canada, assignors to Massey-Ferguson Industries, Limited, Toronto, Ontario, Canada

Filed Oct. 12, 1967. Published Nov. 12, 1968  
Class 130—27

## 2 Sheets Drawings. 6 Pages Specification



A combine harvester is provided with a rotatable threshing cylinder mounted rearwardly of a crop conveyor. The cylinder includes peripherally spaced rasp bars which cooperates with grate bars carried by a concave located beneath the cylinder. The concave front end is connected by an adjustable eccentric through a linkage to a hand control lever. Adjustment of the spacing between the front end of the concave and the cylinder is obtained by varying the eccentric or by moving the lever. The rear end of the concave is eccentrically pivoted to a shaft that is journaled in a bracket. A turnbuckle connects the bracket to a pivot pin on the combine. The shaft is normally fixedly bolted to the bracket and adjustment of the spacing between the concave rear edge and the cylinder is via the turnbuckle. An obstruction introduced between the concave and cylinder is cleared by moving the lever to open the front edge of the concave. The bolt is then removed to enable shaft rotation to eccentrically move the rear edge of the concave away from the cylinder. This permits quick and easy clearance of obstructions from the threshing mechanism in the field.

674,884

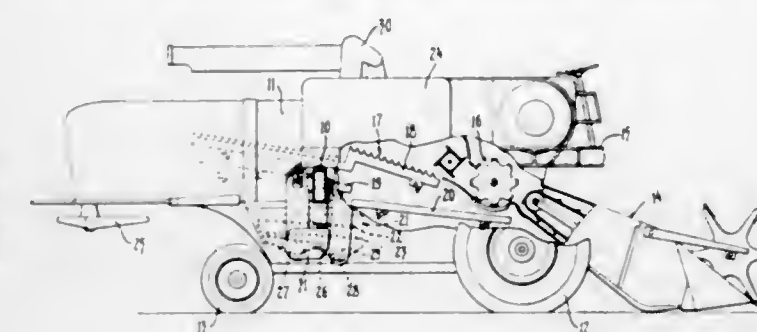
# RETHRESHING UNIT FOR COMBINES Robert Ashton, Islington, Ontario, Canada, assignor to Massey-Ferguson Industries Limited, Toronto, Ontario, Canada

Filed Oct. 12, 1967. Published Nov. 12, 1968  
Class 130—27

## 3 Sheets Drawings. 6 Pages Specification

A combine harvester is provided with a rethreshing unit which is fed with tailings by an elevator from a grain

conveyor. The rethreshing unit comprises a generally cylindrical housing having an inlet in one end wall and having an upper tangential outlet. A heavy high inertia cylinder is positioned for rotation between the end walls and includes a plurality of peripherally spaced removable rasp bars. The housing includes an arcuate door



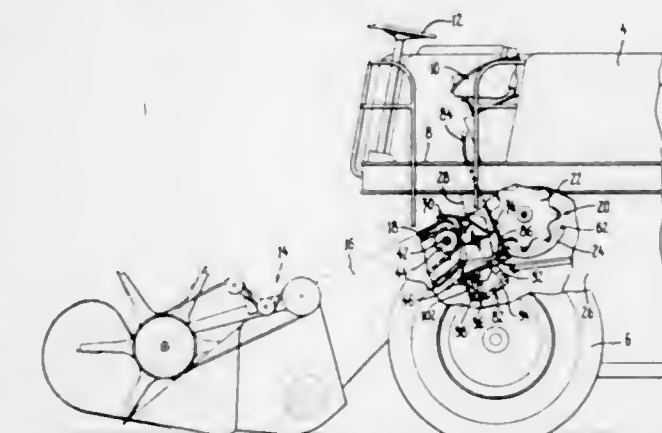
which is maintained closed by a latch. A plurality of spaced U-shaped threshing strips are removably bolted to door interior and cooperate with the rasp bars to rethresh the tailings. The removable threshing strips may be selectively increased or decreased in number of compensate for varying crop conditions.

680,486

# STONE DEFLECTOR FOR COMBINES Robert Ashton, Islington, Ontario, Canada, assignor to Massey-Ferguson Industries Limited, Toronto, Ontario, Canada

Filed Nov. 3, 1967. Published Nov. 12, 1968  
Class 130—9

## 3 Sheets Drawings. 7 Pages Specification



A stone deflector assembly is hinged to the rear of a combine elevator and is mounted on the front of the concave for movement therewith. The assembly includes a rotatable deflector for deflecting stones and heavy objects downwardly into the stone trap. The trap has a triangular cross section and includes a bottom wall having an opening. The opening is closed by a hinged door which has a slotted bracket at its free end. The slot carries a pin mounted on one end of a control linkage which connects to a hand lever on the operator's platform. In operation the deflector normally thins out the flow of harvested crop material and deflects stones downwardly into the trap. When it is desired to dump accumulated stones, the operator moves the lever which, through the linkage, slides the pin in the slot to open the door. The door is closed by reverse movement of the lever so that harvesting can continue without loss of crop material through the door. The stone trap assembly readily mounts on existing combines.



## DECISIONS IN PATENT AND TRADEMARK CASES

### U.S. Court of Customs and Patent Appeals

IN RE HANS CHRISTIAN ANDERSEN

No. 7940. Decided April 11, 1968

[55 CCPA—; 391 F.2d 953; 157 USPQ 277]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—REFERENCES.

"While the Board preferred to rely on Weise from among the secondary references, this fact does not render the other secondary references any less available as prior art for the purposes of this appeal. *In re Harza*, 47 CCPA 771, 274 F.2d 669, 124 USPQ 378."

2. PATENTABILITY—COMBINING REFERENCES—BODY INCORPORATION OF SECONDARY REFERENCE STRUCTURE NOT REQUIRED.

"Appellant argues that a combination of the teachings of Loosli and Weise would result in an inoperative structure in view of other elements essential to the Weise patent. This, however, ignores the relevant combined teachings of the two references. We have here a combination rejection involving structure. It is not necessary that the structure of one be substituted bodily in that of the reference with which it is combined. *In re Soderquist*, 51 CCPA 969, 326 F.2d 1016, 140 USPQ 387; *In re Bent*, 52 CCPA 850, 339 F.2d 255, 144 USPQ 28."

3. SAME—SAME—PROCESS—OBVIOUSNESS.

"Appellant contends that the secondary references are nonanalogous to the claimed method. As has been seen, Loosli relates to shrinking fabrics and the secondary references relate to dyeing them. All of the references pertain to the area of textile fluid treatment as does appellant's claimed process. We perceive no lack of relevancy in applying the manipulative aspects of one type of textile fluid treatment to other types of such treatment."

4. SAME—SAME—SAME—SAME.

"Appellant contends that in combining the teachings of Loosli with those of Weise, as well as with those of each of the other secondary references, the tribunals below have indulged in hindsight reconstruction of appellant's invention from such prior art. This argument is not persuasive. In our view, one of ordinary skill in the art who had the prior art of record before him would readily recognize that he had to attach the stockings of Loosli's Example 1 to some type of conveying means. Resort to any of the means of attachment disclosed in the secondary references would not involve the use of hindsight."

5. SAME—PARTICULAR SUBJECT MATTER—"TREATMENT OF TEXTILE GOODS MADE FROM SYNTHETIC YARN MATERIAL."

The refusal of a certain claim in an application entitled "Treatment of Textile Goods Made From Synthetic Yarn Material," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 98,041.

AFFIRMED.

*Richard E. Babcock, Jr., Watson, Cole, Grindle & Watson* for appellant.

*Joseph Schimmel (Raymond E. Martin, of counsel)* for the Commissioner of Patents.

Before WORLEY, Chief Judge, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK<sup>1</sup>

ALMOND, J., delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the rejection of the sole remaining claim of appellant's application entitled "Treatment of Textile Goods Made From

<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.



Synthetic Yarn Material,<sup>2</sup> as unpatentable over the prior art under 35 U.S.C. 103. All other claims were either canceled or withdrawn under Rule 142(b).

As disclosed in the specification, the claimed invention relates to a process of treating textile articles such as nylon stockings to improve their heat insulating and moisture absorbing qualities and to reduce their hard touch and glossy appearance. It is known from prior art to pursue these objectives by subjecting the materials to treatment in a chemical shrinking bath and subsequent rinsing baths. The specification states that as a result of this known process:

\* \* \* the strands are spread apart between intersecting or linking points of the textile pattern whereby a great number of small cavities are formed between the individual strands which cavities will give the thread as a whole somewhat more fluffy contours whereby the fabric becomes more voluminous and less glossy, and will also contribute towards increasing the heat insulating and moisture adsorbing or absorbing properties.

It is asserted that to accomplish the desired result of spreading the strands apart at their intersections rather than to achieve merely a uniform shrinking of the filaments without such spreading, "it has been found necessary to operate at very short and well defined times of treatment in the shrinking bath." In the prior art, it was attempted to control the immersion time "by conveying the goods through the bath between two synchronously travelling belt conveyors." However, this resulted in nonuniform and stained portions of the stockings. This undesired result, it is stated, arises because it is not possible "to obtain a uniform penetration of the liquid \* \* \* into all surface portions of a textile article." This difficulty is accentuated at such places where the article forms folds or plies, thus tending toward nonuniform shrinking so that the article may be unfavorably warped. It appears that the problem confronting appellant was that of non-uniform shrinking and staining, allegedly caused by partial shielding and/or restraint from shrinking of some areas of the article.

To obviate the problem and its cause, the specification states that the goods:

\* \* \* are conveyed through the baths in a continuous path in a freely suspended state. By keeping the goods freely suspended while pulling them through the shrinking bath it has been found possible to obtain a much more uniform penetration of the shrinking liquid into all portions of the article, than when the article is held, even relatively loosely, between two belt conveyors. Moreover, the freely suspended article will not form sharp folds or plies preventing the free penetration of shrinking liquid into the zones concerned. Finally, the article is free to shrink throughout the whole of its area, thus eliminating the risk of non-uniformity that may arise if in some places the article is incapable of moving relative to the conveying means or can only move to an insufficient extent.

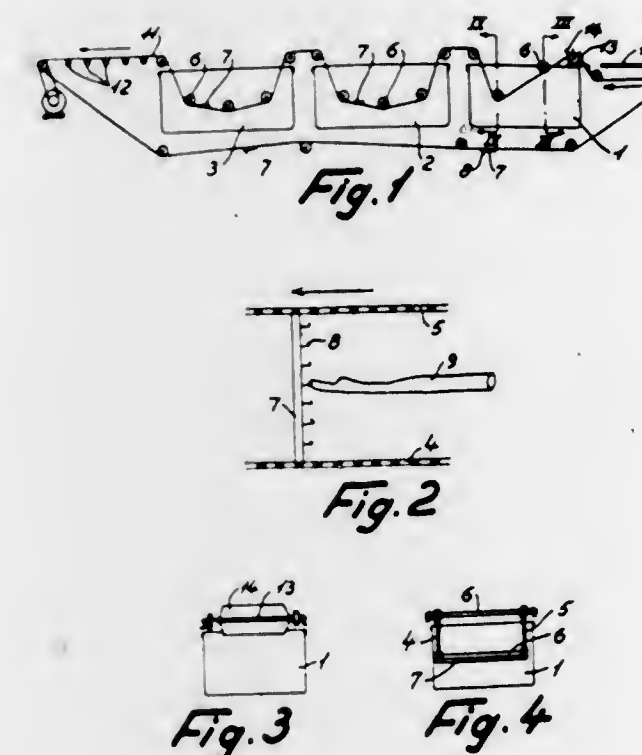
Claim 28 reads as follows:

28. In a method for the treatment of elongated textile articles as stockings made from synthetic material to make them softer, less glossy and more voluminous, said method including the submersion of the stockings in a liquid chemical shrinking bath in not more than 15 seconds, the improvement comprising the steps of attaching said stockings at one end only thereof to a conveying means and conveying the stockings into said bath with progressive immersion, starting with said one end, of said stockings, and conveying said stockings through said shrinking bath in a completely freely suspended state trailing through the liquid entirely out of contact with said conveying means, except at said point of attachment, in a continuous path, and then conveying said stockings out of said bath by progressive emergence, starting with said same one

<sup>2</sup> Serial No. 98,041, filed March 24, 1961.

end, of said stockings in the bath, whereby all portions of the stockings are exposed to the liquid and receive substantially equal treatment for substantially equal time intervals in the bath and the stockings are permitted free shrinkage.

Illustrative of the method of the claimed invention, the application drawings are set out below:



Elements 1, 2 and 3 are vessels containing liquid solution. Endless conveyor chains 4 and 5 extend along opposite sides of the vessels in a path which dips into and rises from each vessel with return run below the bottoms of the vessels. At suitable intervals transverse bars 7 provided with hooks 8 for attachment of article 9 to be treated, are mounted between the chains. Rollers 12 serve as support for the articles upon completion of the treatment to facilitate removal of same from hooks 8 of transverse bars 7. Roller 13 is driven synchronously with chains 4 and 5. Rollers 6 serve to insure complete submersion of the articles during transportation into and out of the several solutions contained in vessels 1, 2 and 3.

The Examiner relied on the following references:

Loosli, 3,084,020, Apr. 2, 1963.

Weise (Denmark), 49,355, Sept. 25, 1934.

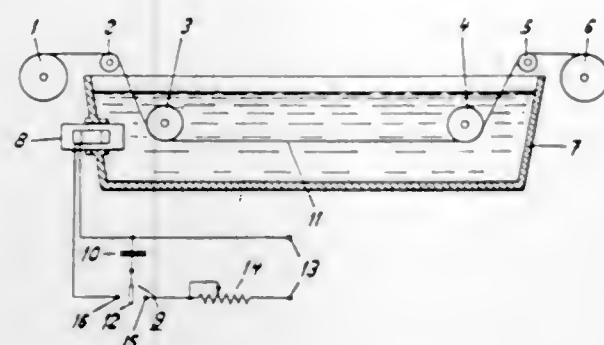
Callebaut et al. (France), 725,236, Feb. 11, 1932.

Holliday (Britain), 3,584, Nov. 4, 1873.

Loosli, with three specific examples, discloses a method of treating synthetic fibers or fabrics made therefrom by immersion within a shrinking bath "which contains chemical additions for loosening and curling the texture of individual fibers and which is also subjected to ultrasonic oscillations." In the first example, it is stated: "A number of hose \* \* \* are pulled sequentially through three baths, one behind the other," and "[t]he hose are successively drawn or conveyed from one bath to the other, the processing treatment in the first bath being no longer than fifteen seconds." In Example 2, the patent states: "The material to be processed is passed on an endless belt through three different baths." In the third example, it is stated that the nylon web "is conveyed through three baths by means of an endless belt as in Example 2 \* \* \*."



In aid of ensuing discussion, the single figure of the Loosli drawing is reproduced:



Holliday describes certain general steps in dyeing of fabric. The patent contains no drawing. The fabric "is attached or hung at one or both of its edges \* \* \* to points or hooks \* \* \* connected to or carried by chains, bands or straps, aided by guides \* \* \*." The fabric may be kept suspended for drying purposes and "may be caused to traverse through the dye liquor in zig-zag directions \* \* \*."

Weise discloses an apparatus for dyeing stockings in which the material is "suspended from a grill-like support which is moved back and forth and up and down in the dye bath." The stockings hang freely from rods attached to the frame or support. Manual downward movement of the support presses the stockings into the bath by the rods, "in association with a pusher element at the ends of the support by which the stockings are held pressed against each other \* \* \*." The stockings are suspended from the rods by toe or heel.

Callebaut teaches that stockings may be suspended from sticks carried by a reciprocating frame for movement in a vat of dye.<sup>3</sup>

The Examiner rejected claim 28 (with other claims not before us) under 35 U.S.C. 103 "as lacking invention over Loosli in view of Holliday, Callebaut or Weise taken separately or together \* \* \*." He found that Loosli disclosed the same basic process as appellant, wherein the textile material is pulled by a conveyor through a chemical shrinking bath "in a continuous path with the end first going into the bath being the end first to emerge \* \* \*," and that the sole difference between the claimed process and that of Loosli "is the manipulative manner in which appellant attaches the textile to the conveying means \* \* \*." He noted that Callebaut and Weise refer to uniform results and that Holliday teaches that his fabric is treated "more equally," concluding that "it would be obvious to one skilled in the art to employ the manner of attachment of the secondary references in the process of Loosli."

In its affirmance, the Board stated:

We find in Loosli a clear suggestion of the method of conveying material to be treated including stockings through a shrinking bath in a continuous path by progressive immersion starting at one end, and progressive emergence starting with the same end. In Weise, upon which we prefer to rely, we find means of attaching stockings at only one end thereof to a means for conveying the stockings through a liquid bath in a completely freely suspended state. In our opinion it would be obvious for one skilled in the art following the method of Loosli to attach the stockings in the manner of Weise. \* \* \*

The Board, in conclusion, stated that for the reasons above set out, as well as those set forth by the Examiner, "the claim is not patentable over the references cited."

<sup>3</sup> It should be noted that the Examiner cited and relied on the first addition of this patent dated June 12, 1933 and not on the original patent. The addition shows in FIGS. 2 and 3 that stockings are freely suspended at their toe ends.

Recurring first to the principal reference, Loosli, it is recalled that the first example discloses a process utilizing three baths for the treatment of hose which are pulled sequentially therethrough, one set of hose behind the other. The first bath serves for opening the yarn, the second for neutralizing the chemical products of the first, and the third for washing the residue out of the material. It is explicitly stated that the "hose are successively drawn or conveyed from one bath to the other" with the treatment in the first bath consuming no longer than 15 seconds, the time limitation called for in the preamble to the appealed claim. It would seem, therefore, that this process delineated in Example 1 would clearly suggest to one skilled in the subject art, as found by the Board, that the Loosli stockings should be pulled or conveyed "through the shrinking bath in a continuous path by progressive immersion starting at one end, and progressive emergence starting with the same end."

If augmentation of the above conclusion be needed, recurrence may be had to Loosli's Examples 2 and 3 where the material to be processed, tricot cloth and a web of nylon, are passed or conveyed by means of an endless belt through three different baths, which would suggest that the journey in and out and through the respective baths on endless belts would necessitate that the end which first enters the bath would be the first to emerge therefrom, suggesting to one skilled in the art that the stockings of Example 1 be conveyed through the baths in a similar manner.

The appealed claim calls for the use of "conveying means" broadly for moving the stockings into and out of a shrinking bath. Appellant apparently does not challenge the Board's broad finding in this respect. Loosli's stockings are moved of necessity by conveying means. The reference clearly teaches, as noted, that the stockings "are pulled sequentially through three baths" and are successively drawn or conveyed which signifies in our judgment a process of "progressive immersion starting at one end and progressive emergence starting at the same end." We must, therefore, agree with the Examiner that the sole difference between appellant's process and that taught by Loosli is the manipulative manner by way of attaching appellant's stockings to the conveying means in order to obtain more uniform contact in a freely suspended state between the bath and the textile.

[1] While the Board preferred to rely on Weise from among the secondary references, this fact does not render the other secondary references any less available as prior art for the purposes of this appeal. *In re Harza*, 47 CCPA 771, 274 F.2d 669, 124 USPQ 378.

Weise discloses that the stockings when subjected to fluid treatment "are suspended, hanging freely" from rods by toe or heel, thus signifying to the Board, in the language of the appealed claim, that they are conveyed through the bath "in a completely freely suspended state." While Loosli's drawing does not disclose a conveyor, his examples, as we have noted, require some type of conveyor which moves in a unidirectional path. We do not consider it of material moment that the movement of the Weise frame to which the rods are attached and from which the stockings are suspended move in a reciprocal or oscillatory manner. The pertinent teaching of Weise is that during fluid treatment the stockings are suspended from bars on the movable rack conveying means.

[2] Appellant argues that a combination of the teachings of Loosli and Weise would result in an inoperative structure in view of other



elements essential to the Weise patent. This, however, ignores the relevant combined teachings of the two references. We have here a combination rejection involving structure. It is not necessary that the structure of one be substituted bodily in that of the reference with which it is combined. *In re Soderquist*, 51 CCPA 969, 326 F.2d 1016, 140 USPQ 387; *In re Bent*, 52 CCPA 850, 339 F.2d 255, 144 USPQ 28.

Holliday teaches that a fabric such as a stocking can be "conducted through a vat" while hung by one end to a single hook "capable of progressive motion in the direction desired." This disclosure suggests movement in a "continuous path" as called for in the appealed claim.

Appellant points out that there is no recognition in Loosli of the problem of maintaining the stockings free of contact with the conveyors, or each other. However, it seems clear that Holliday does recognize this problem since the fabric may move through the liquid from near one side of the vat to near the opposite side "without one part of its surface necessarily coming in contact with the other." In view of the teaching of Loosli, it is wholly immaterial that Holliday does not teach the so-called "first end in, first end out" treatment asserted by appellant.

The record clearly supports the finding of the Examiner that Callebaut teaches fastening stockings by the toe end to a carrier and moving them through a bath so that uniform impregnation is obtained.

[3] Appellant contends that the secondary references are non-analogous to the claimed method. As has been seen, Loosli relates to shrinking fabrics and the secondary references relate to dyeing them. All of the references pertain to the area of textile fluid treatment as does appellant's claimed process. We perceive no lack of relevancy in applying the manipulative aspects of one type of textile fluid treatment to other types of such treatment.

[4] Appellant contends that in combining the teachings of Loosli with those of Weise, as well as with those of each of the other secondary references, the tribunals below have indulged in hindsight reconstruction of appellant's invention from such prior art. This argument is not persuasive. In our view, one of ordinary skill in the art who had the prior art of record before him would readily recognize that he had to attach the stockings of Loosli's Example 1 to some type of conveying means. Resort to any of the means of attachment disclosed in the secondary references would not involve the use of hindsight.

We have assessed appellant's arguments and considered the cases cited but are not persuaded of error in the decision of the Board holding the appealed claim unpatentable under 35 U.S.C. 103. [5] The decision of the Board is affirmed.

**AFFIRMED.**

KIRKPATRICK, J., took no part in the decision of this case.

#### U.S. Court of Customs and Patent Appeals

IN RE TOMOYUKI KOHNO

No. 7933. Decided April 11, 1968

[55 CCPA—; 391 F.2d 959; 157 USPQ 275]

#### 1. PATENTABILITY—DEVICE—INTEGRAL STRUCTURE.

"We agree with the Patent Office as to obviousness of the claimed subject matter. Wholly apart from whether the Osnos construction as modified by

the French patent may be considered "integrally formed," we think that one of ordinary skill in the art would readily appreciate that insulating projections performing the function of the support screws of Osnos could readily be molded as part of the base plate to form a unitary, one piece structure. See *In re Fridolph*, 50 CCPA 745, 309 F.2d 509, 135 USPQ 319."

#### 2. SAME—SAME—WORDS AND PHRASES—"INTEGRAL."

"That the expression 'integral' \* \* \* is not necessarily restricted to a one-piece article is clear from the definition of that term as discussed in *Henderson v. Grable*, 52 CCPA 920, 339 F.2d 465, 144 USPQ 91, and *In re Larson*, 52 CCPA 930, 340 F.2d 905."

#### 3. SAME—PARTICULAR SUBJECT MATTER—"MINIATURE VARIABLE CONDENSERS."

The refusal of certain claims in an application entitled "Miniature Variable Condensers," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 140,432.

**AFFIRMED.**

Edmund M. Squire (*Laforest S. Saulsbury*, of counsel) for appellant.

Joseph Schimmel (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

Before WORLEY, Chief Judge, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK<sup>1</sup>

WORLEY, Chief Judge, delivered the opinion of the court.

Kohno appeals from the decision of the Board of Appeals affirming the Examiner's rejection of claims 3-8 in appellant's application<sup>2</sup> for "miniature Variable Condensers" as "unpatentable over Osnos"<sup>3</sup> in view of Lechopiez<sup>4</sup> under 35 U.S.C. 103."

Rather than connecting the two insulating end plates of a variable capacitor by utilizing nuts and through bolts surrounded by insulative spacers at the corners of the end plates to form the framework of the capacitor, as Osnos shows to be conventional in the prior art, appellant provides the corners of one end plate of his device with threaded, integrally-formed support screws or bolts which extend to and permit attachment of the other plate. Thus, in one disclosed embodiment the base and supporting screws are molded as a single part from an insulating resin. In another, the heads of metal fastening screws are embedded in a synthetic resin end plate while the shanks of the screws are coated nearly their full length with insulating resin. The subject matter is reflected in claim 3:

3. A variable capacitor comprising: a base plate member formed of insulating material; a plurality of spaced elongated parallel supports extending outwardly from said base plate member, said supports being at least partially integrally formed with said base plate to provide external electrically insulative surfaces which are continuations of the surfaces of said base plate member; at least one stator plate mounted on at least two of said supports; electrically insulative spacer means laterally surrounding said two supports for holding said stator plate against longitudinal movement along said two supports; a rotor member mounted in said base plate for rotation about an axis parallel to the longitudinal axes of said supports; and at least one rotor plate carried by said rotor member and cooperating with said stator plate to provide a capacitance between said plates which may be varied by rotation of said rotor member. [Emphasis supplied.]

The Examiner found that Osnos disclosed all the features of the claims but for recitations corresponding to the italicized portion of claim 3 above. The Examiner thought it would be obvious to one of ordinary skill in the art to mold the base and connecting bolt parts

<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

<sup>2</sup> Serial No. 140,432, filed September 25, 1961.

<sup>3</sup> U.S. Patent No. 2,079,921, May 11, 1937.

<sup>4</sup> French Patent No. 934,088, January 7, 1948.



of Osnos in one piece, particularly<sup>3</sup> in view of such "common occurrences of integral formation of rods in bases" in the electrical arts as "stand-off terminals and vacuum tube pins." He relied upon the French patent to show that threaded bolts partially coated with insulating resin had previously been employed in electrical devices where it was desirable to electrically insulate the bolt from other components, and considered it obvious to substitute integral or partially integral insulation for all or part of the insulative spacers of Osnos. "It is not unreasonable," said the Examiner, "that the combination taught by the references be considered to be integrally formed when assembled." The Board agreed.

[1] We agree with the Patent Office as to obviousness of the claimed subject matter. Wholly apart from whether the Osnos construction as modified by the French patent may be considered "integrally formed,"<sup>5</sup> we think that one of ordinary skill in the art would readily appreciate that insulating projections performing the function of the support screws of Osnos could readily be molded as part of the base plate to form a unitary, one piece structure. See *In re Fridolph*, 50 CCPA 745, 309 F.2d 509, 135 USPQ 319.

With due regard for appellant's arguments, we are satisfied the Board committed no error in affirming the rejection.

[3] The decision is affirmed.

AFFIRMED.

KIRKPATRICK, J., took no part in the decision of this case.

[2]<sup>5</sup> That the expression "integral" in the present context has a somewhat broader connotation than appellant argues, and is not necessarily restricted to a one-piece article is clear from the definition of that term as discussed in *Henderson v. Grable*, 52 CCPA 920, 339 F.2d 465, 144 USPQ 91, and *In re Larson*, 52 CCPA 930, 340 F.2d 965, 144 USPQ 347.

## U.S. Court of Customs and Patent Appeals

IN RE C. R. BARD, INC.

v.

FOLEY BAG CATHETER, INC.

No. 7931. Decided May 16, 1968

[55 CCPA—; 394 F.2d 582; 157 USPQ 579]

### 1. TRADEMARK—OPPOSITION—PLEADINGS.

"Appellant also urges as a preliminary question that the Board erred in refusing to strike appellee's answer to the notice of opposition, which answer consisted of a general denial of every averment in the notice. We find no reversible error in the Board's finding that the answer amounts to a proper pleading."

### 2. SAME—SAME—RES JUDICATA.

"While the present record also supports a finding that 'Foley' is descriptive, the issue is different and *res judicata* does not apply because the disclaimer here avoids that potential restraint against appellant's use of descriptive matter on which the decision in the previous opposition was grounded. As the Board observed in the present case: \* \* \* the registration sought by applicant with the restriction therein would not be inconsistent with opposer's right to continue to do what it has in the past, namely use 'Foley,' per se descriptively to designate a particular type of catheter."

### 3. SAME—DISCLAIMER—OPPOSITION.

"\* \* \* appellant contends that those who observe the composite mark in use with the notation ® indicating registration, but do not investigate to find there is a disclaimer, 'will think that Dr. Foley and his company somehow have reclaimed that which he so freely relinquished thirteen years ago.' That contention is not pertinent here. Appellee obviously has the right to use the composite mark and, so far as the public is concerned, the goods of appellee

may be distinguished from the goods of others by the mark. It is immaterial to any but appellant and those others who may wish to use the descriptive matter in the mark in commerce that a disclaimer has been made. Such users or potential users can readily determine the status of the mark."

### 4. SAME—SAME—SAME—*Fischbeck v. Kleeno AND Walgreen Co. v. Godefroy Manufacturing Co.* DISTINGUISHED.

"Appellant has cited *Fischbeck v. Kleeno*, 44 App. D.C. 6 (1915), and *Walgreen Co. v. Godefroy Manufacturing Co.*, 19 CCPA 1150, 58 F.2d 457, 13 USPQ 194 (1932), as cases wherein disclaimers were held ineffective to avoid successful opposition. In contrast to the present case where the disclaimed subject matter is descriptive, the opposer had trademark rights relating to the disclaimed material in both cited cases."

APPEAL from the Patent Office. Opposition No. 44,521.

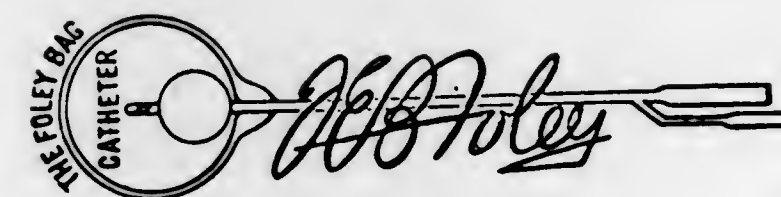
AFFIRMED.

W. Saxton Seward (Robert I. Dennison, of counsel) for appellant.  
Harold J. Kinney for appellee.

Before WORLEY, Chief Judge, RICH, SMITH AND ALMOND,  
Associate Judges

WORLEY, Chief Judge, delivered the opinion of the court.

Appellant seeks review of the decision of the Trademark Trial and Appeal Board<sup>1</sup> dismissing its opposition to appellee's application for registration of the following mark for urological and endoscopic instruments, such as catheters:



The application contains the following language which we, like the Board, consider adequate to disclaim certain matter:

Applicant seeks no registration rights in the words "The Foley Bag Catheter" or in the reproduction of the goods, or in the word "Foley," apart from the mark as shown.

It also includes the following statement:

The mark "FEB Foley" is the facsimile signature of Frederic E. B. Foley, president of applicant corporation.

The record establishes that appellant has continuously used the term "Foley" on a balloon or inflatable type catheter which it has sold in commerce since 1958, a date prior to appellee's effective date.<sup>2</sup>

Although the controlling question is whether appellant will be damaged by the registration appellee seeks,<sup>3</sup> appellant contends that the question is *res judicata* by virtue of a final Board decision adverse to appellee in a previous opposition<sup>4</sup> involving the same parties. There appellee sought registration of the instant mark but without disclaiming what is herein disclaimed. There was evidence that "Foley" is a common descriptive name for a particular catheter, thus the Board concluded that registration of the mark sought "would be inconsistent with the right of opposer to continue the use of 'Foley' as it has done in the past."

<sup>1</sup> Results reported at 148 USPQ 770.

<sup>2</sup> Appellee has introduced no evidence to show that it is entitled to any date prior to the filing date of its application, February 28, 1962. See *Columbian Steel Tank Company v. Union Tank and Supply Company*, 47 CCPA 898, 277 F.2d 192, 125 USPQ 406 (1960).

[1]<sup>3</sup> Appellant also urges as a preliminary question that the Board erred in refusing to strike appellee's answer to the notice of opposition, which answer consisted of a general denial of every averment in the notice. We find no reversible error in the Board's finding that the answer amounts to a proper pleading.

<sup>4</sup> *C. R. Bard, Inc. v. Foley Bag Catheter, Inc.*, 132 USPQ 1470 (T.T. & A.B. 1961).



[2] While the present record also supports a finding that "Foley" is descriptive, the issue is different and *res judicata* does not apply because the disclaimer here avoids that potential restraint against appellant's use of descriptive matter on which the decision in the previous opposition was grounded. As the Board observed in the present case:

\* \* \* the registration sought by applicant with the restriction therein would not be inconsistent with opposer's right to continue to do what it has in the past, namely use "Foley," per se, descriptively to designate a particular type of catheter.

That conclusion, with which we agree, disposes of any claim that appellant will be damaged by the registration sought. [3] However, appellant contends that those who observe the composite mark in use with the notation ® indicating registration, but do not investigate to find there is a disclaimer, "will think that Dr. Foley and his company somehow have reclaimed that which he so freely relinquished thirteen years ago."<sup>5</sup> That contention is not pertinent here. Appellee obviously has the right to use the composite mark and, so far as the public is concerned, the goods of appellee may be distinguished from the goods of others by the mark. It is immaterial to any but appellant and those others who may wish to use the descriptive matter in the mark in commerce that a disclaimer<sup>6</sup> has been made. Such users or potential users can readily determine the status of the mark.

The decision is affirmed.

**AFFIRMED.**

<sup>5</sup>In evidence in the previous opposition are letters written in 1953 by Dr. F. E. B. Foley, who was appellee's president and apparent developer of the particular catheter bearing his name. In those letters, Dr. Foley conceded that "Foley Catheter" is a generic term.

[4] Appellant has cited *Fischbeck v. Kleeno*, 44 APP. D.C. 6, (1915), and *Walgreen Co. v. Godefroy Manufacturing Co.*, 19 CCPA 1150, 58 F.2d 457, 13 USPQ 194 (1932), as cases wherein disclaimers were held ineffective to avoid successful opposition. In contrast to the present case where the disclaimed subject matter is descriptive, the opposer had trademark rights relating to the disclaimed material in both cited cases.

### U.S. Court of Customs and Patent Appeals

IN RE JOHN S. METCALF, CHARLES E. MILLER, AND ROY C. OLNEY

No. 7939. Decided May 2, 1968

[55 CCPA—; 394 F.2d 558; 157 USPQ 423]

#### 1. PATENTABILITY—COMBINING REFERENCES—OBVIOUSNESS—35 U.S.C. 103.

"\* \* \* obviousness under 35 U.S.C. 103 is not determined solely by a test of whether it would be obvious for one of ordinary skill in the art to physically substitute the material of McGlamery or Esselmann for the material disclosed in the St. Clair process. Rather, the test is whether it would have been obvious to one of ordinary skill in the art to do what appellants have done given the teachings of the prior art references. The teachings of references are not to be as narrowly construed as appellants would have us do, i.e., limit them to what they disclose directly. Under 35 U.S.C. 103, proper prior art references are to be considered for all subject matter fairly disclosed either alone or together for what they teach the worker of ordinary skill in the art and from this consideration the legal conclusion of obviousness or non-obviousness is to be drawn."

#### 2. SAME—AFFIDAVIT—STATEMENTS OF OPINION.

"Insofar as these affidavits provide evidence to support the legal conclusion of unobviousness under 35 U.S.C. 103, they must be considered. *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966); *In re Lindell*, 55 CCPA—, 385 F.2d 453, 155 USPQ 521 (1967); *In re Weber*, 52 CCPA 1015, 341 F.2d 143, 144 USPQ 495 (1965). Statements of opinion in an affidavit must also be

accorded some weight as bearing upon the legal conclusion required by 35 U.S.C. 103. *In re Fay*, 52 CCPA 1483, 347 F.2d 597, 146 USPQ 47 (1965); *In re Ward*, 51 CCPA 1132, 329 F.2d 1021, 141 USPQ 227 (1964)."

#### 3. SAME—PARTICULAR SUBJECT MATTER—"PLASTIC WORKING PROCESS AND SHOT SHELL."

The refusal of certain claims in an application entitled "Plastic Working Process and Shot Shell," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 135,569.

**AFFIRMED.**

Donald R. Motsko for appellants.

Joseph Schimmel (Fred W. Sherling, of counsel) for the Commissioner of Patents.

Before WORLEY, Chief Judge, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK<sup>1</sup>

SMITH, J., delivered the opinion of the court.

The sole issue involved in this appeal from the Patent Office Board of Appeals<sup>2</sup> is whether appellants' claimed subject matter is obvious under the conditions stated in 35 U.S.C. 103.<sup>3</sup>

The Board refused to sustain the rejection for the reasons stated by the Examiner, and restated the rejection as a new ground of rejection under Rule 196(b). Upon reconsideration, the Board adhered to its statement of the rejection, and this appeal followed.

In general, appellants' invention related to a process for cold working a crystalline thermoplastic material to obtain an increase in the tensile properties of the material. It is appellants' position that the invention provides a solution to a particular problem in the art of making shotgun shells.

Appellants explain that the art had attempted to use rigid linear polyethylene in an attempt to overcome certain disadvantages of using various other plastics and separate components, such as paper, in the manufacture of shotgun shells. One approach described in the specification refers to an attempt to make the entire shotgun shell casing as one piece, molded from linear polyethylene having a high degree of crystallization, a melting point of at least 125° C. and a relatively high density. Such articles, made by injection molding a piece of the linear polymer, are said to fail at normal and low temperatures when the rate of tensile strain is high instead of elongating and recovering for extraction from the gun barrel as a sound piece.

Thus, according to the invention as described in appellants' specification, articles of manufacture, such as shot shell bodies, are formed at least in part by compression from certain plastic materials, such as polyethylene or polypropylene. High density linear polyolefins specifically are contemplated for forming by what appellants state is "compression as distinguished from forming by stretching." By confining the plastic between at least two juxtaposed surfaces and exerting pressure upon the plastic, a thin-walled body may be formed in the solid crystalline state from a relatively thick slug or blank of the linear polymer to attain a high increase in the strength of the body.

It is explained that this process is performed at a wide range of working temperatures below the crystalline melt temperature of the

<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.  
<sup>2</sup> The board consisted of Messrs. Federico and Rosa, Examiners-in-Chief, and Stone, Acting Examiner-in-Chief. Mr. Stone wrote the opinion of the board.  
<sup>3</sup> Claims 21, 27, 29, and 32-36 in appellants' application Serial No. 135,569, filed September 1, 1961 for "Plastic Working Process and Shot Shell." No claim has been allowed.



material and at speeds intended to prevent an excessive rise in temperature. Appellants explain that:

• • • By compression forming according to this invention, shaping of an article by deformation can occur over a broad range of temperatures below the crystalline melt temperature rather than in a sharply limited narrow range of temperature hovering extremely closely to such crystalline melt temperature, and difficult to maintain. By compressive deformation instead of stretching, necking of the thermoplastic is avoided and very high tensile strength is obtained where needed. Compression forming also allows other parts of the finished article also to be made to finished dimensions, an advantage which is not secured when material must be stretched out of one part to supply another. • • •

#### *The Appealed Claims*

In its broadest aspect, appellants claim a process for cold working crystalline plastic to obtain an increase in tensile properties. Claim 35 is representative:

35. A process comprising the steps of confining a preformed blank of a crystalline polyolefinic material in its self-supporting crystalline state in a die cavity, closing said die cavity with a punch member dimensioned so as to define a space between said punch and die cavity, and applying sufficient pressure to said blank with said punch to deform into said space while in said state oriented material of substantially increased tensile properties.

Appellants also claim a method for producing a thermoplastic article in one piece. The article includes a base section and relatively thin tubular section elongated to a given length in the axial direction. Claim 29 is thus representative:

29. A method of deforming a blank of crystalline olefinic material into a cylindrical article having a sidewall of greatly increased longitudinal and circumferential tensile strength relative to the tensile strength of the undeformed blank, said method comprising the steps of

- (a) placing a preformed blank of said material into an open die member,
- (b) closing said die member with a tapered punch having an exterior dimension somewhat smaller than the interior dimension of said die member so that a space corresponding to the finished size and shape of the cylindrical article exists between the punch and the die member,
- (c) bringing said die member into engagement with said blank and applying a compressive force to said blank at a controlled rate so that plastic material from said blank in the solid crystalline self-supporting state is compressively forced into said space to form said sidewall,
- (d) and maintaining said material at a temperature below its crystalline melt temperature so that the plastic material compressively forced into said space is oriented and increased in longitudinal tensile strength to a value at least twice that of the undeformed blank.

The prior art references relied upon by the Board are:

St. Clair, 2,070,242, Feb. 9, 1937.

McGlamery, 3,083,410, Apr. 2, 1963 (filed Nov. 23, 1956).

Esselmann et al. 3,173,977, Mar. 16, 1965 (filed Nov. 15, 1955).

St. Clair discloses the production of a hollow tubular structure by forcing a rod-like plunger into a solid stock thermoplastic material formed of a cellulose ester such as nitrocellulose. The reference discloses that the material is heated to a sufficient plasticity to cause it to flow under pressure while its temperature is preferably maintained below the point where it becomes liquid. The reference also describes the tendency of the blank to retain its shape but to flow into and assume a different form under pressure, which assumed shape is retained after release of pressure.

The McGlamery patent discloses that the tensile strength of crystalline polyethylene polymers is increased by a cold working step such as a rolling operation. McGlamery achieves his result by a "severe

milling step" at temperatures below the softening point of the polymers. He adds that the polymers to which his invention applies are partially characterized by a softening temperature of at least 240° F. and refers to "softening temperature" in terms of the ability of the polymer to support a standard load or withstand a force at elevated temperatures without substantial deformation.

Esselmann discloses that the cold drawing of a polyolefin, such as a polyethylene, materially increases the strength of the resulting product. Esselmann indicates that the polyolefin is stretched at a temperature ranging from just below the flow point of the polymer to about 90° C. below the flow point.

#### *The Rejection*

The Examiner had rejected the claims as "unpatentable over St. Clair alone or in view of Green.[\*]" The Board reversed the decision of the Examiner, stating:

• • • The Examiner states that the process of St. Clair "can obviously be used to shape any thermoplastic material" and therefore concludes that it would be obvious to cold work polyethylene to obtain an increase in strength of the final product. We do not agree with the Examiner's holding in this connection. We find no recognition of increasing the strength of the final product by a cold working operation in either the St. Clair or Green patents. Under these conditions, we will not sustain the rejection of claims 21, 27, 29 and 32 to 36 on the prior art as developed by the Examiner. [Emphasis added.]

The Board entered a new rejection of the claims under Rule 196(b), stating:

However, in view of the teachings of McGlamery or Esselmann et al. that cold working of crystalline polyethylene materially increases the strength thereof, it would be obvious that the substitution of crystalline polyethylene in the St. Clair process would produce an article of increased strength. Accordingly, under the provisions of Rule 196(b) we reject claims 21, 27, 29 and 32 to 36 as unpatentable over St. Clair in view of McGlamery or Esselmann et al.

#### *Opinion*

Appellants raise no objection here to the Board's recognition that St. Clair discloses a process wherein a blank of material heated to a certain degree of plasticity can be compressed in a die and deformed by a plunger to form either a solid or tubular object. They contend that the reference shows an "old and well-known compression molding process" which is a "hot forming process wherein the formed article must be cooled in a separate step before removal from mold."

Appellants assert, however, that St. Clair fails to disclose that a crystalline linear plastic material can be cold formed in its solid crystalline self-supporting state under certain steps to produce a hollow, cylindrical object having a tensile strength three to five times the tensile strength of the starting material. They argue that such a product can only be produced if the deforming operation is carried out below the crystalline melt temperature of the material in a fully enclosed die cavity when a blank of the material, in its solid self-supporting state, is compressively deformed by a punch and the material is required to flow under great pressure into a fully enclosed cavity formed between the die and the punch. We initially observe that not all of appellants' claims are so definitive.

Appellants also agree with the general proposition stated by the Board that the cold working of crystalline polyethylene by rolling,

[\*] Patent No. 2,408,630, issued October 1, 1946.



stretching or drawing will produce an increase in tensile strength. They argue that:

• • • If one were to substitute crystalline plastic material, as suggested by the Board of Appeals, for the nitrocellulose plastic disclosed in St. Clair and heat the material to bring about the consistency required to meet the other conditions set forth in the St. Clair reference, he would fully, clearly and obviously wind up with exactly the same type of product which St. Clair did. Unfortunately, there would be no increase in tensile strength or orientation since the crystalline plastic material disclosed and claimed by Appellants, if heated to the highly flowable condition described by St. Clair, would not and could not become oriented and its tensile strength would not be increased. • • •

[1] However, notwithstanding the statement of the Board, obviousness under 35 U.S.C. 103 is not determined solely by a test of whether it would be obvious for one of ordinary skill in the art to physically substitute the material of McGlamery or Esselmann for the material disclosed in the St. Clair process. Rather, the test is whether it would have been obvious to one of ordinary skill in the art to do what appellants have done given the teachings of the prior art references. The teachings of references are not to be as narrowly construed as appellants would have us do, i.e., limit them to what they disclose directly. Under 35 U.S.C. 103, proper prior art references are to be considered for all subject matter fairly disclosed either alone or together for what they teach the worker of ordinary skill in the art and from this consideration the legal conclusion of obviousness or non-obviousness is to be drawn.

Here, we think one of ordinary skill in this art would be aware of the obvious modifications which he could make in the St. Clair process in the light of the teachings of either McGlamery or Esselmann. Since the art evidenced by either of these two "secondary" references teaches that cold working of polyethylene increases its tensile strength, it would be obvious to utilize the steps of St. Clair modified in the light of the clear teachings of McGlamery or Esselmann to control the temperature of the product being worked.

Thus, we disagree with appellants' argument that:

The knowledge imparted by the secondary references that crystalline plastic can be cold worked by drawing or rolling does not lead one to the substantial modifications required to the St. Clair process to convert it to a cold working compression forming process. That one would even consider any modifications to, or substitutions in, the St. Clair process in view of the teachings of McGlamery or Esselmann is purely conjectural without the benefit of appellants' disclosure.

We do not agree with the Examiner's characterization of the affidavits of Wiley and Gray as "incompetent expressions of opinions."

[2] Insofar as these affidavits provide evidence to support the legal conclusion of unobviousness under 35 U.S.C. 103, they must be considered. *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966); *In re Lindell*, 55 CCPA —, 385 F.2d 453, 155 USPQ 521 (1967); *In re Weber*, 52 CCPA 1015, 341 F.2d 143, 144 USPQ 495 (1965). Statements of opinion in an affidavit must also be accorded some weight as bearing upon the legal conclusion required by 35 U.S.C. 103. *In re Fay*, 52 CCPA 1483, 347 F.2d 597, 146 USPQ 47 (1965); *In re Ward*, 51 CCPA 1132, 329 F.2d 1021, 141 USPQ 227 (1964).

Here, reviewing these affidavits for both the factual and opinion evidence contained in them, we do not find that they are persuasive on the issue before us.

[3] Accordingly, the decision of the Board is affirmed.  
AFFIRMED.

# U.S. Court of Customs and Patent Appeals

IN RE PETER P. NOZNICK, CHARLES W. TATTER, AND CARL F. OBENAUER

No. 7901. Decided April 11, 1968

[55 CCPA—; 391 F.2d 946; 157 USPQ 268]

## 1. PATENTABILITY—CRITICALITY—PROPORTIONS—SPRAY DRIED SOUR CREAM.

"It seems to us, as it did to the Examiner and the Board, that one skilled in the art would find it obvious to spray dry a cultured cream product such as Grelck teaches, and to add a coating agent prior to spraying to achieve the advantages taught by Bornegg. The addition of such a coating agent to sour cream specifically is suggested by Page, although for a different purpose. The teachings of Cameron reinforce our conclusion. As to the specific percentages recited in certain claims, we find nothing in the specification to indicate any criticality of such proportions. The claim seems to recite merely the optimum proportions for achieving an acceptable powder when using gum acacia. Since we find it obvious to spray dry the combination of acacia and sour cream, we also consider it obvious to vary the proportions of the two until a satisfactory ratio is found, particularly since Bornegg suggests that different proportions are needed for different liquids."

## 2. SAME—CLAIMS—ARGUMENT BASED ON UNCLAIMED SUBJECT MATTER.

"There are certain statements by appellants' attorneys during prosecution which may be read as indicating that a coating agent in the absence of a peptizing agent will produce a reconstitutable product. But there are also statements indicating that the peptizing agent alone is responsible for this property. There is no basis in the specification to conclude that the coating agent alone [to which the claims are limited] can yield a reconstitutable product, and no affidavits on the point were in the file as it went to the Board. The Board, faced with that record, was entirely correct in refusing to accord any weight to appellants' arguments of unexpected results [attributed to the coating agent alone]. We do not feel that the Board thus made a new rejection [in attributing reconstitutability to the peptizing agent]. The Board was merely explaining to appellants why their arguments were ineffective to overcome the rejection made by the Examiner."

## 3. APPEAL TO BOARD OF APPEALS—MATTER BEFORE BOARD—BELATED AFFIDAVIT.

"• • • the Board was correct in refusing to consider the belated Tatter affidavit. It did not think the affidavit to be properly before them, and it is abundantly clear that an affidavit filed after a Board decision, considered by neither the Board nor the Examiner, is not properly before this court. *In re Rothermel*, 47 CCPA 866, 276 F.2d 393, 125 USPQ 328."

## 4. PATENTABILITY—AFFIDAVIT—SPECIFIC RECIPES LACKING.

"It is of more than passing interest to note that the affidavit, and accompanying exhibit which purports to show that sour cream containing coating agent but no peptizing agent is in fact reconstitutable, does not give the specific recipes for the two samples shown in the exhibit. It only says that one was prepared as described in Example 11 and the other as described in Example 16. As indicated in our discussion above, we find it impossible to conclude from the specification whether a peptizing agent was used in these examples or not."

## 5. SAME—PARTICULAR SUBJECT MATTER—"SOUR CREAM POWDER."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Sour Cream Powder," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 197,837.

AFFIRMED.

Alvin Gutttag, Cushman, Darby & Cushman for appellants.

Joseph Schimmel (Fred W. Sherling, of counsel) for the Commissioner of Patents.

Before WORLEY, Chief Judge, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK<sup>1</sup>

ALMOND, J., delivered the opinion of the court.

<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.



This is an appeal from the decision of the Patent Office Board of Appeals affirming the rejection of claims 13, 52, 53, 54, 55 and 56 of appellants' application for patent entitled "Sour Cream Powder."<sup>2</sup>

The application is directed to the production of a dry powder of sour cream. The powder is sold to dairies where it is reconstituted by the addition of water. The preferred embodiment of the invention as described in the application includes the addition of a peptizing agent which appears to aid in the reconstitution step. Claims reciting inclusion of the peptizing agent were allowed by the Examiner. The appeal before us involves only claims which omit the recitation of the peptizing agent, but which do recite the presence of a "coating agent." While this admittedly was the nonpreferred embodiment in the application as filed, it is claimed to have become the preferred commercial embodiment of the invention.

The claimed invention with which we are involved is a process for making a spray-dried powder from sour cream, involving the steps of adding to the sour cream a coating agent for encapsulating the fat particles, homogenizing the mixture, and then spray drying. The coating agents disclosed are listed in the Markush group of claim 55. Claim 13 is a composition claim limited to approximately 82% sour cream solids and 18% gum acacia. The remaining claims are directed to specifically disclosed embodiments of the process and are encompassed by claim 55.

Claims 13 and 55 are reproduced below:

13. A spray dried free flowing sour cream powder containing approximately 82% sour cream solids and 18% gum acacia.

55. The process of making a sour cream powder comprising adding to sour cream 5 to 30% of a coating assisting agent selected from the group consisting of gum acacia, gum tragacanth, corn, wheat and potato starches, acid modified starches, phosphated starches, enzyme modified starches of the previous group, dextrins, pectins, carboxymethyl cellulose, nonfat milk solids, gelatin and casein, homogenizing the mixture and then spray drying the mixture.

The claims were rejected by the Examiner under 35 U.S.C. 103. The references are:

Bornegg, 1,800,501, April 14, 1931.

Grelck, 2,009,135, July 23, 1935.

Page et al., 2,719,793, October 4, 1955.

Cameron et al., 2,913,342, November 17, 1959.

Bornegg teaches the addition of a water soluble gum such as gum arabic (acacia) as a drying aid for acid liquids which are to be spray dried. The liquids contemplated are "of plant, animal, and synthetic origin," and a specific example is lemon juice.

Grelck discloses spray drying of cultured milk products from which the albumin has been coagulated. The starting material of Grelck may be any one of a number of milk products including cream, and the viscosity of the product which is finally dried may be that of a heavy liquid.

Page describes addition of a gum to a sour cream product to prevent separation. Tragacanth gum is specifically mentioned; acacia is not. Page does not dry his product.

Cameron teaches encapsulation of fat compositions with water soluble solids such as gelatin and gum acacia followed by spray drying.

It was the position of the Examiner that it would be obvious to

<sup>2</sup> Serial No. 197,837, filed May 28, 1962.

spray dry the gum-containing sour cream of Page since Grelck teaches spray drying of a cultured cream product and Bornegg teaches the use of gum acacia as an aid in spray drying acid liquids. Cameron was cited to show gelatin being used as a substitute for gum acacia and to show that viscous emulsions may be spray dried. The Examiner found no patentable significance in the recitation of specific proportions of gum and sour cream in view of the Bornegg disclosure that the amount of gum can vary widely depending upon the product to be dried. The Board agreed with the Examiner's reasons for the rejections.

In its opinion the Board indicated that it was unimpressed by arguments presented by appellants alleging an unexpected result in that their product can be reconstituted with water without separation. The Board commented:

However, the superior properties on reconstitution to which appellants refer appear from the specification to be mainly attributable to the peptizing step, at least in part. In none of the examples, except in Examples 9 and 12 is there used a coating agent without the peptizing agent; in Example 9 it is stated that the coating material alone is not as effective, but makes the product dryable, and in Example 12 appellants state that use of the peptizing agent was found to be preferable. \* \* \*

Appellants took this to be a new ground of rejection, and filed a request for remand along with an affidavit by coinventor Tatter purporting to show that spray-dried compositions prepared according to the application without peptizing agents are indeed redispersible in water to produce stable compositions. The Board answered:

We find no new grounds of rejection in our decision. It does not constitute a new ground of rejection to point out to an appellant why his arguments are not persuasive of error in the Examiner's rejection, nor does it constitute an implied invitation to present belated showings to supply the deficiencies. \* \* \*

[1] It seems to us, as it did to the Examiner and the Board, that one skilled in the art would find it obvious to spray dry a cultured cream product such as Grelck teaches, and to add a coating agent prior to spraying to achieve the advantages taught by Bornegg. The addition of such a coating agent to sour cream specifically is suggested by Page, although for a different purpose. The teachings of Cameron reinforce our conclusion. As to the specific percentages recited in certain claims, we find nothing in the specification to indicate any criticality of such proportions. The claim seems to recite merely the optimum proportions for achieving an acceptable powder when using gum acacia. Since we find it obvious to spray dry the combination of acacia and sour cream, we also consider it obvious to vary the proportions of the two until a satisfactory ratio is found, particularly since Bornegg suggests that different proportions are needed for different liquids.

At oral argument, appellants' attorney stressed the different problems involved in spray drying a semi-solid such as sour cream and a thin liquid such as Bornegg's lemon juice. Such argument, however, does not dispose of Grelck or Cameron, both of whom spray dry viscous materials.

Appellants have attempted to overcome the holding of obviousness by arguing that they have achieved an unexpected result from their process—namely that their powder is water reconstitutable into a smooth cream whereas the Grelck product appears not to be so reconstitutable. As stated above, the Board attributed this property to the peptizing step of the preferred embodiment, and therefore did not



feel that the alleged unexpected result had any bearing on claims not reciting peptization.

Appellants vigorously contest this holding of the Board. They claim that throughout the prosecution of the application they always made it clear that the presence of the coating agent alone yielded a reconstitutable product. This being so, they argue that the Board's holding was a new ground of rejection, and that the Board erred in not remanding the case to the Examiner and in not considering the Tatter affidavit filed to answer the Board's statements.

We have examined the specification and record in this case and are in complete agreement with the Board. Although appellants cite certain portions of the specification and the various papers they filed during prosecution to support their contention, it appears that many of the quotations on which they rely in their brief are taken out of context.

For example, appellants refer to one sentence in their specification which states:

The coating agent improves the product appreciably in helping to secure adequate encapsulation and on reconstitution with water, improves the dispersibility and also precludes forming a curdy mass characterized by solids separation and precipitation.

However, they do not mention the two immediately preceding sentences of the same paragraph of their specification. The whole paragraph reads:

The peptizing agent and the coating or enrobing agent aid, as explained, in assuring encapsulation on the one hand and on the other hand, aids in the reconstruction with water to improve dispersibility and produce a smooth, creamy body. Without the peptizing agent, on reconstitution with water, a curdy mass is produced from which the solids separate or precipitate out. The coating agent improves the product appreciably in helping to secure adequate encapsulation and on reconstitution with water, improves the dispersibility and also precludes forming a curdy mass characterized by solids separation and precipitation.

While this paragraph is far from a model of clarity, its organization points to the conclusion that the second sentence teaches nonreconstitutability when a coating agent alone is used with the sour cream. This sentence was cited by the Solicitor in his brief, but appellants did not see fit to explain or comment on it in oral argument.

The remainder of the specification is not of much help on this point. Appellants point to Example 6, for instance, in support of their contention that coating agents alone yield a reconstitutable product. Their reliance is clearly misplaced, for Example 6 states:

Each of the previous examples was repeated, including in the mixture a coating agent, namely, a gum such as gum acacia and corn starch respectively, these agents rendering the mix smooth and easily dryable and reconstitutable with water into a smooth cream. . . .

Reference to the specification shows that "each of the previous examples" included a peptizing agent. Example 6 therefore shows only the effect of coating agents in combination with peptizing agents.

Of the 22 examples in the specification, only Examples 9, 12, 14a, 15a and 18 specifically show the use of a coating agent in the absence of a peptizing agent. None of these examples mentions reconstituting the powder. Example 9 indicates that the coating agent, though not as effective as the peptizing agent, makes the product dryable. Examples 12 and 18 indicate that use of the peptizing agent is preferable, but do not say why. Examples 14a and 15a merely report that

powders were made using nonfat milk solids in place of disodium phosphate.

Appellants claim that their arguments during prosecution clearly showed that they considered the coating agent alone to be effective in producing a reconstitutable product. As one example, they quote from their amendment of August 21, 1963:

On the contrary, none of the patents teaches the spray drying of sour cream in such a manner that rehydration of the product yields a viscous material similar to the original sour cream.

One again, appellants' propensity to quote only a portion of a paragraph is somewhat misleading, for the second and third sentences following the one quoted are:

Thus, the function, for example of the peptizing agent to produce a powdered sour cream which is readily dispersible during rehydration is not suggested in the prior art. Similarly, the function of the coating agents to produce a sour cream which may be readily dried is likewise not suggested by the references of record.

[2] The remainder of the record is similar. There are certain statements by appellants' attorneys during prosecution which may be read as indicating that a coating agent in the absence of a peptizing agent will produce a reconstitutable product. But there are also statements indicating that the peptizing agent alone is responsible for this property. There is no basis in the specification to conclude that the coating agent alone can yield a reconstitutable product, and no affidavits on the point were in the file as it went to the Board. The Board, faced with that record, was entirely correct in refusing to accord any weight to appellants' arguments of unexpected results. We do not feel that the Board thus made a new rejection. The Board was merely explaining to appellants why their arguments were ineffective to overcome the rejection made by the Examiner.

[3] It follows that the Board was correct in refusing to consider the belated Tatter affidavit. It did not think the affidavit to be properly before them, and it is abundantly clear that an affidavit filed after a Board decision, considered by neither the Board nor the Examiner, is not properly before this court.<sup>3</sup> *In re Rothermel*, 47 CCPA 866, 276 F.2d 393, 125 USPQ 328.

We are of the opinion that the appellants have failed to support their allegation of unexpected results with any credible evidence. [5] We agree with the Board that the claimed invention before us is obvious under 35 U.S.C. 103 for the reasons set forth by the Board.

#### AFFIRMED.

SMITH, J., dissenting.

I respectfully dissent from the reasoning and conclusion of the majority on the merits. In addition, see *In re Wiechert*, 54 CCPA 957, 370 F.2d 927, 152 USPQ 247 (1967) for my views concerning a board consisting of two acting examiners-in-chief, such as appears in this record.

[4] It is of more than passing interest to note that the affidavit, and accompanying exhibit which purports to show that sour cream containing coating agent but no peptizing agent is in fact reconstitutable, does not give the specific recipes for the two samples shown in the exhibit. It only says that one was prepared as described in Example 11 and the other as described in Example 16. As indicated in our discussion above, we find it impossible to conclude from the specification whether a peptizing agent was used in these examples or not.



## U.S. Court of Customs and Patent Appeals

IN RE ALFRED MARZOCCHI AND NICHOLAS S. JANETOS

No. 7920. Decided May 9, 1968

[55 CCPA—; 394 F.2d 571; 157 USPQ 504]

## 1. APPLICATION—DISCLOSURE—SUFFICIENCY OF DISCLOSURE—SECTION 112.

Upon considering a rejection based on section 112 because of an "inconsistency" in which the R groups in the claimed structural formula included some groups which hold no "antecedent support in the specification (although the claims were in the application as filed)," Held that "It is apparent that we must affirm the rejection on section 112 at least on the basis of the first ground, supra, lack of correspondence between the specification and claims."

## 2. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—BELATED CHALLENGE TO EXAMINER'S STATEMENT OF FACT.

Held, with respect to a statement of fact of the Examiner challenged for the first time on the appeal before the court, "We usually decline to consider such tardy nay-saying . . ."

APPEAL from the Patent Office. Serial No. 38,745.

AFFIRMED.

*Herman Hersh, George A. Degnan, McDougall, Hersh, Scott & Ladd, Staelin & Overman* for appellants.

*Joseph Schimmel (Joseph F. Nakamura, of counsel)* for the Commissioner of Patents.

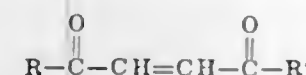
Before WORLEY, Chief Judge, and Judges, RICH, SMITH, ALMOND, and KIRKPATRICK<sup>1</sup>

RICH, J., delivered the opinion of the court.

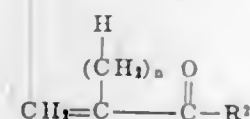
This appeal is from a decision of the Patent Office Board of Appeals<sup>2</sup> affirming the Examiner's rejection of claims 2-25 and 34 of application Serial No. 38,745, filed June 27, 1960, entitled "Sized Glass Fibers, Compositions and Methods." The Examiner also rejected claims 26-33. Appellants withdrew their appeal to the Board with respect to those claims. Appellants now have withdrawn their appeal here with respect to claims 2-18 and 34, leaving only claims 19-25. No claim has been allowed.

The invention is an article of manufacture: glass fibers with a surface coating of a cured epoxidized copolymer attached to the glass fibers by a polyfunctional anchoring agent. The claims define the copolymer and anchoring agent more precisely.

19. An article of manufacture comprising glass fibers containing a surface coating of a cured epoxidized copolymer of a polyolefin and a compound containing a molecular grouping from the group consisting of:



and



where R and R' are members of the class consisting of OH and OR<sup>3</sup>, NH<sub>2</sub> and NHR<sub>3</sub>; R<sup>2</sup> is a member of the class consisting of OH, NH<sub>2</sub>, —N—(R<sup>3</sup>)<sub>2</sub>, NHR<sup>3</sup>, OR<sup>3</sup> and H where R<sup>3</sup> and R' are organic radicals of not more than 10 carbon atoms in chain length with the proviso that R<sup>3</sup> and R' may contain from 0 to 4 amino groups and where n is an integer from 0 to 1, said cured epoxidized copolymer being attached to the glass fibers by a polyfunctional anchoring agent which forms a part of the copolymer and contains at least one functional group

<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

<sup>2</sup> Consisting of Magill and Behrens, Examiners-in-Chief, and Vertiz, Acting Examiner-in-Chief, opinion by Behrens.

capable of attaching to the surface of the glass fibers and at least one functional group capable of reacting with said epoxidized polyolefin copolymer.

20. The article of manufacture of claim 19 where the polyfunctional anchoring agent is a compound selected from the group consisting of an organic chrome complex having a carboxylate group coordinated with the trivalent nuclear chromium atom, an organo silane, its hydrolysis products and its polymerization products, wherein said silane contains at least one hydrolyzable group, and an amine, said organic chrome complex, organo silane and amine compounds also containing a functional group capable of reacting with the epoxidized polyolefin copolymer.

21. The article of manufacture of claim 20 where the functional group capable of reacting with the epoxidized polyolefinic copolymer is selected from the group consisting of carboxyl, primary amino, secondary amino, epoxy, hydroxy, phenolic, acid halide, mercapto-olefinic and amido groups.

22. The article of manufacture of claim 20 where the epoxidized polyolefinic copolymer is linear and contains at least one epoxy group attached to a terminal carbon atom and at least one epoxy group attached to carbon atoms other [than] terminal carbon atoms.

23. The article of manufacture of claim 20 where the epoxidized polyolefinic copolymer contains at least one reactive olefinic linkage.

24. The article of manufacture of claim 20 where the epoxidized polyolefinic copolymer is of branch chain configuration and contains at least one epoxy group attached to a terminal carbon atom and at least one epoxy group attached to carbon atoms other than terminal carbon atoms.

25. The article of manufacture of claim 20 where the epoxidized polyolefinic copolymer is a copolymer of 1,3-butadiene and a hydrolyzed ester of an acrylic acid.

The following prior art is relevant:

Marzocchi et al., 2,931,739, April 5, 1960.

Marzocchi et al.<sup>3</sup> disclose glass fibers with a surface coating of polyester resin attached by a difunctional anchoring agent, e.g., α-amino-propyl triethoxy silane. The specification adds, however:

Instead of the described polyesters, use can be made of other film forming materials . . . . Use can be made of epoxy resinous material such as a self-curable modified epoxy resin of the type manufactured under the trade name "Becco A-15-35" or a catalyzed curable epoxy resin such as is marketed under the trade name "Becco A-15-50" . . . .

The claims were rejected as anticipated by or obvious in view of Marzocchi et al. and as "vague and indefinite and not complying with 35 U.S.C. 112."

The prior art rejection is based on the Examiner's statement that Becco A-15-50 "corresponds to" the cured, epoxidized copolymers of appellants' claims. He apparently inferred as much from appellants' argument in another case. Appellants here deny that any of their pending applications support such an inference or that, in any event, it is determinative of patentability. Their argument below was confined to the latter point. The Solicitor insists that it should be so confined here.

The rejection under section 112 is based on three separate objections to appellants' claims.

The first is that R groups in the structural formulae of claim 19 are inconsistent with the disclosure of the specification. The effect of the inconsistency is that compounds are claimed for which the specification provides no support. More particularly, referring to claim 19, R and R' are defined as members of the class consisting of OH, OR<sup>3</sup>, NH<sub>2</sub>, and NHR<sub>3</sub>. Neither OH nor NH<sub>2</sub> has antecedent support in the specification (although the claims were in the application as filed).

<sup>3</sup> Appellants are also the patentees of the reference, assigned to Owens-Corning Fiberglass Corporation.



Appellants expressly conceded this inconsistency in their brief, but withdrew the formality of the concession at oral argument under questioning from the court. Appellants, however, made no attempt to show that this rejection was in error.

The second basis for the section 112 rejection is the apparent inconsistency between the claims which permit serial application of anchoring agent and resin and the assertion in the specification that:

The invention specifically resides in the sizing of glass fibers with a composition containing as an essential component an epoxidized polyolefin and anchoring agent.

Appellants reply that this is an inappropriate objection to claims which define articles of manufacture and, further, that they intend their claims to be broad enough to cover serial application if, indeed, such application is effective (which appellants doubt).

Thirdly, the section 112 rejection is based on this paragraph from the specification:

An important concept of the invention resides in using epoxidized polyolefins which contain at least one epoxidized group attached to a terminal carbon atom and at least one epoxidized group attached to carbon atoms other than terminal carbon atoms and wherein the epoxidized polyolefins also contain at least one or more unsaturated or ethylenic linkages within the molecule.

The Examiner said, referring to the quoted paragraph:

- • • the specification makes critical that the epoxidized polyolefin have internal and terminal epoxy groups as well as at least one point of unsaturation;
- • • [the claims] are deficient in this regard.

Appellants point to a sentence in their specification which indicates that the use of epoxidized polyolefins in which at least one epoxidized group is attached to a terminal carbon atom and at least one to a carbon atom other than a terminal atom is merely *preferred* and thus no critical limitation of the invention. They also argue that an epoxidized polyolefin is inherently unsaturated and that any specific definition of that characteristic in the claims would be surplusage.

The Solicitor argues strongly that the distinction between "preferred" polyolefins and others was never made below and that, had it been made, entirely new lines of inquiry might have been opened by the Examiner and board. He also disputes the contention that the epoxidized polyolefins are inherently unsaturated.

[1] It is apparent that we must affirm the rejection on section 112 at least on the basis of the first ground, *supra*, lack of correspondence between the specification and claims. *In re Cavallito*, 49 CCPA 1335, 306 F.2d 505, 134 USPQ 370 (1962); *In re Rainer*, 54 CCPA 1445, 377 F.2d 1006, 153 USPQ 802 (1967). We will not discuss the other bases for the section 112 rejection not only because such discussion is unnecessary to our decision but because the issues involved in such discussion, viz, the propriety of raising a certain point for the first time on appeal and the necessity of including certain limitations allegedly "surplusage" in the claims, probably would be mooted if prosecution were resumed.

Nor are we inclined to comment upon the prior art rejection, based as it is on an Examiner's statement of fact, unsupported in the record and yet, until now, unchallenged by appellants.<sup>4</sup> Any comment of ours

[2]<sup>4</sup> We usually decline to consider such tardy nay-saying: When an Examiner's statement is first controverted on appeal to us, especially for lack of evidentiary support, we are not only deprived of the benefit of his views and those of the Board on the particular point, but we also lack assurance that the appropriate support could not have been provided, absent the implicit acceptance of the statement's validity by appellants below. *In re Fong*, 54 CCPA 1482, 378 F.2d 977, 154 USPQ 25 (1967).

could only be helpful in the event prosecution is resumed. And, if that should come to pass, we may safely anticipate an early challenge to the Examiner's assertion and a reply to that challenge.

The decision of the Board is affirmed.

AFFIRMED.

## PATENT SUITS

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2,771,936, G. D. Johnson, WELL HEAD CONTROL; *Re.* 24,609, same, *filed* June 4, 1968, D.C., W.D. Pa. (Pittsburgh), Doc. 68-621, *Armco Steel Corporation v. Joy Manufacturing Company*.

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2,806,532. (See 2,799,346.)

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3,004,536. (See 2,702,034.)

3,026,098. (See 2,967,701.)

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3,158,142, G. W. Bradshaw, CRANKCASE VENTILATION, *filed* July 6, 1966, D.C., E.D. Mich. (Detroit), Doc. 28633, *George W. Bradshaw v. General Motors Corporation*, Order of dismissal for lack of prosecution (without prejudice), June 4, 1968.

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3,169,883. (See 3,048,498.)

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3,384,992, H. C. Heffron, PLANT SHELTER; Reg. No.

789,815 (ROSE KONE), G.I. Plastics Corporation, Plant shelter for protecting plants, filed July 12, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1293, Gotham Industries, Inc. v. L.M. Plastics Company, Inc. et al.

Re. 24,609. (See 2,771,956.)

Re. 25,129. (See 2,702,034.)

Re. 25,171. (See 2,702,034.)

D. 207,047. (See 3,310,966.)

Reg. No. 789,815. (See 3,384,992.)

## REISSUES

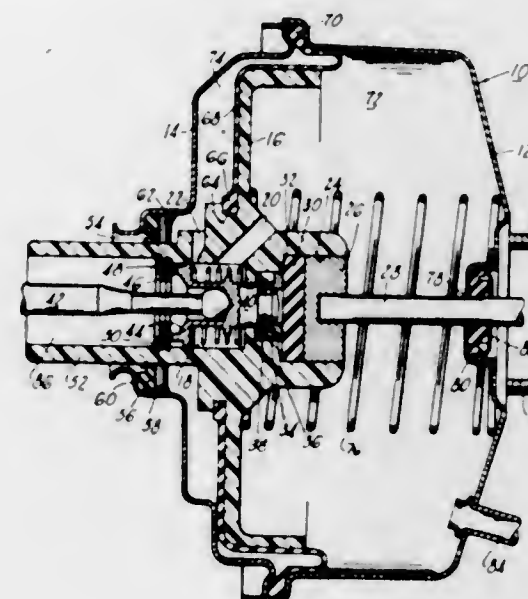
NOVEMBER 12, 1968

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,487

### REACTION MECHANISM

Charlie N. French, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware  
Original No. 3,279,327, dated Oct. 18, 1966, Ser. No. 372,323, June 3, 1964. Application for reissue Feb. 24, 1967, Ser. No. 626,645  
7 Claims. (Cl. 91—369)

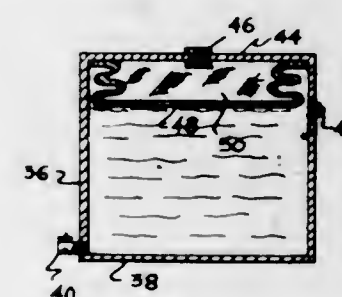


A reaction means between an operator-operated valve means and a force transmitting means of a servomotor including a pressure responsive element to proportionally vary the area of a reaction force transmitting device on the operator-operated valve means.

26,488

### DISPENSING CONTAINER WITH COMPRESSED MASS DISCHARGING MEANS

Glen C. Bull, 2800 Quebec St. NW., Washington, D.C. 20008  
Original No. 3,235,138, dated Feb. 15, 1966, Ser. No. 340,079, Jan. 24, 1964. Application for reissue Jan. 12, 1967, Ser. No. 617,426  
3 Claims. (Cl. 222—263)



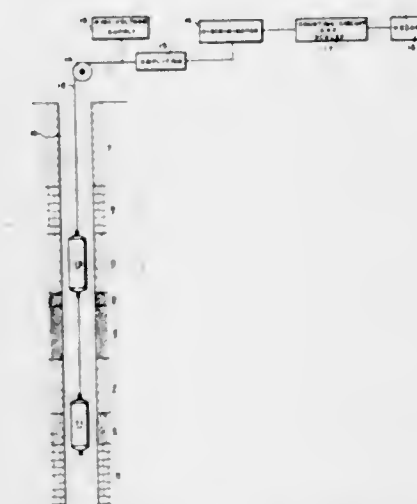
1. In combination with a container having contents therein, an impervious flexible bag within the container in contact with the contents thereof, a compressed mass of intersticed material in said bag, and said flexible bag containing a gas generating medium.

558 O.G.—12

26,489

### METHOD OF LOGGING WELLS BY INDUCED DELAYED RADIATION

James A. Rickard, Harris County, Tex., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware  
Original No. 2,963,586, dated Dec. 6, 1960, Ser. No. 616,713, Oct. 18, 1956. Application for reissue June 20, 1967, Ser. No. 661,135  
4 Claims. (Cl. 250—83.3)

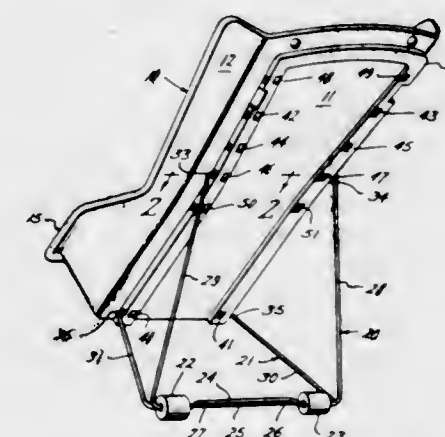


A method of logging wells by induced delayed radiation. Earth formations surrounding a borehole are bombarded with neutrons. A new isotope is produced by the neutron bombardment (chemically identical to one of the chemical elements of which the earth formations are composed). The new isotope is radioactive and decays by beta emission with a characteristic half-life and emits gamma rays of energies characteristic of said beta emission. Such gamma radiation is detected at a selected time interval after bombardment and the intensities thereof are recorded to indicate amounts of said isotope and thereby the amounts of said element.

26,490

### BABY CARRIER APPARATUS

Knud A. Jensen, Eldora, Iowa, assignor to Infaseat Company, Eldora, Iowa, a corporation of Iowa  
Original No. 3,171,687, dated Mar. 2, 1965, Ser. No. 224,898, Sept. 18, 1962. This application is a continuation of Ser. No. 484,513, Aug. 31, 1965. Application for reissue Oct. 31, 1966, Ser. No. 591,029  
9 Claims. (Cl. 297—377)



A baby carrier having back, sides and bottom, and a support stand attached thereto, the stand having inwardly

365 i 4



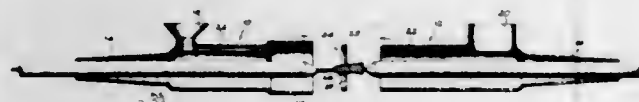
bent ends while the back includes means for limiting motion of the bent ends relative to the back of the carrier.

26,491

## CABLE SPLICING DEVICE

Lee J. Colbert, 202 Jefferson Ave., Allegany, N.Y. 14706; Dolores B. Colbert, executrix of said Lee J. Colbert, deceased  
Original No. 3,145,421, dated Aug. 25, 1964, Ser. No. 142,475, Dec. 27, 1961. Application for reissue Apr. 12, 1966, Ser. No. 547,069

9 Claims. (Cl. 249—90)



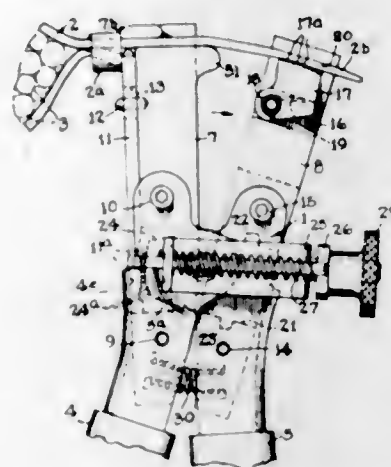
A two part device of flexible plastic material for closely enveloping a plurality of electrical conductors and providing a chamber enveloping the splice or joint formed between such conductors to receive encapsulating material, each of said parts having essentially tubular body portions with interfitting means at one end thereof, and a gradually tapered extension at the other end having walls disposed at a relatively slight angle to the axis thereof adapted, by cutting off at an appropriate point longitudinally of said extension to closely engage an associated conductor regardless of substantial variation in conductor diameter, each of said parts having a radially protruding passage in the tubular body adjacent to its juncture with said tapered end, and at least one of said extensions being flared to facilitate introduction of encapsulant through said passage. The walls of each tubular body suitably have a longitudinal offset defining an internal vent channel extending to said passage. When the longitudinal offset extends to the interfitting portion of each tubular body this provides means for aligning the radial passages in assembling the two parts. In a preferred adaptation of the device the assemblage includes a centering device slidably engaging the outer surface of a conductor, and the inner surface of the tubular body, said centering device being of open construction to permit free flow of encapsulant therethrough.

26,492

## BINDER STRAP TOOL

Jack E. Caveney, Chicago, and Roy A. Moody, Flossmoor, Ill., assignors to Panduit Corporation, Timley Park, Ill., a corporation of Illinois  
Original No. 3,169,560, dated Feb. 16, 1965, Ser. No. 178,332, Mar. 8, 1962. Application for reissue Feb. 6, 1967, Ser. No. 620,553

17 Claims. (Cl. 140—93.2)



A hand tool is provided for tensioning a stretchable plastic strap about a bundle, the tool including two jaw members to which are attached handles and mounted to provide relative movement therebetween, the first jaw member restraining movement of one end of the strap and the second jaw member pulling on the other end of the strap so that movement of the jaw members away from each other causes the strap to be longitudinally tensioned therebetween and around the associated bundle, and a shear blade mounted adjacent the first jaw member for relative movement therebetween to sever the portion of the strap disposed between the restrained end of the strap and the second jaw member, an actuator for the shear blade for producing strap-severing relative movement between the shear blade and the jaw member, and bias means permitting actuation of the actuator only when a predetermined tension is reached in the strap to sever the portion of the strap disposed between the restrained end of the strap and the second jaw member while the strap is under the predetermined tension about the associated bundle, the bias means being adjustable to vary the amount of tension required to be reached in the strap before the shear blade is actuated.

## PLANT PATENTS

GRANTED NOVEMBER 12, 1968

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,844

## ROSE PLANT

David L. Armstrong, Ontario, Calif., assignor to Armstrong Nurseries, Inc., Ontario, Calif., a corporation of California

Filed June 7, 1967, Ser. No. 644,399

1 Claim. (Cl. Plt.—20)

1. A new and distinct variety of rose plant of the grandiflora class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a vigorous plant of semi-upright habit and having canes and branches heavier or of greater caliper in proportion to the plant and foliage than most garden rose varieties, attractive, dark green, medium to large, leathery and semi-glossy foliage, a very floriferous habit, with the flowers borne on medium to long stems in small clusters, as well as singly, as exemplary of the grandiflora class, an attractive flower bud form, said buds being moderately short but quite symmetrical and high-

centered and usually urn-shaped, and having excellent heavy substance, with consequent much longer lasting qualities than that of most garden roses, both on the plant and as cut flowers, quite double flowers of medium size intermediate those of the parent varieties, and a distinctive, attractive and relatively dark but bright red flower color that is resistant to fading or bluing under most weather conditions.

2,845

## ROSE PLANT

David L. Armstrong, Ontario, Calif., assignor to Armstrong Nurseries, Inc., Ontario, Calif., a corporation of California

Filed June 9, 1967, Ser. No. 645,067

1 Claim. (Cl. Plt.—29)

1. A new and distinct variety of rose plant of the floribunda class, substantially as herein shown and described,

2,846

## SUGARCANE

Leslie M. Weetman and Benjamin A. Bourne, Clewiston, Fla., assignors to United States Sugar Corporation, Clewiston, Fla., a corporation of Delaware

Filed Apr. 20, 1967, Ser. No. 632,458

1 Claim. (Cl. Plt.—89)

characterized particularly as to novelty by the unique combination of a vigorous plant having an attractive bushy, semi-upright, well-foliaged plant habit, a very floriferous habit, with the flowers literally covering the plant at peak times and borne in medium sized clusters well spaced over the plant, small, moderately double flowers having an attractive open form exposing the center, and a distinctive, attractive and brilliant dark red flower color which is relatively unfading under most weather conditions and presenting a very attractive mass bloom display on the plant.

1. The new and distinct variety of sugarcane herein shown and described, identified by the combination of the characteristics enumerated above.

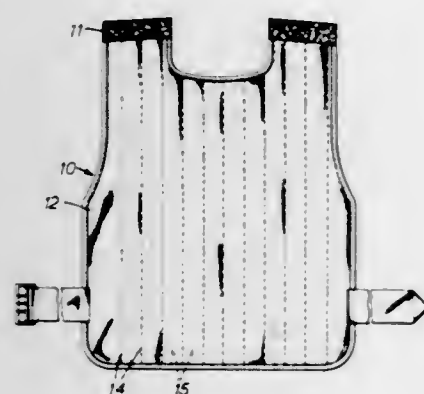


# PATENTS

## GRANTED NOVEMBER 12, 1968

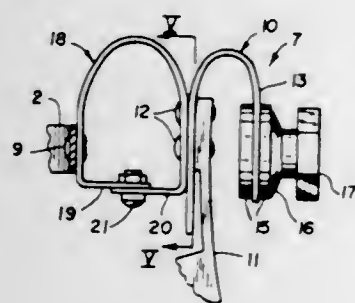
### GENERAL AND MECHANICAL

**3,409,907**  
**ARMOUR**  
Leonard Arthur Alexander Barratt, Surbiton, Surrey, England, assignor to Wilkinson Sword Limited, London, England, a British company  
Filed July 2, 1965, Ser. No. 469,099  
Claims priority, application Great Britain, July 4, 1964, 27,660/64  
9 Claims. (Cl. 2-2.5)



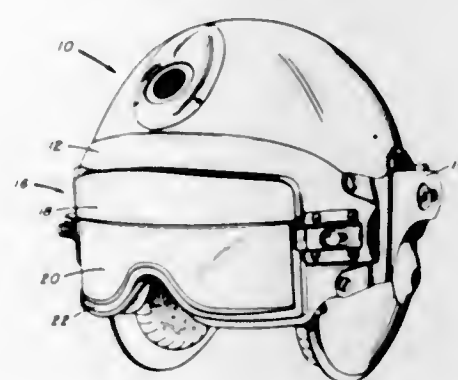
An armoured vest having a back portion and a front portion interconnected at the shoulders. Each portion of the bullet-proof vest includes a number of elongate fabric pockets so arranged that adjacent pockets overlap, and each pocket contains a fabric strip to which a series of overlapping metal plates are secured by short fabric strips with the aid of a metal-to-fabric adhesive. The provision of overlapping pockets and overlapping metal plates for each elongate strip ensures that the vest is flexible in two directions at right angles.

**3,409,908**  
**ATTACHMENT FOR MOUNTING A FACE PROTECTIVE SHIELD ON A SAFETY HAT**  
Jack N. Simpson and William R. Bohner, Reading, and Palmer E. Brace, Mohnton, Pa., assignors to ESB Incorporated, a corporation of Delaware  
Filed July 18, 1966, Ser. No. 566,134  
1 Claim. (Cl. 2-3)



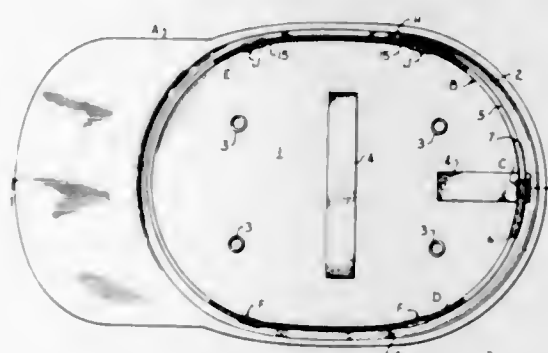
A headband for detachably supporting a face protecting shield on a safety hat or cap, which headband includes a pair of depending hooks secured to looped strips on opposite sides of the headband wherein the loops are of adjustable size for varying the spacing between the hooks.

**3,409,909**  
**ATTACHING AND SEALING MEANS FOR FLASH GOGGLE LENSES**  
Donald D. Scott, Silver Spring, and William J. Roemer, Baltimore, Md., assignors to the United States of America as represented by the Secretary of the Navy  
Filed June 21, 1966, Ser. No. 560,381  
3 Claims. (Cl. 2-14)



The invention relates to means for attaching and sealing a pair of arcuate lenses to the reservoir housing of an anti-flash goggle. The lenses are held in spaced relation to one another by a sub-housing having an orifice therein. The reservoir housing is equipped with outer shells which contiguously enclose the upper exterior surfaces of each lens. Said outer shells are notched to receive tabs extending from retainers located between each lens and each outer shell. The retainers are formed into an L-shape with the short leg of the L extending inwardly into a groove across the exterior surface of each lens. After assembly the lenses are sealed against the orifice housing by forcing a molded material between each lens and orifice housing. A plurality of screws pass through the lens housing whereby, on tightening said screws, the lens housing is sealed against the orifice housing.

**3,409,910**  
**SWEAT BAND FOR A SPORT CAP**  
James S. Massa, 5677 Cabot Drive, Oakland, Calif. 94611  
Filed Aug. 22, 1966, Ser. No. 573,899  
6 Claims. (Cl. 2-183)



A sweat band comprising an annular band of U-shape in cross section having telescoped ends and slots formed in the bight of the U. Plate-like support members have a lower end thereof disposed between the sides of the U

NOVEMBER 12, 1968

GENERAL AND MECHANICAL

369

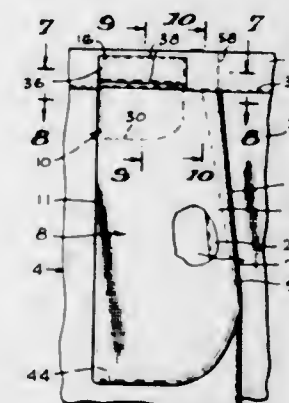
with depending bendable tabs of the plate-like members extending through the slots and bent against the side of the sweat band. The plate-like support members are secured to the inside crown of a hat with the slots and tabs removably securing the sweat band thereto.

**3,409,911**  
**HAT WITH EXPANDABLE HAT BASE**  
Frederick Loeb, 73-15 184th St., Jamaica Estates North, N.Y.  
Filed Feb. 15, 1967, Ser. No. 616,402  
6 Claims. (Cl. 2-197)



A hat comprising a hat base which is expandable to fit a plurality of head sizes. The hat base is formed of a rectangular or parallelogram-shaped integral piece of fabric whose free ends are joined by one of a plurality of curved generally vertical seams meeting at a common apex. These curved seams are formed in pairs, each pair outlining a Gothic type pointed arch shape below the seam and a loose upstanding double-walled flap of generally triangular shape above the seam. The double walls of each respective flap are joined at the inside thereof by one of the curved seams, and at the outside edge thereof by being part of the original fabric—except for the flap which is formed from the two opposed free ends of the original parallelogram-shaped fabric piece, which free ends may remain unjoined at their outer extremities.

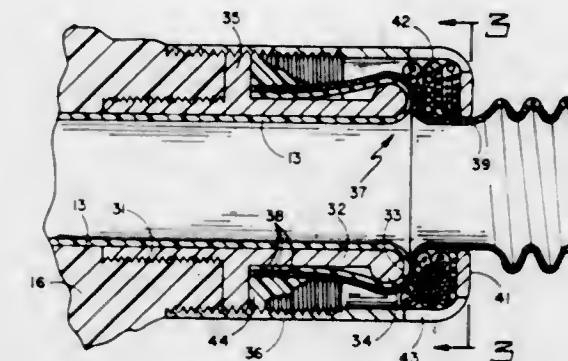
**3,409,912**  
**WATCH POCKET CONSTRUCTION**  
Edward Hyman, Los Angeles, Calif., assignor to Edward Hyman Company, Los Angeles, Calif., a corporation of California  
Filed Oct. 22, 1965, Ser. No. 501,146  
7 Claims. (Cl. 2-253)



A trouser construction and method for forming the same, which trouser construction includes a side pocket having inner and outer side panels which are joined together to form a pocket with a side opening, a watch pocket formed integrally with the side pocket by connecting the inner and outer side panels together to define a watch pocket therebetween, and a waist band which extends inwardly and thereby maintains the watch pocket opening in a closed condition while the trousers are being worn.

necting the inner and outer side panels together to define a watch pocket therebetween, and a waist band which extends inwardly and thereby maintains the watch pocket opening in a closed condition while the trousers are being worn.

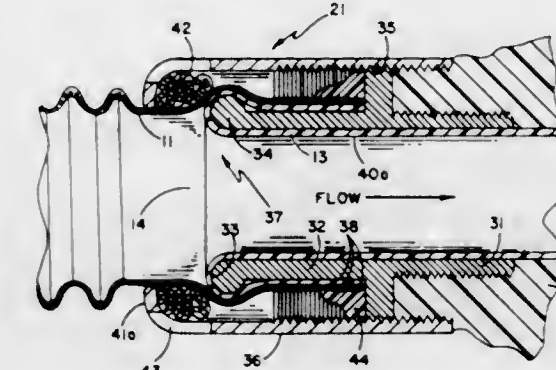
**3,409,913**  
**CONNECTOR FOR IMPLANTABLE PROSTHETIC DEVICES**  
Arthur R. Kantrowitz, Arlington, Robert T. Jones, Lexington, and Richard G. Priebe, Reading, Mass., assignors to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware  
Filed July 1, 1966, Ser. No. 562,251  
12 Claims. (Cl. 3-1)



1. In apparatus for receiving blood from a blood vessel such as an artery or vein in a living body and having a medically inert inner liner exposed to said blood and open at at least one end and a substantially inflexible case surrounding said liner, the combination comprising:

- (a) an arterial graft section;
- (b) connector means attached to said case and surrounding at least part of the portion of said liner defining said open end for attaching said graft section to said case, said connector means surrounding a portion of said graft section and having a plurality of openings adjacent its junction with said graft section; and
- (c) perforate means disposed within said connector means at its junction with said graft section for providing a large number of interstices of a size to promote clotting.

**3,409,914**  
**CONNECTOR FOR BLOOD PUMPS AND THE LIKE**  
Robert T. Jones, Lexington, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware  
Filed July 1, 1966, Ser. No. 562,199  
5 Claims. (Cl. 3-1)



1. In apparatus for receiving blood from a blood vessel such as an artery or vein in a living body and having a



smooth inner surface exposed to and acceptable to said blood and on which clots and tissue will not form, said surface defining a cylindrical inlet opening and a cylindrical outlet opening, the combination comprising:

- (a) a first arterial graft section having an effective diameter greater than that of said inlet opening; and
- (b) first substantially cylindrical connector means for maintaining arterial graft section in contact with said surface defining said inlet opening, said connector means substantially maintaining the said effective diameter of said graft material up to its point of contact with said surface whereby the velocity of said blood adjacent said inner surface of said graft section is increased at said point of contact, said connector means being provided with a plurality of openings adjacent the junction of said surface and said graft section; and first perforate means having a large number of interstices of a size to promote clotting disposed within said connector means adjacent said junction and in communication with said openings and said graft section.

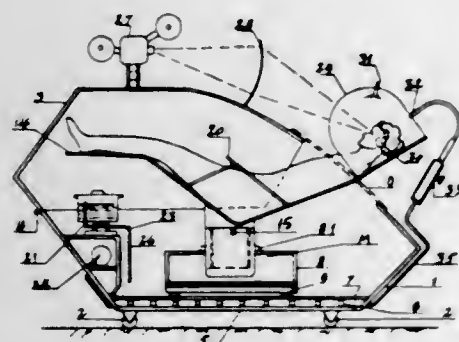
3,409,915

**STEAM CHAMBER**

Gregoire Jauvals, 6 Quai des Chartrons,  
Bordeaux, France

Filed Dec. 1, 1965, Ser. No. 510,819  
Claims priority, application France, Dec. 7, 1964,  
7,651

1 Claim. (Cl. 4-163)



This invention relates to the art of relaxation equipment and more particularly to a combined steam chamber and vibrating armchair, said steam chamber having means to provide superheated steam and also to provide a source of oxygen thereto.

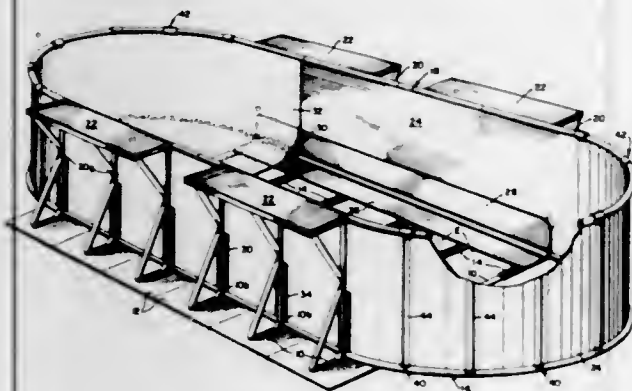
3,409,916

**OVAL SWIMMING POOL**

Jules Billig, New York, and Robert Schleeweiss, Beech-  
hurst, N.Y., assignors, by mesne assignments, to Bilnor  
Corp., Brooklyn, N.Y., a corporation of Delaware

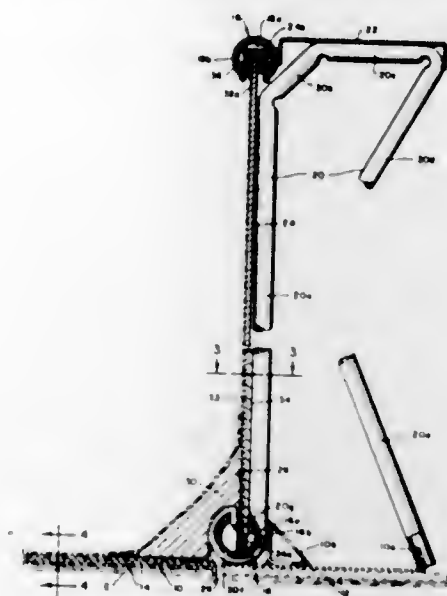
Filed June 23, 1965, Ser. No. 466,234

12 Claims. (Cl. 4-172)



An above ground swimming pool having an oval shape  
with opposing straight side walls joined by curved ends

which is easily erectable and has the required structural strength provided by vertical support members along



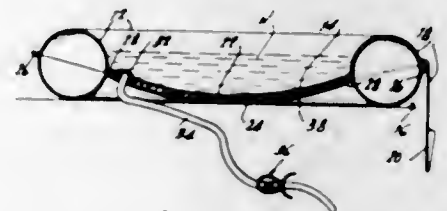
the straight side walls and the straps joining opposing vertical support members.

3,409,917

**BABY BATH AND DRESSING AID**

Howard S. Howard, 17 Clover Place,  
New Rochelle, N.Y. 10805

Filed Jan. 20, 1966, Ser. No. 521,780  
1 Claim. (Cl. 4-177)



1. An article for bathing and dressing infants adapted to be used on a flat support surface comprising a co-operating pair of plastic panels of an identical predetermined extent operatively arranged in facing relation to each other, an internal foam member of a smaller extent than said plastic panels interposed therebetween and centered relative to the marginal edges of said plastic panels, an auxiliary plastic panel having pockets formed therein having an operative position extending in a hanging condition over the marginal edge of said article, said auxiliary plastic panel during the manufacture of said article being operatively arranged with an upper edge thereon extending into an area outwardly adjacent the marginal edge of said internal foam member, a closed inner line of heat sealing located outwardly of and about the marginal edge of said internal foam member effective to enclose said foam member between said plastic panels and to secure said upper edge of said auxiliary plastic panel to said article, said closed inner line of heat sealing further delineating said medial area of said article as the bathing and dressing area thereof, a closed outer line of heat sealing joining the free marginal edges of said plastic panels to each other so as to define an outer inflatable chamber between said plastic panels bounded on opposite sides by said outer and inner lines of heat sealing, a pressure air inlet valve connected to said outer inflatable chamber which, when in an inflated condition, effectively serves as a water-containing and safety barrier for said article medial area and raises the outer marginal edge of said medial area into a clearance position with respect to said support surface of said article, and a water outlet valve for said article medial area located along the marginal edge of said medial area and oper-

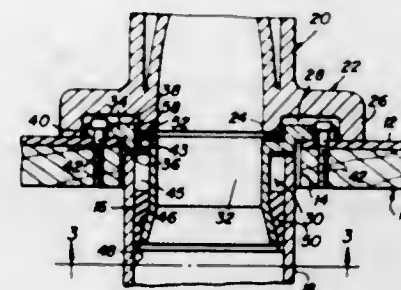
atively arranged to extend in a depending condition into said clearance between said article and said support surface.

3,409,918

**WATER CLOSET CONNECTION**

William L. Gaddy, 2122 W. "C" St.,  
Kannapolis, N.C. 28081

Filed Apr. 6, 1966, Ser. No. 540,601  
3 Claims. (Cl. 4-252)



A closet bowl connector defining a tubular fitting having a radially outwardly projecting flange on one end and adapted to extend through an opening in a floor with the flange abutting the upper surface of the floor and the other end of the connector telescoped within the inlet end portion of the soil pipe. The inner periphery of the radially outwardly projecting flange defines an upwardly opening circumferential groove disposed outwardly of the tubular portion of the connector and the outer peripheral portions of the flange include means for securing the flange to the floor and a closet bowl down over the flange. The groove has a resilient annular seal disposed therein against which the outlet horn of the associated closet bowl may be tightly engaged upon installation of the closet bowl and the inner peripheral portions of the flange have circumferentially spaced openings formed therethrough disposed outwardly of the tubular portion of the connector and which open upwardly into the bottom of the groove through which sealing material may be passed for forming a seal between the telescoped portions of the soil pipe and the tubular portion of the connector prior to disposition of the annular seal within the groove and securement of the associated closet bowl over the connector.

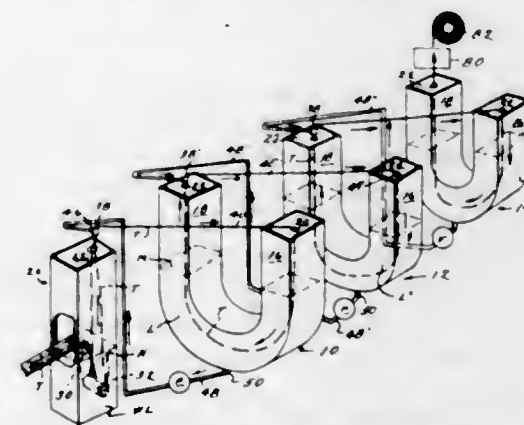
3,409,919

**PROCESS FOR TREATING TEXTILE MATERIAL SEQUENTIALLY IN A SERIES OF LIQUID TREATMENTS**

William T. Carpenter, Stanley, N.C., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware

Original application Sept. 28, 1965, Ser. No. 490,846, now  
Patent No. 3,330,134, dated July 11, 1967. Divided and  
this application Feb. 2, 1967, Ser. No. 627,582

8 Claims. (Cl. 8-152)



A process for treating textile material such as a fabric in rope form sequentially in a series of treating liquids. The process comprises passing the fabric through a con-

fined path into a first liquid bath and from the first liquid bath, further passing the fabric in another confined path into at least a second liquid bath. Liquid from the first bath is utilized to convey the fabric through the confined path to the first bath, the liquid being recycled into the first bath. Liquid from the at least second bath is utilized to carry the fabric in the confined path to the second bath with the liquid being recycled into the second bath.

3,409,920

**SECTIONALIZED SURFBOARD**

Charles R. Brownley, Box 102A,  
Forest Hill, Md. 21050

Filed Oct. 25, 1966, Ser. No. 589,251  
7 Claims. (Cl. 9-310)



This disclosure portrays a framed plastic foam surfboard which is sectionalized and mortised for ready disassembly. The framing is essentially profile conforming and includes transverse trusses and gusset elements at the section joints. Fasteners in the form of U-clips bridge from one section to the next and nest in cutaways which are coextensive with the edging frame. The ends of these fasteners are ball shaped and snap detent-wise into key-hole shaped apertures in the gussets. In this manner the frame is made effectively continuous about the assembled sections.

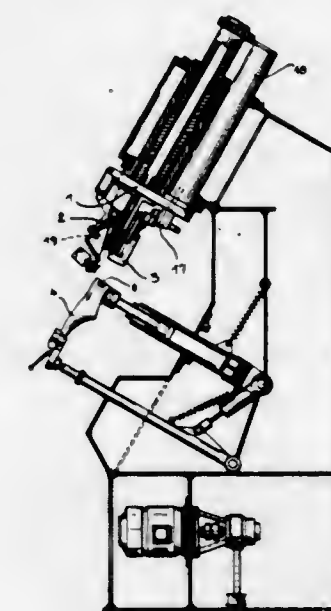
3,409,921

**COMBINED HEEL, FOREPART, AND CEMENT LASTING MACHINE**

Karl Stein and Herbert Schindler, Pirmasens, Germany,  
assignors to Firma Schon & Cie, Gesellschaft mit be-  
schränkter Haftung, Pirmasens, Germany

Filed Apr. 19, 1967, Ser. No. 632,023

6 Claims. (Cl. 12-12.5)

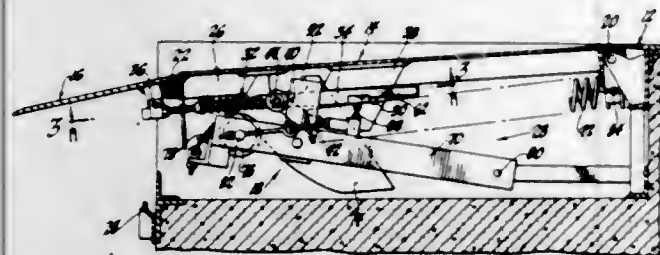


The invention relates to a combination heel, forepart, and cement lasting machine having a last holder and a carriage horizontally movable towards the heel portion of the last to carry a heel-band, a cutter pair and an insole support, adapted to permit the use of modern production methods by ensuring that a precise distance is maintained between the rear last edge and the last thimble by the provision of automatic tripping means for that purpose.



### 3,409,922 DOCKBOARD

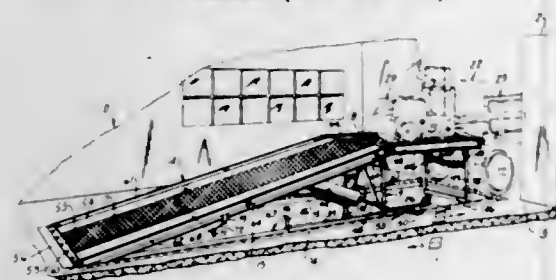
Robert C. Beckwith, Milwaukee, Wis., and Robert W. Hecker, Jr., Clare, Mich., assignors to Loomis Machine Company, Clare, Mich., a corporation of Michigan  
Filed Feb. 9, 1966, Ser. No. 526,286  
17 Claims. (Cl. 14-71)



A dockboard adapted for installation on a loading dock to span the gap between the dock and the bed of a truck which is in position to be loaded or unloaded and, more specifically, to a dockboard including a support structure, a ramp pivotally connected at a first end thereof to the support structure, a ramp lip pivotally connected to the second end of the ramp for movement between a pendent position and an extended cantilevered position, and actuation means for yieldably locking the ramp lip in the extended cantilevered position so that the ramp lip may pivot toward the pendent position when a predetermined force is applied thereto and for unlocking the ramp lip when the ramp pivots to a fixed position below dock level.

### 3,409,923 ADJUSTABLE PLATFORM AND RAMP UNIT

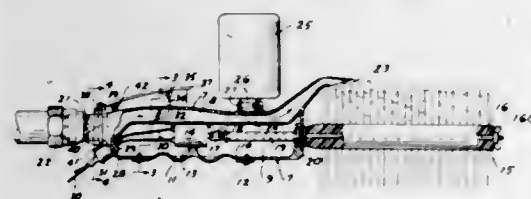
Walter B. Walker, 19603 Park Lane,  
Grosse Ile, Mich. 48138  
Filed Apr. 29, 1966, Ser. No. 546,332  
13 Claims. (Cl. 14-71)



An apparatus which can be installed in a prepared pit in a floor area and which presents a deck surface level with the surrounding floor surface when it is in one position. In said one position it is capable of sustaining a superimposed loading or cross-over traffic. The apparatus includes a ramp portion and a hinged platform portion, with power means for elevating the platform portion to levels equal to the height of a truck or the like to permit a lift-truck to drive up the attached ramp and over the platform into the truck for unloading the same.

### 3,409,924 PORTABLE CAR WASHER

Russell J. Slama, 27037 Vance, Madison Heights,  
Mich. 48071  
Filed May 29, 1967, Ser. No. 642,040  
7 Claims. (Cl. 15-24)

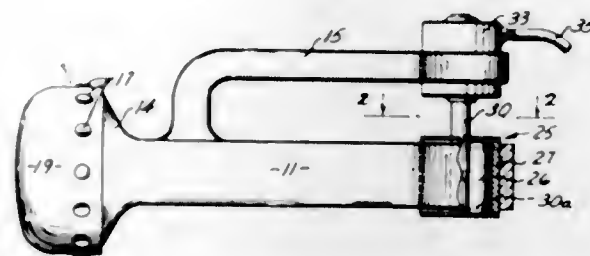


This application discloses a power driven rotary brush mounted in a handle with water and detergent, or soap,

inlet means and means to discharge the water, with or without the soap, onto the brush.

### 3,409,925 SONIC SCRUBBING DEVICE

Albert G. Bodine, Jr., 7877 Woodley Ave.,  
Van Nuys, Calif. 91406  
Filed June 6, 1966, Ser. No. 555,422  
8 Claims. (Cl. 15-97)



A highly compliant applicator member which closely conforms to surfaces to be cleaned is formed by a flexible container member which has a fluid medium therein. This applicator member is applied against the surfaces to be cleaned and follows the irregularities of such surfaces. Sonic elastic vibrational energy generated by means of a mechanical oscillator member is coupled to a resonant bar member which is elastically vibrated at a resonant sonic frequency. Sonic energy developed in the resonant bar member is coupled to the applicator member for utilization in affecting the cleaning action at the interface between the applicator member and the surfaces to be cleaned.

### 3,409,926 BRUSH FOR CLEANING MILKING INFLATIONS

Gomer L. Martin, R.R. 1, Blue River, Wis. 53518  
Filed Nov. 3, 1967, Ser. No. 680,377  
2 Claims. (Cl. 15-114)



An inflation cleaning brush having an upper portion with a plurality of radially extending flexible webs secured to an elongate wire core. The webs are made of open, low-density sheets of tough, flexible, organic fibers. The webs fold backwardly one on another in overlapping supporting spiral relation when the brush is inserted with a rotary motion into the cup portion of the milking inflation. The lower portion of the brush is of conventional bristle construction for cleaning the milk tube portion of the inflation. The brush may have an intermediate webbed portion between the upper and lower portions. This intermediate portion has fewer radial webs than the upper portion to accommodate tapered cup portions.

### 3,409,927 SCOURING COMPOSITION BOARD

Shibley A. Hider, Toledo, and Klahr D. Loudenslagel,  
Maumee, Ohio, assignors to Owens-Illinois, Inc., a  
corporation of Ohio  
Filed Oct. 23, 1965, Ser. No. 503,612  
5 Claims. (Cl. 15-209)



1. A scouring composition board which comprises a pulp-thermoplastic board and a fibrous layer wherein the pulp-thermoplastic board, having a discrete fibrous web, is produced by the agitation of a slurry for a period of time sufficient to cause fibrillation, said fibrillation being sufficient to decrease the TAPPI freeness of said pulp according to TAPPI test T 227 m-58 by at least about 25 ml. to a final value of from about 300 ml. to about 600 ml., wherein the slurry comprises from about 0.01 to about 2 weight percent of a composition having intermingled therein from about 20 to about 90 weight percent of a particulate thermoplastic, which will pass through a 40-mesh screen and be retained by a 300-mesh screen and from about 80 to about 10 weight percent of a fibrous cellulose material, the balance of the slurry being slurry medium, and draining the resulting mixture; wherein the fibrous layer is steel wool, brass wool, copper wool, aluminum wool or glass wool and is bonded to the pulp-thermoplastic board.

### 3,409,928 HOLDER DEVICE FOR COSMETIC TOOTH CLEANERS AND THE LIKE

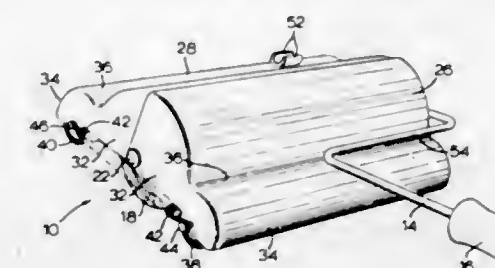
Richard L. Thurman, Beloit, Wis., assignor to The Smylon Co., Hollywood, Calif., a corporation of California  
Filed Oct. 23, 1965, Ser. No. 503,850  
1 Claim. (Cl. 15-210)



A cosmetic device comprising an article holder portion of circular cross-sectional configuration having a cylindrical recess in one end thereof for receiving an article therein. An enlarged handle portion integrally formed with the other end of the article holder portion and flaring outwardly and downwardly from opposite sides thereof. The handle portion including opposed concave finger gripping surfaces to facilitate gripping thereof by user. The cosmetic article comprising a resilient tooth cleaner of cylindrical configuration having a flat planar beveled upper surface. And a conical shaped holder secured to the upper end of the article holder portion and covering the tooth cleaner article.

### 3,409,929 PAINT ROLLER SPRAY SHIELD AND LEVELLER

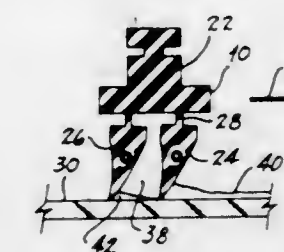
Sandor Fisher, 589 Palmerston Ave.,  
Toronto, Ontario, Canada  
Filed Nov. 13, 1967, Ser. No. 682,426  
8 Claims. (Cl. 15-248)



This disclosure relates to a spray shield and paint-levelling accessory for paint rollers and includes a pair of levelling rollers rotatably mounted on opposite sides of a main roller within a two-piece pivotally connected shield structure.

### 3,409,930 HEATED WINDSHIELD WIPER WITH REFLECTOR MEANS

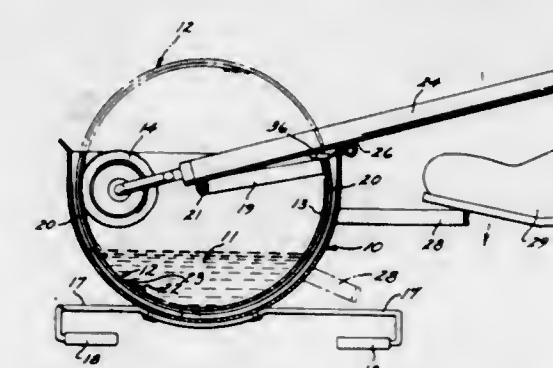
Roy E. Linker, Nursery Road, Titusville, N.J. 08560  
Filed Aug. 10, 1967, Ser. No. 659,695  
7 Claims. (Cl. 15-250.06)



An integral extruded windshield wiper blade embodying two spaced parallel flexible wiping elements each of which embodies a heating element, the parallel elements cooperating to define a heat concentrating channel between the blade wiping elements.

### 3,409,931 APPARATUS FOR APPLYING PAINT TO PAINT ROLLERS

Duane M. Graf, 2257 Maple, Costa Mesa, Calif. 92627  
Continuation of application Ser. No. 426,240, Jan. 18, 1965. This application Jan. 19, 1968, Ser. No. 699,271  
10 Claims. (Cl. 15-257.06)



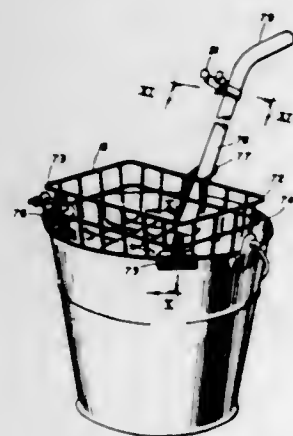
A paint roller loading apparatus having a sheet-like applicator element formed from a screen material and which element is in the form of a substantial portion of a hollow cylinder. The applicator element is pivotally mounted in a paint containing container, about a hori-



zontal axis which is substantially coincident with the axis of the applicator element. The applicator element having a first position wherein the applicator element is at least partially immersed in the paint in the container and a lever operated arm mounted on the pivot means for pivoting the applicator element about its axis to a second position wherein the immersed portion is exposed above the paint in the container.

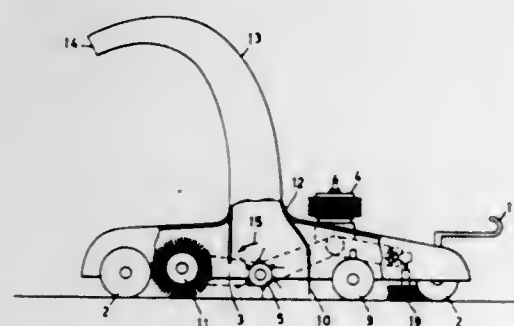
**3,409,932**  
**CLEANING APPARATUS**  
Philip F. George, 2 Dartmouth St.,  
Worcester, Mass. 01604

Original applications Sept. 8, 1964, Ser. No. 396,467, now Patent No. 3,199,136, dated Aug. 10, 1965, and May 28, 1962, Ser. No. 198,059. Divided and this application May 14, 1965, Ser. No. 455,910  
1 Claim. (Cl. 15—260)



A cleaning apparatus comprising a perforated rack positioned over a receptacle in a first operative position for mop pressing and supporting, said rack being swingable to a second inoperative position at one side of the receptacle, an inclined supporting arm fixed to the rack and a spring clip on the arm adapted to receive the handle of a mop resting on the rack.

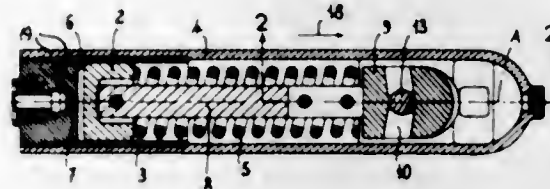
**3,409,933**  
**MACHINE FOR REMOVING LEAVES AND OTHER DEBRIS FROM THE GROUND**  
Harry Larsson, Hult, Tenhult, Sweden, assignor to Aktiebolaget Huluforsverken, Norrahammar, Sweden, a joint-stock company of Sweden  
Filed May 18, 1966, Ser. No. 551,120  
3 Claims. (Cl. 15—364)



A wheeled machine for removing leaves from the ground in which the underside of the machine is provided with an intake opening limited at the rear in relation to the direction of movement by a rotatable brush for throwing leaves toward the opening. An impeller is positioned in the opening with its shaft parallel to the brush and provided with blades swingable about shafts

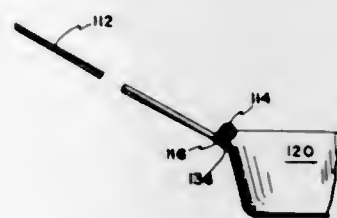
parallel to and arranged around the impeller shaft. A downwardly hanging plate is located in front of the opening and a pressure roller capable of vertical movement is arranged forward of the plate.

**3,409,934**  
**DOOR CHECK**  
Pierre Liogier, 54-56 Cours de la Liberte,  
Lyon, France  
Filed Dec. 5, 1966, Ser. No. 599,052  
Claims priority, application France, Jan. 4, 1966,  
46,786  
7 Claims. (Cl. 16—55)



Door check with dashpot assembly whose spring-loaded piston is rigid with a head having a chevron-shaped transverse groove which, in a closed-door position, points toward the axis of rotation of a shaft extending at right angles to the piston, this shaft being arranged to turn upon a swinging of the door carrying the door check; a roller mounted eccentrically on the shaft engages in the groove to displace the piston against its spring force whenever the door is opened. In the closed-door position, the roller rests at the vertex of the groove; after rotating through about 150° from this starting position, it approaches a zone of ineffectiveness of the restoring spring so that the door may be left open notwithstanding the closing force acting upon the piston.

**3,409,935**  
**DETACHABLE SHEET METAL HANDLE FOR A KITCHEN UTENSIL**  
Milton W. Wishnick, 400 E. Randolph St.,  
Chicago, Ill. 60601  
Filed Oct. 23, 1965, Ser. No. 502,924  
1 Claim. (Cl. 16—114)



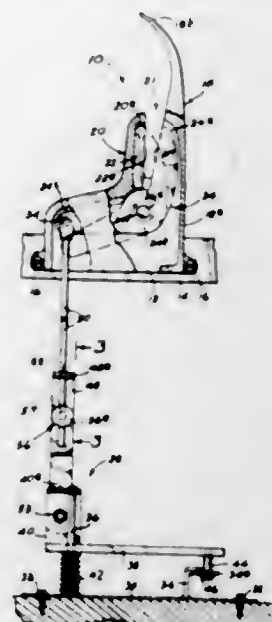
A detachable handle for kitchen utensils of either shallow or deep cup-shaped or dished design. The handle is of one-piece sheet metal construction which lends itself to a simple stamping operation. When applied to a utensil, a pair of hook-over tongues engage the rim of the utensil and a short central bearing tongue engages the side wall of the utensil on edge-to-face contact therewith, thus supporting the utensil in compression.

**3,409,936**  
**APPARATUS FOR SKINNING AN ANIMAL**  
Doran E. Hochbaum, Rte. 1, Box 6,  
Newberg, Oreg. 97132  
Filed May 31, 1966, Ser. No. 553,840  
9 Claims. (Cl. 17—21)

Apparatus for skinning an animal including an elongated curved prong which is insertable between, and oper-

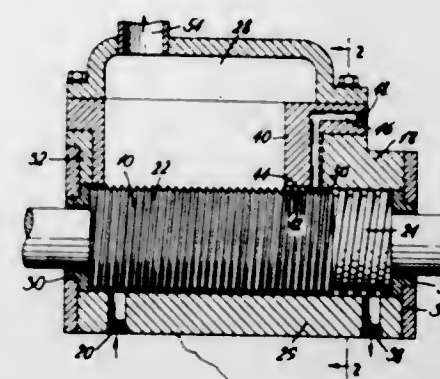
able to separate, the pelt and the flesh and bone portion of an animal's leg, and a movable knife which may be moved

provide a heated, high velocity air stream surrounding the disc so as to entrain droplets emanating from the disc and



from a shielded position within the prong laterally outwardly to cut through the flesh and bone portion of the leg.

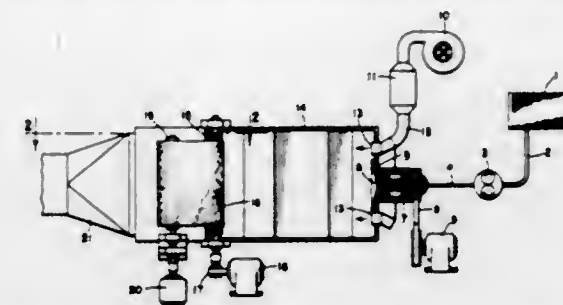
**3,409,937**  
**CONTINUOUS MILLING AND DEVOLATILIZING APPARATUS**  
Felix P. Klosek, Neshean Station, Richard E. Nicolson, Martinsville, and Sydney P. Spence, Westfield, N.J., assignors to Union Carbide Corporation, a corporation of New York  
Original application June 28, 1963, Ser. No. 291,362.  
Divided and this application Dec. 28, 1966, Ser. No. 630,151  
2 Claims. (Cl. 18—2)



A twin screw milling and devolatilizing apparatus is provided with means for injecting inert fluid e.g. steam into the devolatilizer at a point where the material being treated is at maximum temperature. The input conduit produces a fluid flow counter-current to the direction of the material being advanced by the screws so that volatile contaminants such as unreacted monomer, solvent and by-products can be readily swept off the advancing materials to a vapor outlet, leaving behind a product, e.g., polymer of high purity.

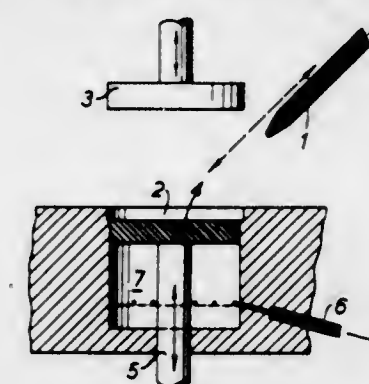
**3,409,938**  
**APPARATUS FOR PRODUCING FINE FIBERS**  
Thomas E. Crompton, Cary, N.C., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
Original application June 16, 1965, Ser. No. 464,477.  
Divided and this application June 23, 1967, Ser. No. 659,254  
5 Claims. (Cl. 18—2.6)

The invention is directed to apparatus for producing fine fibers of an organic polymer and comprises a horizontally rotatable conoid disc, means to feed a polymer solution, through an aperture located in the middle of the disc, onto the concave surface of the disc, means to



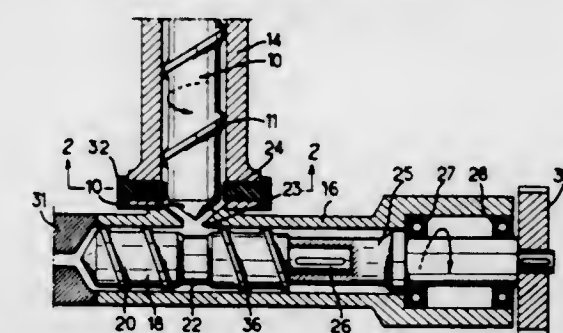
form fibers by removing the solution from the droplets. There is also provided means to collect the fibers and means to collect the removed solvent.

**3,409,939**  
**APPARATUS FOR THE MANUFACTURE OF HOLLOW ARTICLES**  
Arie Hey, Hendrik-Ido-Ambracht, Netherlands, assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine  
Filed Nov. 29, 1965, Ser. No. 510,320  
14 Claims. (Cl. 18—5)



A method and apparatus for manufacturing thin-walled hollow articles from a thermoplastic material, in which a metered slug of the material is deposited in the cavity of a heated die to render the thermoplastic material in a molten condition. Next, pressure is applied to the molten thermoplastic material by a stamping element to produce a preform of the material conforming to the shape of the die cavity. Subsequently, the material preform is drawn into the cavity of a mold by the application of differential pressure to the interior of the mold cavity to conform the preform to the shape of the article to be manufactured.

**3,409,940**  
**PRESS FOR THE EXTRUSION OF PLASTIC MATERIAL**  
Jean Ovtcharenko, Eaubonne, France, assignor to Societe des Etablissements Andouart, a corporation of France  
Filed July 1, 1966, Ser. No. 562,277  
Claims priority, application France, July 2, 1965,  
23,250  
3 Claims. (Cl. 18—12)



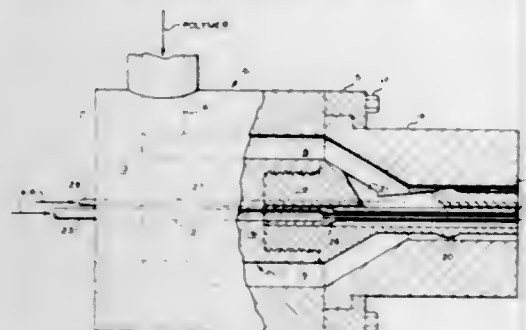
A press with an extrusion screw for feeding a pre-jellified plastic material to a kneading screw provided with a shallow thread and requiring a circumferential speed



considerably higher than that of the extrusion screw to provide a strong kneading action on the material over a length extending from one to three times the kneading screw diameter.

### 3,409,941 APPARATUS FOR PRODUCING PLASTIC ARTICLES

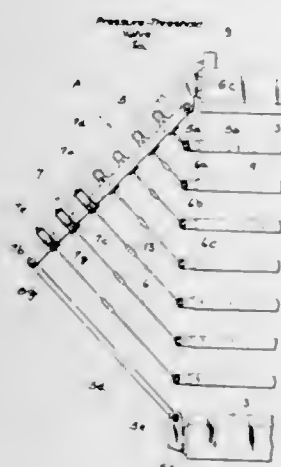
Charles A. Poux, Titusville, Pa., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed Sept. 6, 1966, Ser. No. 577,454  
5 Claims. (Cl. 18-14)



Apparatus for producing a first tubular extrudate disposed within a second tubular extrudate in a single operation by means of a die having a first annular extrudate passageway formed by a first mandrel and bore through the die, a second annular extrudate passageway formed by a second bore and mandrel located within said first mandrel, and connected to said first annular passageway by means defining an opening in said first mandrel to form a communicating passageway between said first and second annular passageways.

### 3,409,942 PLATEN PRESS WITH SIMULTANEOUS CLOSURE MEANS

Eugen Siempelkamp, Krefeld, Germany, assignor to Firma G. Siempelkamp & Co., Krefeld, Germany, a corporation of Germany  
Filed Oct. 4, 1966, Ser. No. 584,186  
Claims priority, application Germany, Oct. 7, 1965, S 99,986  
10 Claims. (Cl. 18-16)

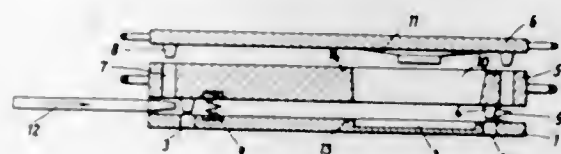


1. In combination with a multiplaten press having a head plate and a bed plate, means for relatively displacing said plates toward and away from one another, and a multiplicity of vertically stacked platens disposed between said plates for simultaneous compaction of individual layers of compressible material positionable between said platens: at least two simultaneous-closure devices connected with said platens for displacing same synchronously with the relative movement of said plates, said devices each comprising

a lever fulcrumed to one of said plates for swinging movement about a generally horizontal axis; means operatively connecting said lever with the other of said plates for swinging displacement of said lever about its fulcrum synchronously with the relative movement of said stationary plates; connecting means individual to said platens and coupled with said lever at spaced locations; and force-equalizing means including respective force-transmitting means interposed between said lever and each of said connecting elements for transferring forces from said lever to said connecting elements, and bridging means connecting said force-transmitting means to equalize the stresses applied by said lever to all of said connecting elements at least at end positions of the platens corresponding to press closure.

### 3,409,943 HEEL MOLD

Claus zur Nedden, Westerhausen, Kreis Melle, Germany, assignor to Firma Westland-Gummiwerke G.m.b.H. & Co., Westerhausen, Kreis Melle, Germany  
Filed Oct. 10, 1966, Ser. No. 585,403  
10 Claims. (Cl. 18-42)

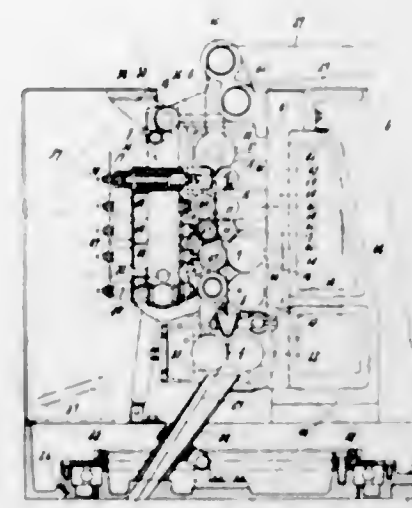


1. A mold, particularly for subjecting diverse materials simultaneously and individually to a preliminary treatment in separate mold cavities and for subsequently subjecting such materials to a simultaneous joint treatment in a composite mold cavity, comprising a first and a second mold section having respective juxtaposed surfaces each provided with a recess, said mold sections being movable between a spaced position in which said surfaces are spaced from each other and said recesses constitute separate cavities, and an abutting position in which said surfaces abut against each other and said recesses together constitute a composite cavity; and separator means having opposed faces and being slidably movable between a first location in which it is interposed between said mold sections when the same are in said spaced position and in which said faces abut the respective surfaces and define with the respective recesses said separate mold cavities, and second location in which said separator means is withdrawn from between said mold sections so that the latter may be moved to said abutting position in which said surfaces abut each other and recesses communicate and together define said composite mold cavity.

### 3,409,944 DRAWING FRAME

Hiroshi Kajimura, Tatuo Ota, and Satoshi Nagira, Yatsuka-gun, Japan, assignors to O-M Ltd., Umeda, Kita-ku, Osaka-shi, Japan  
Filed June 22, 1964, Ser. No. 376,964  
Claims priority, application Japan, July 6, 1963, 38/50,712, 38/50,713; Oct. 9, 1963, 38/76,393; Nov. 12, 1963, 38/85,406  
5 Claims. (Cl. 19-262)

1. A drawing frame comprising, in combination, (A) a pair of calender rollers and pairs of draft rollers arranged thereabove, said pairs of draft rollers each comprising a bottom roller and a top roller, said bottom rollers being supported on roller stands and being positively driven, and each of said top rollers having bearing parts at its ends,



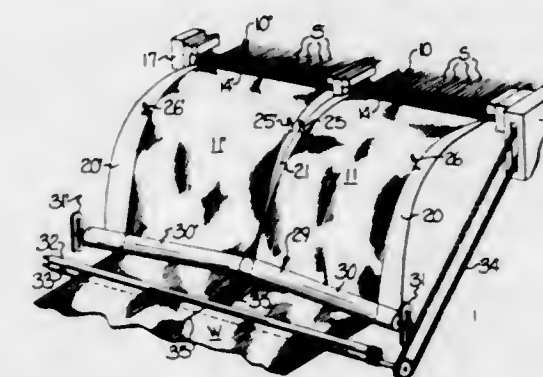
(B) a cap bar supporting said bearing parts at each end of said top rollers as hereinafter set forth, (C) said pairs of rollers including a pair of front rollers, said pair of front rollers being mounted as aforesaid with its nip point positioned immediately above the nip point of said pair of calender rollers and sufficiently close thereto to substantially avoid unstable vibrations of slivers being delivered at high speed from said front rollers to said calender rollers, (D) said pairs of rollers also including a pair of back rollers, said pair of back rollers being mounted as aforesaid with its nip point facing upwardly, (E) said combination further comprising a sliver guide positioned immediately above the nip point of said back rollers and having a center portion parallel therewith, said sliver guide comprising a number of adjacent discs defining passages therebetween at either side of said center portion through each of which a sliver is passed on its way to the nip point of said back rollers, enabling a number of slivers to be introduced to said draft rollers through the clearances at each side of the center portion of said sliver guide, (F) said combination also characterized in that each of said cap bars comprises

(1) a flat plate member having an inner side facing toward said top rollers and an outer side facing away from said top rollers, and having an elongated opening extending through from its inner side to its outer side and longitudinally of said plate member, and (2) an attachment for supporting the bearing part of said top roller, which attachment comprises (a) a flange portion formed to abut against the inner side of said plate member, (b) a side portion fitting in the elongated opening in said plate member, (c) threaded bolt means securing said attachment in a selected position in said elongated opening, and (d) a bearing part engaging portion extending from said flange portion into the aforesaid recess in the end of said bearing part, (G) said combination further comprising (1) scrapers juxtaposed to rollers of said pairs of draft rollers, (2) a support frame in which said scrapers are mounted, (3) means comprising an eccentric cam mounted on the shaft of one roller of said pairs of draft rollers and a member engaged with said cam and attached to said support frame for imparting reciprocating motion to said scrapers as said draft rollers are rotated,

(4) said support frame comprising a support base and articulating means for mounting said support base to permit said reciprocating motion thereof.

### 3,409,945

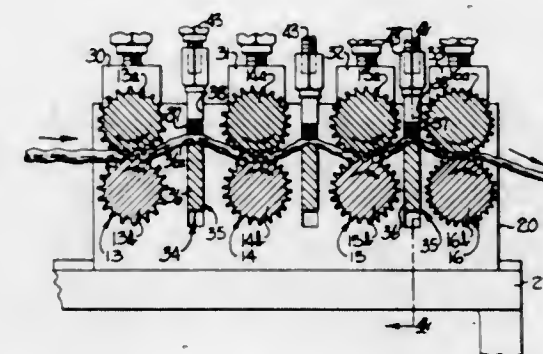
APPARATUS FOR UNITING FIBROUS WEBS  
Coley L. Godwin, Gastonia, Frank S. Helms, Bessemer City, and James Arthur F. Rayfield, Stanley, N.C., Charles J. Greiner, Menasha, Wis., and Frederic J. Hrubecky, Hendersonville, N.C., assignors to Ideal Industries, Inc., Bessemer City, N.C., a corporation of North Carolina and Kimberly-Clark Corporation, Neehah, Wis., a corporation of Delaware  
Filed Mar. 23, 1966, Ser. No. 536,752  
8 Claims. (Cl. 19-288)



Apparatus for interconnecting a pair of webs to form a wider web by convergently moving the webs into side-by-side abutting relation while subjecting each of the webs to a differential drafting with the distal portions of the webs being subjected to a greater draft than the proximal portions, and thereafter in a continuous operation, subjecting the webs to a differential drafting of the proximal portions of the webs, and wherein the fibers at the proximal portions of the webs are intermingled with each other to unite the webs together.

### 3,409,946 APPARATUS FOR DRAFTING TEXTILE FIBROUS STRANDS

Joe R. Whitehurst, Bessemer City, N.C., assignor to Ideal Industries, Inc., Bessemer City, N.C., a corporation of North Carolina  
Filed July 5, 1966, Ser. No. 562,831  
7 Claims. (Cl. 19-292)



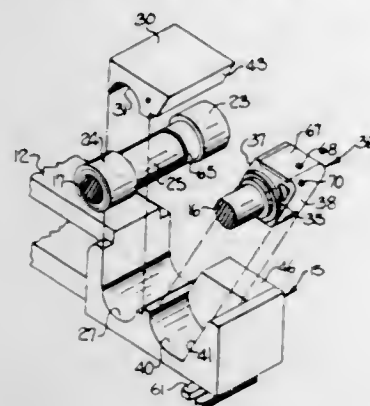
Apparatus for varying the effective length of a drafting zone to accommodate a wide range of staple length fibers without changing the spacing between the drafting elements, such as spaced sets of drafting rolls, defining the drafting zone, which apparatus includes deflecting means adjustably positioned between the sets of drafting rolls for engaging and laterally deflecting the textile material being drafted, and wherein the deflecting means comprises a pair of cooperating members forming a nip with one of the same preferably being driven at a speed intermediate the respective speeds of the sets of drafting rolls.



### 3,409,947 CALENDER ROLL SUPPORT FOR TEXTILE MACHINES

Joe R. Whitehurst, Bessemer City, N.C., assignor to Ideal Industries, Inc., Bessemer City, N.C., a corporation of North Carolina

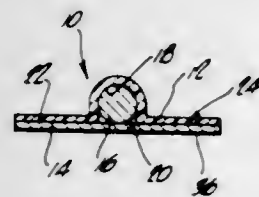
Filed May 9, 1966, Ser. No. 548,696  
5 Claims. (Cl. 19—236)



Resilient means for supporting opposite ends of a pair of cooperating calender rolls so as to dampen the transmission of vibrations between the calender rolls and associated components of a draw frame and to also compensate for misalignment of the slide blocks supporting opposite ends of the calender rolls.

### 3,409,948 TIE STRIP

Robert F. Goodwin, Santa Ana, Calif., assignor to Royal Industries, Pasadena, Calif., a corporation of California  
Filed Feb. 8, 1968, Ser. No. 704,060  
10 Claims. (Cl. 24—16)

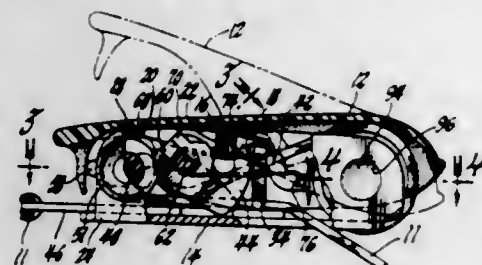


A tie strip having a paper ribbon, a plastic ribbon, and a wire disposed between the ribbons. A face of the paper ribbon adjacent the plastic ribbon includes a bonding agent and the exterior of the wire has a cementitious coating to bond the parts together. The wire is disposed in a channel defined by the plastic ribbon. An outer surface of the paper ribbon is flat to enable its imprinting even after the tie strip has been formed.

### 3,409,949

**BUCKLE AND RETRACTOR COMBINATION**  
Peter M. Kobrehel, Warren, and Paul Mandrik, St. Clair Shores, Mich., assignors to General Motors Corporation, Detroit, Mich.

Filed Apr. 29, 1966, Ser. No. 546,342  
3 Claims. (Cl. 24—77)

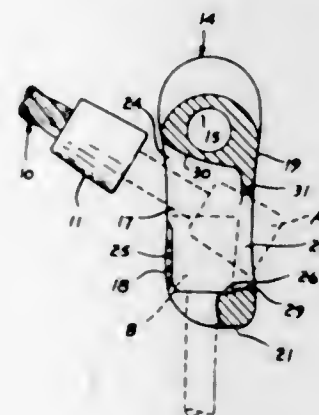


A combined seat belt buckle and locking retractor has a base which mounts a spring biased reel for retracting a seat belt. The belt extends from the reel, between biased-

apart fixed and slidable rollers, around the slidable roller and to a vehicle body attachment. A buckle cover overlies the reel and is slidably pivoted to the frame so that it can move relative to the base to accommodate varying amounts of the belt on the reel. The cover mounts a bar for lifting a pair of locking pawls, pivoted to the base, when the cover is lifted about its pivot. A latch plate is insertable into the buckle to latchingly engage the locking pawls. Upon insertion the latch plate engages the slidable roller to prevent its rotation so that a tensile force on the belt will slide the roller until the belt is clamped between the rollers to lock the belt against movement.

### 3,409,950

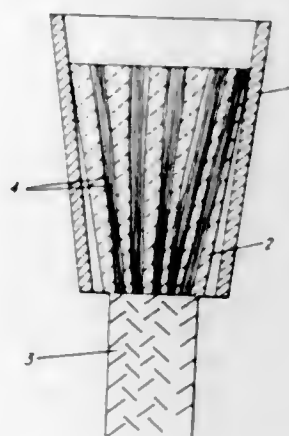
**JUMP-PROOF CHOKER HOOK**  
William D. M. Boyd, 1620 Haro St., Vancouver 5, British Columbia, Canada  
Filed Nov. 7, 1966, Ser. No. 592,433  
7 Claims. (Cl. 24—123)



A jump-proof choker hook having a cable sleeve, and an elongated socket opening below the sleeve. The opening adapted to admit a cable ferrule through the hook when presented at an obtuse angle, and a narrow slot at the base of the socket so that the cable may pass through the slot to assume an axial position whereat tension on the cable seats the ferrule in a base of the socket, from which the cable can be dislodged only by returning it to the obtuse angle entering position.

### 3,409,951

**DEVICE FOR ANCHORING A TEXTILE CABLE**  
Gilbert Morieras, Lyon, France, assignor to Societe Rhodiaceta, Paris, France, a French body corporate  
Filed Nov. 7, 1966, Ser. No. 592,610  
Claims priority, application France, Nov. 15, 1965, 38,390  
15 Claims. (Cl. 24—123)



Anchoring device for a textile cable under tension comprising a core formed by a bundle of parallel filaments and an external envelope covering the core. The device is constituted exteriorly by a rigid sleeve of taper-

ing form and interiorly by a bung also of tapering form which has a common directrix with the sleeve and in which the end of the cable is fixed in any appropriate way. The interior apical angle of the sleeve is less than the apical angle of the bung. The device is particularly advantageous for anchoring cables made of synthetic textile materials such as polyamides, polyesters and polyolefins.

### 3,409,952

#### SLIDE FASTENER CHAIN

Karl Wilhelm Uhrig, Wuppertal-Elberfeld, Germany, assignor to Supla-Etablissement, Vaduz, Liechtenstein, Germany

Filed Mar. 21, 1966, Ser. No. 536,073  
Claims priority, application Germany, Mar. 20, 1965, P 36,333  
1 Claim. (Cl. 24—205.1)



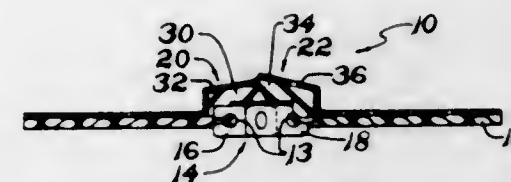
A fastener chain whose stringers each have a woven tape in which a longitudinal row of openings separated by filling threads is formed by missing warp threads. A continuous row of slide fastener elements consisting of a plastic wire having alternating head and bight portions is attached to the tape by the head portions passing through consecutive openings until the filling threads are received in the bight portions and the heads project from one face of the tape a distance which is not substantially smaller than the narrower of the two tape portions separated by the openings. An integral burr on each head portion prevents the same from slipping back through the tape.

### 3,409,953

#### PRESSURE SEALING ZIPPER

James A. Briscoe, Barberton, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

Filed Oct. 31, 1966, Ser. No. 590,748  
2 Claims. (Cl. 24—205.1)



This disclosure relates to an improved pressure sealing zipper which incorporates the use of fabric covered sealing lips to reduce slider resistance and air leakage caused by slider wear.

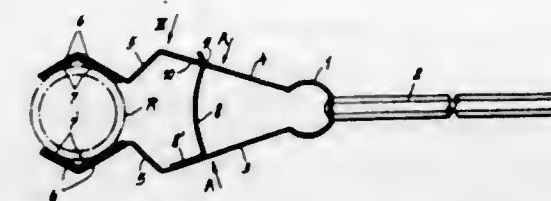
### 3,409,954

#### TUBE HOLDER

Walter Schneider, Unterengstrasse 8135, Langnau am Albis, Switzerland

Filed May 24, 1967, Ser. No. 641,011  
Claims priority, application Switzerland, July 8, 1966, 10,006/66  
4 Claims. (Cl. 24—257)

A tube holder fashioned from a bent leaf spring has a first leg formed with a cutout and a second leg provided



with a bent spring tongue traversing the cutout for locking engagement with a lug extending from an edge of that

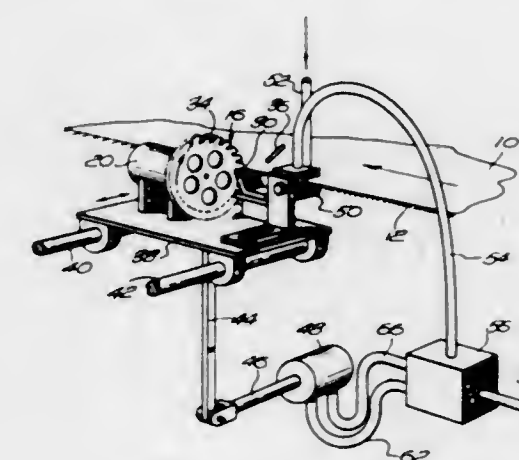
cutout, the tongue having a plurality of notches adapted to receive this lug.

### 3,409,955

#### APPARATUS FOR CUTTING LOOPS ON THE EDGE OF A RUNNING CLOTH WEB

William J. Holm, Springfield, Vt., assignor to Parks & Woolson Machine Company, Springfield, Vt., a corporation of Vermont

Filed Mar. 8, 1966, Ser. No. 532,632  
1 Claim. (Cl. 26—10.4)



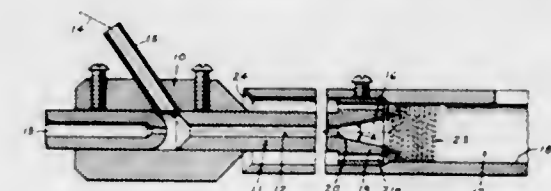
A rotary cutting wheel mounted adjacent the edge of a moving cloth web cooperates with a fixed knife to cut loops formed along the cloth selvage. The wheel rotates about an axis parallel to the web edge and generally in the plane thereof. Air jets cause the loops to extend outwardly to be cut and a control system maintains the selvage and cutting wheel in proper relation.

### 3,409,956

#### APPARATUS AND PROCESS FOR TEXTURIZING YARN

Parker W. Longbottom and Kenneth L. Huggins, Petersburg, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed July 5, 1966, Ser. No. 562,893  
12 Claims. (Cl. 28—1)



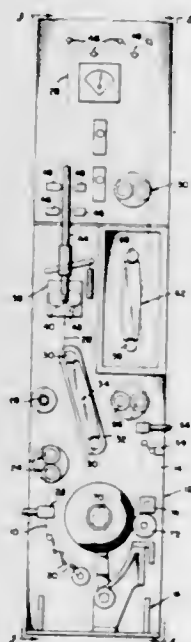
Continuous filament yarns are texturized by introducing the yarn into a pre-heat chamber in contact with a heated fluid such as steam which directs the heated yarn into a texturizing chamber having a larger cross section than the pre-heat chamber wherein the flow of the yarn is impeded whereby a yarn plug is established. The heated fluid is discharged from the texturizing chamber in a reverse direction from entry therein through an arrangement of exhaust ports located in the pre-heat chamber wall



concentric to the yarn passage. The exhausted fluid becomes an insulating medium around the pre-heat chamber to prevent heat loss and provide more uniform temperatures within said chamber.

### 3,409,957 CONTINUOUS YARN TREATMENT PROCESS AND APPARATUS

Ralph H. Carter, Sanford, N.C., assignor to Northeastern Engineering and Development Co., Inc., Pawtucket, R.I., a corporation of Rhode Island  
Filed Aug. 11, 1966, Ser. No. 571,759  
21 Claims. (Cl. 28—1)



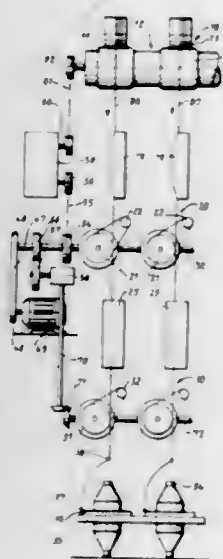
A method and apparatus for treating a synthetic and/or a thermoplastic yarn for providing a continuous treatment of the yarn in the form that it leaves a spinning or extruding device until the treated yarn is wound upon a take-up package.

### 3,409,958 APPARATUS FOR STRETCHING AND SHRINKING YARNS

Erich Bucher, Goppingen, Horst Haninger, Ebersbach (Fils), and Gunter Mutschler, Aichelberg-Zell, Germany, assignors to Zinser-Textilmaschinen Gesellschaft mit beschränkter Haftung, Ebersbach (Fils), Germany

Filed Aug. 22, 1966, Ser. No. 574,074  
Claims priority, application Germany, Aug. 26, 1965, Z 11,722

19 Claims. (Cl. 28—71.3)

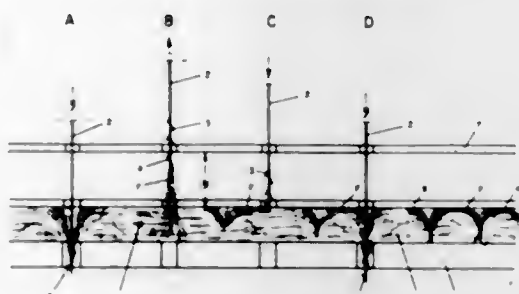


A yarn is first stretched at a first speed and then guided at a second lower speed through a shrinking area where the yarn passes between a pair of heater segments form-

ing a central channel for the yarn. At least one heater segment can be moved to a position opening the channel along the entire length thereof for insertion and removal of the yarn, and also for momentarily starting and stopping the heating of the yarn independently of the movement of the yarn.

### 3,409,959 PROCESS FOR MANUFACTURING NONWOVEN FABRICS

Franco Papalini Barboni, Barcelona, Spain, assignor to Resintex S.A., Barcelona, Spain  
Filed June 7, 1966, Ser. No. 555,817  
Claims priority, application Spain, June 23, 1965, 314,818; Sept. 24, 1965, 317,787  
2 Claims. (Cl. 28—72.2)

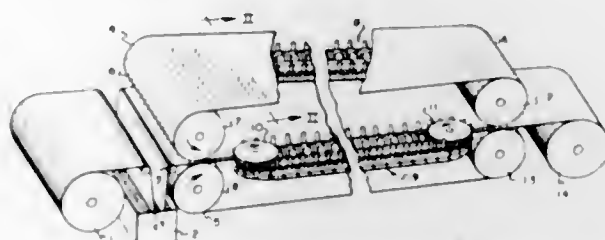


An improvement in the manufacture of nonwoven fabrics is comprised of punching a needle having a hooked end in a down and up motion completely through a lap of loose fibers. As the needle emerges from the lap in its upward path it draws a beam of fibers from the lower face of the lap through its upper face. With the needle withdrawn, the lap of fibers is displaced in the general direction of the fibers and as the movement of the lap is completed the needle again passes downwardly inserting the beam of fibers back into the lap at a different position. The cyclical down and up movement of the needle and the movement of the lap of fibers forms a continuous stitching of the fibers. A small portion of the fibers making up the lap have a welding rate different from the remaining fibers in the lap and the lap of fibers are consolidated by welding the fibers having a different welding rate from the other fibers in the lap.

### 3,409,960 STRETCH FABRIC PROCESS EMPLOYING EXTERNAL COMPACTING FORCES

Joseph H. Dusenbury and Samuel G. Thompson, Spartanburg, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware

Filed Nov. 24, 1964, Ser. No. 413,570  
2 Claims. (Cl. 28—76)



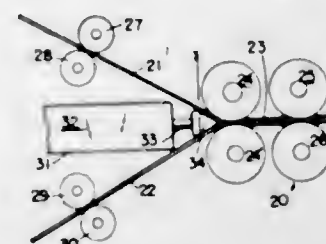
1. A method for impairing stretch characteristics to a woven fabric having an open weave comprising the steps of securing said fabric in a preselected configuration, reducing the width of the fabric to produce a stretch in the fill direction in excess of 25% by sequentially applying external forces on the edges of said fabric in the fill direction, maintaining the body of said fabric in wrinkle-free condition while applying said external forces and setting said fabric in its reduced configuration.

### 3,409,961 APPARATUS FOR MAKING COMPOSITE SHEET MATERIALS

Jerome H. Lemelson, 85 Rector St.,  
Metuchen, N.J. 08840

Continuation-in-part of application Ser. No. 589,848,  
May 28, 1956. This application Dec. 16, 1963, Ser.  
No. 331,000

3 Claims. (Cl. 29—33)



An apparatus for fabricating composite sheet material which includes a pair of capping sheets which are welded together and retain a filler material therebetween. In one form, the apparatus is operative to continuously inject a filler material between two sheets of metal which are pressure welded to shape. In another form, the apparatus continuously feeds capping sheets of plastic into abutment with a center sheet of foamed plastic and provides a plurality of longitudinal weld lines to secure two sheets together.

### 3,409,962 APPARATUS FOR MAKING RAIL WELDS

Wilhelm Ahlert, Essen-Bredene, Germany, assignor to Elektro-Thermit G.m.b.H., Essen, Germany, a limited-liability corporation of Germany

Filed Dec. 27, 1966, Ser. No. 604,894  
Claims priority, application Germany, Jan. 5, 1966, E 30,785

7 Claims. (Cl. 29—33)



1. An apparatus for making rail welds comprising a frame, means on the frame for clamping the frame to rails to be welded, means on the frame for aligning the rails to be welded, means on the frame for supporting a reaction crucible, and means on the frame for removing excess weld metal from a welded joint.

### 3,409,963 METHOD AND APPARATUS FOR DESCALING BILLETS

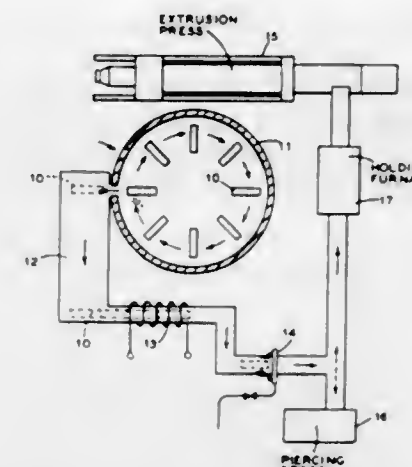
David A. Edgecombe and James S. Trees, Beaver Falls, and Vincent C. Gloffre, Koppel, Pa., assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

Continuation-in-part of application Ser. No. 331,024,  
Dec. 16, 1963. This application May 27, 1966, Ser.  
No. 553,490

7 Claims. (Cl. 29—81)

A clean, ferrous metal billet is prepared for hot extrusion by heating it in a fossil fuel furnace to a temperature not exceeding 1900° F. It is withdrawn from the furnace and coated with a scale-fluxing protective ma-

terial of glass and salt and then heated throughout its entire volume to an extrusion temperature by an electric induction heating coil to form a slushy layer thereon.



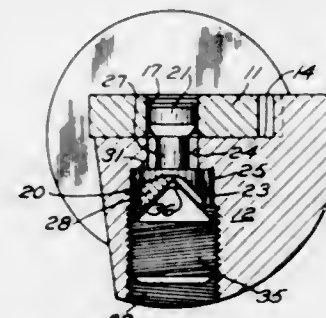
The slushy layer is then removed from the billet by high pressure liquid jets without appreciably lowering the surface temperature of the billet.

### 3,409,964 PIN RETAINER FOR THROW-AWAY INSERTS

Kenneth L. Jessop, Centerdale, R.I., assignor to Madison Industries, Inc., a corporation of Rhode Island

Filed Jan. 22, 1968, Ser. No. 699,630

4 Claims. (Cl. 29—96)



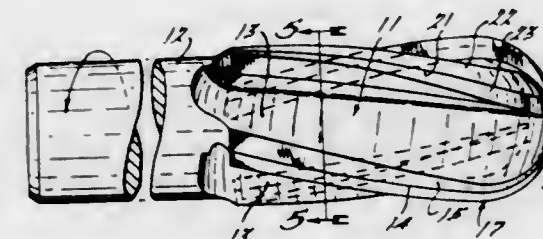
A tool holder for throw-away inserts in which a pocket is provided for the insertion of the insert, said pocket including a floor and a bore extending normal to said floor, the bore containing a locking pin which is adapted to be moved transversely in the bore, one portion of the locking pin engaging an aperture in the throw-away cutter insert by which the insert may be moved into tight engagement in the pocket.

### 3,409,965 TIPPED BALL END CUTTER

Kenneth R. Fisher, Grosse Pointe Woods, Mich., assignor to Universal American Corporation, New York, N.Y., a corporation of Delaware

Filed June 7, 1966, Ser. No. 555,736

9 Claims. (Cl. 29—103)



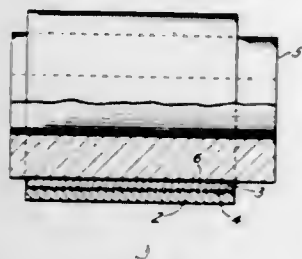
A tipped cutting tool has a cylindrical body and a ball end provided with diametrical slots in the side joined by



a slot across the end. A strip of cutting material is formed into U-shape and brazed in the slot to form cutting edges at opposite sides and across the end of the body.

### 3,409,966 METHOD OF PRODUCING BI-METAL BEARING SLEEVE

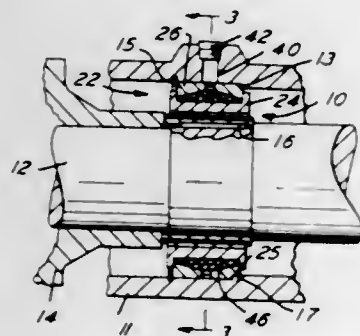
Charles A. Hilbisch, Harrisburg, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware  
Filed Apr. 22, 1966, Ser. No. 544,501  
2 Claims. (Cl. 29-149.5)



A method of producing, by fusion welding, a bi-metal bearing sleeve that has high resistance to both abrasion and impact strain.

### 3,409,967 BEARING ALIGNMENT APPARATUS AND METHOD

Hans G. Spier, Media, Pa., assignor to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Delaware  
Filed May 5, 1966, Ser. No. 547,971  
9 Claims. (Cl. 29-149.5)



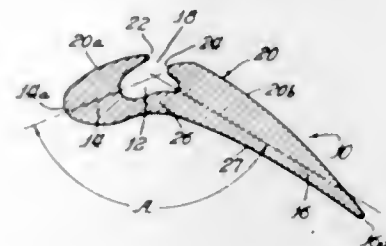
A bearing unit comprising inner and outer bearing races which define a double wedge-shape cavity therebetween. The cavity is filled with steel balls or shot which are movable within the cavity. The shaft is aligned with the inner bearing race and is inserted therethrough. The shaft and bearing unit are assembled in a loose and yieldable engagement. The shaft is vibrated, wrapped, etc., so that the bearing and shaft are fully aligned. This results in a self-arrangement of the metal shot in the cavity. After the bearing and shaft are thus aligned, a liquid high strength material is introduced into the space between the shot in order to lock the shot from shifting and yet permit metal contact throughout the connecting layer of shot. The liquid material may be plastic or metal.

### 3,409,968 METHOD OF MAKING A SLOTTED BLADE BY EXTRUDING

Robert Denes, Rockford, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois  
Filed Oct. 3, 1966, Ser. No. 583,753  
5 Claims. (Cl. 29-156.8)

1. A method of producing a torque converter blade with an internal cavity therein comprising:  
extruding a blade blank having two end portions each

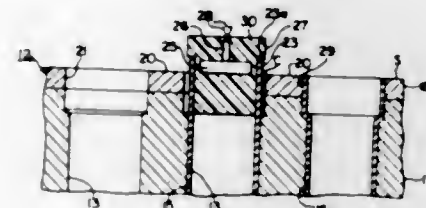
having convex surfaces and a relatively thin portion connecting said two end portions to define a large slot between said two end portions,



bending said blank at said thin portion to bring said end portions into a closely spaced relationship with each other so as to define an internal cavity in said blade with a passageway leading from said cavity to the outside surface of said blade.

### 3,409,969 METHOD OF EXPLOSIVELY WELDING TUBES TO TUBE PLATES

Charles C. Simons, Columbus, and Ronald J. Carlson, Galloway, Ohio, assignors, by mesne assignments, to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed June 28, 1965, Ser. No. 467,244  
15 Claims. (Cl. 29-157.3)



A method of explosively welding one or more open-ended metal tubes to a tube plate (for example the tube plate of a heat exchanger), comprising positioning a disc-shaped explosive charge in the tube in a plane substantially flush with the surface of the plate or slightly beyond said plane. The explosive charge is enclosed in a body of material closely fitting the tube and acting as a coupling agent to transmit the detonation forces of the explosive to the tube in a manner to expand the wall of the tube with a high velocity into impinging abutment with the inner wall of the opening to effect an autogenous bond or explosion weld joint.

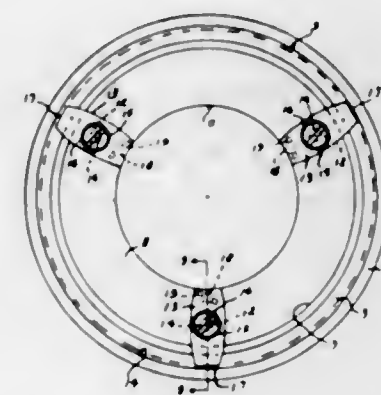
In so welding a number of tubes to a heat exchanger tube plate, the proximity of the openings for the tubes is so close that the metal ligaments between the openings may be distorted during the explosion welding of adjacent tubes. Accordingly, a further feature of the invention is to provide an explosive having a detonation velocity exceeding 120% of the sonic velocity of the metal in the components (tube and tube plate) having the highest sonic velocity.

### 3,409,970 TURBINE REAR GAS SEAL REPLACEMENT FIXTURE ON J-57 ENGINE

Dante C. Di Pietra, 1108 Elwood St., Rome, N.Y. 13440  
Original application Mar. 23, 1964, Ser. No. 354,185, now Patent No. 3,286,335, dated Nov. 22, 1966. Divided and this application Aug. 12, 1966, Ser. No. 572,161  
8 Claims. (Cl. 29-200)

1. A fixture for replacing circular rear gas seals in rear shaft bearing support housings in turbojet engines having a cylindrical housing for receiving the seal which is formed

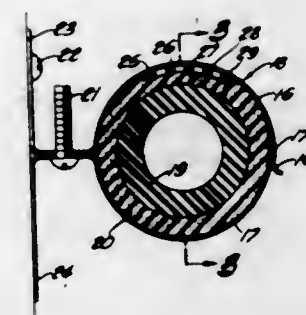
with a plurality of radial rivet receiving holes therein disposed in a plane normal to the axis of the housing in predetermined spaced relation from the seal receiving end of the housing for receiving rivets for securing the gas seal in predetermined position in the housing comprising: a circular plate shaped to fit and be guidably received into the cylindrical housing having a circular gas seal supporting surface on one side thereof for positioning the circular gas seal thereon in concentric contacting relation thereto, clamping means carried by said plate for removably securing said seal against said surface in concentric relation for insertion of said plate and said seal thereon into said housing, said plate having an annular radially projecting stop flange adjacent the opposite side thereof spaced



a predetermined distance from said surface, aforesaid distance equal to the distance from the seal receiving end of the housing to a transverse plane through the centers of the rivet receiving holes less one-half of the thickness of said circular gas seal, whereby when said annular gas seal is concentrically clamped thereon and inserted into said housing for replacement said stop flange limits the degree of insertion and position of said plate into said housing to position and support said seal in said housing to dispose a median plane between the opposite side faces of the seal coincident with the aforesaid plane through the rivet holes, whereby the base of the seal can be drilled through said rivet holes to dispose rivets for securing the seal in the housing midway between the opposite faces of the seal.

### 3,409,971 WIRING HARNESS AID

Anthony J. Morrow, Los Angeles, Calif., assignor of one-half to Arthur De Spirito, Los Angeles, Calif.  
Filed June 8, 1965, Ser. No. 462,296  
9 Claims. (Cl. 29-203)

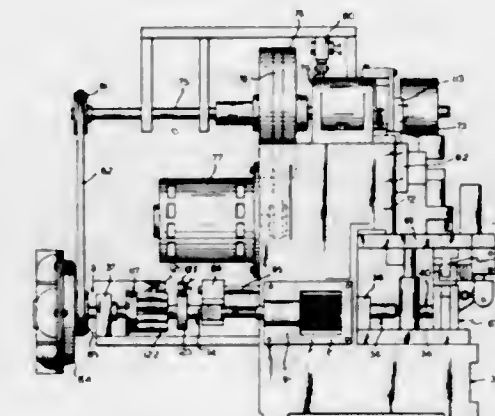


1. A wiring harness aid, comprising:  
first and second open-sided, arcuate spring members; means securing the spring members together with the open sides facing each other, the relative dimensions of said spring members being such that an end of one of said members overlaps an end of the other member; and

resilient means clampingly received between said spring members whereby wires can be forced between the overlapping ends of said spring members for being secured between the resilient means and associated spring member.

### 3,409,972 MACHINE FOR APPLYING TERMINAL LUGS TO COIL FORMS AND THE LIKE

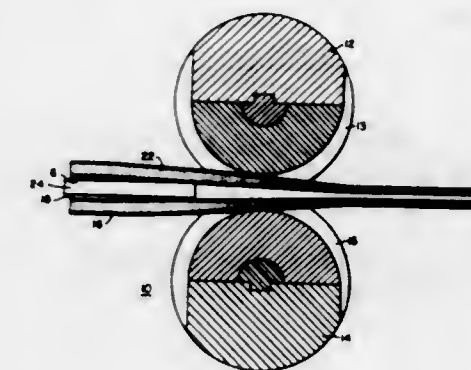
Joseph J. Cervenka, 410 S. Kenilworth, Elmhurst, Ill. 60126, and Marvin E. Hetzel, 1825 S. 49th Ave., Cicero, Ill. 60650  
Filed June 8, 1966, Ser. No. 556,038  
12 Claims. (Cl. 29-203)



Machine for applying a plurality of terminal lugs to a coil form including detaching lugs singly from a chain form of lugs and applying same sequentially to a coil form and bending of the lugs to the coil form to secure same thereto.

### 3,409,973 PROCESS FOR PRODUCING ANNULAR COMPOSITE MEMBERS

Gerald R. Kilp, Bethel Park, Paul M. Bergstrom, Irwin, and Harry M. Ferrari, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Continuation-in-part of application Ser. No. 120,066, June 27, 1961. This application Jan. 19, 1965, Ser. No. 438,450  
8 Claims. (Cl. 29-420)



5. A process for producing a composite, elongated, cylindrical unit, the steps comprising disposing a compactible material between a rod member and a concentric hollow cylindrical metal member, the material filling the space therebetween, the ends of the metal members being sealed to provide a closure for the compactible material, and rocking roll processing the unit to provide a dense highly compacted, uniform body of material in firm and intimate contact with the walls of the metal members.



3,409,974

**PROCESS OF MAKING TUNGSTEN-BASED COMPOSITE MATERIALS**

Arthur M. Lueck, Kings Park, and Jerry C. La Plante, Hempstead, N.Y., assignors to Alloys Unlimited, Inc., Melville, N.Y.

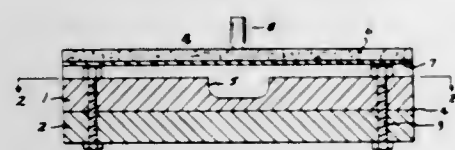
Filed July 7, 1967, Ser. No. 651,893  
6 Claims. (Cl. 29—420.5)

The properties that are most desirable for semiconductor mounts or pads is that they have low thermal expansion and high thermal and electrical conductivity. Ideally, they should also be easy to form, bond readily and be inexpensive. Ductile composites of tungsten-silver and tungsten-copper have been determined to be superior to materials heretofore employed in this service. The pads are made by rolling powders of the components together to form a green tape, sintering above the copper or silver melting point, rolling the sintered tape again to densify it, annealing, stamping desired shapes, and plating.

3,409,975

**WELDING BY HIGH ENERGY STRESS FRONT**  
Robert F. Rolsten, Dayton, Ohio, and Harold H. Hunt, La Mesa, Calif., assignors to the United States of America as represented by the Secretary of the Air Force

Filed Aug. 23, 1966, Ser. No. 574,873  
2 Claims. (Cl. 29—470.1)



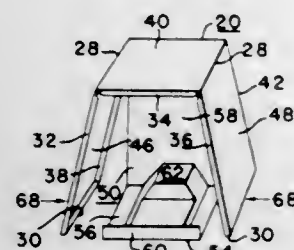
An improved method of welding metal plates together in which the plates are first tightly clamped together and a layer of explosive is laid down over the upper plate. A detonator causes the layer to explode and set up shock waves which pass through the upper plate and move obliquely along the interface between the plates. The shock waves produce re-occurring ripples which serve to increase the area of intimate contact and thus enhance the clamping effect. The ripples also break up any oxide coating present and the accompanying strains provide an interchange of atoms across the interface to produce a strong bond.

The improved method also includes the use of a relatively deep recess on the side of the plate carrying the explosive which serves to control the direction of the shock waves caused by the explosion to further enhance the bonding effect.

3,409,976

**METHOD OF ASSEMBLING AN OUTER SHELL**  
Keith K. Kesling, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 13, 1966, Ser. No. 520,411  
3 Claims. (Cl. 29—476)



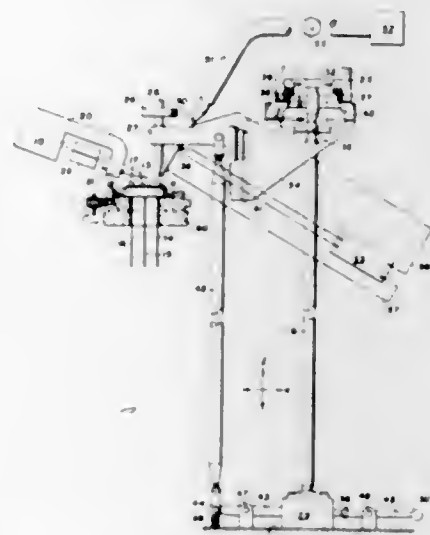
In the preferred form to form a cabinet, a sheet metal blank is cut to a length and width slightly longer and wider than the total length and width of the top and sides of the cabinet. This blank is then notched at the

corners as well as at the ends of the two lines upon which the blank is later to be folded to form the corner between the top and sides of the cabinet. The edges of the blank are then bent at right angles to form a flange extending around all the edges. After this, the blank is folded into an inverted U-shape with slightly less than right angle bends between the top and side portions. A second blank slightly longer than the combined length of the back and bottom of the cabinet is then folded into an L-shape. A continuous cavity or bulge is formed in adjacent portions of the bottom of the back which stiffens the blank and holds the angle. The first U-shaped piece is placed over the second piece and the edges brought together and electrically seam welded to complete the shell.

3,409,977

**HOT GAS THERMO-COMPRESSION BONDING**  
Clair Allen Johnson, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Oct. 28, 1963, Ser. No. 319,135  
4 Claims. (Cl. 29—494)

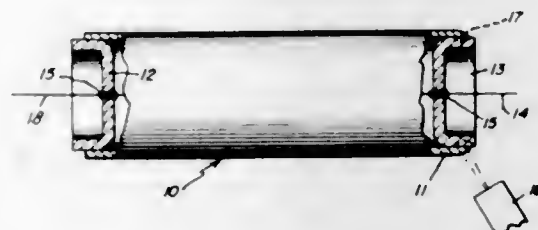


1. The method of bonding lead wires to a conductive structure on a semiconductor device which comprises:
  - (a) moving the free end of a lead wire to position the same over said conductive structure,
  - (b) maintaining a force sufficient to cause bonding on said lead wire to force said wire into contact with said structure, and
  - (c) directing a jet of heated gas onto said wire and said structure at the point of contact to heat them to a bonding temperature, whereby a bond is formed through the application of said heated gas and pressure from said force.

3,409,978

**METAL CLADDING PROCESS**  
William R. Grams, Ballston Spa, N.Y., assignor to General Electric Corporation, a corporation of New York

Filed Aug. 17, 1965, Ser. No. 480,272  
1 Claim. (Cl. 29—494)



A titanium body is clad with tightly-bonded aluminum by heating the titanium body under conditions which re-

sult in adhering oxygen and oxide on the titanium body surface diffusing into the body so that metal-to-metal contact is established between the body and the aluminum cladding.

3,409,979

**METHOD FOR THE SURFACE TREATMENT OF SEMICONDUCTOR DEVICES**

Anantha Swamy, Merzhausen, and Rolf Thiemann, Freiburg im Breisgau, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 27, 1966, Ser. No. 523,259  
Claims priority, application Germany, Feb. 2, 1965, J 27,435

8 Claims. (Cl. 29—578)

This is a method of surface treating base mounted transistors in an etching solution of hydrogen peroxide and fluoboric acid in order to stabilize characteristics thereof. The transistors are first immersed in a hydrogen peroxide solution for about 2 minutes. Then fluoboric acid is added to the solution and after about 2 minutes of treatment the devices are rinsed in cold deionized water and finally dried at temperatures above 80° C.

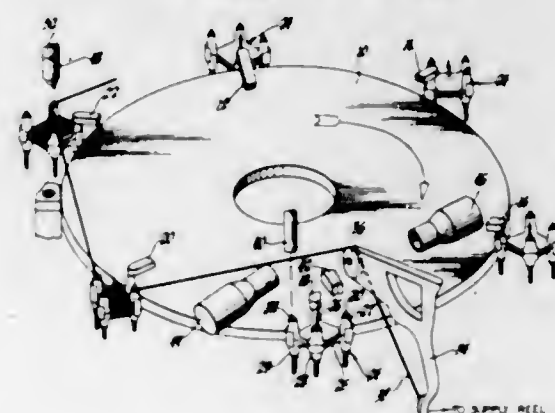
3,409,980

**METHOD AND APPARATUS FOR WINDING COILS ON BOBBINS**

Norman D. Lawless and Noel A. Triaca, Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 27, 1965, Ser. No. 516,327

3 Claims. (Cl. 29—605)



The construction of gages of the type having coils of wire wrapped around a bobbin and connected to terminal posts. The bobbins are mounted on a turntable which indexes the bobbins through a sequence of stations where the various stages of construction take place. The coils are wound and wire is looped over the terminal posts at the first station. The wire is cut at a second station while the bobbin in a third station intermediate the first and third maintains tension in the wire.

3,409,981

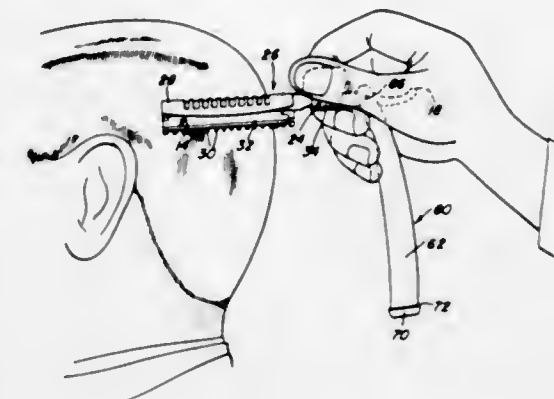
**RAZOR TYPE HAIR SHAPER**

Rheinhardt J. Beverly, Tucson, Ariz.  
(1932 11th Ave. E, Bradenton, Fla. 33505)

Filed Jan. 19, 1967, Ser. No. 610,268

3 Claims. (Cl. 30—30)

Manually usable to shape hair implement comprises: an "old style" razor blade, more particularly, one which is friction-held in a holder having a finger-grippable manipulable shank. A removable blade guard on the



holder has comb-like teeth projecting beyond blade's cutting edge. A pivoted swing-type but weighted handle sheathes the razor blade when folded. Chief improvement: An easy-to-handle finger-grip on the shank.

3,409,982

**DISPOSABLE SINGLE EDGE RAZOR HAVING A GENERALLY TRIANGULAR HEAD**  
Hugh William Barnes Baker, Beaconsfield, and Edward Eric Pomfret, Hampton Hill, England, assignors to The Gillette Company, Boston, Mass., a corporation of Delaware

Filed Aug. 29, 1966, Ser. No. 575,809  
Claims priority, application Great Britain, Sept. 9, 1965, 38,603/65  
3 Claims. (Cl. 30—47)



A disposable safety razor which comprises a generally triangular blade supporting platform having a handle attached to the underside of the platform and a blade guard along one side. The platform is provided with a blade stop adjacent each end of the blade guard and a blade locating projection at the apex opposite the side at which the guard is located. A single edge blade conforming generally to the shape of the platform, which blade may conveniently be made from one-half of a slotted double edge blade, is disposed on the platform with the ends of the sharpened edge in engagement with the blade stops and a notch in its apex in engagement with the blade-locating projection. A cap conforming in shape to the platform is clamped to the platform, sandwiching the blade therebetween.

3,409,983

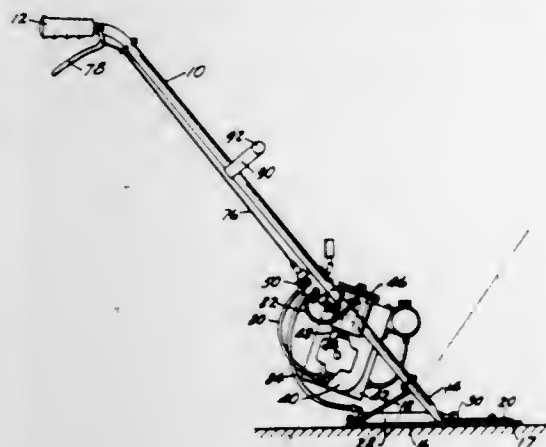
**PRUNING DEVICE**

Joe M. Jamison, Webster, Wis. 54893  
Filed Oct. 22, 1965, Ser. No. 501,928  
3 Claims. (Cl. 30—228)

The present invention concerns a self-contained foliage pruning device containing a cutting assembly and a self-contained engine-hydraulic pump unit connected therewith. The cutting assembly includes a fixed shear blade



and a mating pivotal shear blade which are opened and closed through the action of a hydraulic cylinder and piston assembly. The engine-hydraulic pump unit comprises a self-powered engine, e.g., of the internal combustion type, connected to a hydraulic pump, the pump



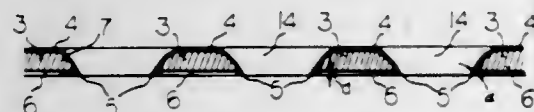
in turn being connected through hydraulic hoses to the hydraulic cylinder through an actuating valve. In the inactive position the valve allows the hydraulic fluid to recycle through the pump, and in the actuated position diverts the fluid to the hydraulic cylinder to close the pivotal cutting blade.

3,409,984

#### SHAVING HEAD FOR DRY SHAVERS HAVING A COATED OUTER SURFACE

Bodo Fütterer, Sarnen, Switzerland, assignor to The Gillette Company, Boston, Mass., a corporation of Delaware

Filed Dec. 17, 1965, Ser. No. 524,661  
6 Claims. (Cl. 30—346.51)



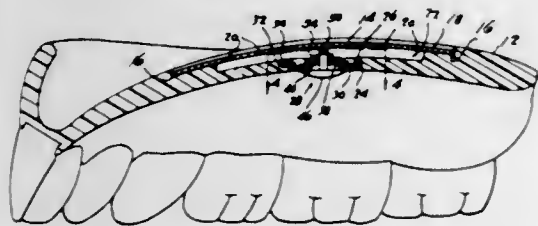
A shearing foil having a substrate body with perforations conforming to the tooth formation of a cooperating blade, and a relatively thin coating of a material harder than said substrate body on the outer surface of the body and extending along the periphery of the perforations to the inner surface of the body while leaving the inner surface devoid of a coating and completely exposed to thereby form hard cutting edges along the rims of the perforations at their inner surface.

3,409,985

#### DENTURE DEVICES WITH SUCTION CHECK VALVE MEANS

Joseph A. Graceffo, 40 Wallace Ave., Auburn, N.Y. 13021

Filed Jan. 17, 1964, Ser. No. 338,495  
6 Claims. (Cl. 32—3)



1. A dental plate comprising a palate plate having a cavity at the palatal side thereof, a cover member extending across said cavity, said cover member having a plurality of passages extending transversely therethrough,

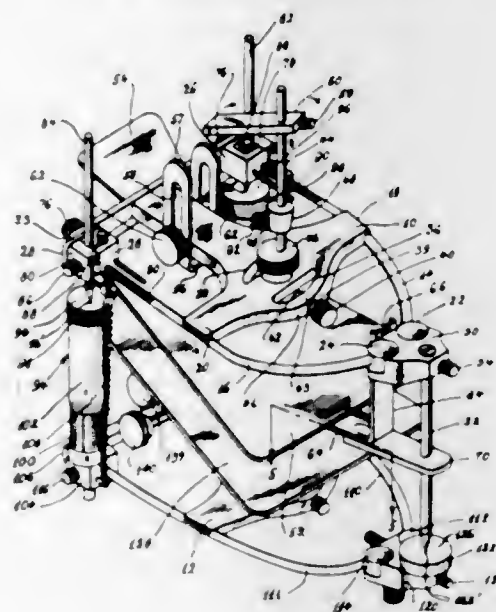
said palate plate having an opening extending transversely therethrough in open communication with said cavity and the lingual side of said palate plate, a discoidal member disposed within said passage, said discoidal member having a plurality of openings extending transversely therethrough, a valve assembly including a valve having a main body portion adapted for movement toward and away from said discoidal member for extension across said openings formed in said discoidal member when said valve is in its closed position, and means connected with said valve constantly biasing said valve for movement toward its closed position.

3,409,986

#### DENTAL ARTICULATOR

Stephen T. Freeman, 10-12 W. Fulton St., Gloversville, N.Y. 12078

Filed Oct. 24, 1965, Ser. No. 504,453  
4 Claims. (Cl. 32—32)



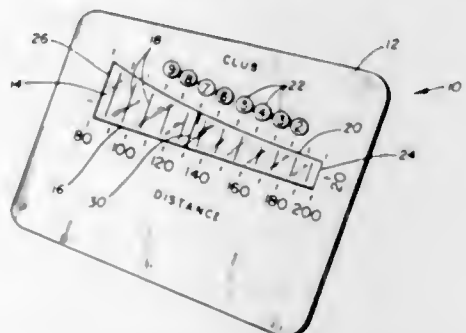
A dental articulator in which two teeth aligning plates are provided. The plates are respectively attached to upper and lower base members by means which permit both angular and vertical adjustments. The upper base member is elevated and supported by pin elements, two of which rest on vertically adjustable platforms.

3,409,987

#### RANGE FINDER

James R. New, 3248 S. Victor, Tulsa, Okla. 74105

Filed Aug. 17, 1966, Ser. No. 573,003  
6 Claims. (Cl. 33—64)



A golf distance measuring device includes a transparent opening having linear graduation imprinted upon an opaque surface surrounding a transparent viewing opening. Removable adhesive-back plastic strip contains golf club numbers uniformly spaced to conform with the interval of the distance scale. These numbers are removable and locatable on the distance scale relative to a golfer's ability.

3,409,988

#### MEASURING TAPES AND METHODS OF MAKING SUCH TAPES

Charles Zelnick, Saginaw, Mich., assignor, by mesne assignments, to Cooper Industries, Inc., Houston, Tex., a corporation of Ohio

Continuation of application Ser. No. 178,181, Mar. 7, 1962, which is a continuation-in-part of application Ser. No. 78,592, Dec. 27, 1960. This application Feb. 11, 1966, Ser. No. 526,811

12 Claims. (Cl. 33—137)



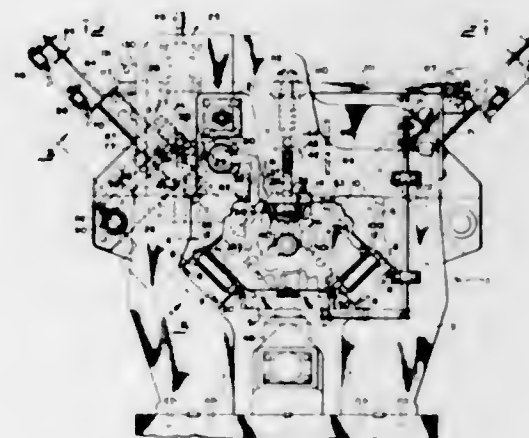
A measuring tape and the method of producing such tape which comprises an elongated strip of thermoplastic film which is stretched and heat set in the stretched condition and in a concavo-convex form.

3,409,989

#### POSITIONING AND GAUGING FIXTURE FOR ENGINE BLOCKS

William H. Herbert, Eastlake, and Roland Eugene Delamater, Cleveland Heights, Ohio, assignors to Curtis Noll Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Dec. 14, 1966, Ser. No. 601,801  
8 Claims. (Cl. 33—180)



Positioning and gauging fixture for use in a production line where a rough engine block casting is machined. The fixture is located at the first or qualifying station of a long line transfer and multiple station machine at which station the engine casting is oriented with respect to machine tool so to provide reference locations. The fixture includes a pair of probes which engage the manufacturing holes and a limit switch controlled equalizer bar which when actuated pushes against one of probes, and moves the engine block to the proper position before it is clamped and machined.

3,409,990

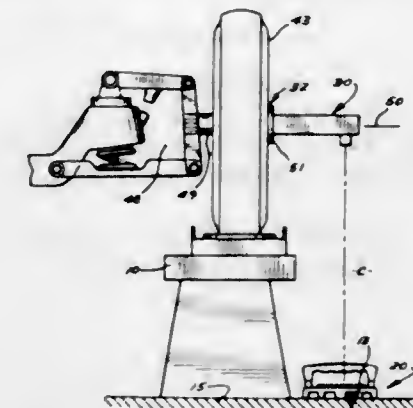
#### WHEEL ALIGNMENT APPARATUS

Carl H. Vorpahl, Minnetonka, Minn., assignor to Bishman Manufacturing Company, Osseo, Minn., a corporation of Minnesota

Filed Dec. 1, 1965, Ser. No. 528,007  
9 Claims. (Cl. 33—203.12)

A wheel alignment system incorporating a vehicle support having work stations located to be adjacent to the wheels of a vehicle when disposed on the support. Each work station is provided with a longitudinally extending

reference marker and all of the markers are disposed in mutual parallelism. An adjustable portable reference line having a fixed base portion adapted to be removably disposed on the reference markers in a predetermined attitude and a movable, or rotatable top portion including an elongated reference line indicia, is utilized in co-operation with a device adapted to engage the vehicle at a predetermined attitude with respect to the longitudinal



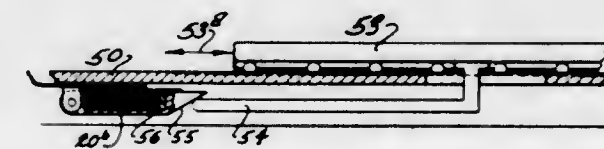
axis, or center line of the vehicle. The reference indicia on the portable reference line is then adjusted into parallelism with the longitudinal axis of the vehicle and the portable reference line is subsequently moved from work station to work station whereat it is disposed on the reference markers and the reference line indicia may be used with suitable gauges or the like, to determine the attitude of the axis of rotation of the wheels of the vehicle.

3,409,991

#### ELECTRONIC WHEEL ALIGNMENT APPARATUS

George G. Davis and Philip C. Davis, Birmingham, Ala., and Houston O. Bender, 2315 N. 26th St., Birmingham, Ala. 35234; said George G. Davis and said Philip C. Davis assignors to said Bender

Filed Nov. 22, 1965, Ser. No. 509,003  
1 Claim. (Cl. 33—203.14)



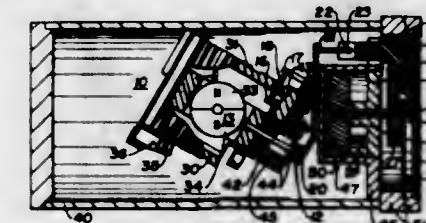
A device for electronically measuring and displaying the alignment characteristics of the wheels of an automobile. A fluid level transducer is operatively connected to the wheel being tested and actuates a meter through an electric circuit so that the deflection of the meter indicates the alignment characteristics of the wheel.

3,409,992

#### PICTORIAL TURN AND BANK INDICATOR

James R. Younkin, Mineral Wells, Tex., assignor, by mesne assignments, to Thurman & Younkin, Inc., a corporation of Texas

Filed May 19, 1966, Ser. No. 551,429  
10 Claims. (Cl. 33—204)



A turn indicator for an aircraft includes a rate gyro rotatable on a first axis oriented at a preselected angle between the roll and yaw axes of the aircraft in addition to a second axis oriented at a preselected angle between the roll and yaw axes of the aircraft.



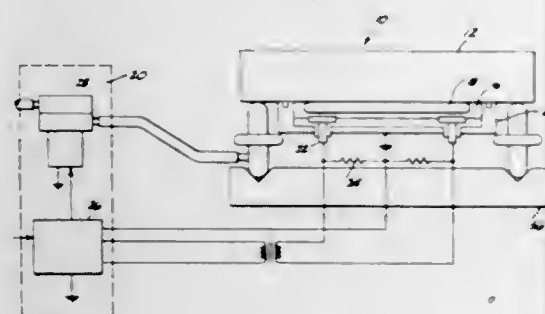
to marked indicator mask directly coupled to the rate gyro and mounted for rotation on a second axis parallel to the roll axis of the aircraft. Reference indicia is mounted fixedly in relation to the aircraft and extends over the face of the marked indicia mask to provide an indication of the rate of turn of the aircraft when the mask is moved by the rate gyro. A rotatable damping element applies a damping force to the indicator mask and the rate gyro during the operation thereof.

3,409,993

**PRECISION TILT METER**

Siegfried Hansen, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Jan. 10, 1966, Ser. No. 519,673  
7 Claims. (Cl. 33-211)



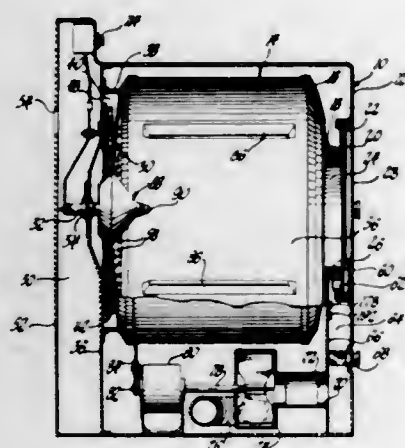
A flat plate having a bubble chamber thereunder. A viscous liquid is placed in the bubble chamber in such volume as to leave a bubble under the flat plate, which bubble does not contact the bottom of the chamber. The bubble chamber also has electrical bubble detectors so that as the bubble moves from a null position in the bubble chamber, in response to tilt of the flat plate, a continuous electric signal is emitted. This signal in turn is transmitted to releveing means which tilts the flat plate so that the bubble returns toward its null position. The signal which releveis, or the releveing action can be used as a signal indicating the amount of tilt. The preferred releveing means is a resilient support for the flat plate, together with a pneumatic source which changes the inclination of the flat plate by varying the pressures within the several parts of the resilient support.

3,409,994

**HEATING CONTROL SYSTEM FOR CLOTHES DRYER**

Melvin A. Menk, Englewood, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 15, 1966, Ser. No. 579,630  
16 Claims. (Cl. 34-33)



A control system for regulating the thermal input of a clothes dryer including first thermostatic energy con-

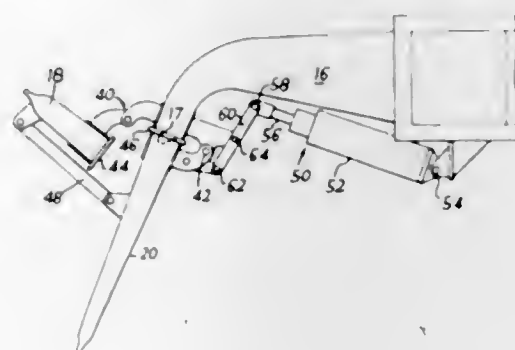
trol means responsive to a first predetermined exhaust temperature of the air stream to vary the thermal input from a high to a low level. A second thermostatic control means is electrically connected to the first control means during high level energization to terminate thermal input when a predetermined maximum temperature is sensed. This second thermostatic control means includes a biasing resistance heater energized only during the low level energization period to change the responsiveness of the second thermostatic control means to open the heater circuit at temperatures below the predetermined maximum temperature. A direct moisture sensor and solid-state module terminates the drying cycle.

3,409,995

**VEHICLE DRYING APPARATUS**

Thomas Eric Greenwood and Michael Victor Denley, Plymouth, England, assignors to Tecalemit (Engineering) Limited, Plymouth, Devon, England

Filed Sept. 16, 1966, Ser. No. 579,996  
11 Claims. (Cl. 34-87)



An apparatus for drying vehicles, including a pair of upright side nozzles having vertically elongated outlets directing their vertical streams of air in a horizontal direction and obliquely of a line of vehicle travel passing between the nozzles, a tubular nozzle base above the side nozzles including an elongated outlet extending transversely across said travel line, a first tubular top nozzle and a second tubular top nozzle, each top nozzle having an inlet adapted for selected detachable engagement with the outlet of said nozzle base in a substantially airtight connection and an elongated outlet transversely of said travel line, both of said top nozzles being pivotally movable into and out of a position wherein the nozzle inlet is cooperatively engaged with the outlet of the nozzle base, and the outlet is directed obliquely downward in the same sense as the side nozzles, and means for delivering air to the side nozzles and the nozzle base for discharge through a selected cooperating one of said top nozzles.

3,409,996

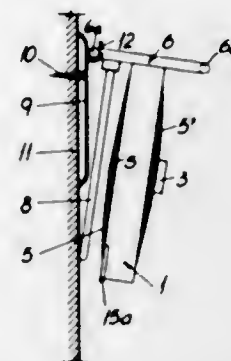
**HEATING, DRYING AND VENTILATING APPARATUS**

Francisco Goldberger Konstandt, Seestrasse, Weggis, Canton Lucerne, Switzerland

Filed Aug. 10, 1965, Ser. No. 478,544  
7 Claims. (Cl. 34-91)

A housing having a first and a second side through each of which air may pass. Blower means mounted in the housing to produce an air current which enters at the first side and leaves at the second side. An electric heating arrangement provided in the housing extending across the path of the air current to heat the same. And a base which is with the housing and arranged to maintain the housing in upright position when the base is

placed onto a substantially horizontal support and to maintain the housing in substantially horizontal position when



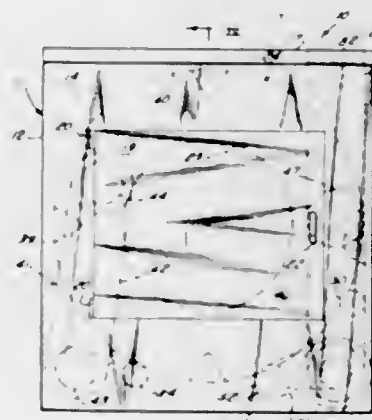
the base is placed against and secured to a substantially vertical support.

3,409,997

**DRYER WITH OPEN END DRUM**

Clifton A. Cobb, St. Joseph, and Gordon J. Krolzick, Benton Harbor, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware

Filed Jan. 13, 1965, Ser. No. 425,302  
9 Claims. (Cl. 34-133)



A clothes dryer having a drum for tumbling clothes, the drum being open at one end confronting a wall of the dryer. Openings in the wall permit passage of air into and out of the drum during tumbling.

3,409,998

**DRYING OF CARBON BLACK PELLETS**

Lewis W. Hurst, Robert L. Powell, and William E. Penn, Hobbs, N. Mex., assignors to Continental Carbon Company, Houston, Tex., a corporation of Delaware

Filed Dec. 30, 1966, Ser. No. 606,230  
3 Claims. (Cl. 34-135)



Apparatus for drying particulate matter comprising a rotating dryer drum encased in a heating means and having improved lifters and a helical lifter arrangement within the drum. The lifters are strip-like members that have one end secured to the inner wall of the drum and extend perpendicularly to the drum axis, with the other end extending angularly from the drum wall and having the end nearest drum opening elevated.

3,409,999

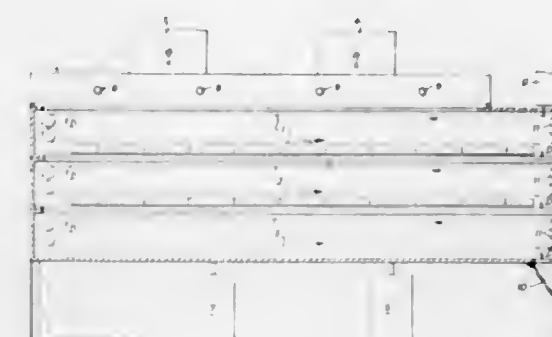
**DEHYDRATION APPARATUS**

Robert A. S. Templeton, 58 Mark Lane,

London E.C.3, England

Continuation of application Ser. No. 386,824, Aug. 3, 1964. This application Jan. 10, 1967, Ser. No. 608,460, Claims priority, application Great Britain, Aug. 12, 1963, 31,783/63

1 Claim. (Cl. 34-216)



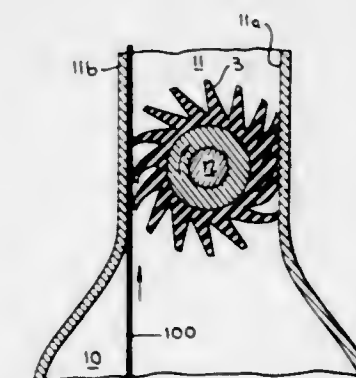
Apparatus for drying diced fruit and vegetables comprising a plurality of superposed conveyors having pivoted drop plates so that diced material can drop from one conveyor run to the next at the end of each run. Drying air is introduced at different levels and the air is separately heated at each level.

3,410,000

**PRESSURE SEALING DEVICE**

Howard G. Freeman, Worcester, Mass., assignor to Jamesbury Corporation, Worcester, Mass., a corporation of Massachusetts

Filed May 16, 1966, Ser. No. 550,416  
6 Claims. (Cl. 34-242)



A pressure sealing device through which elongated material such as sheets, strands, or yarns can be introduced into or taken out of a pressure vessel is provided. A roller covered with a flexible material having a plurality of longitudinally extending slashes, each raising an axially extending vane, is placed eccentrically in a duct communicating with the vessel. As the roller rotates, the vanes are compressed to a greater extent if the rub passed on surface of the duct than the other, thereby accommodating the passage of the elongated material while maintaining a pressure-tight seal.

3,410,001

**DIGITAL-LOGIC TRAINER**

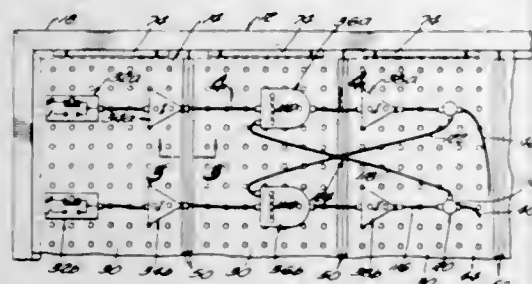
Victor Blum, Alhambra, Calif., assignor of fifty percent to Electronic Calculating Service, Inc., Los Angeles, Calif., a corporation of California

Filed Mar. 8, 1966, Ser. No. 532,785  
7 Claims. (Cl. 35-19)

A training device for instructing students in digital logic, which includes a large flat panel that is vertically disposed for visual display before the students, locations



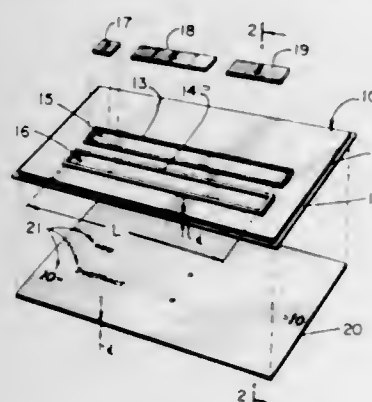
on the front surface of the panel for attachment of digital devices, a number of digital-logic circuit devices having means for both mechanical and electrical connection to the panel, a power circuit associated with the



panel for energizing the digital-logic devices, and circuit connections for making selected logical circuit interconnections between the digital-logic devices displayed on the panel.

**3,410,002**  
**EDUCATIONAL AID FOR TEACHING MATHEMATICS**

Eric H. Mulholland, 1727 La Flora Drive, Lake San Marcos, Calif. 92069, and James N. Butterfield, 425 S. Catalina, Los Angeles, Calif. 90005  
Filed Oct. 24, 1966, Ser. No. 588,869  
10 Claims. (Cl. 35—31)



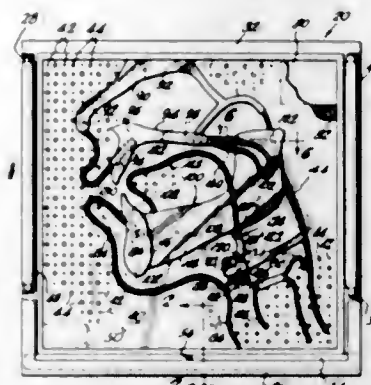
An educational aid for teaching mathematics is made up of a sheet of transparent material having elongated raised portions on its top surface to define a plurality of longitudinal channels of equal length. A plurality of blocks of different lengths are dimensioned to slide in the channels. Each block has a numeral corresponding to its length visible on its upper surface so that the blocks may be positioned in end to end relationship in the channel in a manner to completely fill the channel or leave a remaining space. A base insert or baseboard having indicia visible on its surface is positionable under the transparent sheet for viewing through the sheet and enabling correlation of the visible indicia with the end positions of the blocks.

**3,410,003**  
**DISPLAY METHOD AND APPARATUS**

Arvi Antti I. Sovijarvi, Mantytie 17B24, Helsinki, Finland, and Niilo N. Jaronen, Nitttykumpu 3E81, Nitttykumpu, Finland  
Filed Mar. 2, 1966, Ser. No. 531,200  
14 Claims. (Cl. 35—53)

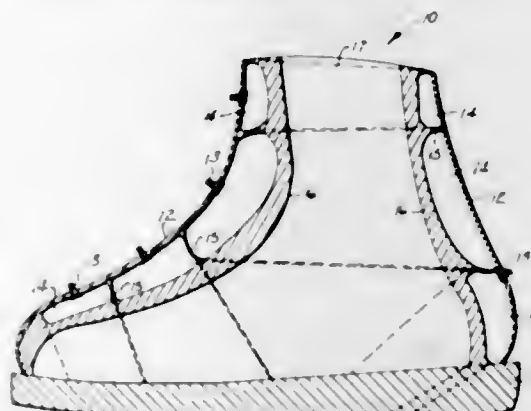
A flat metallic surface has a plurality of holes formed therethrough and illumination means is disposed adjacent thereto for passing light through the holes. A diffusing means is positioned adjacent the illumination means for diffusing the light. Flexible contour means is supported on the surface and includes permanent magnet means for holding it to the surface. The contour means also includes metallic portions which are attracted toward electromagnet means supported adjacent the surface. The

contour means comprises a plurality of similar members interconnected by a flexible connector. Remote control



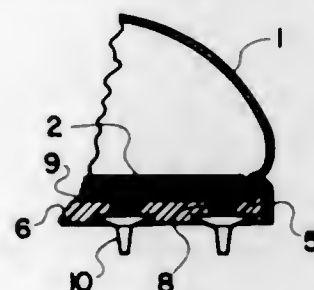
means is also provided for remotely adjusting the position of the indication means.

**3,410,004**  
**PNEUMATIC SKI BOOT**  
James T. Finn, 154 Maple St., Springfield, Mass. 01101  
Filed May 26, 1967, Ser. No. 641,587  
1 Claim. (Cl. 36—2.5)



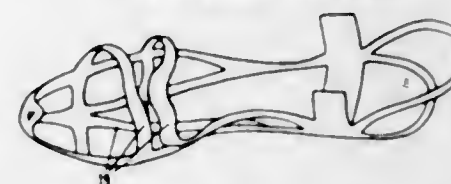
A boot or shoe with inflatable chambers which may be filled by a handpump compressed air or Freon gas. This boot or shoe provides adjustable support for the wearer while also providing warmth due to the trapped air insulation within the inflatable chambers. The design also prevents the necessity of lacing and does not need protruding buckles or buttons.

**3,410,005**  
**GOLF SHOE**  
Andrew Szerenyi, Waynesville, N.C., assignor to Ro-Search, Inc., Waynesville, N.C.  
Filed Apr. 14, 1965, Ser. No. 448,105  
1 Claim. (Cl. 36—2.5)



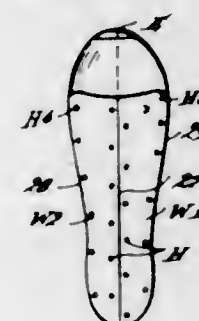
The provision of a plurality of strips of rigid material molded integrally into a soft elastomeric sole molded directly to the upper, said strips being spaced from each other and extending transversely of said sole with a plurality of transversely spaced eyelets connected to each of said strips makes possible the resistance to bending stresses in a light weight sole.

**3,410,006**  
**REINFORCED FOOTWEAR**  
Raimund Vogel, Tuerkenstrasse 103, Munich, Germany  
Filed Mar. 18, 1966, Ser. No. 541,896  
Claims priority, application Germany, Mar. 24, 1965, V 28,127; June 12, 1965, V 28,686  
16 Claims. (Cl. 36—3)



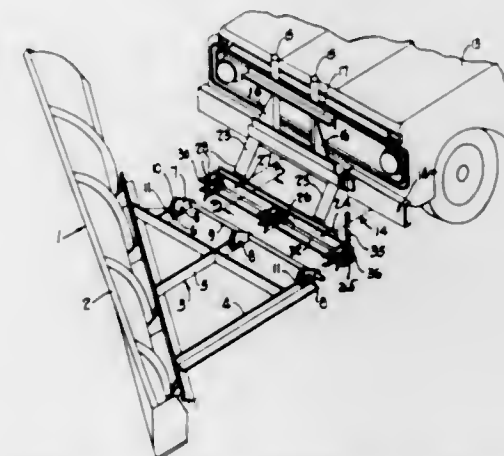
A piece of footwear including a stiffening element made of plastic reinforced by two groups of reinforcing members inserted in the plastic. The reinforcing members may be yarns, wires, glass fibers, or the like. One group of reinforcing members is greater than the number of members in a perpendicular group, providing greater stiffness in a desired direction.

**3,410,007**  
**PROTECTIVE ELEMENT FOR SAFETY SHOES**  
Eric W. Peterson, 2300 NE. 5th Ave., Boca Raton, Fla. 33432  
Filed Jan. 4, 1966, Ser. No. 518,629  
3 Claims. (Cl. 36—77)



A crush-resistant protective device for safety shoes consisting of hard, stiff sheet material shaped to provide a toe protecting arch open at front and rear and foot protecting means designed to underlie a part, at least, of the wearer's foot and which is operative to prevent the springs of the arch from spreading.

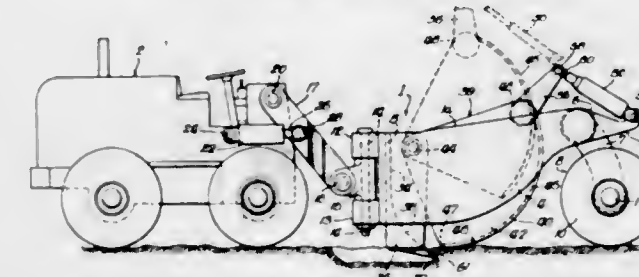
**3,410,008**  
**SNOW PLOW COUPLING MECHANISM**  
Ernest R. Standfuss, Bucyrus, Ohio, assignor to The Burch Corporation, Crestline, Ohio, a corporation of Ohio  
Filed Jan. 13, 1965, Ser. No. 425,226  
1 Claim. (Cl. 37—42)



This invention relates to snow plow connecting means, particularly to means to guide the connecting parts of a snow plow and a prime mover therefore so that the con-

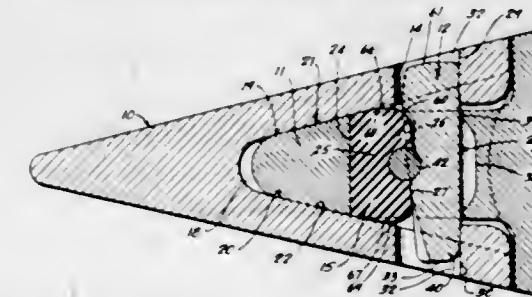
necting operation can be effected by one man and the disconnecting operation likewise with a minimum amount of positioning of the respective units.

**3,410,009**  
**WHEEL-SUPPORTED ROAD SCRAPER ATTACHABLE WITH AND OPERABLE FROM A ROAD-WORKING POWER UNIT**  
William E. Martin, % Martin Company, P.O. Box 187, Kewanee, Ill. 61443  
Filed Aug. 19, 1965, Ser. No. 481,024  
3 Claims. (Cl. 37—126)



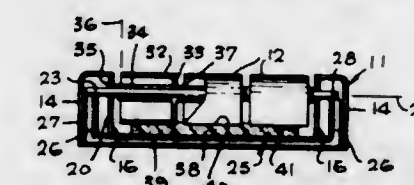
A road working two part scraper bowl having coaxing movable bowl parts pivotally joined together and supported on a mobile frame having supporting wheel means at one end and universal supporting means at the other end, with link units to carry the universal means from a multipurpose power vehicle including power apparatus to swing the link units for frame and bowl height regulation through said universal means in relation to a surface being worked by said scraper.

**3,410,010**  
**DIPPER TOOTH**  
Thomas A. Ratkowski, Chicago Heights, Ill., assignor to Abex Corporation, a corporation of Delaware  
Filed Oct. 5, 1965, Ser. No. 493,137  
1 Claim. (Cl. 37—142)



Retention of the point on a dipper tooth having an adapter or holder is improved by confining a rubber block or the like in a unique cavity of the adapter and recessing the adapter to enable the retainer key to be wrapped about a portion of the block preliminary to driving the key home.

**3,410,011**  
**DEVICE HAVING ELEMENTS DISPLAYABLE IN DIFFERENT PATTERNS**  
Richard G. Bowman, 7652 Bella Vista St., Los Angeles, Calif. 90045  
Filed July 22, 1966, Ser. No. 567,250  
10 Claims. (Cl. 40—68)

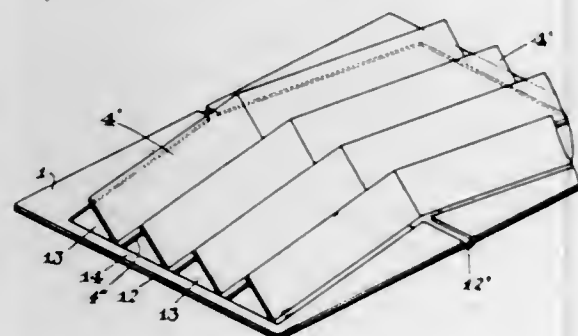


A display unit including a body carrying an array of display elements arranged in a series of rows and a series



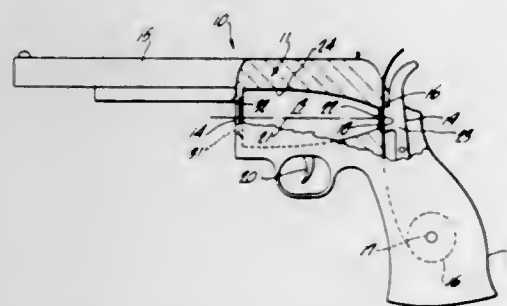
of columns perpendicular to the rows, with the elements being mounted to turn about a number of shafts between different display positions, and being retainable in those different display positions by detenting means carried by a rear wall of the body. The display elements have hub portions engageable in a relation maintaining their peripheral display portions out of contact with one another. The body is formed of two sections which act together to receive and locate the shafts.

**3,410,012**  
**ALBUM BINDER FOR SLIDES OR NEGAFILMS**  
Chuichi Kumel, 31-banchi, Shinmei-cho, Nakano-ku, Tokyo, Japan, and Junji Eguchi, 32-banchi, 1-chome, Soshigaya, Setagaya-ku, Tokyo, Japan  
Filed Mar. 18, 1966, Ser. No. 535,414  
Claims priority, application Japan, Aug. 3, 1965, 40/46,915  
6 Claims. (Cl. 40—106.1)



An album binder for slides or negafilms comprising two pivotally connected covers and a plurality of standing parts. The parts include means for receiving film for permitting light to pass therethrough, each extending continuously across a portion of both covers and having a transverse crease dividing each of the parts to permit transverse folding, which crease is located at the cover connection line. A reflecting ground sheet is provided to support the parts secured pivotally longitudinally and to reflect light through and onto the films when the binder is opened causing the standing parts to stand up slantingly from a collapsed closing position.

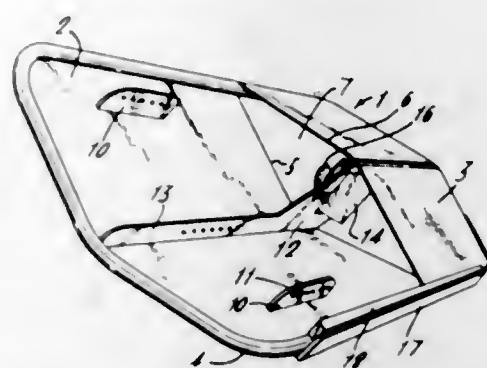
**3,410,013**  
**TOY CAP GUN HAVING A PARABOLIC GAS EXPANSION CHAMBER**  
Jack V. Miller, Sierra Madre, Ronald W. Froelich, Arcadia, Edward E. Headrick, La Canada, and George C. Strader, San Dimas, Calif., assignors to Wham-O Mfg. Co., San Gabriel, Calif., a corporation of California  
Filed May 24, 1967, Ser. No. 640,873  
13 Claims. (Cl. 42—54)



A toy cap gun having a perforated striking anvil, a hammer and a parabolic gas expansion chamber, the anvil forming a boundary of the chamber adjacent the focus of the chamber. Acoustic energy produced by detonating a percussion cap between the anvil and the ham-

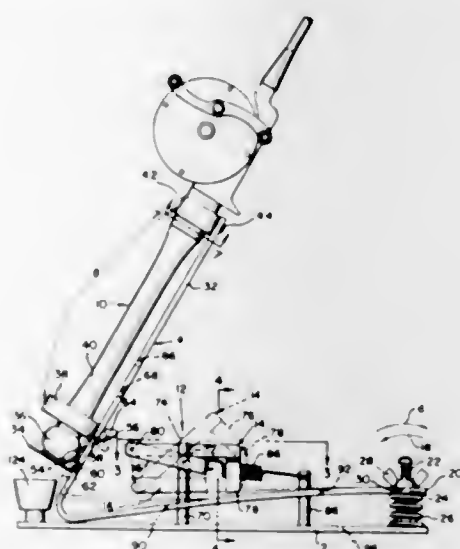
mer is communicated to the chamber and is there controlled to closely resemble the sound of a gunshot and to produce shock waves.

**3,410,014**  
**TRAWL BOARDS**  
Jens William Jenssen, Charles St., Westshore, Napier, New Zealand  
Filed Apr. 26, 1966, Ser. No. 545,373  
Claims priority, application New Zealand, Apr. 26, 1965, 141,413  
11 Claims. (Cl. 43—9)



A substantially rectangular trawl board defined by two sheet-like shear members, one of which members is approximately half the length of and substantially the same width as the other member. Frame means are fastened to each of the members for holding the members in opposed spaced relationship with their central longitudinal axes substantially parallel and with two adjacent ends overlapping slightly for providing a passageway therebetween. Attachment means is secured to one face of the longer member adjacent the overlapping end for coupling to a trawl warp. Net coupling members for connection to a net are attached to the longer member adjacent the non-overlapping end and on the opposite face to the attachment means.

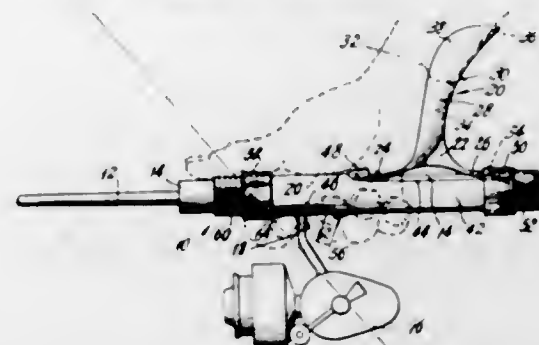
**3,410,015**  
**FISHING ROD HOLDER AND HOOK SETTING DEVICE**  
Benardo G. Garcia, Jr., 1520 C St., Antioch, Calif. 94509  
Filed Feb. 14, 1966, Ser. No. 527,286  
2 Claims. (Cl. 43—15)



A fish rod holder and hook setting device having a pivotally mounted V-shaped holder for the fish rod. The holder is adjustably clamped at one end to a base for selecting the amount of pull necessary for a fish to exert upon the fishing line to move the holder in one direction. This movement of the holder sets off a spring mounted

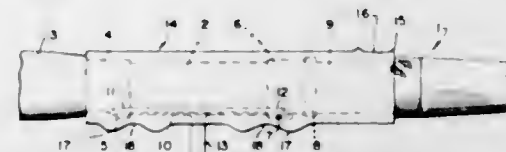
impact means operating to move the holder in an opposite direction so as to snap the holder and line, thereby setting the hook in the mouth of the fish.

**3,410,016**  
**FISHING ROD HANDLING DEVICE**  
Albert J. Arsenaault, 430 Albert Ave., Stratford, Conn. 06497  
Filed Oct. 22, 1965, Ser. No. 500,590  
15 Claims. (Cl. 43—21.2)



A handling device for fishing rods having a mounting base and an upstanding body which is transversely shaped concavely to engage and partially embrace a portion of the user's lower forearm and wrist in the vertical plane of the handle while the fingers of the same hand encircle the handle of the rod, a slotted sleeve on the handle removably receives mounting lugs on the handling device, and threaded collars secure the sleeve to the handle and the handling device to the sleeve. The same sleeve may, in like manner, mount a reel on the handle.

**3,410,017**  
**FISHING ROD GRIP**  
Robert L. Wilson, 10047 Avenue N, Chicago, Ill. 60617  
Continuation-in-part of application Ser. No. 496,515, Oct. 15, 1965. This application June 2, 1966, Ser. No. 563,621  
12 Claims. (Cl. 43—22)

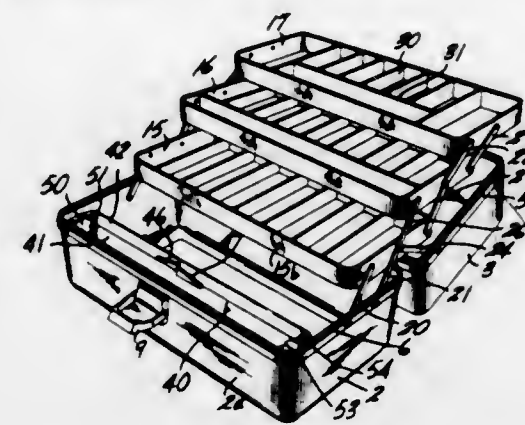


A removable tubular friction rod grip which may be in one or two parts and which is adapted to cover the reel seat area of the rod and reel mounting portions carried by the rod. The said grip also covers the reel base and has an opening therein to accommodate the reel stem. The said grip is particularly adapted for rods provided with spinning reels.

**3,410,018**  
**TACKLE BOX AND ROD PACK**  
Richard G. Woolworth, Lancaster, Pa., assignor to Old Pal, Inc., Lititz, Pa.  
Filed Dec. 6, 1966, Ser. No. 599,486  
4 Claims. (Cl. 43—26)

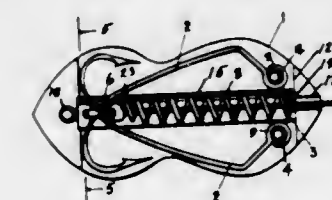
1. In a box, means defining a bottom half of said box, a lid pivotally mounted for opening and closing said bottom half and jointly therewith defining said box, at least one cantilevered tray in said box, means cantilevering said cantilevered tray for automatically moving the cantilevered tray to a position in which said cantilevered tray is housed in said box when the lid is closed from an open position and for moving it to a position out of said box when the lid is opened a given extent, a rod pack re-

movably held in said bottom half by said cantilevered tray, means on said rod pack cooperative with said cantilevered tray for automatically releasing said rod pack when said



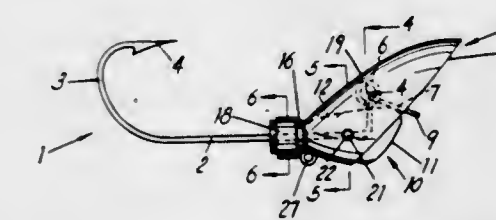
lid is opened and automatically holding said rod pack in fixed position in the interior of said bottom half when the lid is closed.

**3,410,019**  
**WEEDLESS LURE**  
Anthony O. Landi, 1225 W. 30th St., Erie, Pa. 16508  
Filed July 16, 1965, Ser. No. 472,508  
1 Claim. (Cl. 43—35)



A fish lure comprising a body with a longitudinal groove therein, and two fish hooks having eyes for mounting the hooks on spaced pins within the groove. The hook shanks cross each other and extend through a ring to be moved inwardly and outwardly of the groove by the longitudinal movement of the ring within the groove, and a helical spring is disposed within the groove to urge the ring to one end of the groove and retract the hook shanks into the lure body. A line or leader extends through the helical spring and is secured to the ring whereby movement of the ring will compress the spring and force the hook shanks outwardly of the lure body.

**3,410,020**  
**JIG TYPE FISH LURE**  
Bingham A. McClellan and John K. Peters, Traverse City, Mich., assignors to Burke-Flexo Products Company, Traverse City, Mich.  
Filed Apr. 18, 1966, Ser. No. 543,144  
2 Claims. (Cl. 43—42.34)

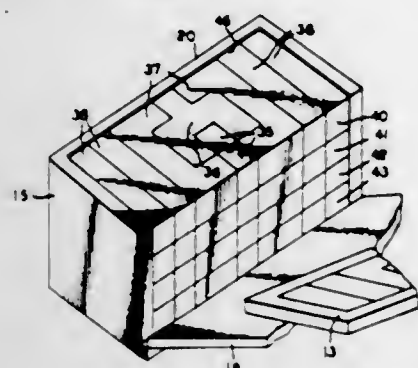


A weight mass molded around a bend in the shank of a hook with its eye projecting above the mass has an enlarged forward end with a downwardly and rearwardly inclined front face. A light weight scoop engages along the outside of the mass and extends in a forwardly and upwardly direction and has a concave front end. Projections on the sides of the mass engage in holes in the sides



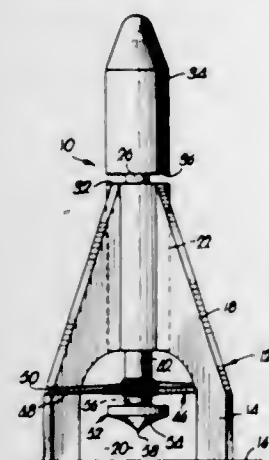
of the scoop and spaced projections on the inner top side of the scoop engage with the eye, and a split neck on the scoop is clamped to the mass by a clamping ring.

**3,410,021**  
**EDUCATIONAL BUILDING BLOCK TOY**  
John Laymond Patterson, 3571 Firestone Blvd.,  
Pensacola, Fla. 32503  
Filed Sept. 20, 1965, Ser. No. 488,324  
3 Claims. (Cl. 46—25)



The invention relates to a set of building elements and also features a container particularly adapted to receive, compactly store, and transport the elements while serving as a riding or pulling toy. Preferably four basic elements comprise the nucleus of the set and are duplicated to provide a total set of 36 elements beginning with a cube of one unit per edge, a U-shaped element made of cubes two units high and four units long, an arch-like element three units in height including a centrally disposed cubular block on top and a cubular recess oppositely disposed in the bottom; and a rectangular cube of four units in height. An assembly of two cubes, one arch, three U-shaped elements, and four rectangular elements will fit together to make one layer in the container with four sets of identical layers completely filling the container.

**3,410,022**  
**TOP SPINNING APPARATUS**  
Leonard I. Behl, Kansas City, Kans., assignor of one-half to William P. Evans, Kansas City, Mo.  
Filed July 13, 1966, Ser. No. 564,902  
9 Claims. (Cl. 46—72)

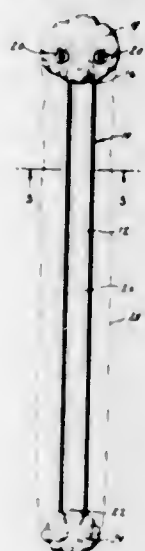


1. Apparatus for spinning a top on a playing surface, said apparatus comprising:

- a support;
- a pair of relatively telescoped elements, one of the elements being carried in a vertical position by the support above the playing surface, the elements including facing surfaces configured to permit longitudinal shifting of the other element between an upper position for placing the surfaces in frictional interengagement precluding relative rotation therebetween and a lower position permitting relative rotation therebetween;

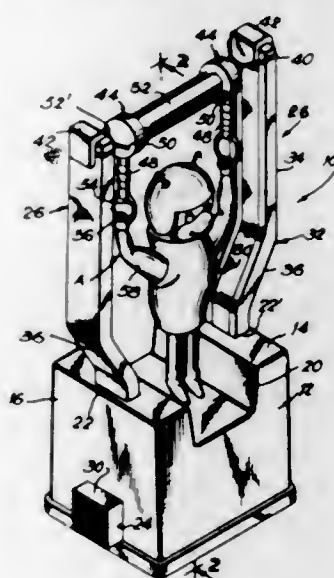
resilient means coupled between the support and other element for placing a torque on the latter when it is rotated in one direction about its longitudinal axis with respect to said one element, the torque urging rotation of said other element with respect to said one element about said axis in the opposite direction; and  
holding structure operably coupled to said resilient means to hold a top above the playing surface when said other element is torqued, and to release the top for spinning on the surface when said other element is rotated in said opposite direction in response to said torque.

**3,410,023**  
**ROLL SPRING TAPE NOVELTY TOY**  
Joseph Anello, Cahokia, Ill., assignor, by court order, to Jerome A. Groes, St. Louis, Mo.  
Filed Aug. 20, 1965, Ser. No. 481,198  
1 Claim. (Cl. 46—123)



Simple toy construction, useful for simulated animal figures and the like, utilizes a flexible spring strip like that of steel measuring tapes. The springing changes of position of such an animal figure, from a prestressed coiled position to flattened position, provides it with interesting and amusing action.

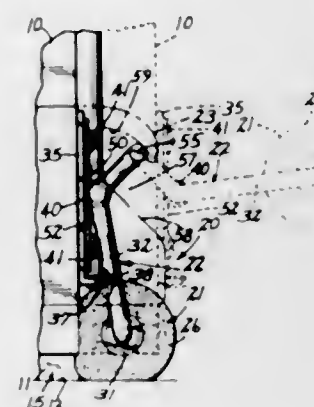
**3,410,024**  
**ACROBATIC TOY**  
Albert Stubbmann, Flushing, N.Y., assignor to Kohner Bros., Inc., East Paterson, N.J., a corporation of New York  
Filed Apr. 29, 1966, Ser. No. 546,292  
7 Claims. (Cl. 46—133)



An acrobatic toy including a pair of pivotally supported upstanding members with a pair of strings extending

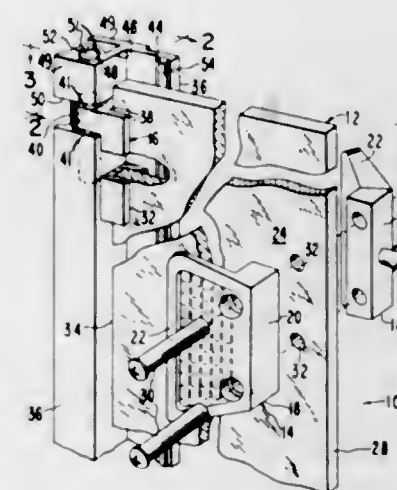
between the upper ends of the members. A pair of spaced supports have the strings threaded through them. The supports have registered arms. The arms are erect when the bottoms of the members are squeezed together, and the arm swing to a pendent position when the bottom ends of the members are released. A single figure swings about a horizontal axis between the ends of the arms. The sections of the figure on opposite sides of the horizontal axis of swinging of the figure are slightly unbalanced with respect to one another, and are different in weight.

**3,410,025**  
**WEATHER STRIP DEVICE**  
Kenneth G. von Busch, 121 Warwick SE.,  
Minneapolis, Minn. 55414  
Filed Sept. 2, 1966, Ser. No. 576,971  
7 Claims. (Cl. 49—311)



An elongated rod with both ends bent so they extend generally toward each other pivotally mounted adjacent the lower edge of a door with portions of the rod offset so that the ends thereof are always biased inwardly toward the door, an elongated resilient roller engaged between the ends of the rod so as to be positioned to substantially close the opening between the door and the threshold when the door is closed and to be positioned in juxtaposition to the door but spaced from the edge thereof when the door is open, said rod having means extending outwardly therefrom adapted to engage a strike means attached to the door jamb to rotate the rod and move the cylinder between the two positions as the door is moved.

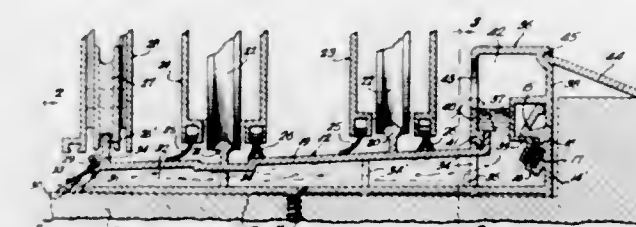
**3,410,026**  
**GLASS DOOR ASSEMBLY**  
Ralph T. Casebolt, 500 High St.,  
Oakland, Calif. 94601  
Filed Feb. 23, 1966, Ser. No. 529,429  
6 Claims. (Cl. 49—397)



A door assembly and method of mounting the same wherein a tempered glass panel has hinge means on one

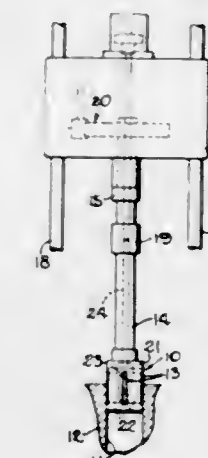
side edge thereof. Hinge structure which is initially perforate is cut to form notches for receiving the hinge means on the tempered glass panel. A hinge pin releasably couples the hinge structure and the hinge means to swingably mount the panel.

**3,410,027**  
**HYDRAULIC THRESHOLD**  
Robert E. Bates, Pembroke Pines, Fla., assignor to Miller Industries, Inc., Miami, Fla., a corporation of Florida  
Filed Nov. 20, 1967, Ser. No. 687,416  
10 Claims. (Cl. 49—471)



A threshold structure particularly for sliding panel closures having a fluid pressure head portion which accumulates sufficient water to overbalance the pressure of the elements on the external side of the closure and produce an actual flow of water from the internal to the external side of the closure automatically and continuously, to thereby eliminate the infiltration of water through the closure.

**3,410,028**  
**CONTROL OF AUTOMATIC ABRADING MACHINES**  
Mark R. Estabrook, Rockford, Ill., assignor to Barnes Drill Co., Rockford, Ill., a corporation of Illinois  
Filed Mar. 30, 1965, Ser. No. 443,875  
12 Claims. (Cl. 51—165)



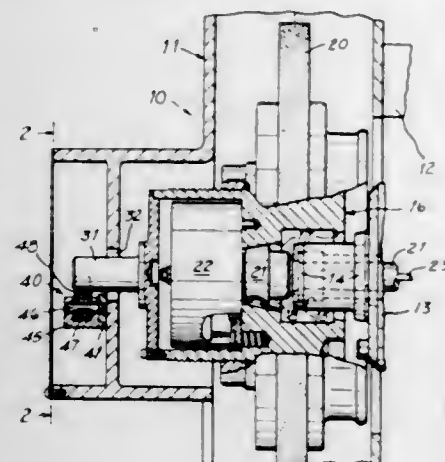
An automatic honing machine having a reciprocating rotary tool of conventional form that is progressively expanded within a work bore to feed the honing stones into the bore wall, thereby removing surface roughness and enlarging the bore to a predetermined size. The expansion mechanism is driven by a variable speed and torque electric motor having an armature that draws current through a tungsten lamp bulb filament so that the resistance value of the filament increases with the current level to modulate the motor torque and honing force in accordance with the load on the tool. The force range of the motor is varied either by a rheostat in parallel with the lamp or by a voltage divider for adjusting the field strength of the motor.



### 3,410,029 STABILIZING AND SUPPORTING MEANS FOR A ROTATING ELEMENT

Edmund G. Savage, North Brookfield, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts

Filed May 24, 1965, Ser. No. 458,023  
11 Claims. (Cl. 51-169)

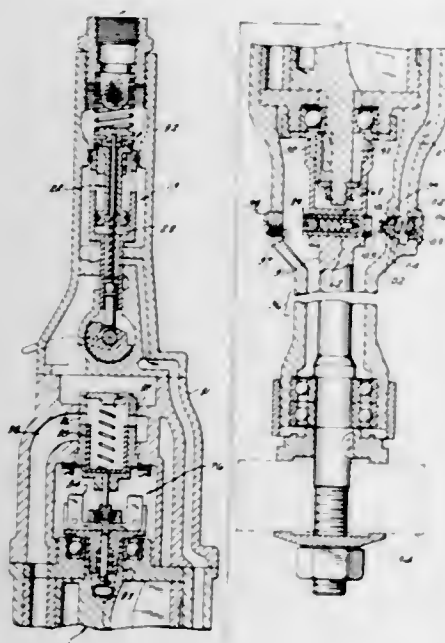


Apparatus including a rotating element selectively either fully constrained radially thereof for rotation below its critical speed about a predetermined fixed axis or yieldably constrained radially thereof for rotation above its critical speed about its center of gravity subject also to radial displacement from the fixed axis due to its weight, and an assembly incorporating a biasing mechanism operative when the rotating element is yieldably constrained radially thereof to limit radial displacement of the rotating element due to its weight.

### 3,410,030 SAFETY OVERSPEED CONTROL MECHANISM FOR ROTARY TOOLS

Kenneth A. McHenry, Clinton, N.Y., assignor to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey

Filed Jan. 11, 1966, Ser. No. 534,924  
11 Claims. (Cl. 51-170)



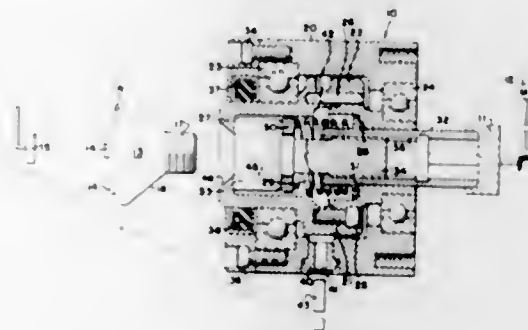
Rotary tool fluid-control valve having a piston exposed on one side to inlet-chamber pressure and to counterbalancing pressure on the other side in a dead-end chamber which continuously communicates with the inlet-chamber. The dead-end chamber has a frangible plug ex-

tending outwardly adjacent a flyweight on the tool spindle. Heavy spring means which normally holds the valve closed is movable away from the valve piston by a manually cammable plunger carrying light spring means which engages the piston and opens the valve. Upon overspeed the flyweight (sliding outwardly under centrifugal force) breaks the plug, thus relieving the counterbalancing pressure and allowing inlet pressure to overcome the light spring pressure and close the valve independently of manual control.

### 3,410,031 CHUCKING APPARATUS

William E. Soong, Chicago, Ill., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed June 29, 1966, Ser. No. 562,447  
4 Claims. (Cl. 51-237)

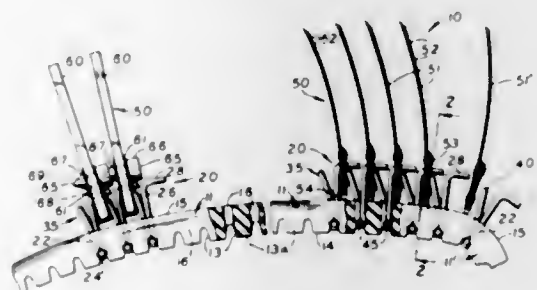


A lens polishing machine having a rapid chucking and de-chucking arrangement for a work-holder which is operated by a reversible drive means. A threaded nut has an integral shank portion splined to an input spindle, though urged away therefrom by a biasing spring. An inwardly directed flange of a hollow shaft has one face normally drivingly engaged by the biased nut and another tapered surface to seat a matingly tapered portion of the work-holder. Both the hollow shaft and surrounding housing have radially alignable apertures to receive a shaft locking or stopping pin, by which work pieces can be quickly assembled or disassembled.

### 3,410,032 ABRASIVE BELT MECHANISM

Wesley C. Meinerting, 1219 19th St. NW., Canton, Ohio 44709

Filed Oct. 21, 1965, Ser. No. 499,310  
12 Claims. (Cl. 51-330)

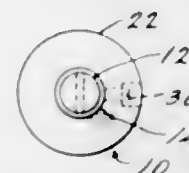


A plurality of flexible conveyor belts with outwardly projecting carrier elements attached to a plurality of said belts at spaced longitudinal intervals and either solid or flexible abrasive elements selectively removably attached to the carrier elements by forming the belts about an arc of relatively short radius and projecting outwardly of the belts and carrier elements when installed to provide a succession of abrasive surfaces.

### 3,410,033 SPINDLE FOR SUPPORTING TUBULAR DEVICES

Norman V. Fehrm, Glen Ellyn, Ill., assignor to The Freeman Supply Company, Toledo, Ohio, a corporation of Ohio

Filed Oct. 23, 1965, Ser. No. 502,894  
3 Claims. (Cl. 51-358)

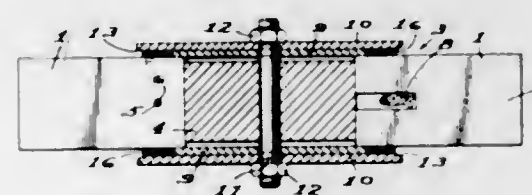


A spindle for supporting and driving tubular sanding cylinders having a solid rod onto which the sanding cylinder is telescoped. A collar, fixed to one end of the rod, defines an annular recess for receiving one end of the sanding cylinder. A recessed setscrew is threaded through the collar to bind the cylinder against the rod. The collar is tapered away from the rod to provide a means for supporting and rotating the spindle.

### 3,410,034 FLEXIBLE ABRASIVE WHEEL AND METHOD OF MAKING

Robert P. Snyder, 247 Snow St., Saginaw, Mich. 48602

Filed Feb. 28, 1966, Ser. No. 530,709  
17 Claims. (Cl. 51-336)

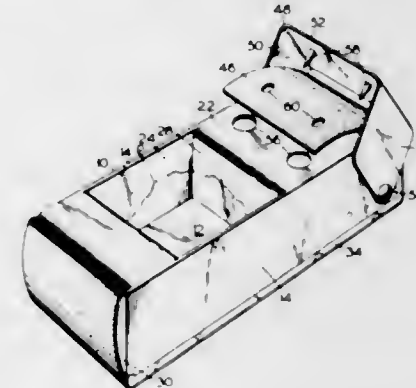


A flexible abrasive wheel having a plurality of abrasive strips arranged to form an annulus having on each side thereof between the inner and outer peripheries of the annulus an adhesive roving wound upon itself to form a ring, the convolutions being wound under tension such as to cause the adhesive to be forced between adjacent abrasive strips whereby the strips are bonded to one another and to the ring.

### 3,410,035 SANDING BLOCK

Ralph Gohde, 3022 Chester, North Bend, Oreg. 97459

Filed July 16, 1965, Ser. No. 472,612  
2 Claims. (Cl. 51-391)



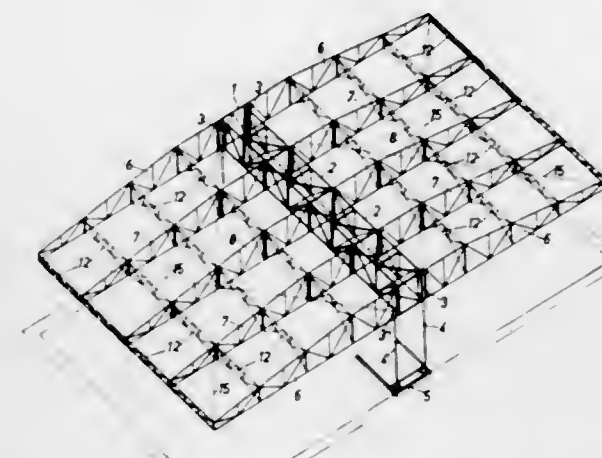
A body member which can be grasped for hand sanding operations. The body member has a slot at one end for anchoring one end of a piece of sandpaper and has a pronged gripping member at the other end for anchoring the other end of the sandpaper. The body member has

top walls extending toward each other from the opposite ends. These top walls terminate short of each other to form a top opening compartment formed by the side walls of the body member and intermediate vertical wall portions.

### 3,410,036 MULTIPURPOSE ROOF STRUCTURES

Franz Brell, Furstenbergstrasse 90, Constance (Bodensee), Germany

Filed May 9, 1967, Ser. No. 637,164  
Claims priority, application Germany, July 8, 1966, B 87,934  
16 Claims. (Cl. 52-16)

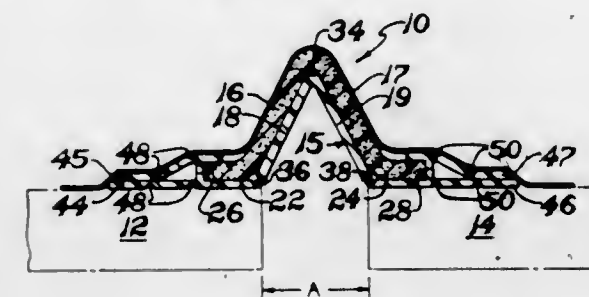


Multi-purpose cantilever roof structure formed by an elongated bridge member which has pivoted side trusses projecting therefrom and which is supported in an erected state by telescopic load-bearing end-support legs provided on the bridge member, the trusses being collapsible against the bridge member, and the bridge member being mountable on vehicle bogies for transportation.

### 3,410,037 STRUCTURAL EXPANSION JOINT

Azariah H. Empson, Stow, and Robert J. Pickelsimer, Akron, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

Filed Oct. 20, 1966, Ser. No. 588,032  
2 Claims. (Cl. 52-58)



This disclosure relates to structural expansion joints and more particularly to a roof or wall joint having an inverted V-shaped bridging member which is covered by an insulation strip and enclosed by a flexible flashing.

### 3,410,038 WALL-JOINING SECTION MEMBER

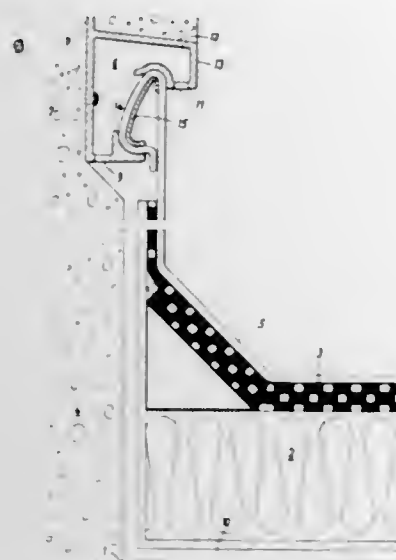
Klaus Göbel, Zeughausstr. 41, Trier, Germany

Filed June 23, 1966, Ser. No. 559,969  
Claims priority, application Germany, June 25, 1965, G 43,987  
4 Claims. (Cl. 52-62)

An elongated hollow bracket spaced above and extending parallel to a flat roof deck is recessed in a parapet or a side wall of a higher portion of a building upstanding from such deck. A margin of a flexible roofing sheet is wrapped around a clamping stiffener and snapped into



sockets of the bracket to clamp and anchor the sheet margin. Such flexible sheet extends downward from the bracket to overlie the roof margin. The bracket includes an overhanging portion which protects from weather the

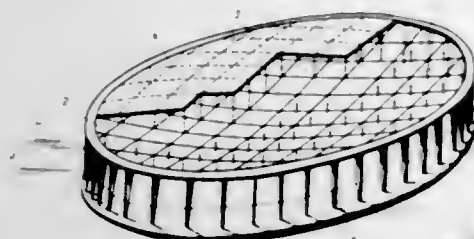


clamped sheet margin and a series of apertures venting the bracket hollow to atmosphere. The space between the parapet side or upright wall face and the adjacent side of the roofing sheet is vented to the bracket hollow by a second series of apertures.

3,410,039

#### ROOF FROM ASSEMBLED SHELL SUPPORTED BY CABLE NET

Vladimír Brezina, Prague, Czechoslovakia, assignor to Československá akademie věd, Prague, Czechoslovakia  
Filed Feb. 24, 1966, Ser. No. 529,693  
Claims priority, application Czechoslovakia, Mar. 9, 1965, 1,585/65  
5 Claims. (Cl. 52—80)



A lens-shaped roof includes a compression ring and a network of two groups of equidistant, practically parallel cables which intersect each other at right angles and are fastened to each other at the points of intersection below the plane of the compression ring, and whose ends are attached to the ring. The rim of a roof shell of arcuate cross section is fastened to the ring while the central roof portion rises above the plane of the ring and is connected to the cable intersections by rigid struts attached to corners of the identical, rectangular panels which mainly constitute the shell.

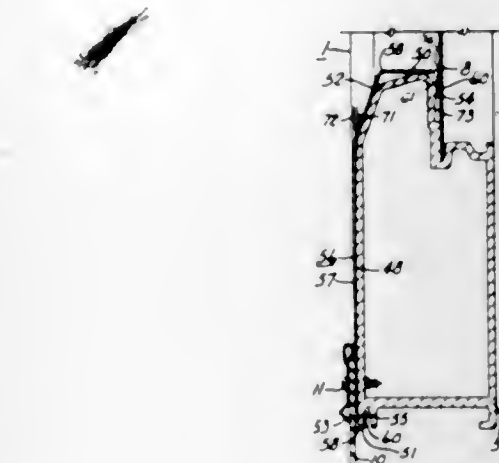
3,410,040

#### STAINLESS STEEL-CLADDED DOOR

Alexander J. Biro, Indiana, and Kenneth N. Gahagan, Karen Drive, Allegheny County, Pa., assignors to Seaton-All Industries, Inc., a corporation of Pennsylvania  
Filed Sept. 14, 1966, Ser. No. 579,285  
6 Claims. (Cl. 52—222)

An ornamental clad structural frame member comprising an elongated structural frame section to which is applied an outer covering in the form of a comple-

mentary flexible cladding member such as stainless steel. The frame section may be, for example, the side stiles, mullions, lintel or sill of a door frame and is provided with a front face having a curved convex surface and side faces which form with the front face, marginal side edges with back marginal surfaces. The cladding member has a planar panel section for engagement with the frame section front face and opposed intumed marginal

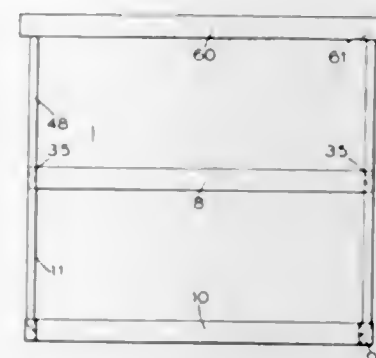


flanges to grip over the frame section side edges and embrace the back marginal surfaces of the frame section side edges. In this manner, the cladding member is caused to be curved over the frame section front face convex surface and snapped into position with the intumed flanges of the cladding member engaging the back marginal surfaces of the frame section to place the cladding member in a condition of stressed tension.

3,410,041

#### BUILDING STRUCTURES WITH AN INTERMEDIATE FLOOR AND SOCKET-CONNECTED UPRIGHTS

Harry Collett Bolt, Jack David Molzer, and Kenneth Alec King, Bletchley, England, assignors to Terrapin (Overseas) Limited, Bletchley, Buckinghamshire, England  
Filed June 1, 1966, Ser. No. 554,390  
Claims priority, application Great Britain, June 9, 1965, 24,381/65  
6 Claims. (Cl. 52—236)



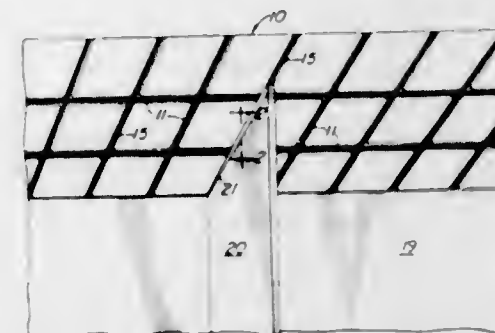
A building unit comprises an intermediate floor, lower corner uprights for supporting the floor, a roof, and upper corner uprights for supporting the roof on the intermediate floor. The intermediate floor has upper and lower sockets at each corner to receive the upper ends of the lower corner uprights and the lower ends of the upper corner uprights. Each socket has a flat surface inclined to the horizontal and an adjacent vertical locating wall. Each upright has an inclined end surface to seat on the inclined end surface of the corresponding socket and an adjacent vertical surface to seat against the vertical locat-

ing wall of the socket so that in use the ends of the uprights are urged against the socket walls by the weight of the structure.

3,410,042

#### MODULAR BUILDING STRUCTURES EMBODYING SLOTTED CEILINGS AND MODULAR PARTITION WALLS

Eugene F. Averill, Waterloo, Iowa, assignor to Titus Manufacturing Corporation, Waterloo, Iowa, a corporation of Iowa  
Filed Sept. 19, 1966, Ser. No. 580,237  
3 Claims. (Cl. 52—238)

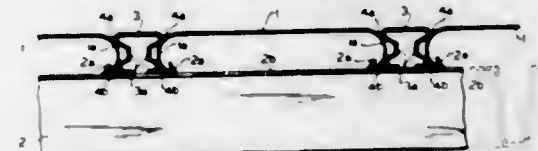


A partition wall is secured to the lips of an elongated slot diffuser in a ceiling by means of opposing jaws carried by a vertical bar which extends into the slot from a header channel at the top of the partition wall.

3,410,043

#### WALL OR CEILING COVERING OF OBLONG SEGMENTS OR PANELS AND INTERMEDIATE PROFILED MEMBER THEREFOR

Willem Rijnders, Rotterdam, Netherlands, assignor to Hunter Douglas International Ltd., Montreal, Quebec, Canada  
Filed July 12, 1966, Ser. No. 564,559  
Claims priority, application Germany, July 16, 1965, H 56,600  
6 Claims. (Cl. 52—303)



The disclosed covering for walls, ceilings and the like comprises spaced parallel oblong-shaped panels secured to spaced transversely-extending supports, in which the panels have side edge sections bent away from the face of the panels and secured to the supports. In this structure the panels are spaced so as to define an interspace in which is located a clampable intermediate profiled member having an outer portion generally in the plane of the panels and side portions respectively engaging the adjacent sides of adjacent panels along the interspace. The intermediate profiled member is generally U-shaped, each side of which includes spaced longitudinally-extending portions contacting the side edge section of the adjacent panel.

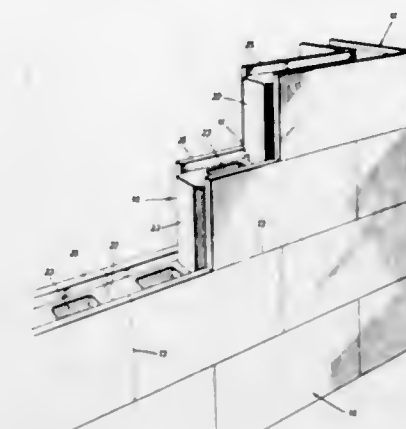
3,410,044

#### FOAMED PLASTIC BASED CONSTRUCTION ELEMENTS

Gerhard Willy Moog, Toronto, Ontario, Canada, assignor to Contemporary Walls Limited, Toronto, Ontario, Canada  
Filed July 23, 1965, Ser. No. 474,525  
7 Claims. (Cl. 52—309)

A wall construction comprising a plurality of molded construction elements, each of which elements is of a

foamable plastic and comprises a low density core and a hard, integrally formed smooth, higher density skin; and wherein each of the construction elements has an orifice

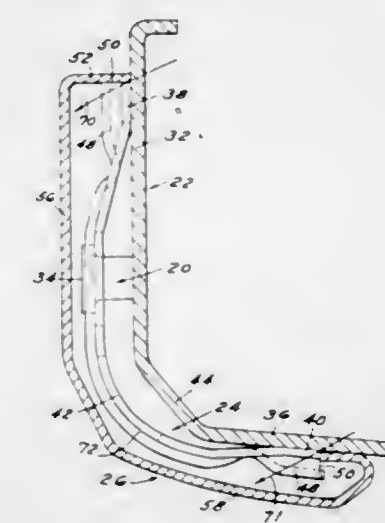


molded therein, the skin completely encases the foamed core and forms a lining of the orifice, and concrete fills the orifice.

3,410,045

#### CLIP AND MOLDING ASSEMBLY

Engelbert A. Meyer, Union Lake, Mich., assignor to Warren Fastener Corporation, Mount Clemens, Mich., a corporation of Michigan  
Filed Sept. 7, 1966, Ser. No. 577,713  
13 Claims. (Cl. 52—718)

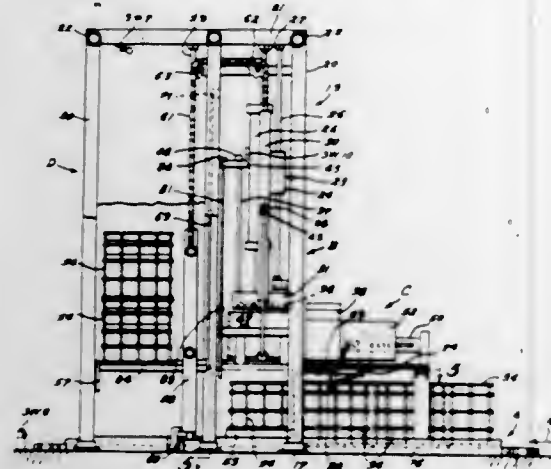


This disclosure relates to a clip and molding assembly adaptable to secure a structural member, such as a trim piece, over the corner of a support. The clip in the preferred embodiment is tensioned beneath a button secured to the support, against each of the angularly related corner surfaces, and the trim piece or structural member is expanded to be received over the opposed clip edges. In the other embodiment, the structural member is received directly on the support, and provides an upstanding flange which is engaged by the clip. The slot in the clip which receives the button is defined at an acute angle to the clip edge which abuts the flange of the structural member to tension the clip against the structural member flange. In each of the embodiments disclosed herein, the marginal edge of the button receiving slot has teeth to restrict removal of the button, and a second generally parallel slot which permits the button receiving slot to expand and receive the shank of the button.



3,410,046

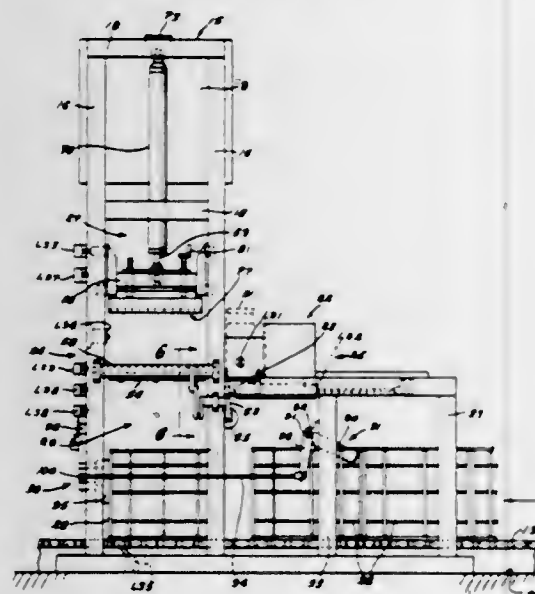
**CASE FILLING AND STACKING MACHINE**  
John A. Johnson, Milford, Ohio, assignor to Cedar Hill Farms, Inc., Cincinnati, Ohio, a corporation of Ohio  
Filed Dec. 3, 1964, Ser. No. 415,667  
15 Claims. (Cl. 53-61)



Apparatus adapted to assemble gabled cartons containing milk, or the like, in patterns, depositing the cartons in patterns into shipping cases, and then vertically stacking the filled shipping cases. A counter-balancing means between the carton pattern lowering means and the stacker raising filled cases into stacked position. Conveyor located switches operated by movements of cases on a conveyor controlling the casing and stacking mechanisms.

3,410,047

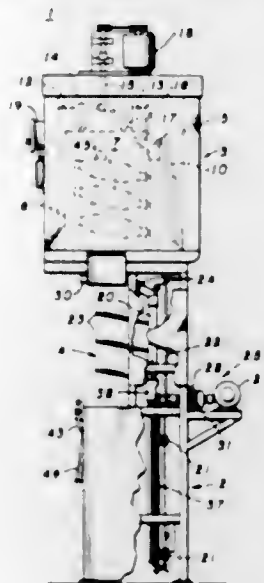
**CASE FILLING MACHINE**  
John A. Johnson, Milford, Ohio, assignor to Cedar Sales, Inc., Cincinnati, Ohio, a corporation of Ohio  
Filed June 10, 1966, Ser. No. 556,660  
9 Claims. (Cl. 53-61)



1. In a machine for loading cartons into a rectangular case in layers, a loading platform, a dead plate disposed at one end of the loading platform, a conveyor delivering a lateral row of cartons onto the dead plate, a pair of pusher plates each adapted to move a part of the cartons in the row one carton space at a time from the dead plate onto the platform, a power means connected to each pusher plate, a vertically reciprocated carton gripper and elevator means located above the loading platform and adapted to engage a pattern layer of cartons assembled on the loading platform, means locating a case beneath the platform, carton layer sensing means adjacent the platform actuating the carton gripper and elevator means to engage and move the carton layer pattern from the loading station into the case, and control means conditioned by movement of the elevator for independently actuating one of the power means.

3,410,048

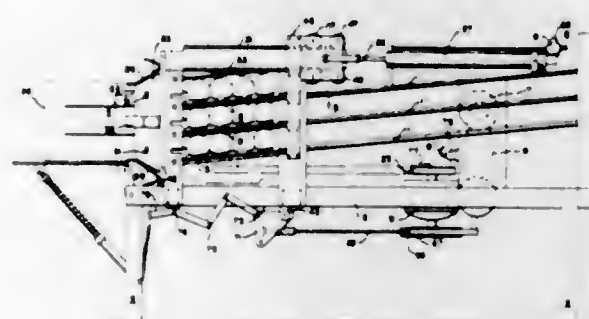
**SHRINK WRAP APPARATUS**  
Arthur L. Gottily and John L. Thomas, Pensacola, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
Filed May 25, 1965, Ser. No. 458,679  
11 Claims. (Cl. 53-77)



Shrink wrapping or bagging apparatus including a thermally controlled oven and a reciprocating carrier adapted to carry items covered with shrink wrap material into and out of the oven.

3,410,049

**CAN LOADING MACHINE**  
William A. Steenberg and Donald Gray, San Leandro, Calif., assignors to Western Corrugated, Inc., a corporation of California  
Filed Sept. 3, 1965, Ser. No. 484,903  
3 Claims. (Cl. 53-153)



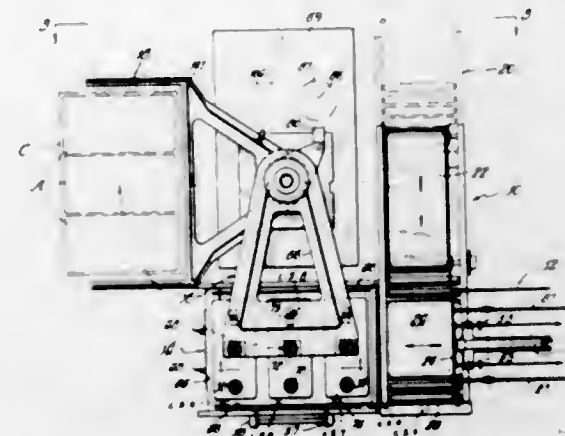
A carton loading machine, the machine having a plurality of ramps for receiving a supply of cans and having a ram which is actuated parallel to the ramps, pushing the cans into an end opening carton. In accordance with a preferred embodiment, a dual action machine is provided so that either top opening cartons or end opening cartons can be employed. In the preferred embodiment, two rams are employed which can be selectively actuated, one of which can be moved against the chimes of the cans to push them into a top opening carton and a second ram which moves parallel to the ramps to push against the sides of the cans, pushing the cans into an end opening carton.

3,410,050

**VACUUM LOADING MACHINE**  
John T. Bell, Lombard, Ill., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware  
Filed Aug. 30, 1965, Ser. No. 483,645  
10 Claims. (Cl. 53-165)

This invention relates to a machine for loading, into an open top container, articles of the type that can be lifted by vacuum, and more particularly, to a machine

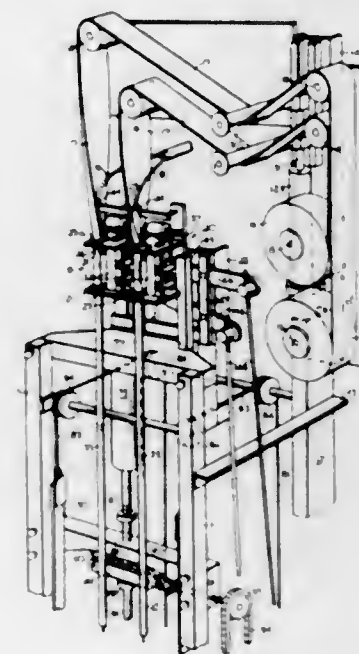
having means for accumulating such articles and having means including an oscillating support arm and vertically for reciprocation therewith; means to synchronise the reciprocating movement of units B and D with the operation of units A and C.



movable vacuum heads for transferring the articles from the accumulating means to the container.

3,410,051

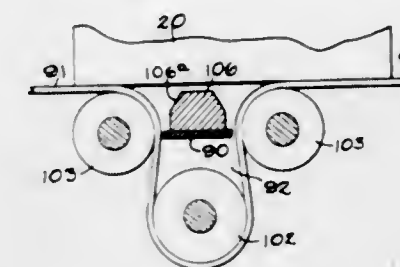
**MACHINE FOR MAKING TUBE OF ELASTOMERIC MATERIAL, PROGRESSIVELY FILLING THE SAME WITH FLUID AND DIVIDING THE FILLED TUBE INTO VENDABLE CONTAINERS**  
Henry Milton Hayward, West Ryde, New South Wales, Australia, assignor to Leslie A. Humphrey, Balmoral, New South Wales, Australia  
Filed July 28, 1966, Ser. No. 568,469  
Claims priority, application Australia, Aug. 2, 1965, 62,198/65  
6 Claims. (Cl. 53-180)



1. A machine for making a tube from plastic strip by folding the strip and fusing the folded parts together, then charging the tube with fluid and transversely dividing and fusing the filled part of the tube into vendable containers of uniform length; said machine comprising a frame on which is mounted in descending order from the top, units A, B, C and D wherein unit A is a tube forming unit, unit B and unit D are tube pulling units and unit C is a tube transverse dividing and fusing unit; unit A comprises a hollow mandrel, tube forming means including a strip edge overlapping device and a tube fusing unit, and a fluid supply pipe passing through the said mandrel; unit B comprises tube gripping jaws constructed to displace fluid in the tube upwardly, actuating means therefor and means to reciprocate unit B on said frame; unit C comprises transverse tube fusing bars and actuating means therefor; unit D comprises tube gripping jaws and actuating means therefor, unit D being connected to unit B

3,410,052

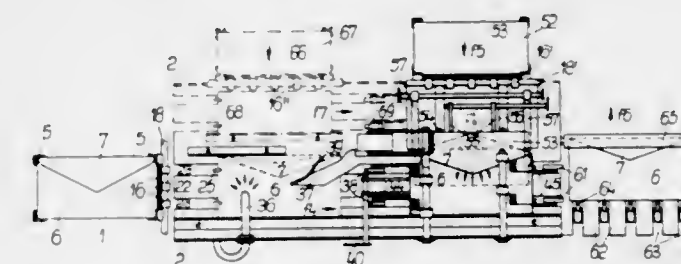
**MACHINE FOR HANDLING ARTICLES AND CONTAINERS**  
Kenneth R. Johnson, Carl J. Beert, and Edwin N. Brogren, Rockford, Ill., assignors to Bartelt Engineering Company, Inc., Rockford, Ill., a corporation of Delaware  
Filed Feb. 17, 1966, Ser. No. 528,310  
9 Claims. (Cl. 53-249)



Stacks of packages advanced along a horizontal path by a conveyor are shoved horizontally off of the conveyor by a pusher, are loaded into empty cartons supported in a holder with their open ends facing the conveyor, and the loaded cartons are swung downwardly with the holder and placed open-end up on a second conveyor spaced laterally and downwardly from the first conveyor. The holder then is swung upwardly to an intermediate position between the two conveyors, is loaded with a new supply of empty cartons, and is swung upwardly alongside the first conveyor so that additional stacks of packages may be loaded into the cartons. The second conveyor comprises an endless belt formed with a series of pockets which receive prongs on the holder as the latter is lowered to enable placement of the loaded cartons on flat sections of the belt between the pockets and thereby effect automatic removal of the cartons from the holder.

3,410,053

**MACHINE FOR THE AUTOMATIC INSERTION OF ENCLOSURES, SUCH AS LETTERS, PRINTED MATTER AND THE LIKE**  
Francols Rodolphe Bonsch, Paris, France, assignor to Mathias Bauerle G.m.b.H., St. Georgen, Black Forest, Germany  
Filed June 6, 1966, Ser. No. 555,334  
Claims priority, application Germany, June 14, 1965, B 82,396  
7 Claims. (Cl. 53-266)



1. Machine for the automatic insertion of enclosures, such as letters, printed matter and the like in envelopes of the gummed flap type comprising, in combination, a frame, a longitudinally extending conveyor table mounted on said frame, an envelope magazine disposed adjacent one end of said table, first means for conveying periodically, in longitudinal direction, individual envelopes from said magazine to a first envelope opening station on said table, means for opening the closing flaps of the envelopes at said first station, said means being disposed perpendicularly to said table, second means for ad-



vancing in longitudinal direction the envelopes with their flaps open to a second station, a magazine for inserts disposed adjacent said second station, at said second station means disposed perpendicularly to said table for inserting the inserts in the envelopes, and means for closing the envelope flaps upon insertion, wetting means for the flaps arranged between said first and second stations, third means for advancing in longitudinal direction the envelopes to a third ejection station, means disposed perpendicularly to said table for applying pressure to the flaps at said third station and means disposed perpendicularly to said table for discharging the envelopes from said third station, all said means being disposed at the same level.

3,410,054

# PROCESS FOR AGGLOMERATION OF SUSPENDED PARTICLES IN STREAMING GASES

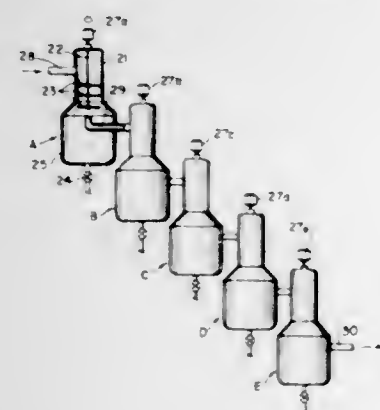
Wilhelm Deiters, Chur, Grisons, Switzerland, assignor to Inventa A.G. für Forschung und Patentverwertung, Zurich, Switzerland, a Swiss company

Filed May 26, 1966, Ser. No. 553,144

Claims priority, application Switzerland, May 28, 1965,

7,467/65

3 Claims. (Cl. 55—70)



A process for the removal of solid polar particles, particularly of ammonium salts, from streaming gases in which they are suspended, by making the particles descend while rotating without eddy formation, whereby said particles agglomerate with each other and are then thrust out continuously and collected, while said gases escape in a pure state.

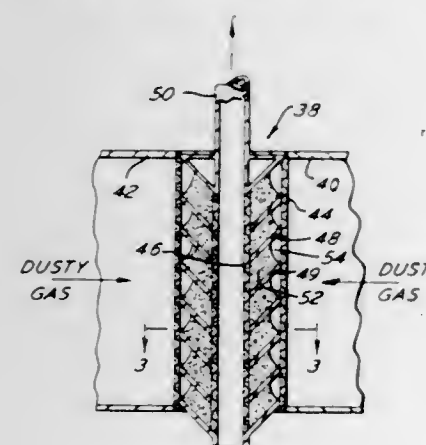
3,410,055

# EXPANDABLE BED FILTER AND METHOD

Frederick A. Zenz, Roslyn Harbor, N.Y., assignor to The Ducon Company, Inc., Mineola, N.Y., a corporation of New York

Filed Oct. 25, 1966, Ser. No. 589,433

4 Claims. (Cl. 55—96)



Apparatus and method for filtering particulates by means of parallel non-communicating channels containing granular filter media in an amount less than the ca-

capacity of the channels so as to leave an air gap into which the filter media may be fluidized by reverse gas pressure for purposes of cleaning the filter media.

3,410,056

# METHOD OF CLEANING FILTER MEDIA

Thomas V. Reinauer, Summit, N.J., assignor to Slick Industrial Company, Summit, N.J., a corporation of Delaware

Continuation-in-part of application Ser. No. 345,996,

Feb. 19, 1964. This application Feb. 9, 1968, Ser.

No. 704,426

4 Claims. (Cl. 55—96)



A method for manipulating pulses of high energy gas to clean a non-rigid filter media in a dust collection system comprising repetitively releasing over a cross-sectional area of some part of the path taken by a normal filtering flow of gas and in a direction generally opposite to the direction of the normal filtering flow separated discrete series of gas pulses, each series being composed of not less than four and not more than eight pulses and a succeeding pulse is released before the gas movement effect of a preceding pulse has been dissipated so that during said series and until the effect of the last pulse of said series has been dissipated the condition as to gas movement in the system is different from the condition immediately preceding the initiation of said series and the energy of each pulse of each series being such as to cause a momentary flow of gas in said system in a direction opposite to the normal filtering flow direction of gas.

3,410,057

# METHOD FOR GAS-LIQUID DISENTRAINMENT OPERATIONS

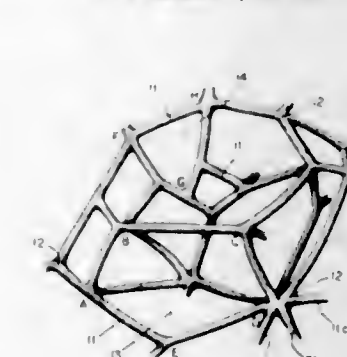
Bernard J. Lerner, 727 Orchard Hill Drive, Pittsburgh, Pa. 15238

Continuation-in-part of application Ser. No. 336,802,

Jan. 9, 1964. This application Sept. 28, 1966, Ser.

No. 592,956

5 Claims. (Cl. 55—97)



This invention relates to the use of a new packing having high efficiency for gas-liquid disentrainment operations, i.e., the removal of entrained liquid droplets from a moving gas stream. The new packing comprises randomly disposed, porous but noncapillary discrete bodies of relatively small size made up of interconnecting cells of varying size formed by a 3-dimensional network of interconnected strands and communicating with one another through pores of varying size, the average pore size being

controlled within the limits of from about 5 to 50 pores per lineal inch. A prime advantage of the new packing over prior disentrainment packings is its high resistance to flooding at high liquid loadings.

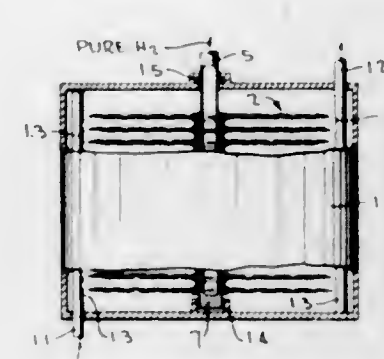
3,410,058

# HYDROGEN DIFFUSER-PURIFIER

Harry G. Oswin, Chauncey, N.Y., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts

Filed Sept. 8, 1966, Ser. No. 577,906

8 Claims. (Cl. 55—158)



An improved device for the separation of hydrogen from gaseous mixtures containing hydrogen is described. The apparatus comprises one or more elements made up of two circular nonporous hydrogen permeable membranes having a plurality of indentations extending from their center to their peripheries. The membranes are sealed together at their peripheries. The indentations are matched to be in phase or out of phase prior to sealing. The device provides a large surface area for the absorption of hydrogen gas and, moreover, accommodates the stress of the membranes caused by expansion due to absorption of the hydrogen gas. Extremely thin membranes are utilizable in the device.

3,410,059

# APPARATUS FOR TESTING THE RADIOACTIVITY OF AIR

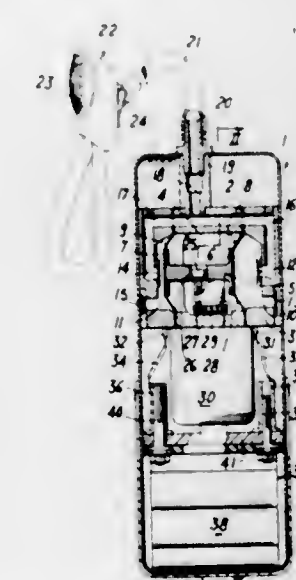
André Garnier, Saint Remy-les-Chevreuse, France, assignor to Societe Siersatom, Paris, France

Filed Feb. 20, 1967, Ser. No. 617,192

Claims priority, application France, Apr. 8, 1966,

57,146

5 Claims. (Cl. 55—270)



An apparatus for sampling aerosols, especially for sampling air which is contaminated by radioactive particles, and comprising a closed case connected to a filter

by means of a flexible hose, an electric motor and a separate supply battery, a piston coupled to said motor by means of a transmission unit whereby said piston is driven in reciprocating translational motion within a cylinder which is rigidly fixed to said case, two flexible membranes defining within said cylinder two cavities having a volume which is variable in inverse ratio, valves for the admission and discharge of contaminated air into and from each of said cavities and an opening for discharging air from said case.

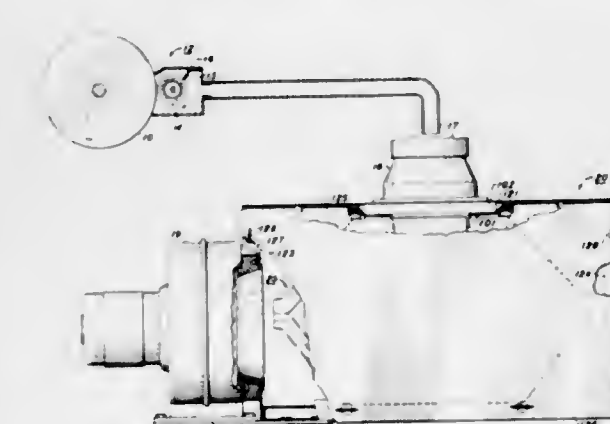
3,410,060

# XEROGRAPHIC FILTER APPARATUS

Richard F. Reilly, Webster, and John W. Wagner, Penfield, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Sept. 30, 1964, Ser. No. 400,490

4 Claims. (Cl. 55—376)



1. A filtering apparatus for filtering an aeriform fluid flowing through a fluid duct about which an outwardly extending wall member having a discharge inlet therein is secured with the discharge inlet in alignment with the duct, said apparatus including a pair of slides secured to the wall member each of said slides having a cam element thereon, said slides being positioned in substantially parallel relation to each other on opposite sides of the discharge inlet, a filter bag including a wall portion having an inlet opening therein and a flange formed with an aperture, said flange being connected to the outer side of said wall portion and positioned so that the aperture in said flange is axially aligned with said inlet opening in said wall portion, an apertured gasket secured to said flange with the aperture being substantially in alignment with said flange aperture, cam portions operatively associated with said flange and engageable with said cam elements on said slides such that the filter bag is positioned in operative relation with the discharge inlet when said cam portions are into engagement with said cam elements on said slides on the wall member whereby the flange will be cammed upwardly to form a dustproof seal between said filter bag and said wall member.

3,410,061

# FILTER BAG AND SUSPENSION THEREFOR

Jack P. Knight, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 9, 1966, Ser. No. 578,401

4 Claims. (Cl. 55—378)

A filter bag formed of woven fiber glass tubing is provided with a hanger and closure combination for its upper end comprising a metal ring member having a straight section along one side at least as long as the width of the flattened upper end section of the bag and means on the opposite side for hanging on a support, said flattened upper end section passing thru the ring and being backfolded over itself to enclose the straight section of the ring and provide a stitching area below said ring,



asbestos cloth being disposed in contact with the ring on the inside of the loop formed by the backfold to insulate the fiber glass in the loop from the ring, another layer of

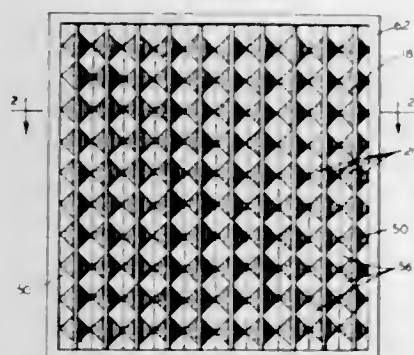


asbestos cloth being disposed outside of the backfolded stitching area, and at least one row of stitching being made thru the asbestos and fiber glass in the stitching area.

### 3,410,062 FILTER

Charles G. Hart, Syracuse, N.Y., assignor to Cambridge Filter Corporation, Syracuse, N.Y., a corporation of New York

Filed Sept. 12, 1966, Ser. No. 584,034  
7 Claims. (Cl. 55—497)



Air filter having a core construction composed of a plurality of like preformed self-sustaining panels of filter media arranged in a stack, with every other panel reversed, each panel having planar inlet and outlet marginal portions and a uniform series of V-sectioned corrugated portions extending from one marginal portion to the other, the V-corrugated portions having alternate apices lying in one of two spaced common planes, one of said planes being common to the inlet marginal portion, and the other being common to the outlet marginal portion, and said panels also having planar edge marginal portions lying in one of said planes, and apparatus for heat curing and forming the panels from media coated on one side with a heat curable binder, which becomes the downstream side.

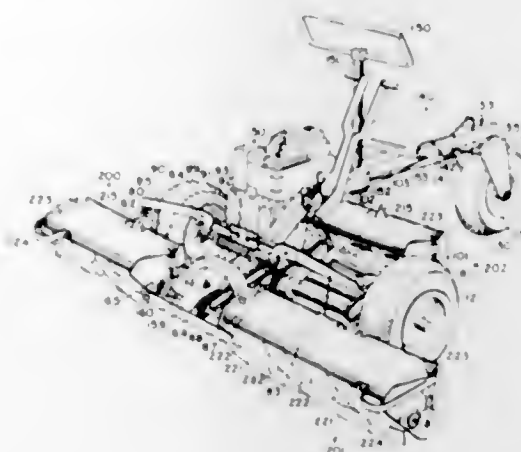
### 3,410,063 MOWING APPARATUS

Ralph W. Speiser, Minneapolis, Minn., assignor to Toro Manufacturing Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Aug. 19, 1964, Ser. No. 390,704  
21 Claims. (Cl. 56—7)

1. A grass cutting device comprising:  
a wheeled automotive frame,

a ground following elongate mowing apparatus attached to said frame in a transverse position, the weight thereof being approximately equally divided on either side of the longitudinal centerline of said frame,  
a pair of cantilever arms pivotally attached to said frame so as to extend transversely outwardly in opposite directions therefrom, in close proximity to said mowing apparatus,

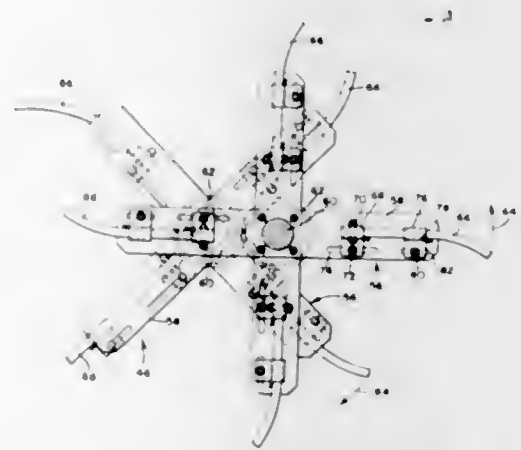


link means attached to the outer ends of said arms and to said mowing apparatus such that the weight of said mowing apparatus is approximately equally disposed on either lengthwise side of each point of attachment on said mowing apparatus, and  
common spring means for and attached to both of said cantilever arms so as to continuously urge the outer ends of said arms upwardly and thereby transfer a substantial portion of the weight of said mowing apparatus onto said frame.

### 3,410,064 ROTARY PLANT KNOCKER FOR A SEED HARVESTER

Charles D. Curtis, Silvis, and Darwin C. Bichel, East Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware

Filed Oct. 22, 1965, Ser. No. 502,227  
8 Claims. (Cl. 56—19)

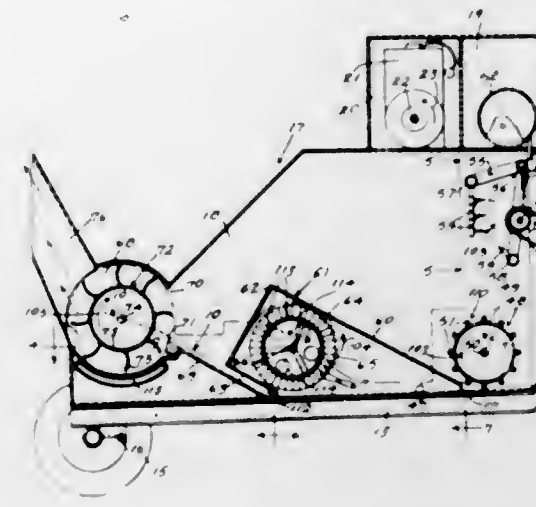


A self-propelled combine has a castor bean harvesting header which includes a pair of fore-and-aft passages through which the lower part of the castor bean plant passes as the combine advances. Adjacent each passage is a horizontal rotary knocker having four radially extending rubber flails which strike the base of the plants moving along the passage to shake the plant and thereby dislodge the ripe castor beans attached to the plant.

### 3,410,065 HARVESTER FOR ALFALFA AND OTHER FORAGE CROPS

John L. Martin, 1010 Pearl Ave.,  
Modesto, Calif. 95350

Filed Apr. 12, 1966, Ser. No. 542,039  
7 Claims. (Cl. 56—23)



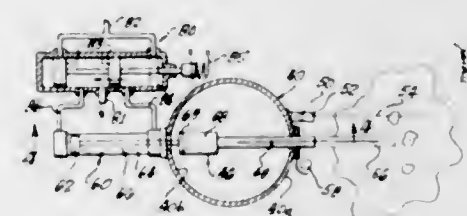
1. A machine for harvesting alfalfa and other forage crops comprising a mobile frame for movement through a field having a forage crop to be harvested, a casing supported by the frame, refrigerating means for quick freezing the crop material entering the casing for extracting moisture from the material, de-icing means in the casing for separating the ice from the material to effect a de-moisturizing thereof, and a chopper and blower means in the casing for chopping the de-moisturized material to a desired fineness and for expelling the chopped material from the machine.

### 3,410,066 RECOVERY OF COTTON AND SIMILAR PLANT PRODUCTS

William W. Boynton, La Canada, and James R. Campbell, Arcadia, Calif., assignors, by direct and mesne assignments, of fifty percent each to William W. Boynton and Leland McCarthy

Continuation-in-part of application Ser. No. 365,731,  
May 4, 1964. This application Apr. 28, 1967, Ser.  
No. 641,091

37 Claims. (Cl. 56—30)



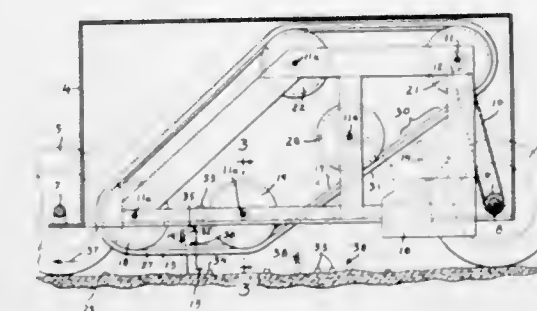
Plant products such as cotton are harvested pneumatically by moving past the plants a conveyance carrying a plurality of picking tubes. Suction flow is produced in each individual tube under automatic control only in response to detection of a plant product that is within the actual picking range of that particular tube. That is typically accomplished by providing each tube with a valve for controlling the production of inward suction flow, and with a sensor that is selectively responsive to the plant product when the latter is substantially within the effective picking range of the tube end.

### 3,410,067

#### ASPARAGUS HARVESTER

Bernard P. Fuchs, R.R. 3, Rochelle, Ill. 61068

Filed Aug. 4, 1965, Ser. No. 477,110  
13 Claims. (Cl. 56—327)



In this asparagus harvesting machine, the closely spaced endless belts employed have a horizontal flight at a predetermined elevation relative to the ground, depending on the length of spears to be cut, as these belts are designed to take hold on opposite sides of the spears that are long enough to be cut, and, after they are cut off at ground level, convey them upwardly to a drop-off point into a receptacle disposed therebelow. The soft rubber gripping portions of the belts that engage the spears do not harm them but hold them securely enough to prevent their dropping off. In one design, the belts operate in pairs and the guide pulleys for the belts are spaced farther apart at the entrance points and exit points than therebetween where the spears are taken hold of for the cutting and conveying. In a second design, three belts are used in each set, and the belts are parallel throughout, the middle belt of each set being shorter than the other two belts on opposite sides of it and having its front end spaced rearwardly relative to the others for the entrance, and having its rear end spaced forwardly relative to the others for the exit. In both designs the belts travel at the ground speed of the machine and are driven by a power take-off from an axle turning with the supporting wheels.

### 3,410,068

#### FRUIT PICKER

Kenneth H. Recker, Winter Haven, Fla., assignor to Heli-Pic, Inc., Polk County, Fla., a corporation of Florida

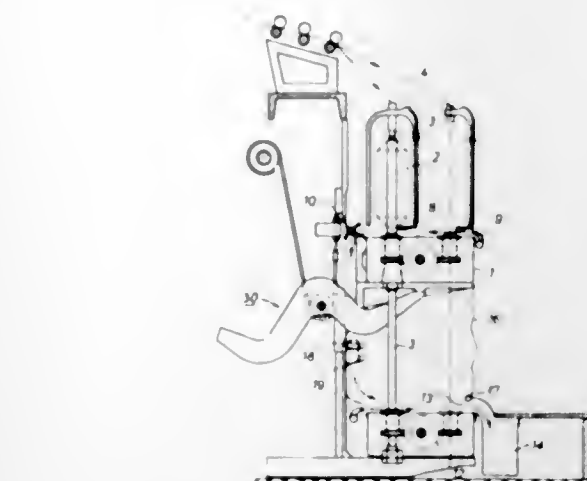
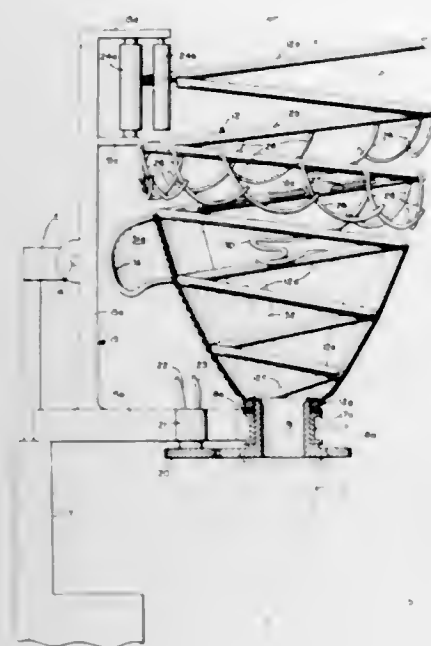
Filed July 16, 1965, Ser. No. 472,414  
19 Claims. (Cl. 56—332)

A fruit picker is disclosed comprising a relatively rigid rod in the form of a helix which is supported on a vehicle with its axis upright, means being provided for rotating the helix about its axis and for moving the helix vertically so that the helix may be threaded through the outer edge portions of fruit trees. The maximum diameter of the helix at the open end portion is such as to permit fruit bearing end sections of tree branches to be contained inside the helix. The convolutions of the helix at the open end are spaced apart so that fruit bearing branches of trees are received therebetween as the helix is threaded through the outer end portions of tree branches. Fruit engaging members are attached to the convolutions of the helix, some of which are arranged to extend towards the next convolution and others to extend towards the central portion of the helix so as to engage the fruit on the tree branches extending between convolutions and strip the fruit from the branches as the helix rotates. The fruit stripped from the branches falls into the lower end of the helix and is transferred therefrom to a bin or the like. A branch engaging member projects outwardly from a side of the helix and urges branches extending into the helix to be deflected from the helix caus-



ing the fruit on these branches to be stripped by the fruit engaging members. The fruit engaging members are yieldable to permit tree branches to move between the con-

withdrawn from the carriage rear across the spindle gear trough to a vacuum pressure area. The positive streams



of air eliminate fly in the regions affected by the air currents created by the rotating spindles.

volutions. The helix has an open end of relatively large diameter and the diameter decreases towards the opposite end.

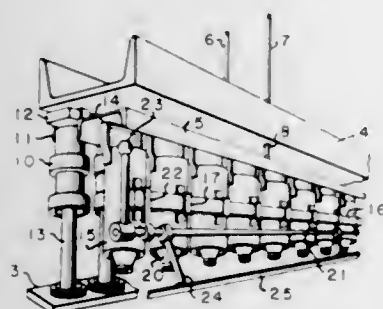
3,410,069

#### YARN END CUTTING DEVICE IN AUTOMATIC BOBBIN CHANGING APPARATUS FOR TEXTILE MACHINERY

Shoto Tai and Kenichi Mihara, Shimaneken, Japan, assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware

Filed Aug. 29, 1966, Ser. No. 575,808  
Claims priority, application Japan, Feb. 3, 1966, 41/9,336

5 Claims. (Cl. 57—52)



A yarn end cutting bar pivotally mounted on the full bobbin grasper of an automatic bobbin doffing and donning apparatus to cut the yarn end between the full bobbin grasper and the spindle after the empty bobbin has been placed on the spindle.

3,410,070

#### PNEUMATIC FLYER CLEANING DEVICE

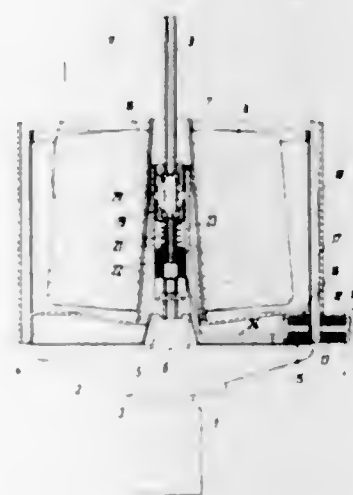
Samuel Denis, Winterthur, Switzerland, assignor to Maschinenfabrik Rieter A.G., Winterthur, Switzerland, a corporation of Switzerland

Filed Apr. 24, 1967, Ser. No. 633,029  
Claims priority, application Switzerland, Apr. 25, 1966, 6,073/66

17 Claims. (Cl. 57—56)

Streams of air are positively blown angularly across the upper surface of the bobbin carriage to the rear and

A method and apparatus for electrically operating elements, such as yarn brakes, yarn cutting devices, wind-off accessories and feed mechanisms, mounted within or on a yarn package carrier comprises inductively transmitting the necessary AC electrical voltage across an air gap needed for ballooning yarn thereby permitting the external control of the above-mentioned elements. The primary of a transformer is mounted on a balloon limiter or on a separator and opposite this primary, in the yarn package carrier, a corresponding secondary of the transformer is installed with the primary and secondary components of the transformer being in reciprocal relation with one another across the air gap for the ballooning yarn.



3,410,072

#### DOUBLE TWISTING MACHINE

Klaus Nimitz and Gustav Franzen, Krefeld, Germany, assignors to Palitex Project-Company GmbH, Krefeld, Germany

Filed May 15, 1967, Ser. No. 638,507  
Claims priority, application Germany, May 16, 1966, P 39,453  
15 Claims. (Cl. 57—58.83)



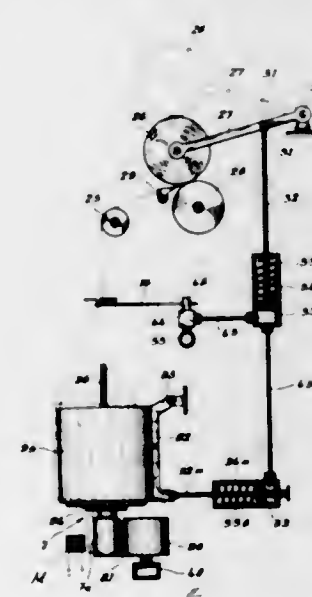
The present invention relates to a two-for-one twisting machine with a plurality of twisting spindles respectively having thread balloon forming means associated therewith, which is characterized primarily by annular singeing means respectively associated with said spindles and arranged relative to said thread balloon forming means in such a way as to be located in the vicinity of the zenith area of the thread balloon being formed by said thread balloon forming means.

3,410,073

#### TWISTING AND SPINNING SPINDLE WITH SPINDLE BRAKE

Kurt Briskin, Monchen-Gladbach, and Gustav Franzen, Neersen, near Krefeld, Germany, assignors to Palitex Project-Company G.m.b.H., Krefeld, Germany

Filed Nov. 29, 1965, Ser. No. 510,288  
Claims priority, application Germany, Dec. 4, 1964, P 35,616  
13 Claims. (Cl. 57—89)



The present invention relates to a spinning and twisting spindle equipped with an individual spindle brake and thread guiding means.

The invention is characterized primarily in that movement of the thread guiding means out of its normal position of operation automatically causes the spindle brake to become effective, and inversely, movement of

said thread guiding means from its ineffective toward its effective position automatically returns the spindle brake to its ineffective position.

3,410,074

#### DOUBLING OR DOUBLE-TWIST SPINDLE MACHINE

Klaus Nimitz and Willy Helmes, Krefeld, Germany, assignors to Palitex Project-Company G.m.b.H., Krefeld, Germany, a German company

Filed Mar. 6, 1967, Ser. No. 620,913  
Claims priority, application Germany, Mar. 10, 1966, P 38,952  
7 Claims. (Cl. 57—108)



The invention relates to a doubling or double-twist spindle machine provided with separators and balloon limiters, the balloon limiters being comprised in unit assemblies, adapted to be fitted by simply placing them over the spindles and separators.

3,410,075

#### SPINDLE BEARING UNIT

Hans Stahlecker, Sussen, Wurttemberg, Germany, assignor to Spindelfabrik Sussen, Schurr, Stahlecker & Grill G.m.b.H., Sussen, Wurttemberg, Germany

Filed Jan. 18, 1966, Ser. No. 521,258  
Claims priority, application Germany, Jan. 28, 1965, S 95,214

11 Claims. (Cl. 57—135)



A spindle bearing unit for a spindle of a spinning or twisting machine which is provided with an antifriction neck bearing which is surrounded by a damping sleeve consisting of an elastic material, and with a footstep bearing for guiding the lower end of the spindle in radial directions. The bearings are separate from each other with the neck bearing being axially secured to and for removal with the spindle. A locking ring is screwed to the spindle housing for locking the neck bearing and spindle axially in one position and for operation from below the whirl for movement into a second position that releases the spindle and neck bearing for removal from above.



3,410,076

**VOLUMIZED YARN OF LARGE DENIER**

Richard F. Dyer, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Continuation-in-part of application Ser. No. 544,886, Nov. 4, 1955. This application July 30, 1958, Ser. No. 752,067

16 Claims. (Cl. 57—140)



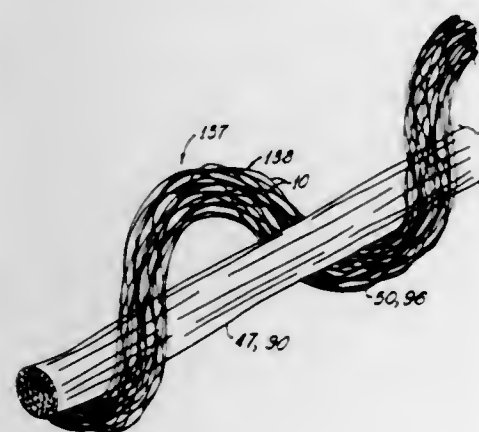
2. As a new product, substantially untwisted, volumized yarn comprising a separate core yarn and separate excess yarn interwoven back and forth in said core yarn, said excess yarn at a number of points extending through said core yarn and forming a multitude of small loops on the outside of said core yarn, said finished yarn having an increase of denier of greater than 100% over the combined denier of the untreated core and excess yarn.

3,410,077

**BULKY YARN**

Alfred Marzocchi, Cumberland and Gustav E. Benson, Greenville, R.I., and Roger W. Roth, Granville, Ohio, assignors to Owens-Corning Fiberglass Corporation, a corporation of Delaware

Filed Dec. 19, 1962, Ser. No. 245,880  
9 Claims. (Cl. 57—144)



1. In a looped yarn, a carrier strand of generally smooth axial alignment and direction and orientation, a looped strand having consecutive loops curled around said carrier strand along the length thereof, and the fibers of said looped strand being filamentized at least in the bight portions of the loops.

3,410,078

**THREAD**

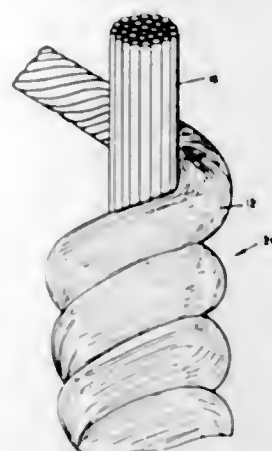
Arnold Freedman, Allentown, Pa., and Herbert I. Greenblatt, Woodmere, N.Y., assignors to Synthetic Thread Company, Inc., Bethlehem, Pa., a corporation of New York

Filed Apr. 27, 1964, Ser. No. 362,769

11 Claims. (Cl. 57—144)

A sewing thread having an inelastic, continuous core which has no twist wrapped with a staple fiber thread.

The staple fiber thread is wrapped about the core in the direction opposite to the direction of twist in the staple



fiber thread in its initial as delivered condition. Also, two of such wrapped yarns twisted together.

3,410,079

**METHOD OF CHANGING SPINDLES IN A DOUBLE TWIST SPINDLE FRAME**

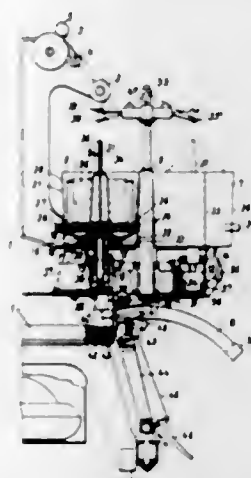
Gustav Franzen, Neersen, near Krefeld, Germany, assignor to Palltex Project-Company G.m.b.H., Krefeld, Germany

Original application Feb. 12, 1965, Ser. No. 432,365, now Patent No. 3,360,915, dated Jan. 2, 1968. Divided and this application Feb. 28, 1967, Ser. No. 634,787

Claims priority, application Germany, Feb. 17, 1964,

N 24,455

8 Claims. (Cl. 57—156)



The method involves replacing the entire spindle upon which the package is exhausted or which has been affected by a yarn breakage by a completely prepared stand-by spindle already provided with a fresh winding-off package, while the double twist frame is in operation. At the same time as the spindle is changed the winding-on package and its holder may also be replaced by another. The reference in this context to replacement of the "entire" spindle is intended to mean that the spindle itself together with its bearings and the whorl as well as the protecting cup and the balloon limiter are thus replaced by another such spindle.

3,410,080

**PROCESS FOR PRODUCING ELASTIC CORE YARNS**

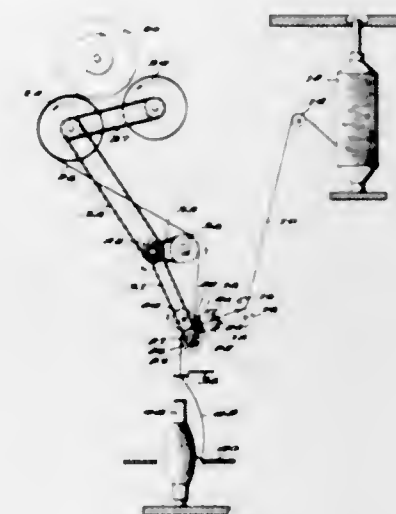
Edwin L. Lord, Jr., and Albert Stewart Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Aug. 7, 1963, Ser. No. 300,552

6 Claims. (Cl. 57—163)

1. In a method for producing a composite elastic yarn comprising the steps of tensioning an elastic core to substantially increase its length, drafting a roving of

staple fibers, and thereafter gathering and twisting the elastic core and the roving together whereby said elastic core is covered by said roving; the improvement which comprises passing the tensioned core and the drafted roving into the nip of a pair of forwarding rolls in a



side-by-side relationship for direct advancement to a windup, said core being displaced from the center of said roving in a direction opposite to the direction of twist, the distance between said core and said roving being not greater than about one-eighth inch.

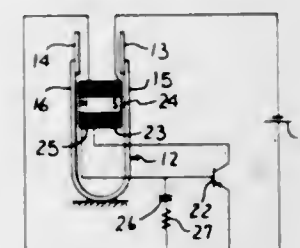
3,410,081

**DRIVE SYSTEM FOR TUNING FORK TIMEPIECE**

Phillippe G. Kueffer, La Salle, Ill., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 4, 1965, Ser. No. 492,793

8 Claims. (Cl. 58—23)



A timepiece movement including a tuning fork, an electronic circuit for applying driving impulses to the tuning fork in synchronism with the vibratory motion thereof, and a transducer for converting the vibratory motion of the tuning fork into rotary motion independently of the amplitude of the tuning fork vibration. The electronic control circuit includes a drive coil magnetically coupled to the tuning fork, a direct voltage source connected to the drive coil for energizing the same, a transistor for controlling the energization of the drive coil, a control coil magnetically coupled to the tuning fork and connected to the transistor for turning the transistor on and off, and a capacitor connected to the control coil and the transistor for applying an oscillatory energizing signal to the drive coil to start the vibratory motion of the tuning fork. The transistor circuit is designed to operate the transistor in the saturated mode so that the driving impulses are applied to the tuning fork independently of variations in the amplitude of the tuning fork motion. The transducer for converting the oscillatory motion of the tuning fork into rotary motion magnetically couples the tines of the tuning fork to the rotary indicating mechanism of the timepiece so as to be independent of the amplitude of the tuning fork vibrations.

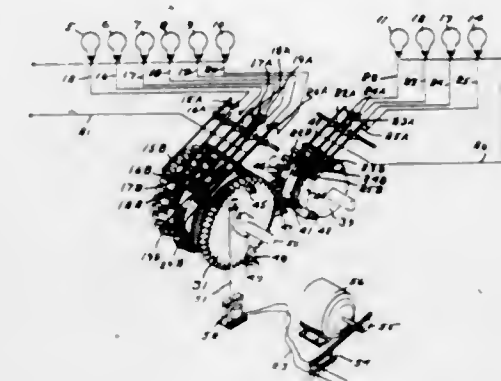
3,410,082

**TIME INDICATING DEVICES**

Olive M. Taylor, 42 Perkins St., Charlestown, Mass. 02129, and Phyllis M. Perry, 5 Caldwell St., North Weymouth, Mass. 02191

Filed Feb. 7, 1966, Ser. No. 525,713

12 Claims. (Cl. 58—50)



1. In a device for indicating time by electric lamps, a series of leads each including a switch and an electric lamp, a rotatable member disposed relative to said switches so that each switch is in engagement therewith in a predetermined annular path, the paths being axially spaced, and means to turn said member at a predetermined rate, said rotatable member including switch-actuating cams in said paths operable to cause the switches to effect the closing of the leads for intervals and, combinations of intervals to indicate time progression through a predetermined time unit, said intervals and combination of intervals being numerically equal to the time progression which said lamp or combination of lamps associated therewith represent.

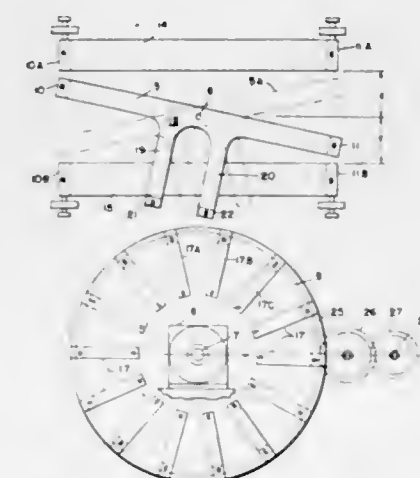
3,410,083

**TIMING MECHANISM**

Abraham L. Korr, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of the Army

Filed Feb. 4, 1966, Ser. No. 525,813

4 Claims. (Cl. 58—116)



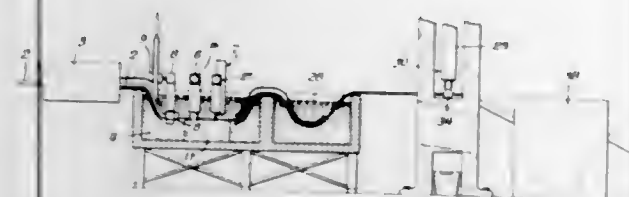
A timing escapement mechanism is provided with a pivoted escapement lever in the form of a long flat bar magnet mounted to oscillate between two other spaced parallel bar magnets with magnetic repulsion action. To the lever is attached a U-shaped magnetic element or pallet having two poles extending at a right angle to one side and centrally of the lever to oscillate therewith. An escapement wheel is provided in the form of a spring-driven rotary disc carrying a plurality of radial bar magnets on one face and equally spaced at the periphery in alternate North and South relation to move past the pallet as the disc rotates and effect a step-by-step motion thereof.



3,410,084

**METHOD OF FORMING CHAIN LINK PLATES**  
Robert L. Cain, West Lafayette, Ind., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey

Filed Apr. 25, 1966, Ser. No. 545,121  
5 Claims. (Cl. 59—8)

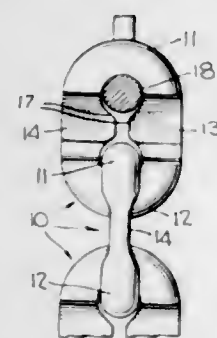


A method of progressively forming wire stock into chain link plates by forming at a first station, opposed locating grooves to divide the wire into sections, and wherein each section is further formed with narrow medial portions. At a second station the sections are flattened and circular cavities are formed therein. Work at the first and second stations is carried out while in a molten lead bath. The sections are quenched in oil, and at a third station the circular cavities are punched to form pin holes. The sections are separated at a fourth station into individual link plates.

3,410,085

CHAIN LINK

Chinubhai D. Sheth, Philadelphia, Pa., assignor to Eaton Yale & Towne Inc., a corporation of Ohio  
Filed May 25, 1964, Ser. No. 369,750  
4 Claims. (Cl. 59—84)



Each side portion of an open chain link is forged to a thinner and deeper section that projects into the link opening, but not outwardly from the link periphery. The side portions more effectively accept the bending stresses incidental to load, strengthening the link, yet the inwardly projecting sections are somewhat spaced so that they cannot transfer stress to one another. Thereby the link achieves advantages of a stud link without a fault of a stud link.

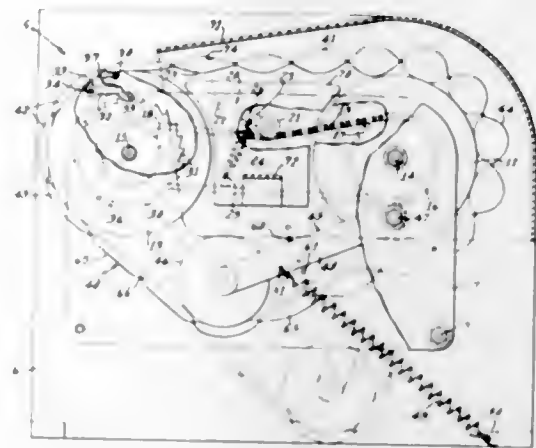
3,410,086

ENGINE

Lawrence E. Bodkin, 1833 Ryar Road,  
Jacksonville, Fla. 32216  
Filed Feb. 8, 1967, Ser. No. 614,727  
22 Claims. (Cl. 60—23)

An engine having a pair of elongated rotatable spools with a multi-cellular, liquid-filled, extensible and contractible, continuous belt therearound which is energized by a heat source to contract, at any instance during operation of the engine, one spanning segment between the spools tending to pull the belt from around the spools and to urge the spools in opposing directions. A connection means between the spools connects the spools to be driven in the same direction, but with one spool having a greater radial velocity than the other spool, thereby permitting contraction of the spanning segment with resultant rotation of the spools, and movement of the

belt in the direction of the rotation of the spools, the amount of belt being pulled from around one spool in



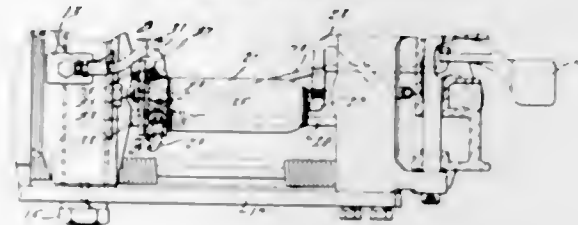
its extended state being equal to the amount of belt picked up by the other spool in the contracted state.

3,410,087

HYDRAULIC JACK

Lyle L. Arnes, Racine, Wis., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware

Filed Mar. 17, 1966, Ser. No. 535,123  
9 Claims. (Cl. 60—51)

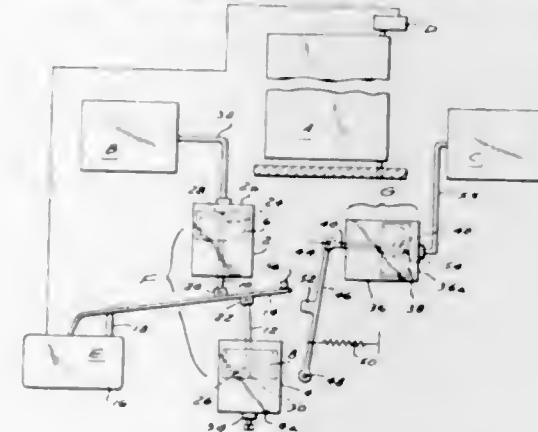


In a hydraulic force applying device a pressure air mechanism is used to move the hydraulic mechanism to a load engaging position, to pressurize the hydraulic fluid, and to remove water accumulating in the hydraulic mechanism.

3,410,088

FLUID CONTROL SYSTEM

Arthur M. Cohen, Westport, and James P. Ettinger, Ridgefield, Conn., assignors to Electric Regulator Corporation, Norwalk, Conn., a corporation of New York  
Filed June 6, 1966, Ser. No. 555,449  
33 Claims. (Cl. 60—54.5)



A system is provided for controlling the opening and closing of doors in response to pressure exerted on mats provided on both sides of the doors, which system is actuated entirely by fluid pressure. Pressure exerted on the entry mat causes a first part to move to cause the door to open, and pressure exerted on the exit mat operatively acts upon that part so as to prevent its further operative movement, thereby to prevent the door from opening when it is closed or closing when it is opened as long as someone is

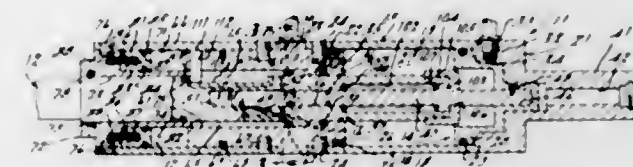
standing on the exit mat. The pressure-sensitive controlling action exerted by the exit mat is operative either mechanically on the part moved by the entry mat or in a fluid-control fashion on the fluid system which moves that first part. Means are provided for enabling any one of a plurality of entry mats or exit mats to control the operation of the system, and the fluid pressure system is designed to minimize the effects of ambient temperature change or sudden release of pressure from the mats.

3,410,089

FLUID OPERATED DEVICE

Joseph D. Snitgen, 9656 Artesian,  
Detroit, Mich. 48228

Filed Mar. 8, 1967, Ser. No. 621,511  
10 Claims. (Cl. 60—54.5)



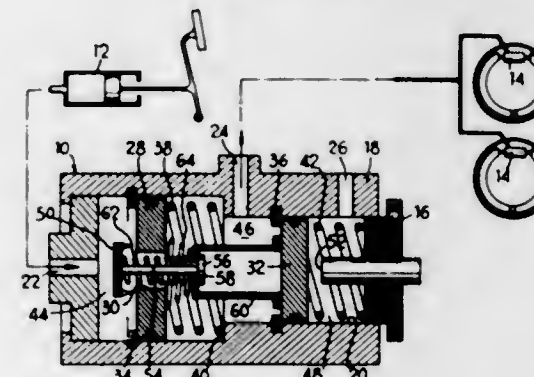
This application discloses a fluid operated device for applying force to a workpiece through a force applying member that is first moved at a relatively rapid rate of speed toward the workpiece and which it is capable of applying a relatively low force against the workpiece, and which subsequently and automatically upon encountering the workpiece moves at a substantially slower rate but applies a substantially higher force. The device is comprised of a first fluid motor having a piston that is actuated by air pressure. This piston is connected to a substantially smaller piston of a hydraulic pump to displace fluid from a pumping chamber into a second fluid motor chamber for moving a piston of a second fluid motor that is connected to the force applying member and which has a substantially greater area than the pump piston. A spring biased connection is provided between the pump piston and the piston of the second fluid motor for simultaneous movement of the piston of the first fluid motor, the piston of the fluid pump and the piston of the second fluid motor upon the initial introduction of the air pressure to the first fluid motor. This effects the rapid movement of the force applying means to a first position. When this first position is reached and the workpiece is engaged, the spring yields causing the displacement of fluid from the fluid pump to the second fluid motor to effect a substantial force amplification.

3,410,090

HYDRAULIC PRESSURE MODIFYING DEVICE

René Thirion, Paris, France, assignor to  
Societe Anonyme D.B.A.

Filed July 21, 1967, Ser. No. 655,101  
Claims priority, application France, Aug. 4, 1966,  
72,143; June 29, 1967, 112,412  
7 Claims. (Cl. 60—54.5)



A hydraulic pressure modifying device having a valve seat movably arranged and resiliently biased within a valve

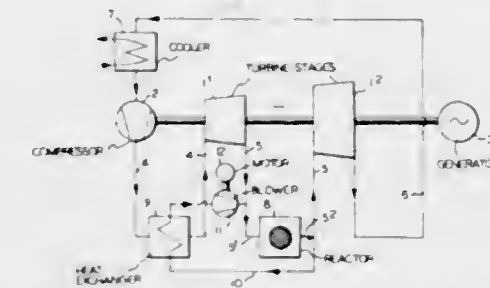
housing to cooperate with a valve control member between a hydraulic pressure source and wheel cylinders of a brake system to reduce the hydraulic pressure to one set of wheel cylinders when the hydraulic control pressure from the master cylinder is above a predetermined value.

3,410,091

NUCLEAR THERMAL POWER PLANT

Hansulrich Frutschi, Zurich, Switzerland, assignor to Escher Wyss Aktiengesellschaft, Zurich, Switzerland, a corporation of Switzerland

Filed Aug. 16, 1965, Ser. No. 479,752  
Claims priority, application Switzerland, Oct. 7, 1964,  
13,018/64; Nov. 5, 1964, 14,317/64  
5 Claims. (Cl. 60—59)



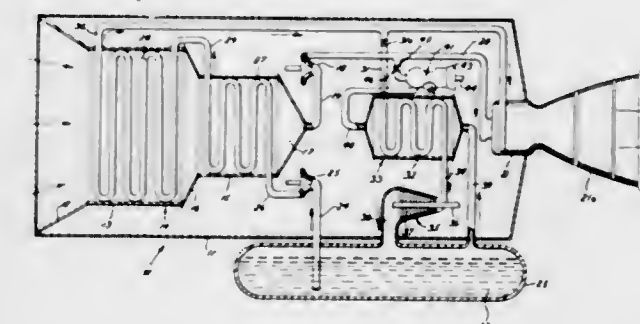
Closed circuit gas turbine power plants utilizing heat generated in a nuclear reactor. Partial transfer of heat from the reactor to the gaseous working medium is effected by passing partially or fully expanded working medium through the reactor. Additional heat transfer is effected by passing compressed or partially expanded working medium through one path of a surface heat exchanger which is located outside the reactor and which is provided with a second path through which working medium leaving the reactor is diverted back to the reactor inlet.

3,410,092

RELIEQUEFACTION CYCLE FOR LIQUID AIR CYCLE ENGINE

Allen E. Goldstein, Van Nuys, Calif., assignor to The Marquardt Corporation, Van Nuys, Calif., a corporation of California

Filed July 17, 1961, Ser. No. 124,680  
7 Claims. (Cl. 60—204)



7. The method of reliquefying a portion of the hydrogen gas present in a liquid air cycle comprising the steps of removing liquid hydrogen from a low pressure storage tank and increasing its pressure, passing the high pressure hydrogen in heat exchange relationship with incoming air in order to produce liquid air, connecting the removed hydrogen discharged from the heat exchange relationship and the liquid air with a combustion chamber for combustion therein, withdrawing a portion of the hydrogen gas prior to entering said combustion chamber to reduce the fuel-air ratio in the combustion chamber to a desired value below that in the heat exchanger, passing the withdrawn gas in heat exchange relationship with cold vapor removed from said tank, and thereafter expanding the cooled withdrawn hydrogen gas to the



pressure of said tank to produce liquid hydrogen to be added to the tank and cold vapor for use in the heat exchange relationship with the withdrawn hydrogen.

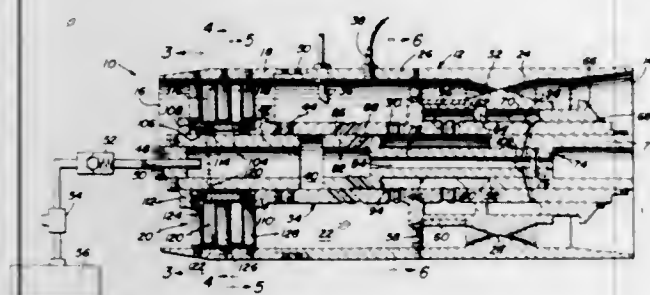
3,410,093

# REACTION THRUST ENGINE WITH FLUID OPERATED COMPRESSOR

John Nazareth Ghogasian, 666 W. 188th St., New York, N.Y. 10040

Continuation-in-part of application Ser. No. 577,635, Sept. 7, 1966. This application May 26, 1967, Ser. No. 648,524

34 Claims. (Cl. 60—269)



A reaction thrust producing engine having an intake compressor driven by reaction jets of pressurized fluid diverted from the combustion products rearwardly discharged through a main discharge nozzle to produce forward thrust. The engine is started by a supply of pressurized fluid to the compressor from an external source automatically cut off and replaced by combustion products when sufficient pressure has been developed in the combustion chamber.

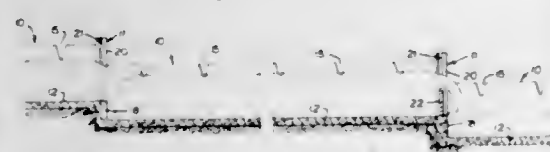
3,410,094

# DISTRIBUTION LATERAL FOR AN IRRIGATION DITCH

Ned R. Shelley, Box 747, Riverton, Wyo. 82501

Filed June 17, 1966, Ser. No. 558,505

5 Claims. (Cl. 61—12)



A distribution lateral for an irrigation ditch to distribute water from the ditch into a field and directly into field furrows spaced alongside the ditch. The lateral, a concrete ditch structure, preferably trapezoidal in cross section, is built as a tandem sequence of carefully leveled reaches or sections of a selected length. A gate controlled drop structure is provided at the end of each section. The freeboard of each section, that is the portion of the ditch sides above the water level therein at maximum flow, is notched by a regular spacing of uniform, narrow notches, to permit water to flow therefrom and onto the field furrows.

3,410,095

# METHOD OF MAKING WATER-SEALING PILE BARRIER AROUND AN EXCAVATION CUT-OFF AREA

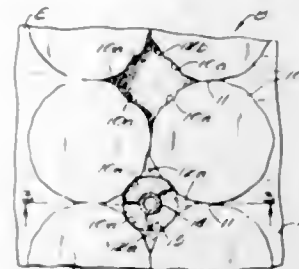
Lee A. Turzillo, 2078 Glengary Road, Akron, Ohio 44313, and Norman L. Liver, 11720 Edgewater Drive, Cleveland, Ohio 44107

Filed Apr. 5, 1965, Ser. No. 445,645

9 Claims. (Cl. 61—35)

Concrete barrier made by forming series of concrete piles in earth situs to have earth columns contained by convex surfaces of adjacent piles touching along vertical

areas of line contact. Flushing water pumped into cavities provided in earth columns removes retained earth from bights between contacting piles. Flushed cavities filled



with self-hardening fluid hydraulic cement, which hardens in fluid-sealing contact with resultant bared convex surfaces of piles, including areas within the bights between the same.

3,410,096

# STREAMLINED RISER PIPE

Frank J. Schuh, Dallas, Tex., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Dec. 7, 1966, Ser. No. 599,798

6 Claims. (Cl. 61—46)

A riser pipe is shown which incorporates an assembly for minimizing current-induced transverse vibrations and drag forces when critically aligned with respect to the current. The assembly is comprised of first and second streamlined sections which are attached to opposite sides of the riser and run lengthwise therewith. One of the streamlined sections has an externally channeled portion for mounting a choke line; optionally, the other streamlined section can be channeled to receive a hose bundle.

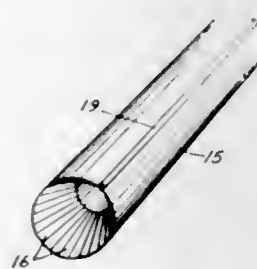
3,410,097

# PILE CAPPING MECHANISM

Edward M. Young, 90 Gregory Ave., West Orange, N.J. 07052

Filed Mar. 21, 1966, Ser. No. 536,022

7 Claims. (Cl. 61—53)



A pile capping mechanism for rehabilitating the tops of old piles and also to provide concrete caps for new

piles, the mechanism having a bottom member or portion of integral overlapping flexible fingers directed inwardly and angularly upwardly and of such length as to provide a central opening smaller than the pile and a casing extending from the bottom. The mechanism may provide U shaped side edges for the casing which are interengaged by contracting the casing and including internal braces when assembled to prevent inadvertent contraction of the casing and disengagement of the edges.

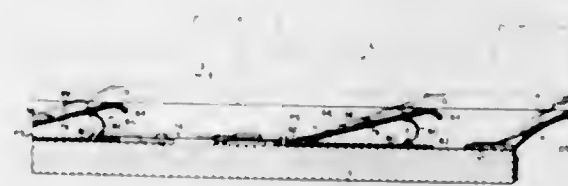
3,410,098

# TAIL SECTION SEALS FOR SHIELD TUNNELING MACHINES

Douglas F. Winberg, Hibbing, Minn., assignor to James S. Robbins and Associates, Inc., Seattle, Wash., a corporation of Washington

Filed Dec. 1, 1964, Ser. No. 415,132

17 Claims. (Cl. 61—85)



A tunneling shield seal located between the tail section of the shield and a radially inwardly positioned portion of the tunnel lining. A segmented spring steel ring secured at its forward end to the tail section and curving inwardly therefrom and making contact with the tunnel lining. The free portion of such spring is slotted axially of the tunnel to form a plurality of circumferentially spaced apart fingers, the resiliency of which maintains them in contact with the tunnel lining. An air bladder or solid foam body fills the space between such ring and the tail section. A plurality of forwardly directed tongues separated by cut-out areas. Mounting means comprising sockets for receiving the tongues, formed by a circumferential ring bridging across circumferentially spaced apart riser blocks, and wedges insertable between the tongues and the inner surface of the shield, and lockable in place by set screws or the like.

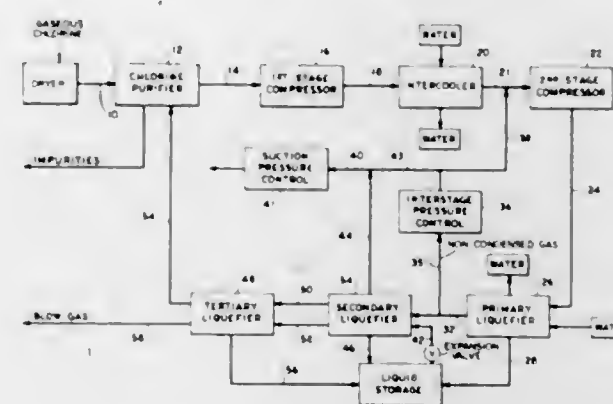
3,410,099

# CHLORINE LIQUEFACTION

Thomas Hooker, Youngstown, and John E. Currey, Niagara, Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed Apr. 7, 1965, Ser. No. 446,332

3 Claims. (Cl. 62—9)



Gaseous chlorine is initially cooled and impurities are removed therefrom. The chlorine is compressed in plural stages and a major portion is liquefied through heat exchange with water. A portion of the remaining gaseous chlorine is passed through interstage pressure control to a further compression stage while another portion of

gaseous chlorine is liquefied by heat exchange with vaporizing liquid chlorine. The vaporized liquid chlorine passes to compressor suction pressure control while the unvaporized portion of liquid chlorine is used in a further heat exchange step to condense the remaining chlorine gas.

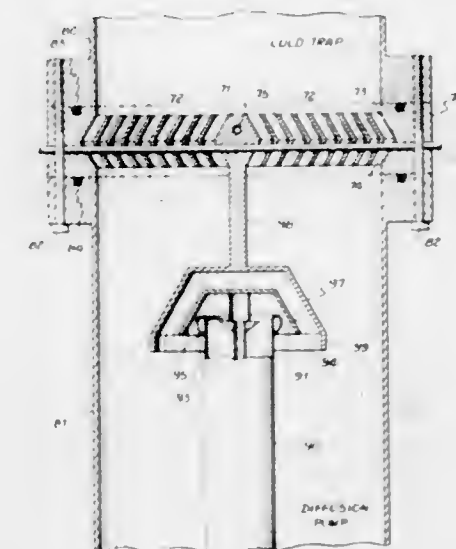
3,410,100

# HIGH-VACUUM BAFFLE USING COOLED, CHEVRON-SHAPED MEMBERS

John G. Carlson, Boulder, Colo., assignor to the United States of America as represented by the Secretary of Commerce

Filed Mar. 18, 1965, Ser. No. 440,966

8 Claims. (Cl. 62—55.5)



This describes a high-vacuum baffle formed by a chevron-shaped solid member, at least one chevron-shaped annular member and a hollow body having a chevron-shaped inner surface. The various elements of the baffle are manufactured separately. The solid and annular members are then removably positioned in the hollow body by means of hollow elements to provide an optically dense path through the baffle. The hollow elements are interconnected in such a way that a coolant may be passed through the elements to cool the baffle.

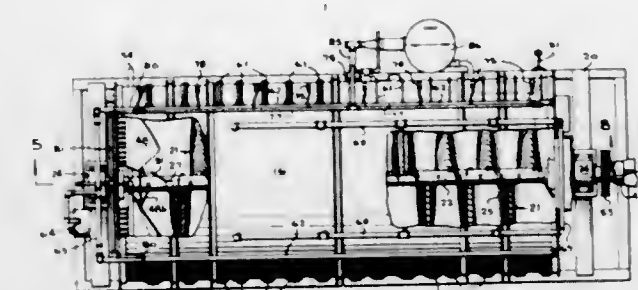
3,410,101

# POULTRY CHILLING METHOD AND APPARATUS

William F. Morris, Jr., 801 Fayetteville St., Raleigh, N.C. 27601

Filed Nov. 10, 1966, Ser. No. 593,451

18 Claims. (Cl. 62—63)



The disclosure relates to an apparatus for chilling poultry and comprises a stationary elongated cylindrical tank for holding a supply of chilling liquid. The tank has a screw type conveyor rotatably supported on either end of the tank for advancing the poultry from a feed end to a discharge end. The screw conveyor is made up of an open network of refrigerant conducting tubes defining screw flights and a hollow center shaft providing refrigeration to the open network. On the discharge end of the conveyor a lift type device integral with the conveyor is

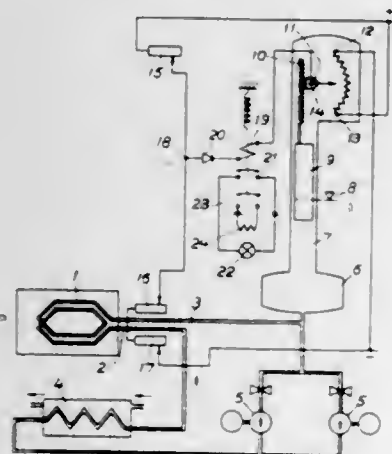


provided to aid in discharge of the poultry. Air agitation is provided along the entire length of the tank to enhance the chilling rate and spray nozzle means are provided within the tank for periodic connection to a sanitizing liquid supply.

### 3,410,102 LEAK INDICATOR FOR LIQUID-COOLED MACHINES

Olav Karsten, Vasteras, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed Mar. 28, 1966, Ser. No. 538,027  
Claims priority, application Sweden, Apr. 6, 1965, 4,402/65  
2 Claims. (Cl. 62—129)

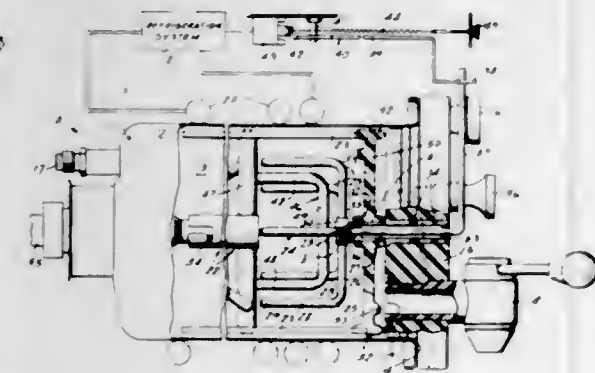


Leak indicator for a closed cooling circuit intended for momentary indication of a small leakage, comprising temperature-independent level indicator means and a temperature sensitive transducer arranged in heat-exchange relation with the coolant. Electrical output signals from the transducer and the level indicator exert opposite influence on a signal means in such a way that the signal means gives no signal in response to alterations due to changing temperature.

### 3,410,103 CONTROL FOR A SLUSH-ICE BEVERAGE MACHINE

Richard T. Cornelius, Minneapolis, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota

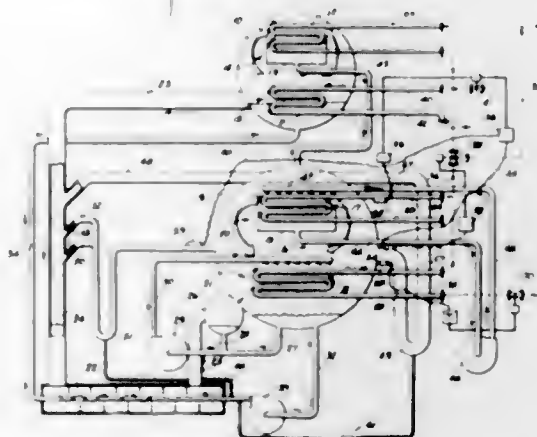
Filed Nov. 9, 1967, Ser. No. 681,718  
11 Claims. (Cl. 62—136)



The freezing chamber of a slush-ice beverage machine has a rotatably driven scraper assembly, at one axial end of which is an independently supported claw-like torque sensing element connected to refrigeration controls. Means on the scraper assembly rotate within such clawshape, scraper blades rotate about such claw-shape, and a spinner rotates between the claw-shape and the end of the freezing chamber independently of the torque sensing element. The spinner rotates past the inlet of a dispensing valve to keep it clean.

### 3,410,104 ABSORPTION REFRIGERATING SYSTEMS

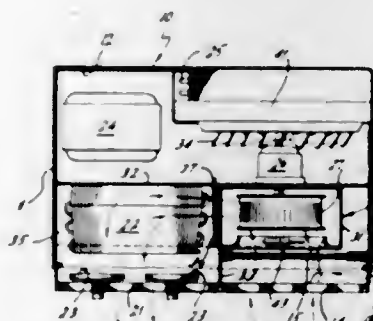
Neil E. Hopkins, Spring Garden Township, York County, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois  
Continuation of application Ser. No. 169,969, Jan. 30, 1962. This application Dec. 24, 1964, Ser. No. 442,562  
18 Claims. (Cl. 62—148)



An absorption refrigeration machine which includes a bypass line around the solution heat exchanger to automatically divert solution flowing from the generator directly to the absorber in the event crystallization blocks flow through the solution heat exchanger. Suitable controls are also provided which sense the flow of solution passing through the bypass line to automatically initiate corrective action.

### 3,410,105 AIR CONDITIONER

Kenneth E. Marsteller, Willow Grove, Pa., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware  
Filed Feb. 15, 1967, Ser. No. 616,310  
5 Claims. (Cl. 62—180)



An air conditioner having a temperature control system which, in addition to cycling the compressor between predetermined temperature limits, modulates air flow passing over the evaporator and into the room in accordance with room temperatures in excess of such limits. Modulation of air flow is accomplished by varying the speed of the fan motor inducing such flow, through a solid state electrical circuit controlled by an optical system comprising a lamp, a photocell, and an interposed shutter arrangement actuated by the thermostat.

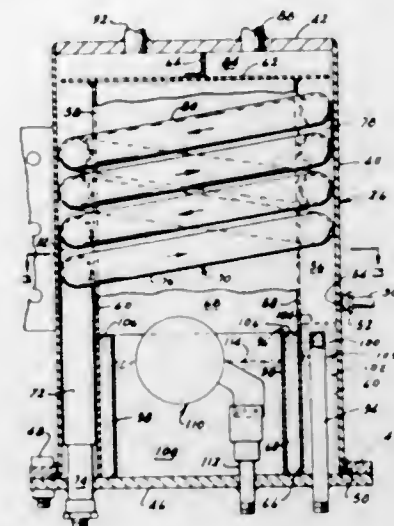
### 3,410,106 PURGE UNIT FOR REFRIGERATION MACHINE

Thomas H. Brockie, Detroit, Mich., assignor to American Standard Inc., a corporation of Delaware  
Filed Dec. 7, 1966, Ser. No. 599,816  
2 Claims. (Cl. 62—195)

This invention proposes a single purge unit for removing foreign non-condensibles and foreign condensibles from a refrigeration machine which uses volatile refrig-

erant. Features of the purge unit are single shell construction, minimum number of leak-prone joints, easy dis-

assembly for maintenance, and ability to perform without a purge compressor.

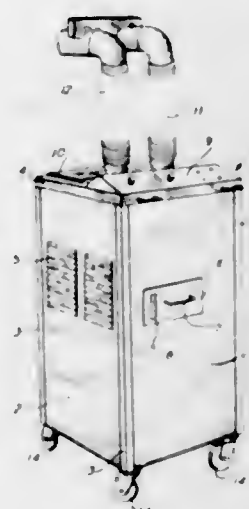


assembly for maintenance, and ability to perform without a purge compressor.

### 3,410,107 OXYGEN TENT APPARATUS AND HOUSING

Dean R. Wallace, Madison, and Douglas D. Carden, Barneveld, Wis., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 25, 1967, Ser. No. 663,417  
7 Claims. (Cl. 62—261)

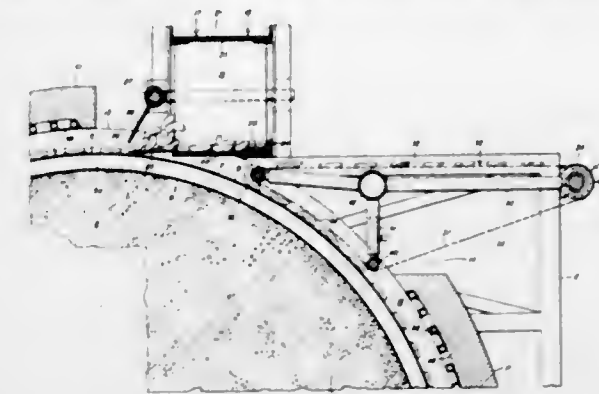


Apparatus including a housing and equipment therein for providing a conditioned environment to an oxygen tent, said housing comprising four side panels and posts, a base and a cover assembly, said equipment comprising a central "cold box" chamber and a refrigeration system therefor.

### 3,410,108 APPARATUS FOR QUICK FREEZING SOLID FOODS

Amaziah F. Wentworth, Clearwater, Walter H. Berg, Jr., Brandon, and Kenneth W. Keeling, Tampa, Fla., assignors to A. F. Wentworth & Associates, Inc., Tampa, Fla., a corporation of Florida  
Filed Sept. 16, 1966, Ser. No. 579,982  
16 Claims. (Cl. 62—341)

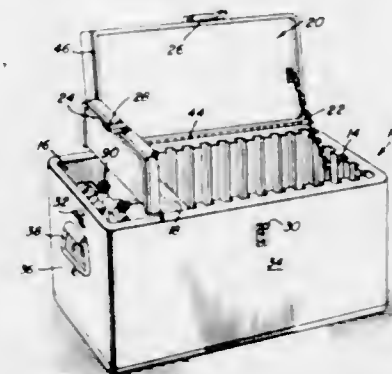
The invention is concerned with an apparatus for individually quick freezing solid foods including a horizontally rotatable freezing drum having an internally refrigerated cylindrical freezing surface, a housing which completely encloses the drum except for an access opening which extends crosswise in the upper portion thereof for access to the upper portion of the drum with means extending through said access opening for individually feeding unfrozen foods gravitationally onto the surface of the drum and for discharging frozen foods



of the feed conveyor means partially wrapping the portion of the freezing surface immediately beyond the feed for pressing the applied food against the surface during the initial portion of its engagement with the drum.

### 3,410,109 ICELESS FREEZER CHEST

Howard R. Maryland, P.O. Box 7, Palm Harbor, Fla. 33563  
Filed Jan. 9, 1967, Ser. No. 608,078  
15 Claims. (Cl. 62—457)



A freezer chest having a storage compartment refrigerated by vaporization of liquid nitrogen discharged under pressure into the compartment from refillable tanks housed within a separate chamber. A thermostatic valve controls the flow of nitrogen into the storage compartment in order to maintain a predetermined temperature therein while flow is cut-off whenever the storage compartment is opened.

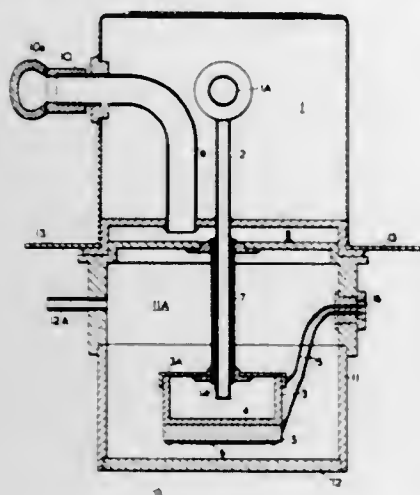
### 3,410,110 COOLING DEVICES

William Adlard Hoyes, Malvern, England, assignor to Minister of Aviation in Her Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England  
Filed Feb. 6, 1964, Ser. No. 343,914  
Claims priority, application Great Britain, Feb. 7, 1963, 5,120/63  
13 Claims. (Cl. 62—514)

1. A cooler including a reservoir for a refrigerant, wall means defining an evacuable chamber, further wall means defining an expansion chamber located within said evacuable chamber, a device to be cooled located within said evacuable chamber in heat exchanging relation to said expansion chamber, an inlet conduit connected between said reservoir and said expansion chamber, an orifice in the inlet conduit for supplying refrigerant from said reservoir to said expansion chamber via said inlet conduit, and an exhaust conduit connected to said expansion chamber in spaced relation to said inlet conduit and in heat exchanging relation with said inlet conduit, said exhaust conduit having selectively operable outlet means

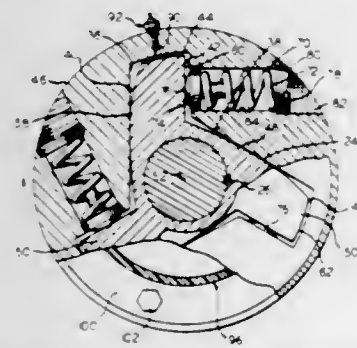


adapted, upon being opened, to effect a flow of refrigerant from said reservoir through said inlet conduit to said expansion chamber for cooling said device, the expanded refrigerant then, passing from said expansion chamber through said exhaust conduit whereby the exhaust from



said expansion chamber passing via said exhaust conduit cools refrigerant flowing toward said expansion chamber via said inlet conduit, said reservoir, expansion chamber, and conduits all containing said refrigerant at a pressure substantially higher than atmospheric pressure.

**3,410,111**  
**FLEXIBLE COUPLING**  
Glen V. Ireland, 6605 W. Bennett Ave.,  
Milwaukee, Wis. 53219  
Filed Jan. 25, 1967, Ser. No. 611,690  
8 Claims. (Cl. 64-9)



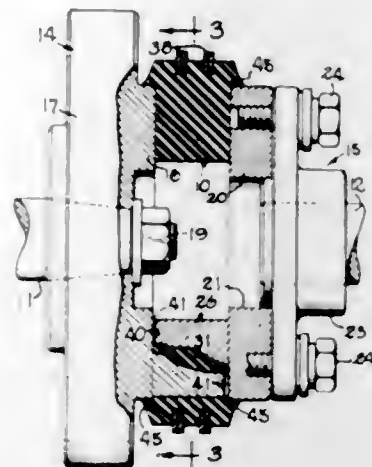
The disclosure relates to a flexible coupling for coupling driving and driven shafts that may be out of alignment and involving a spider member adapted to be secured to one of the shafts and having outwardly extending arms that are received within recesses formed in a cooperating hub member that is adapted to be secured to the other shaft. The spider arms are each formed with a convexly shaped spherically contoured surface that provides for an engagement of substantial area with an abutment surface of the respective hub recesses, with the parts being proportioned, oriented, and biased, so that each of the arms maintains its contact with the hub member abutment surface with the respective hub member abutment surfaces at any and all positions of orientation of the spider member with respect to the hub member during the rotating movement of the shafts, even though shaft misalignment exists.

**3,410,112**  
**SPIDER FOR FLEXIBLE COUPLING**  
Eugen Gawreluk, South Haven, Mich. (% Lovejoy Flexible Coupling Company, 4949 W. Lake St., Chicago, Ill. 60644)

Filed Dec. 7, 1966, Ser. No. 599,867  
5 Claims. (Cl. 64-14)

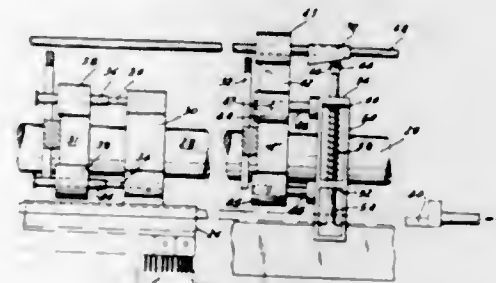
A flexible coupling for connecting two rotating shafts and having a pair of heads each formed with jaws which

intermesh with an intermediate spider having lugs fitting between the jaws. A peripheral ring encircles the outer



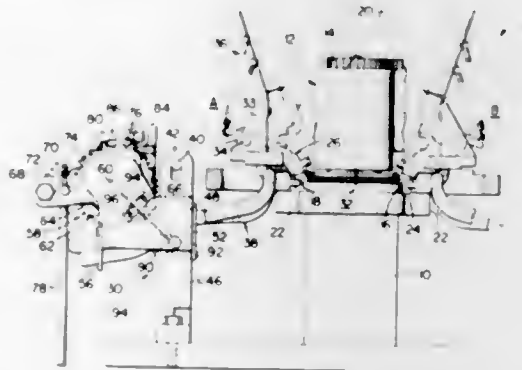
ends of the lugs and is formed with resiliently yieldable lips which seal against the heads to prevent foreign particles from entering between the lugs and the jaws.

**3,410,113**  
**KNITTING MACHINE HAVING A CHOPPER BAR CONTROLLING MECHANISM**  
Rudolph G. Bassist, 3660 Waldo Ave.,  
New York, N.Y. 10063  
Filed Apr. 6, 1966, Ser. No. 540,550  
6 Claims. (Cl. 66-84)



Chopper bar mounted to swing with guide bars, but vertical movement of chopper bar controlled by a pattern chain. Chopper bar may carry cam follower engaging cam mounted on rod slidable in response to pattern chain, or chopper bar may be actuated by solenoid energized via switch responsive to pattern chain.

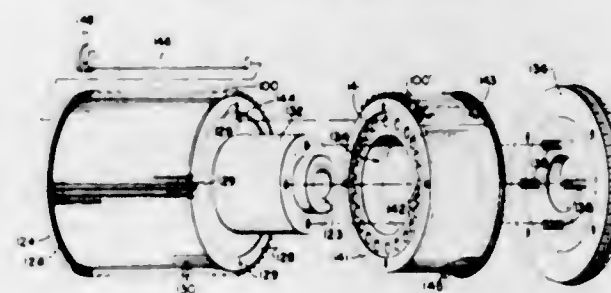
**3,410,114**  
**YARN FEED DISABLING APPARATUS FOR HOSIERY KNITTING MACHINES**  
Kerwin R. Boyer and Ronald Shaw, High Point, N.C., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey  
Filed May 31, 1966, Ser. No. 554,172  
2 Claims. (Cl. 66-138)



Access to the interior of the needle cylinder of a hosiery machine is obtainable by lifting the dial of such machine. To prevent the dial from striking yarn feed

fingers as such dial is swung upward, "all" yarn feed fingers of such machine are dropped to below the ordinary level of the dial, thereby freeing such dial for its upward swing.

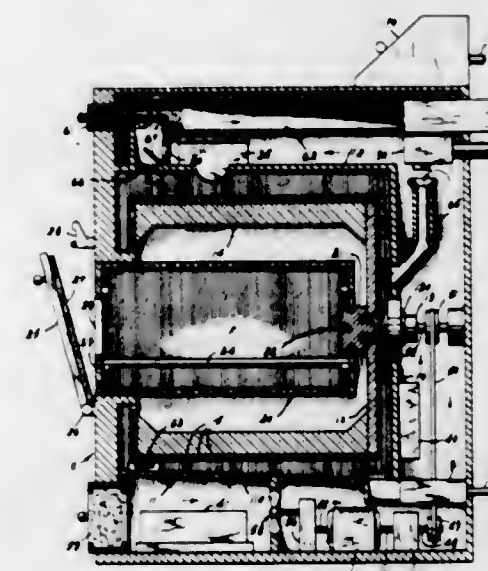
**3,410,115**  
**PATTERNING APPARATUS FOR HOSIERY MACHINES**  
Kerwin R. Boyer and Kenneth W. Newlen, High Point, N.C., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey  
Filed May 31, 1966, Ser. No. 554,058  
7 Claims. (Cl. 66-154)



Pattern apparatus for use by a knitting machine is disclosed as including two coaxial drum sections, which sections are relatively positionable with respect to each other, but which sections are normally locked together for unitary rotation of the two sections as an integral unit. Each drum section stores its own coded arrangement of jacks and, by relatively positioning one section with respect to the other section, the pattern effected by one set of jacks may be selectively positioned within the pattern effected by the other set of jacks.

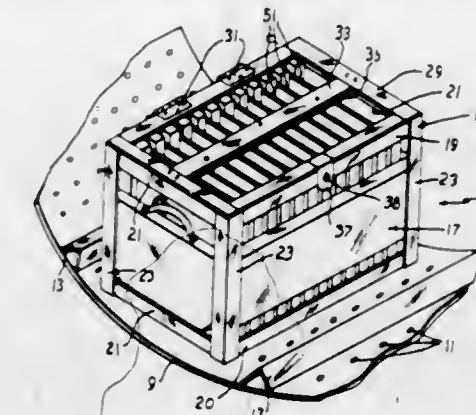
**3,410,116**  
**MICROWAVE AND ULTRASONIC APPARATUS**  
Melvin L. Levinson, 1 Melzer St.,  
Avenel, N.J. 07001  
Continuation-in-part of application Ser. No. 430,624,  
Feb. 5, 1965. This application Oct. 24, 1966, Ser.  
No. 594,964

10 Claims. (Cl. 68-3)



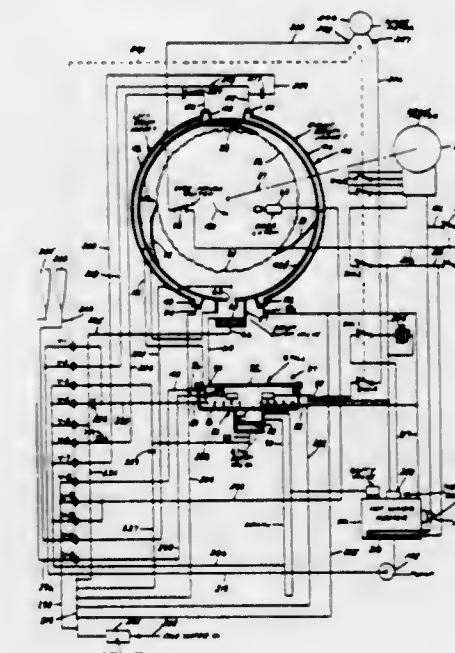
Apparatus capable of performing numerous functions on various workloads, which include means for emitting microwave energy for heating a workload, means for emitting ultrasonic energy to said workload, and means for selectively controlling the operation of said microwave and ultrasonic means. The apparatus is capable of functioning as a washer, dryer, dishwasher, microwave oven, and the like.

**3,410,117**  
**CAP-CLEANING APPARATUS**  
Harry N. Elam, 1001 Chicago, St.,  
Greenville, Ill. 62246  
Filed Apr. 7, 1967, Ser. No. 629,216  
9 Claims. (Cl. 68-4)



Apparatus for cleaning academic mortarboard graduation caps. The apparatus is operative in combination with a conventional clothes cleaning machine having a perforated rotary drum and a plurality of spaced agitator ribs or paddles extending substantially parallel to the axis of rotation for liquid stirring. The apparatus is constituted by cages, each comprising an open prismatic framework which is removably mounted in the drum between the paddles. A cap-spacing and -holding rack is snugly but removably received in each cage. Each cage has an operable lid for locking its rack in place therein. The arrangement is such that when a rack is locked in a cage the planes of the mortarboards in the rack extend substantially perpendicularly to the axis of rotation of the drum, so that the liquid cleaning fluid circulates efficiently between them as they revolve.

**3,410,118**  
**APPARATUS FOR DRY CLEANING**  
John W. Dickey, Esmond, Va., assignor to Forenta Forschungs und Entwicklungs Aktiengesellschaft  
Filed Feb. 1, 1966, Ser. No. 524,329  
34 Claims. (Cl. 68-12)



Dry cleaning apparatus, including a housing having an access opening with means for selectively closing and sealing the opening. An apertured basket is rotatably mounted in the housing and has an access opening so that the materials to be cleaned may be placed in the basket through the housing and basket access openings. A solvent still



is provided including means for selectively heating the solvent thereby to vaporize the same. Passage means communicates between the still and the housing for transferring solvent to the housing, and means is provided for condensing the solvent. Means is provided for selectively heating the air in the housing and pumping means is provided carried by the basket in the housing and actuated thereby at times for circulating condensed solvent through the materials in the basket to wash the same and at other times for circulating heated air through the materials to vaporize the condensed solvent therein to dry the materials.

3,410,119

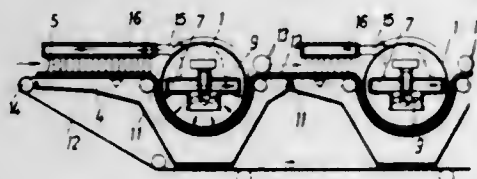
### APPARATUS FOR THE WET-TREATMENT OF MATERIALS

Gerold Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to Anstalt für Patentdienst, Vaduz, Liechtenstein

Filed Nov. 22, 1965, Ser. No. 508,933

Claims priority, application Germany, Nov. 21, 1964, A 47,664; Apr. 13, 1965, A 48,913

14 Claims. (Cl. 68-62)



A device for the wet treatment of textile materials which comprises a container means at least partially filled with a treatment liquid, at least one sieve drum means subjected to a suction draft rotatably disposed within said container means, inlet means for introducing the material to be treated to the container means, means associated with the sieve drum means for producing the suction draft causing the liquid to flow from the container into the sieve drum interior thereby forcing said material against the sieve drum means, and baffle plate means mounted in the sieve drum means below the liquid level and operable to interrupt the suction draft over a portion of the sieve drum means, said baffle plate means being associated with an exhaust connection which has a suction opening disposed substantially below the liquid level.

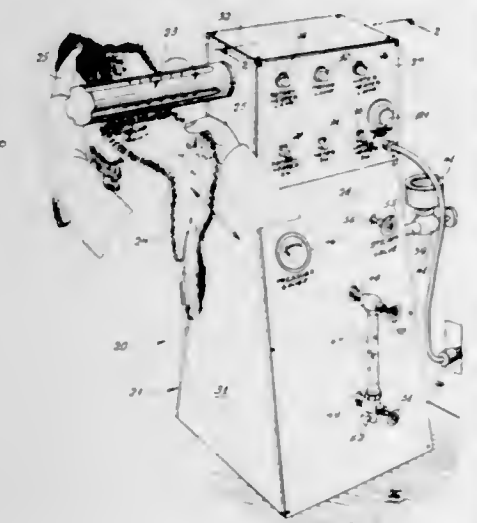
3,410,120

### FUR TREATING MACHINE

Sam Schloss, 6629 17th Ave., Brooklyn, N.Y., 11204

Filed Sept. 14, 1966, Ser. No. 579,237

7 Claims. (Cl. 69-27)



A fur treating machine having a casing standard of enlarged base area, the standard mounting a power-driven

heated, perforated rotary treating roll projecting horizontally from one side thereof, with a steam generator within the casing, the steam being moved from the generator by a pump into the interior of the treating roll from which it passes through the perforations in the roll against a fur workpiece.

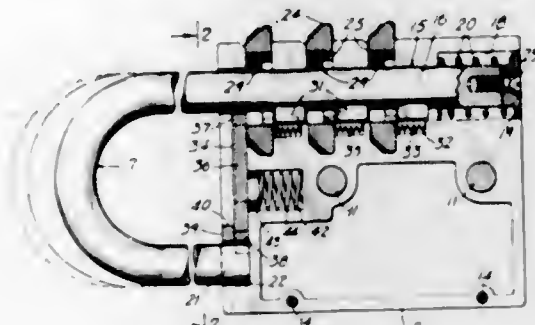
3,410,121

### RESETTABLE COMBINATION PADLOCK

Louis H. Morin, Bronx, N.Y., assignor to Coats & Clark Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 13, 1966, Ser. No. 601,446

4 Claims. (Cl. 70-25)



A combination padlock employing resettable insignia wheels having means frictionally retaining the wheels at numerous set combinations and wherein a manually operable and frictionally controlled slide is employed in changing or resetting the combination of the insignia wheels of the padlock.

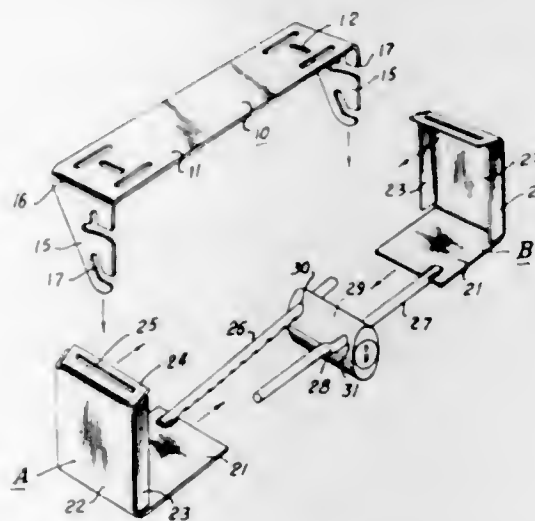
3,410,122

### ANTI-THEFT LOCK FOR VEHICULAR RADIOS AND TAPE PLAYERS

Elvis L. Moses, 156 Farmers Branch Shopping Center, Dallas, Tex. 75234

Filed Dec. 22, 1967, Ser. No. 692,765

8 Claims. (Cl. 70-58)



A pair of lock elements which may be attached to the mounting bracket of a vehicular radio or tape player and locked thereon to prevent theft of the radio or tape player.

3,410,123

### DISCONNECTING SIDE BAR LOCK

Edward N. Jacobi, Milwaukee, Wis., assignor to Briggs & Stratton Corporation, Milwaukee, Wis., a corporation of Delaware

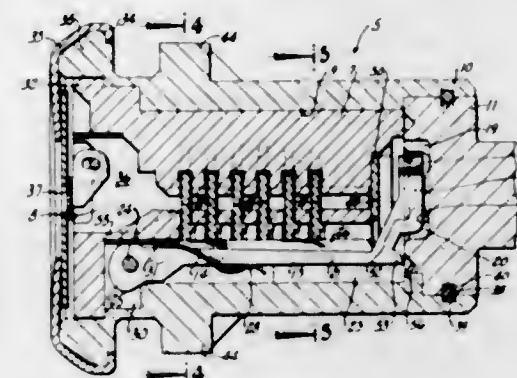
Filed Sept. 12, 1966, Ser. No. 578,629

14 Claims. (Cl. 70-364)

13. In a lock having a cylinder with a forwardly opening key aperture, and a plurality of substantially flat tumblers carried by the cylinder for rotation therewith

and for movement relative thereto in opposite directions transverse to the cylinder axis:

- (A) a substantially L-shaped side bar having an elongated stem portion and a foot portion;
- (B) means providing a pivotal connection between the stem portion of the side bar near the end thereof remote from its foot portion, and the cylinder near its front end and at one side thereof, said connection



disposing the side bar with its stem portion extending along said one side of the cylinder and its foot portion projecting across the rear end of the cylinder and providing for swinging motion of the side bar radially in and out relative to the cylinder; and (C) spring means reacting between the cylinder and the stem portion of the side bar to bias to side bar radially inwardly for cooperation with said tumblers to afford locked and unlocked conditions.

3,410,124

### SHOT BLASTING PROCESS

Makoto Suwa, Mishima, Japan, assignor to Fuji Selki Machine Works, Ltd., Shimotogari, near Mishima, Japan, a company of Japan

No Drawing. Continuation-in-part of application Ser. No. 320,536, Oct. 31, 1963. This application Aug. 5, 1966, Ser. No. 570,447

Claims priority, application Japan, Dec. 1, 1962,

37/53,456

5 Claims. (Cl. 72-53)

1. A process for surface treatment of relatively soft nonferrous metal pieces comprising peening to a high luster satin mat finish without substantial surface deformation or surface stress formation by subjecting the metal pieces to a blasting stream comprising a carrying fluid charged with round-edged, shot-like elastic synthetic resin particles of about 20-80 Tyler mesh size having no thermal softening point below about 200 degrees Fahrenheit and a hardness of about between 75 and 125 Rockwell M.

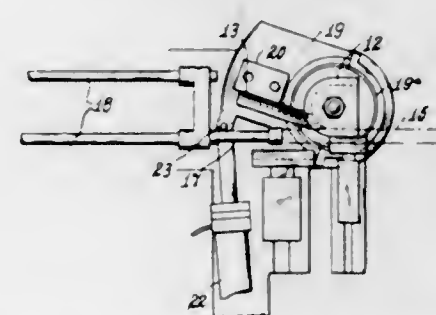
3,410,125

### TUBULAR STOCK BENDING MACHINE

Hans Schmidt, Aurora, Ill., assignor to Pines Engineering Co., Inc., Aurora, Ill., a corporation of Illinois

Filed Feb. 2, 1967, Ser. No. 613,563

8 Claims. (Cl. 72-156)



Apparatus for bending tubular stock having a pivoted wiper die and an associated clamp die both

movable into positions to enable the ram to closely approach the bending die for eliminating end waste in bent tubing and wherein the wiper die is nested in the bending die to eliminate unwanted undulations in the finished work.

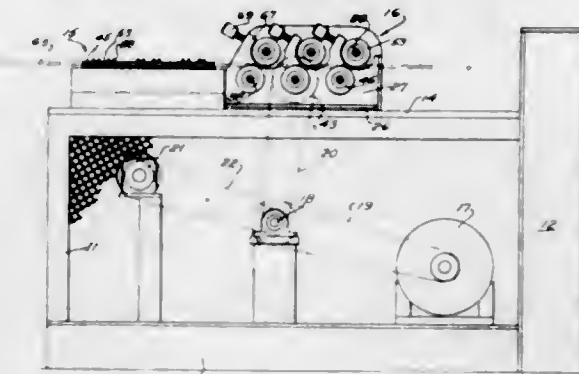
3,410,126

### MACHINE FOR STRAIGHTENING TUBES AND RODS

Ellery L. Baker, Warwick, R.I., assignor to United Wire & Supply Corporation, a corporation of Rhode Island

Filed Dec. 29, 1965, Ser. No. 517,221

6 Claims. (Cl. 72-164)



A machine for straightening tubes and rods by passing them through driven rolls engaging the tube or rod in staggered relation on opposite sides, the driving of the rolls on opposite sides being through gear means with the rolls on one side swingable about the axis of the rolls on the other side.

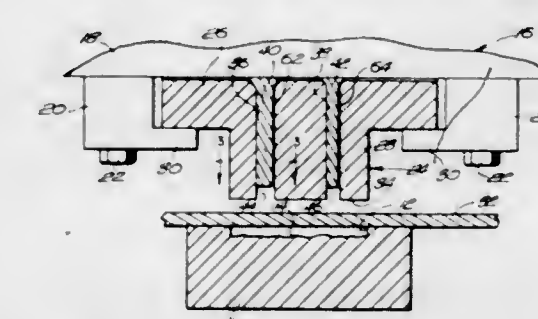
3,410,127

### PLATE WITH INTEGRAL RIVET AND METHOD AND APPARATUS FOR MAKING SAME

William J. Burns, Lincoln, R.I., assignor to Supreme Manufacturing Co., Inc., Pawtucket, R.I., a corporation of Rhode Island

Filed Apr. 25, 1966, Ser. No. 544,907

9 Claims. (Cl. 72-256)



The method and apparatus for forming a metallic decal with integral rivets thereon wherein a metallic strip is placed over a cavity in a die and a striking member is moved downwardly into engagement with the metallic strip for forcing it into the die, the configuration on the bottom surface of the die being impressed on the surface of the strip that is forced into engagement therewith, a striking member that forces the metallic strip into the die, including openings therein that provide for the simultaneous formation of rivets on the metallic strip as it is forced into the die.

3,410,128

### PULL GUN

Bobbie S. Sauter, Newport Beach, and Albert J. Wahlberg, Santa Ana, Calif., assignors to Standard Pressed Steel Co., Santa Ana, Calif., a corporation of California

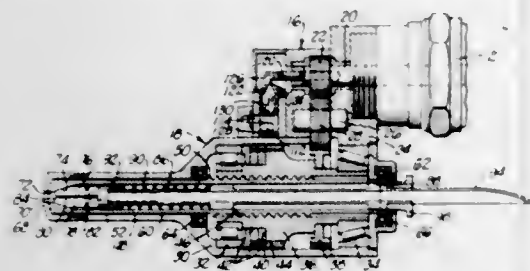
Filed Oct. 13, 1966, Ser. No. 586,444

10 Claims. (Cl. 72-391)

A pull gun which is suited for the pulling of pullable stems or pin tails on fasteners which are secured by this



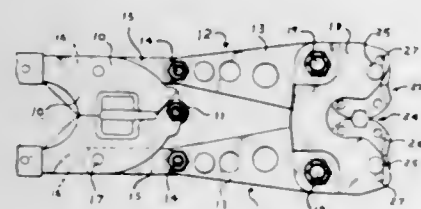
means. The pull gun comprises a relatively fixed body housing and an axially movable set of pulling jaws. The puller carries screw threads on its exterior. A nut engages upon the screw threads and is rotatably mounted with respect to the housing. A motor is connected to rotate the nut. In the preferred structure, the motor is a



fluid driven rotary motor. The motor has a drive shaft, which drives an analog nut and screw in proportion to the rotation of the main pulling nut and thus the amount of axial transport of the pulling stem. The analog nut and screw is connected to control means to limit the maximum rotation of the motor and thus the maximum transport of the pulling stem.

3,410,129

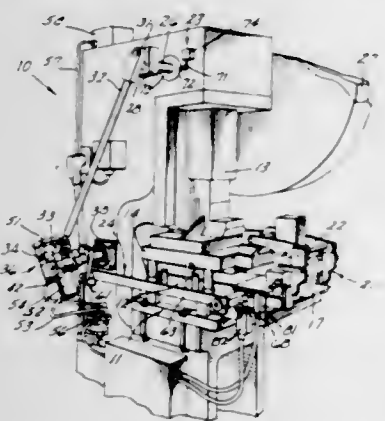
**ELECTRICAL CONNECTOR CRIMPING TOOL**  
Walter Myers Werner, Downingtown, Pa., assignor to AMP Incorporated, Harrisburg, Pa.  
Filed July 25, 1966, Ser. No. 567,488  
5 Claims. (Cl. 72-410)



A crimping tool wherein the dies thereof are guided for rectilinear movement towards and away from each other by guide means comprising projections on the dies engaging guide slots in the tie plates arranged on movement of the dies by pivotal movement of the jaw plates to maintain a constant relative orientation between the dies.

3,410,130

**FEED PROGRESSION CHANGER**  
Lawrence A. Franks and Eugene E. Eldridge, Sturgis, Mich., assignors to Burr Oak Tool & Gauge Company, Sturgis, Mich., a corporation of Michigan  
Filed Sept. 23, 1965, Ser. No. 489,557  
9 Claims. (Cl. 72-421)



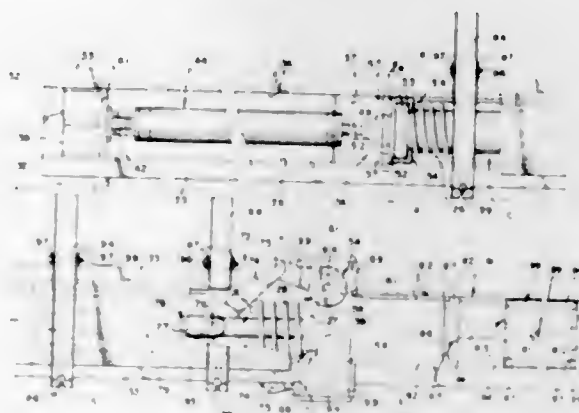
A feed mechanism for advancing sheet material through a punch press and having actuating means connected to

the feed mechanism for effecting reciprocating movement thereof. An electrically energized control means is mechanically connected to the actuating means for changing the amount of movement of the feed mechanism. First switch means is connected to the control means and it is adapted to energize the control means when an operation, such as a shearing operation, is carried out at selected intervals as the sheet material is fed through the press. Second switch means is connected for maintaining the control means energized for one cycle of operation of the punch press following actuation of the first switch means.

3,410,131

**TEST FIXTURE FOR HYDRAULIC CUSHION DEVICE**

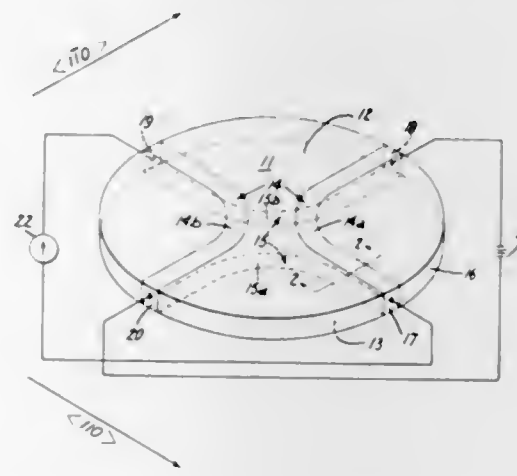
Thomas L. Roesel, Lansing, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware  
Filed Jan. 23, 1967, Ser. No. 611,154  
3 Claims. (Cl. 73-11)



A test fixture for testing operation of an extendable and contractable hydraulic cushioning unit of the type disclosed in U.S. Patent 3,003,436 which is used in cushion underframe railway vehicles to minimize lading damage. The test fixture includes means for moving the cushion unit against a stop from an extended to a contracted position and for releasing the stop so that a return spring of the cushion device is operative to return the device to the extended position.

3,410,132

**SEMICONDUCTOR STRAIN GAUGE**  
Robert N. Hall, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York  
Filed Nov. 1, 1966, Ser. No. 591,306  
11 Claims. (Cl. 73-88.5)



A strain sensitive element is typically comprised of a monocrystalline semiconductor wafer having a first pair

of radially directed low resistivity zones formed in its upper surface and a second pair of radially directed low resistivity zones formed in its lower surface. In each surface, the high resistivity of the semiconductive material electrically insulates the low resistivity zones from each other. The extremities of the first pair of zones are connected to respective proximate extremities of the second pair of zones by conductive means along the wafer periphery, and may be further interconnected to form a bridge circuit.

3,410,133

**METHOD OF AND STRUCTURE FOR TESTING THE WELDABILITY OF HIGH STRENGTH STEELS**

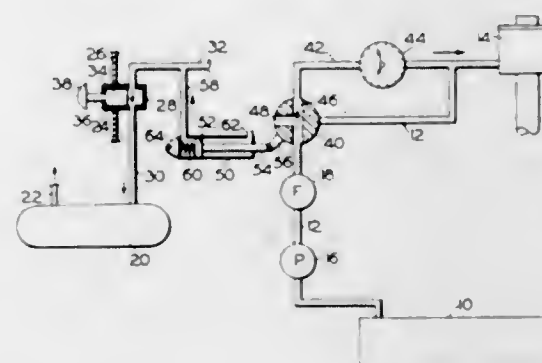
Warren F. Savage, Averill Park, N.Y., assignor to the United States of America as represented by the Secretary of the Air Force  
Filed June 27, 1966, Ser. No. 561,666  
4 Claims. (Cl. 73-100)



The disclosure involves methods by which the presence of hot cracking when laying down a weld bead can be detected. The specimen, while hot from the absorption of heat from the weldment, is caused to bend about around a die block of predetermined curvature so as to put the member and the bead of weld metal under severe strain. Any tendency of the joined metals to produce cracks would immediately become apparent under such stresses as are designed to be much greater than those met with in service.

3,410,134

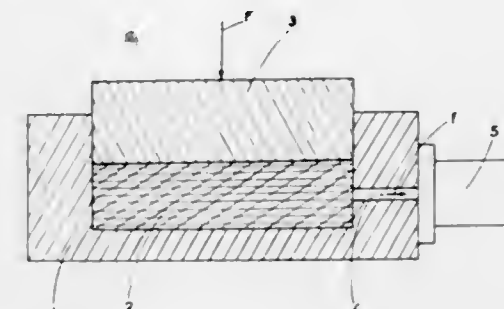
**FUEL METERING SYSTEM FOR VEHICLES**  
Earl C. Adams, Beaverton, Oreg., assignor to System's Corporation, Portland, Oreg., a corporation of Oregon  
Filed Oct. 15, 1965, Ser. No. 496,521  
2 Claims. (Cl. 73-113)



The invention includes fuel metering apparatus for connection to vehicles for the purpose of measuring fuel consumption which is not taxable. The apparatus includes a valve arranged to be connected in the fuel line of the vehicle and also arranged to direct fuel through an auxiliary metered fuel line when the vehicle is stopped. The valve is operated by a plunger in turn operated by the pressure or vacuum operated emergency brake and is arranged to be connected directly into communication with a connecting line of the air pressure or vacuum operated emergency brake so that when the emergency brake is set the fuel consumed by the vehicle engine will be measured.

3,410,135

**FORCE OR PRESSURE MEASURING APPARATUS**  
Jean Gilbert André Reynaud, Courbevoie, France, assignor to Societe de Fabrication d'Instruments de Mesure (S.F.I.M.), Massy, France, a company of France  
Filed Mar. 17, 1966, Ser. No. 535,232  
Claims priority, application France, Mar. 22, 1965, 10,242; July 23, 1965, 25,824  
3 Claims. (Cl. 73-141)

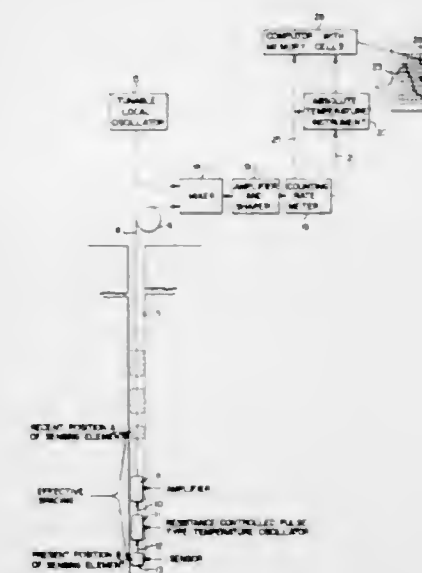


A force of pressure measuring device has a detection instrument and a pickup to indicate the detected force or pressure. The detection device is a chamber holding an elastomer which elastomer is compressed by the force or pressure but cannot escape from the chamber and the pickup receives the pressure transmitted by the elastomer.

3,410,136

**DIFFERENTIAL TEMPERATURE WELL LOGGING APPARATUS**

Earl Johns and Gerald Max Lowrie, Fort Worth, Tex., assignors to Gearhart-Owen Industries, Inc., Fort Worth, Tex., a corporation of Texas  
Filed Aug. 15, 1966, Ser. No. 572,505  
3 Claims. (Cl. 73-154)



A device for recording borehole parameters in which the measured values are stored in a memory means and differential values are obtained by comparing the measured values with previously measured values taken from the memory means.

3,410,137

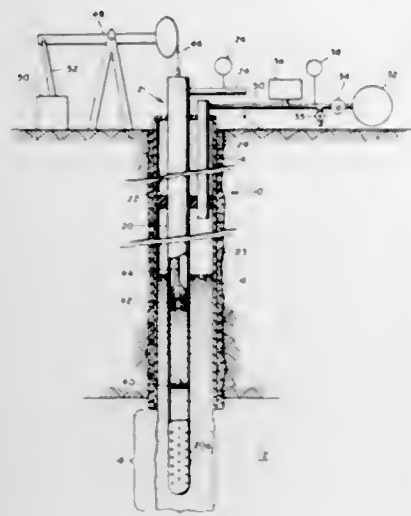
**WELL PRESSURE DATA TESTING METHOD**  
Vasel R. Slover, Jr., Irving, Edwin E. Glenn, Jr., Dallas, and Malcolm K. Strubhar, Irving, Tex., assignors to Mobil Oil Corporation, a corporation of New York  
Filed June 6, 1966, Ser. No. 555,465  
18 Claims. (Cl. 73-155)

A method for determining the bottomhole pressure for a well in which the production tubing is closed to the



inflow of liquid through the inlet and gas is injected into the annulus between the tubing and casing under sufficient

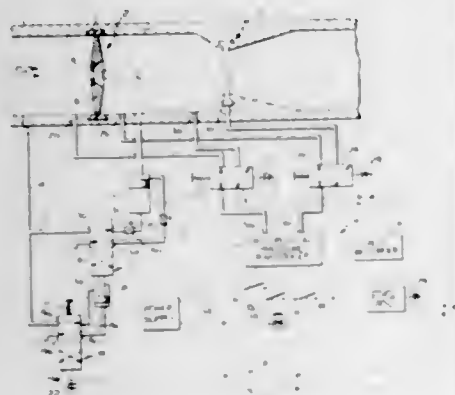
ing head and the discharge end thereof communicating with the exterior of the vessel, and a valve means exterior



pressure to restrict the rise of liquid. The level of the liquid and the pressure of the gas are then monitored.

### 3,410,138 WIDE RANGE FLOW METER

Edmond B. Lynch, Greenville, R.I., assignor to General Signal Corporation, a corporation of New Jersey  
Filed Apr. 15, 1966, Ser. No. 542,783  
12 Claims. (Cl. 73-197)

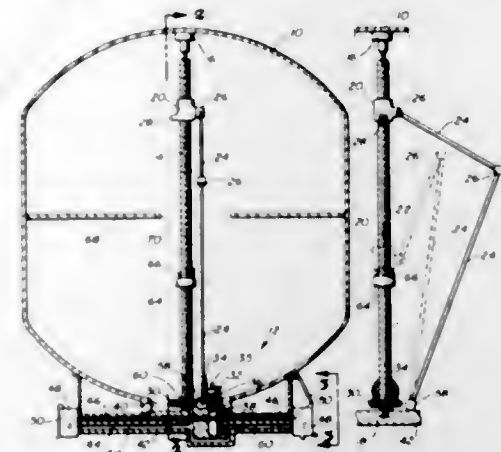


A wide range flow meter comprising a pair of primary elements of the differential pressure-producing type arranged in series in the flow line, and a secondary element including a single transducer which serves both primaries. The low flow primary element is incorporated in the vane of a butterfly valve. Means, under the control of the secondary element, closes the butterfly valve and connects the low flow primary with the transducer in the low flow portion of the metering range, and opens the valve and connects the other primary with the transducer in the high flow portion of the metering range.

### 3,410,139 BOTTOM READING LIQUID LEVEL GAUGE

Chester Fanshier, P.O. Box 76, Bartlesville, Okla. 74003  
Filed Mar. 17, 1966, Ser. No. 535,058  
9 Claims. (Cl. 73-298)

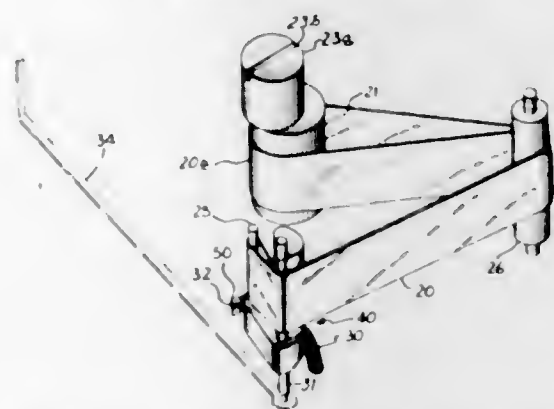
This invention relates to a liquid level gauge for a vessel providing means of reading the liquid level in the vessel on the lower portion of the vessel and includes a vertical externally threaded elevating screw rotatably supported within the vessel, means at the external lower portion of the vessel for rotation of the screw, a traveling head having an opening therein threadably received on the elevating screw, the height of the head being positionable by the rotation of the elevating screw, a flexible flow tube member having an intake carried by the travel-



of the vessel for selectably opening and closing the flow tube.

### 3,410,140 HYGROMETER

Ralph H. Preiser and Clarence J. Goodwin, La Salle, Ill., assignors to General Time Corporation, Stamford, Conn., a corporation of Delaware  
Filed Aug. 17, 1967, Ser. No. 661,439  
7 Claims. (Cl. 73-337.5)



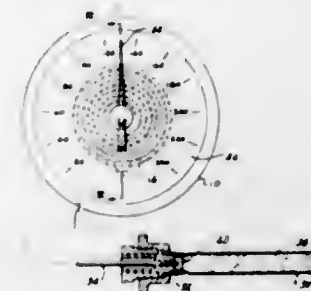
A hygrometer having a humidity sensing element, typically made of nylon film, which changes in length as a non-linear function of the humidity to which it is exposed. A first end of the sensing element is adjustably fixed, while the other end is connected to an output assembly which includes a biasing means for tensioning the sensing element. The output assembly includes a compound cam having a first cam surface acting on the sensing element to continuously convert the non-linear variations in the length of the sensing element to linear displacement of the output assembly, and a second cam surface acting on the biasing means for continuously compensating for variations in the tensioning force so as to maintain a substantially constant tension on the sensing element. An eccentric cam is associated with the fixed end of the sensing element to permit adjustment thereof by manually turning the cam. The sensing element is shown as being in the form of a closed loop.

### 3,410,141 GAS CHARGED REMOTE THERMOMETER

Herbert John Zurstadt, Grosse Pointe Park, Mich., assignor to American Standard Inc., a corporation of Delaware  
Filed Aug. 5, 1964, Ser. No. 387,649  
1 Claim. (Cl. 73-368.2)

A remote thermometer having a thermal bulb charged with an expansible gas, and gas-adsorbent material (e.g. charcoal) having the effect of adsorbing gas molecules onto its surface at low temperatures and releasing said gas molecules at higher temperatures, thereby causing the gas to have a steeper pressure-temperature curve than

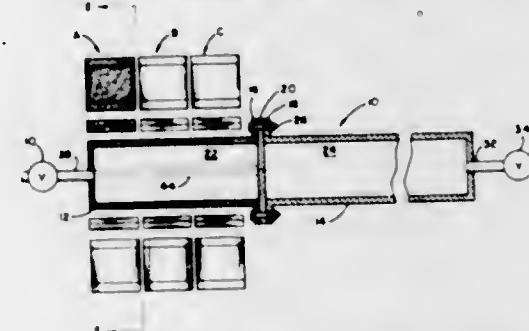
would otherwise be possible. A transducer (gas pressure to mechanical movement) is employed which comprises a multi-convolution Bourdon coil, and a gearless drive connection between the coil and temperature indicator



(pointer). The coil is chosen to have a relatively small volume compared to the bulb volume so that temperature variations at the coil have little effect on the readout accuracy.

### 3,410,142 LASER-DRIVEN SHOCK TUBE

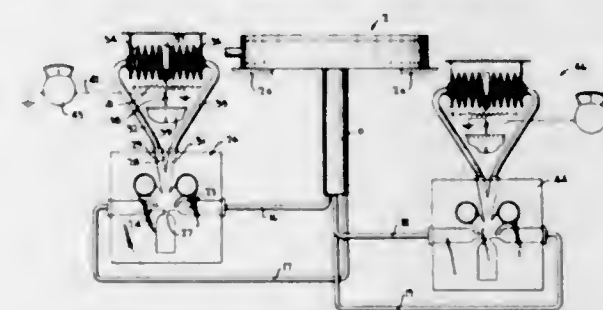
John W. Daiber, Williamsville, Abraham Hertzberg, Tonawanda, and Charles E. Wittliff, Williamsville, N.Y., assignors to Cornell Aeronautical Laboratory, Inc., Buffalo, N.Y., a corporation of New York  
Filed July 27, 1966, Ser. No. 568,288  
3 Claims. (Cl. 73-432)



A shock tube having a compression chamber and an expansion chamber separated by a frangible diaphragm, wherein a plurality of lasers surround the compression chamber for imparting energy to a driver gas therewithin.

### 3,410,143 FLUID CONTROL DEVICE, SERIES V, TYPE 3

Ronald E. Bowles, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Army  
Filed Jan. 12, 1962, Ser. No. 166,479  
7 Claims. (Cl. 74-5.6)

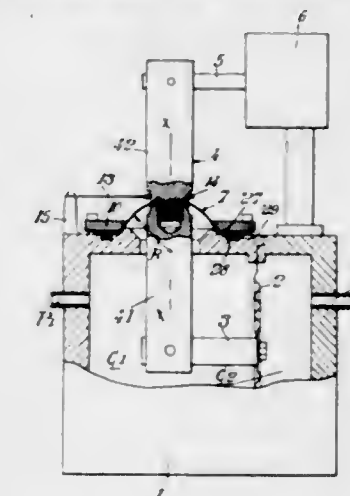


1. A gyroscopic device comprising a fluid vortex amplifier including a flat cylindrical vortex chamber, an inlet opening for introducing fluid tangentially into said chamber adjacent the circumference of said chamber and an outlet opening coaxial with the center of said chamber, the radius of said outlet opening being small compared to the radius at which said inlet opening enters said chamber, and an axially elongated cylinder having an internal diameter approximately the same as the diameter of said outlet opening, said chamber and said elongated cylinder being coaxial, said elongated cylinder being connected to receive fluid directly from said outlet opening, means for

confining the fluid in said elongated cylinder to an annulus adjacent the periphery of said elongated cylinder, and means for detecting the precessional effects in said fluid as a result of rotation of said device about an axis having at least a projection in a plane perpendicular to the axis of said elongated cylinder.

### 3,410,144 APPARATUS INCLUDING A FLUIDTIGHT CASING AND A PIVOTING TRANSMISSION ARM EXTENDING THROUGH A WALL OF SAID CASING

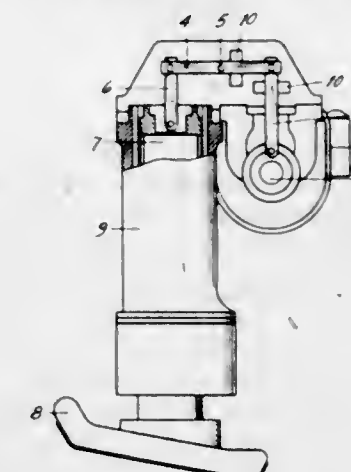
Jean-Louis Noz, Vire, and Daniel Reverdin, Paris, France, assignors to Precision Mecanique Labinal, Paris, France  
Filed Jan. 13, 1967, Ser. No. 609,052  
Claims priority, application France, Jan. 25, 1966, 47,148  
11 Claims. (Cl. 74-18.1)



A fluidtight casing, a movable element on the inside of said casing, a movable element on the outside of said casing, and a transmission arm for connecting said two elements with each other. A thin flexible diaphragm is fixed to the wall of said casing and to said transmission arm. This diaphragm is in the form of a spherical zone and it is fixed to said casing wall and to said arm through parts of said casing wall and of said arm tangent to the outer and inner edges of the spherical zone formed by said diaphragm.

### 3,410,145 MANUALLY GUIDED MOTOR DRIVEN WORKING DEVICE

Philipp Uebel, Munich, Germany, assignor to Hermann Wacker and Peter Wacker, Munich, Germany  
Filed Aug. 2, 1966, Ser. No. 569,738  
Claims priority, application Germany, Sept. 7, 1965, W 39,860  
6 Claims. (Cl. 74-40)



Manually guided motor driven working device such as a tamper, having an adjustable rocking lever intermediate the drive motor and the swing or beat system which is

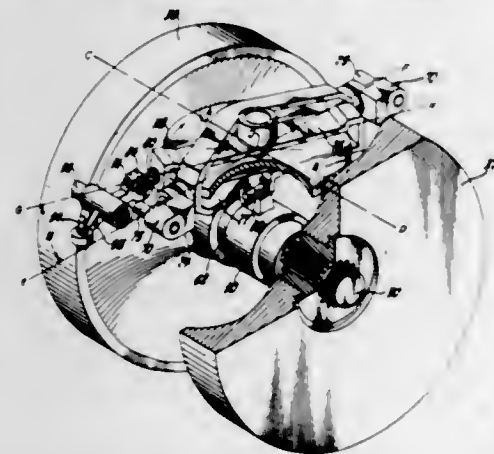


supported at a fulcrum and adjustable by means of a pinion and toothed rack proximate the fulcrum of the lever.

3,410,146

**ROLLER FRICTION TRANSMISSION**

Donald L. Nordeen, Orchard Lake, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed June 20, 1966, Ser. No. 558,935  
9 Claims. (Cl. 74-200)

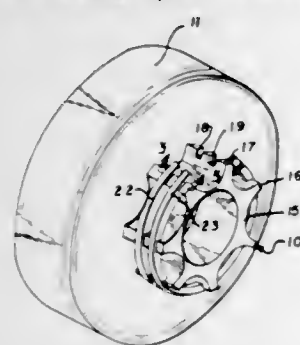


This invention relates to a roller friction transmission constructed and arranged to permit limited axial motion of the spider, cradle and roller carrier relative to the transmission case without upsetting the transmission drive ratio. In addition, the roller carrier is mounted in the cradle with the longitudinal axis of the cradle disposed at an angle to the longitudinal axis of the carrier. The control means for varying the drive ratio is also operatively connected to the cradle by a clevis which accommodates axial motion of the cradle and carrier relative to the ratio control means without upsetting the tilt angle of the carrier relative to the races.

3,410,147

**CHAIN SAW SPROCKET DRIVE ASSEMBLY**

Dennis G. Scott-Jackson, Burnaby, British Columbia, Canada, assignor to Windsor Machine Company Limited, Burnaby, British Columbia, Canada  
Filed June 12, 1967, Ser. No. 645,185  
9 Claims. (Cl. 74-243)



A chain saw drive sprocket having split rings detachably mounted thereon in spaced apart relationship to serve as supporting flanges on which the connecting links of the saw chain ride.

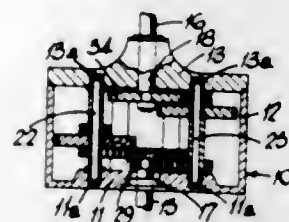
3,410,148

**GEAR MECHANISMS**

George Clarke, Selly Oak, England, assignor to Clarke Olsen (Gears) Limited, Selly Oak, England  
Filed Feb. 2, 1967, Ser. No. 613,661  
Claims priority, application Great Britain, Mar. 1, 1966, 8,972/66  
5 Claims. (Cl. 74-331)

A reduction gear box is provided in which successive reduction stages are obtained by spur gear/pinion combinations arranged on equally spaced axes around co-

axial input and output shafts. Each spur gear/pinion combination consists of a loose spindle, spacing sleeves locating the spur gear/pinion on the spindle for rotation



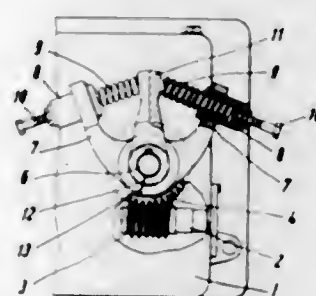
relative thereto and means which drivingly interconnect the spur gear and pinion. The spur gear and the pinion are separately removable to allow wide variation of ratio.

3,410,149

**DEVICE WITH ADJUSTABLE BODIES OF ROTATION AS CONVEYING AND GUIDING ELEMENTS**

Gerold Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to Anstalt für Patentdienst, Vaduz, Liechtenstein

Filed May 20, 1966, Ser. No. 551,723  
Claims priority, application Germany, May 24, 1965, A 49,295  
19 Claims. (Cl. 74-411)



An apparatus for conveying textile materials under tension or tensionless comprising rotating conveying means disposed one behind the other, drive means for driving said rotating conveying means, and a connecting means operatively connected between said conveying means and the drive means for transferring the moment of rotation from said drive means to the conveying means, said connecting means comprising a gear box containing a drive shaft, sleeve means coaxially disposed around at least a portion of said drive shaft and rotatable to a limited extent relative thereto, a force transmitting means secured to the sleeve means and a resilient force accumulator means secured to the sleeve means, said sleeve means transmitting the force from the force-transmitting means to the resilient force accumulator means, and lever means secured at one of its end portions to the drive shaft and communicating with the resilient force accumulator means at its other end portion, said resilient force accumulator means transmitting the force to the drive shaft via said lever means.

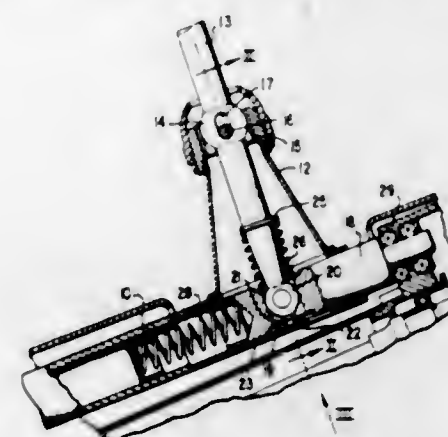
3,410,150

**BLOCKING MECHANISM FOR SHIFTING DEVICES**

Egon Wieland, Stuttgart-Feuerbach, and Fritz Roters, Russelsheim, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany  
Filed Dec. 16, 1965, Ser. No. 514,255  
Claims priority, application Germany, Dec. 17, 1964, D 46,079  
23 Claims. (Cl. 74-476)

A selectively operable shifting blocking means for the reverse speed in shifting mechanisms of motor vehicle

change-speed transmission, in which the manual shifting lever is pivotally connected at the shifting rod so as to be displaceable in the direction of its longitudinal axis, and in which this shifting lever is adapted to be pivoted with respect to the shifting rod into the shifting planes of the

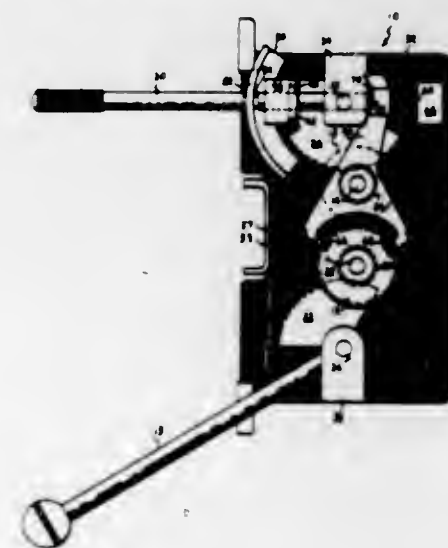


forward speeds and into a shifting plane for the reverse speed and is additionally provided with a blocking member, which in conjunction with abutments at the shifting rod coordinated to the shifting planes limits the pivot movements of the shifting lever.

3,410,151

**SAFETY INTERLOCK FOR MASTER CONTROLLER**

Donald W. Adams, Erie, John P. Nadzam and Ralph E. Walter, North East, Pa., assignors to General Electric Company, a corporation of New York  
Filed Feb. 27, 1967, Ser. No. 618,788  
10 Claims. (Cl. 74-483)

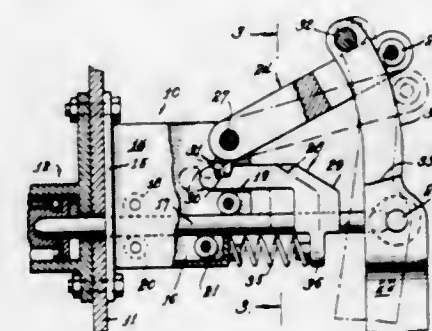


A safety interlock arrangement for a master controller of the type having two rotatable cam-shafts arranged in parallel side-by-side relationship. The safety interlock includes a pivotally mounted locking pawl arranged to cooperate at one end with the end of a removable operating handle of one cam-shaft and at the other end with a notched disc having a first notch on one side of a diameter and a second notch on the other side thereof. The removable operating handle is arranged so that movement thereof to initiate its removal operates to cause movement of the locking pawl in a direction to effect its engagement with the first notch of the notched disc with complete removal of the handle allowing for movement of the locking pawl in the opposite direction to effect its engagement with the second notch. The notched disc is secured to the other cam-shaft and the notches thereof are located so that engagement with the locking pawl can only be effected when the cam-shaft is in a predetermined position.

3,410,152

**MECHANICAL LINKAGE**

Frederick A. Krusemark, 303 S. 2nd Ave., Maywood, Ill. 60153  
Filed Feb. 1, 1966, Ser. No. 524,115  
10 Claims. (Cl. 74-516)

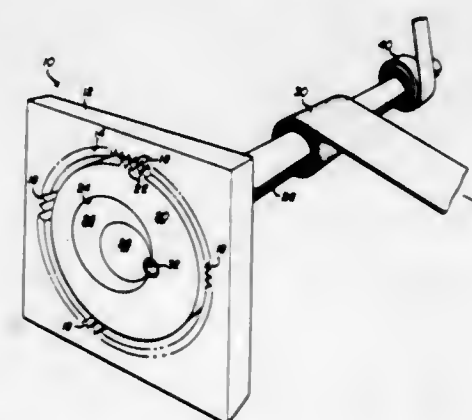


A mechanical linkage, supported by framework, comprising an arm serving as a lever which has a rod pivotally connected thereto for moving a work load. A fulcrum arm is pivotally connected at one end to the framework and at the other end is provided with a roller fulcrum which operably engages an arcuate end of the arm above the pivot point, whereby, when force is applied to the other end of the arm to move a workpiece the roller fulcrum is moved toward the pivot point thereby reducing the effort required to move the work load. Also, means, operably associated with the fulcrum arm and the rod, are provided which causes the fulcrum roller to move to, and remain at a predetermined point at the time the rod reaches a predetermined distance of travel calculated from the time the fulcrum roller starts rolling.

3,410,153

**CAM ACTUATED LOCKING DEVICE**

Michael Merna, Jr., 24901 Carlisle, Dearborn, Mich. 48124  
Filed June 7, 1967, Ser. No. 644,144  
12 Claims. (Cl. 74-530)



The locking device includes a first member having a first circular opening and a rotary member rotatable in the opening and also laterally movable in the opening. The rotary member has a second circular opening in which a cam is provided, and there may be a shaft connected to the cam and a flexible belt wound on the shaft which may be a seat belt or harness for an automotive vehicle. A gradual pull on the belt will cause the belt to unwind as the shaft and cam rotate causing the rotary member to rotate within the first opening. A sudden yank on the belt causes the device to lock so that the belt cannot unwind. In locking the device, the cam rotates relative to the rotary member and forces the rotary member against the inner perimeter of the first member about the first

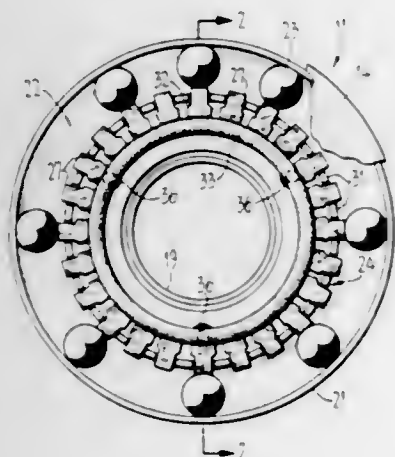


circular opening, so that the rotary member, cam and shaft are each locked in a stationary position. Unlocking occurs when the pulling force is released and is accomplished by a resilient means which returns the cam to its initial position with respect to the rotary member.

**3,410,154**  
**AUTOMATIC BALANCING DEVICE**  
Alfred Deakin, 1307 Mount Pisgah Road,  
Walnut Creek, Calif. 94596

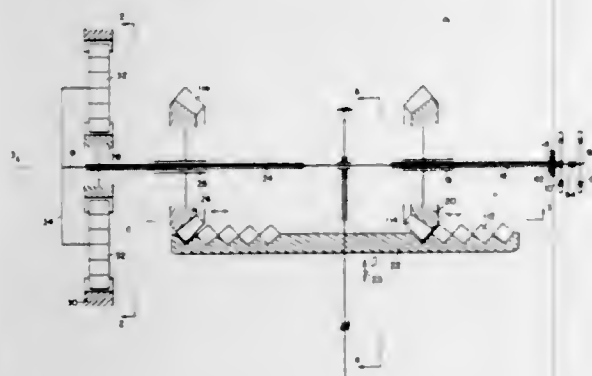
Continuation-in-part of application Ser. No. 493,392,  
Oct. 6, 1965. This application Sept. 11, 1967, Ser.  
No. 666,638

9 Claims. (Cl. 74-573)



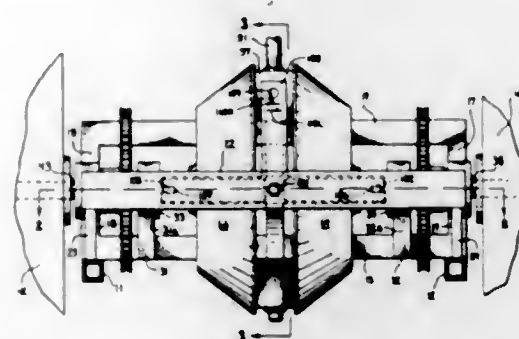
A device for automatically correcting an unbalanced condition in a rotating shaft assembly, including an annular housing and an annular raceway. A plurality of ball weights are provided within the raceway, and a floating weight retaining assembly is within the housing. If the shaft is out of balance, centrifugal force causes the floating weight to alternately bind and release the balls. The released balls tend to move to the "light" side of the shaft.

**3,410,155**  
**VARIABLE SPEED DRIVE MECHANISM**  
Donald Herman Polzin, Horicon, and Ernst Emil Schnell,  
West Bend, Wis., assignors to Deere & Company, Mo-  
line, Ill., a corporation of Delaware  
Filed May 29, 1967, Ser. No. 641,863  
4 Claims. (Cl. 74-740)



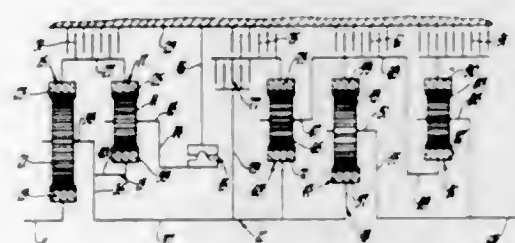
A drive having coaxial input and final output shafts, the hollow input shaft being connected to a gear set having a variable speed intermediate output shaft which is in coaxial alignment with the input shaft, the intermediate output shaft in turn being connected to a planetary gear set that drives the final output shaft at a reduced speed.

**3,410,156**  
**DRIVE UNIT**  
Marion H. Davis, Hagerstown, Ind., assignor to V-Plex  
Clutch Corporation, Hagerstown, Ind., a corporation of  
Delaware  
Continuation-in-part of application Ser. No. 371,699,  
June 1, 1964. This application Oct. 24, 1966, Ser.  
No. 589,117  
5 Claims. (Cl. 74-721)



A pair of driver cones on a powered input shaft; and a pair of driven drums on separate output shafts mounted on frames rockable in a base frame for engagement of the drums with the cones for power transmission to the output shafts at speed ratios dependent on degree of rocking action. Resilient bars acting on the frames, and thereby urging the drums toward neutral position closely spaced from the cones.

**3,410,157**  
**POWER TRANSMISSION**  
William G. Livezey, Indianapolis, Ind., assignor to Gen-  
eral Motors Corporation, Detroit, Mich., a corporation  
of Delaware  
Filed Mar. 9, 1965, Ser. No. 438,332  
2 Claims. (Cl. 74-758)

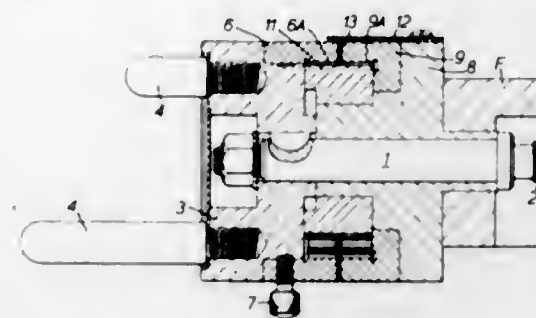


Multi-ratio power transmission including compound planetary input splitter unit having a plurality of reduction ratios with a close step therein for driving a three-forward ratio and one-reverse ratio-range unit to provide six forward ratios and two reverse ratios with close steps between the ratios.

**3,410,158**  
**DIAL MECHANISMS**  
James Selby, Hatch End, England, assignor to  
Elliott Machine Tools Limited  
Filed Apr. 21, 1967, Ser. No. 632,783  
Claims priority, application Great Britain, May 19, 1966,  
22,247/66  
4 Claims. (Cl. 74-805)

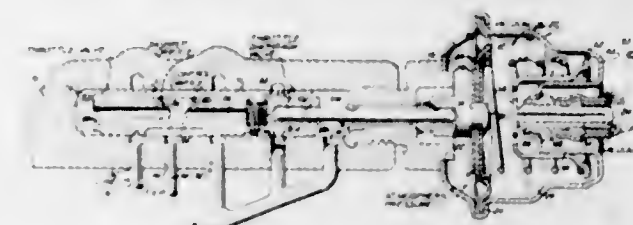
A control dial for a machine tool has two separate dials, co-axially mounted for rotation relative to each other. One dial is calibrated in inch measure and the other in metric measure, and each is fast with an internal gear, the two gears having, for example 127 and 125 teeth respectively. A third gear meshing with both internal gears is rotatable about a fixed axis eccentric to the dials, so that rotation of one dial effects rotation at a

different angular velocity of the other dial. With this construction, a machine tool having a reciprocal pitch head



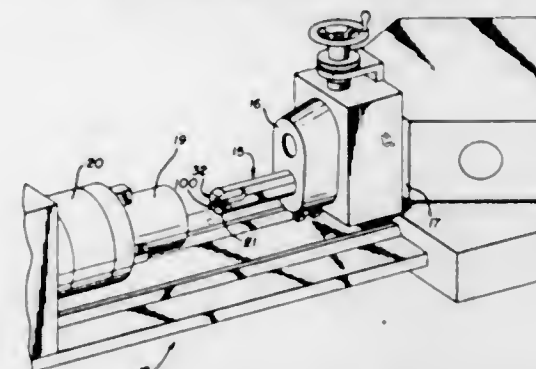
screw can be used by an operator working to metric dimensions without any inconvenience.

**3,410,159**  
**ENGINE MANIFOLD PRESSURE OPERATED THROTTLE VALVE SYSTEM**  
Robert P. Zundel, Birmingham, Mich., assignor to Ford  
Motor Company, Dearborn, Mich., a corporation of  
Delaware  
Continuation-in-part of application Ser. No. 598,113,  
Nov. 30, 1966. This application Feb. 5, 1968, Ser.  
No. 710,422  
3 Claims. (Cl. 74-863)



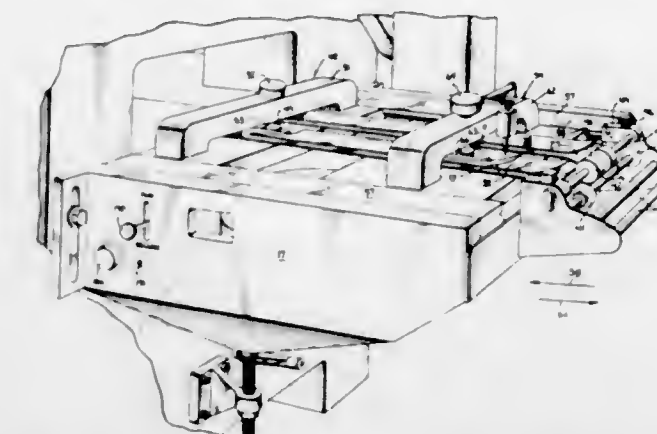
This specification describes a pressure modulator valve having a substantially rateless characteristic. It is adapted for use with automatic power transmission mechanisms in automotive vehicle drivelines that include also an internal combustion engine. The actuating forces acting on the valve are determined by the pressure drop across a flow control orifice, which in turn is dependent upon engine manifold pressure.

**3,410,160**  
**ADJUSTABLE BORING BAR**  
James W. Le Barre, Clinton, Ohio, assignor to The  
Warner & Swasey Company, Cleveland, Ohio, a  
corporation of Ohio  
Filed Apr. 8, 1966, Ser. No. 541,227  
10 Claims. (Cl. 77-58)



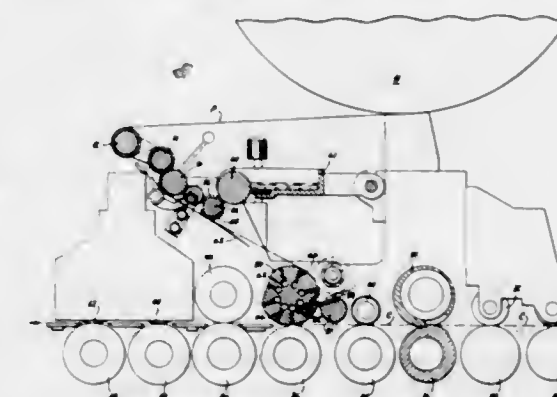
A boring bar for machining work pieces having a radially opening slot in one end and a socket extending axially of the tool body and communicating with the slot. An elongate cutting element with a shank and cutting tip has its shank received within the socket and its cutting element received within the slot. Adjustment means are disposed in the slot to radially flex the cutting element for adjustment purposes.

**3,410,161**  
**STOCK FEEDING APPARATUS FOR PUNCH PRESSES AND THE LIKE**  
Gerald V. Roch, New Augusta, Ind., assignor to E. L.  
Humston Co., Inc., Indianapolis, Ind., a corpora-  
tion of Indiana  
Filed Oct. 11, 1965, Ser. No. 495,453  
18 Claims. (Cl. 83-67)



Press apparatus having stock feed means including pneumatically operated grippers and retainers, the gripper being on a slide linked to an eccentric mechanically driven by the press crank shaft, with mechanically driven rotary valves mounted on the gripper and retainer directly for control thereof. An override or retainer release mechanically driven and readily adjustable by an external control knob for synchronization with die pilot pins. A mis-feed detector including a carbide tipped vertically disposed plunger tiltable upon detection of misfeed to operate contactors in a press stopping circuit in the event of a press feed error. A scrap feed and chopper including a pneumatically actuated gripper on a slide linked to an eccentric which is mechanically driven by the press crankshaft, and a mechanically driven scrap retainer including a spring-biased cam-operated retainer shoe accommodating variations in stock thickness resulting from punch operation, and a scrap chopper including a shear blade following the scrap retainer and having a drive rod driven from the press crankshaft by an eccentric on the crankshaft, the lower end of the drive rod being received in a ball bearing box, and a pair of tension rods mounted in suitable bearings between the press crankshaft and the scrap feed and chopper bracket to prevent dislodging of the bracket by the scrap chopper action.

**3,410,162**  
**APPARATUS FOR MANUFACTURING FILM RECORD CARDS**  
Henry A. Ruggeri, Springfield, Mass., assignor to United  
States Envelope Company, Springfield, Mass., a cor-  
poration of Maine  
Filed June 15, 1966, Ser. No. 557,777  
9 Claims. (Cl. 83-100)

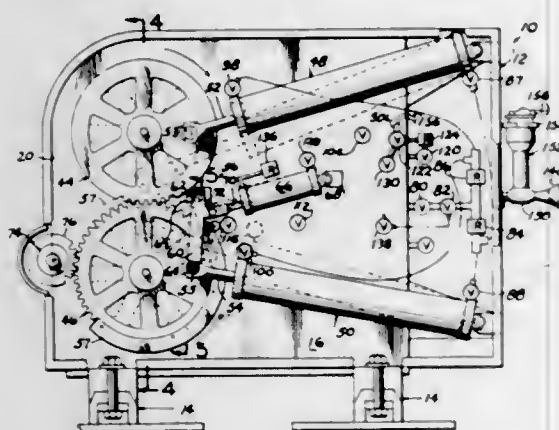


In a film record card making machine a patch of film material is applied to a card passing between two rolls,



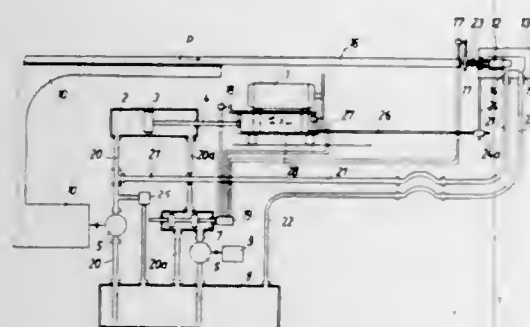
one of which is a vacuum roll. The patch is cut from a web feed to the vacuum roll at a speed slower than that of the roll and means are provided on the roll to prevent scratching of the web due to slippage between the roll and web. A cut off blade carried by the vacuum roll is also so arranged as to prevent scratching of the web.

**3,410,163**  
**FLYING SHEAR**  
Julian S. Taylor, Oklahoma City, Okla.  
(P.O. Box 152, Kingfisher, Okla. 73750)  
Filed Oct. 28, 1966, Ser. No. 590,415  
8 Claims. (Cl. 83—289)



1. A flying shear for longitudinally moving stock comprising: a pair of crank means rotatable to a stock cutting position; drive cylinder means connected with said pair of crank means for moving the latter from a starting position to effect a cutting stroke; means for supplying fluid under pressure to said drive cylinder means; latch means releasably engaged with one of said pair of crank means; latch cylinder means connected with said latch means for releasing the latter; sequence operating valve means controlling the supply of fluid to said drive cylinder means and said latch cylinder means; and sensing means actuated by longitudinally moving stock to be cut for triggering said sequence operating valve means.

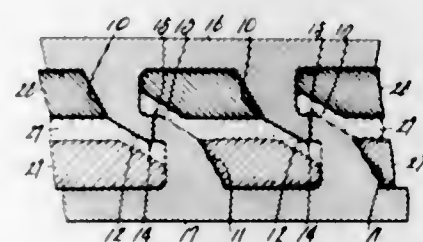
**3,410,164**  
**AUTOMATIC MOVEMENT CONTROL SYSTEM FOR A WORK DEVICE FOR A WORKPIECE**  
Walter Schlüter, Geesthacht, Germany, assignor to Wilhelmsburger Maschinenfabrik Hinrichs & Sohn, Geesthacht, Germany  
Filed May 25, 1965, Ser. No. 458,684  
Claims priority, application Germany, May 25, 1964, W 36,858  
11 Claims. (Cl. 83—290)



1. In an automatic movement control system, a machine member driving a work member at a predetermined speed and along a predetermined path; a work device disposed adjacent to said work member for operating on said work member to change the characteristic thereof; carriage means for supporting said work device and moving the latter along said work member;

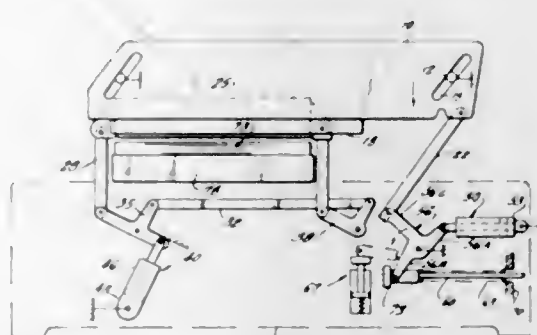
driving means connected to said carriage means for driving same; operating means coupled to one of said members and to said driving means, said operating means being actuated by said machine member to operate said driving means directly at the same speed of said machine member and work member; actuating means located within said path of said work member and supported by said carriage means, said actuating means being movable with said carriage means and actuable by said work member; and connecting means connecting said actuating means with said operating means for accelerating said carriage to said speed of said work member when latter engages said actuating member and for maintaining the speed of said carriage identical with said work member, said actuating means moving with said carriage means so as to maintain said actuating means engaged with said work member.

**3,410,165**  
**SPIRAL UPSTANDING PROJECTING BLADE ON CUTTER ROLLER FOR CONTINUOUS CHEMICAL FIBER CUTTING APPARATUS**  
Zenji Murakami, Osaka-shi, Osaka-fu, Japan, assignor to Osaka Kiko Kabushiki Kaisha, Osaka-shi, Japan  
Filed Feb. 10, 1967, Ser. No. 615,218  
Claims priority, application Japan, Dec. 23, 1966, 41/117,297  
1 Claim. (Cl. 83—342)



Cooperating cutting rolls that have helically mounted cutting blades. The blades have flat edges on their periphery to prevent breakage and to maintain a constant cross angle of contact.

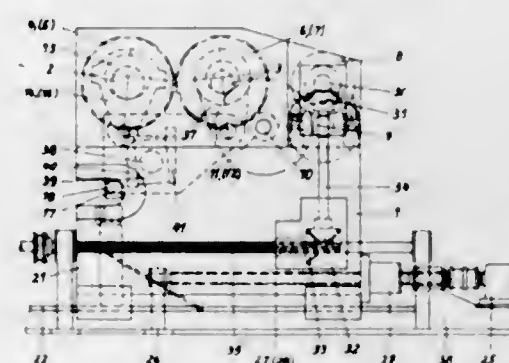
**3,410,166**  
**ALL HYDRAULIC CUTTER WITH SPRING KNIFE RETURN**  
Carl Thumim, Chicago, Ill., assignor to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware  
Filed Mar. 10, 1966, Ser. No. 533,178  
13 Claims. (Cl. 83—380)



A cutting machine of the guillotine type which includes a clamp operated entirely by a hydraulic system, and a knife operative in its cutting stroke by hydraulic means but returned to its rest position by spring biasing means. The hydraulic system includes a large capacity and a small capacity pump which are cumulative in effect when the

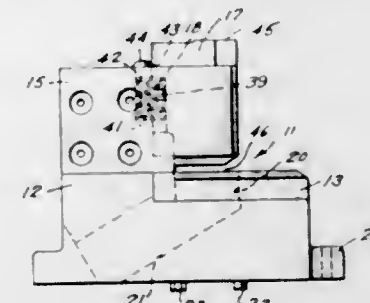
knife and clamp are being operated but requires only the small capacity pump to retain the clamp in its upward or rest position between cutting cycles.

**3,410,167**  
**SHEARS FOR TRIMMING THICK METAL SHEETS OR PLATES**  
Ernst Klein, Dusseldorf, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany  
Filed Jan. 24, 1966, Ser. No. 522,497  
Claims priority, application Germany, Jan. 22, 1965, Sch 36,420  
7 Claims. (Cl. 83—556)



Flat-plate trimming shears, wherein the upper blade beam, driven by a crank and press-rods, executes, on its return stroke, a movement lifting the blade away from the cut edge, this movement being determined by a guiding system, and wherein a lever is arranged on the upper blade beam, and to this lever is pivoted, by way of a thrust arm, the crank of a subsidiary crank-shaft, the speed of revolution of which corresponds to that of the main crank-shaft, whilst the dead-center positions of the main and subsidiary crank-shafts are different in such a way that upon the rectilinear stroke movement of the upper blade beam a rocking movement is superimposed, the upper blade beam being precisely guided on the stand throughout the entire course of the motion.

**3,410,168**  
**NOTCHING UNIT**  
Ralph J. Feitshans, Tonawanda Township, Erie County, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan  
Filed June 25, 1965, Ser. No. 466,896  
4 Claims. (Cl. 83—588)

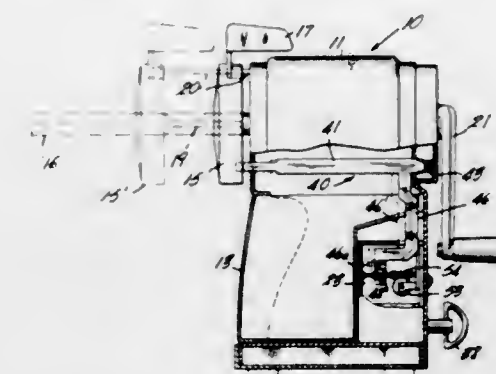


1. Notching apparatus for use between the bed and ram of a press, comprising in combination:  
(a) a base adapted to be secured to the press bed and adapted to detachably support a notching die;  
(b) a standard extending upwardly from said base, said standard having fixed slide surface means all lying in a single plane adjacent to the opening in the notching die;  
(c) a punch holder slidably disposed against said slide surface means, said holder being adapted to support notching punch means beneath it and to hold the punch means in registration with the die, and to be

engaged at its upper end by the press ram, said holder having an upwardly directed external abutment surface integral therewith and disposed beneath said upper end;

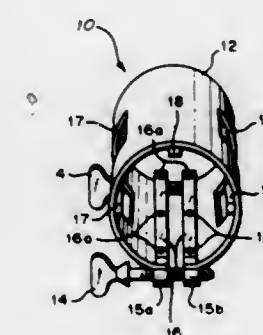
(d) a pair of cheek plates rigidly secured to opposite sides of said standard, and having confronting surfaces extending perpendicularly to said plane and slidably guiding opposite sides of said holder, said cheek plates each having a gib integral therewith and respectively projecting from said surfaces and toward each other, said gibs being received in vertically elongated grooves in said holder and providing further guidance for said holder;  
(e) arresting means directly secured to said standard and engageable with said abutment surface; and  
(f) spring means biasing said punch holder in a direction urging said abutment surface toward said arresting means.

**3,410,169**  
**PENCIL SHARPENER WITH A MUSIC BOX**  
Sanzo Kobayashi, 235 Ryusenji-machi, Daito-ku, Tokyo, Japan  
Filed Nov. 15, 1966, Ser. No. 594,568  
3 Claims. (Cl. 84—95)



1. A pencil sharpener having a container portion for receiving pencil shavings therein, means defining a compartment in said container portion, a music box in said compartment, and means under control of said pencil sharpener to automatically start and stop said music box to cause it to play only during an interval of time substantially corresponding with a time interval during which a pencil is being sharpened in said pencil sharpener.

**3,410,170**  
**LIGATURE FOR REED INSTRUMENTS**  
Anthony M. Gigliotti, 710 Medary Ave., Philadelphia, Pa. 19126  
Filed Oct. 27, 1967, Ser. No. 678,595  
8 Claims. (Cl. 84—383)

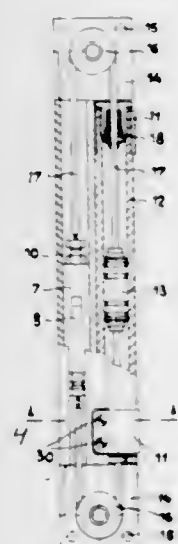


A ligature to secure a vibrating reed to a mouthpiece of a clarinet or other single reed woodwind instrument. The ligature is made entirely of non-damping material and is provided with two different types of interior spacers. One set of spacers provides selected and limited contact between the ligature and the reed to promote free



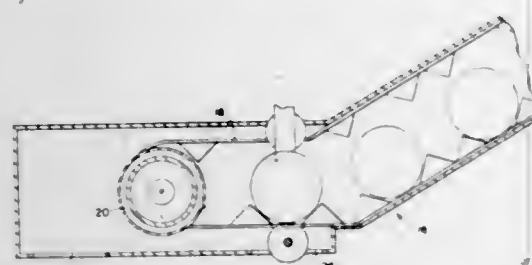
vibration of the reed, and the other set of spacers provides selected and limited contact between the ligature and the mouthpiece, to promote free vibration of the mouthpiece.

**3,410,171**  
**COCKING DEVICE FOR AUTOMATIC FIRE ARMS**  
Clemens Bremer, Dusseldorf, Germany, assignor to Firma Rheinmetall G.m.b.H., Dusseldorf, Germany  
Filed June 23, 1967, Ser. No. 648,474  
Claims priority, application Germany, June 28, 1966, R 43,561  
7 Claims. (Cl. 89—1)



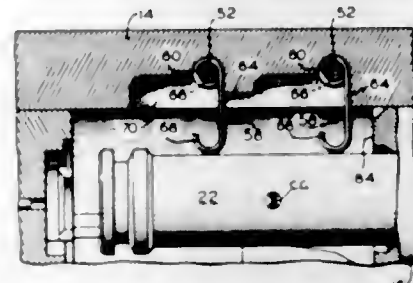
A cocking device for automatic fire arms, which comprises a housing, a breech block axially movable in the housing and a hydraulically operable member is disposed in the housing for movement of the breech block. An actuator is guided in the housing for movement in a direction parallel to the direction of movement of and operatively connected with the breech block. The hydraulically operable member comprises a double-acting hydraulic cylinder and a piston reciprocating in the hydraulic cylinder. The longitudinal axis of the hydraulic cylinder is disposed parallel to the direction of movement of the actuator, and means are provided for operatively connecting the actuator with the piston.

**3,410,172**  
**MULTI-PURPOSE MISSILE CONTAINER**  
William L. Allan, 419 S. Edgemont Circle, Huntsville, Ala. 35811  
Filed Oct. 13, 1966, Ser. No. 587,381  
2 Claims. (Cl. 89—1.804)



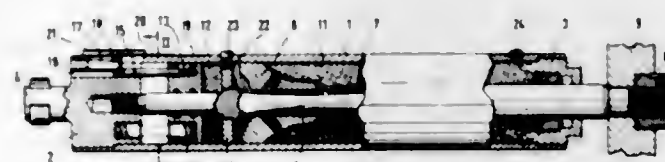
A missile container for storing a missile therein in an inert atmosphere. The missile is retained in the container during storage and shipment thereof to a vehicle from which the missile is launched. The vehicle is provided with mechanism for cooperating with opening means disposed on the container for opening thereof at launch of the missile.

**3,410,173**  
**ROUND CONTROL DEVICE**  
Bengt I. Piskator, Chicopee Falls, Mass., assignor to the United States of America as represented by the Secretary of the Army  
Filed Nov. 13, 1967, Ser. No. 682,685  
5 Claims. (Cl. 89—33)



A front and a rear pair of round control units are located in the receiver of a known automatic firearm so that the units in each pair are disposed 90° apart on opposite sides of a cartridge feed port and opposite a pair of round stops so as to cooperate therewith in holding a cartridge at a feeding position after passing through the feed port. Each of the round control units includes a compression-torsion spring with an extending arm and the round control units in each pair are arranged so that the arms are pressed apart by the cartridge when transferred to the feeding position and then spring back to cooperate with the round stops. The arms are swung rearwardly by the reciprocating barrel to prevent interference therewith when moving rearwardly to envelop the feed position cartridge.

**3,410,174**  
**HYDRAULIC BRAKE WITH COMPENSATION CHAMBER FOR GUN RECOIL**  
Wilhelm Hahn, Dusseldorf, Germany, assignor to Rheinmetall G.m.b.H., Dusseldorf, Germany, a company of Germany  
Filed Dec. 27, 1966, Ser. No. 604,698  
Claims priority, application Germany, Dec. 30, 1965, R 42,344  
7 Claims. (Cl. 89—43)

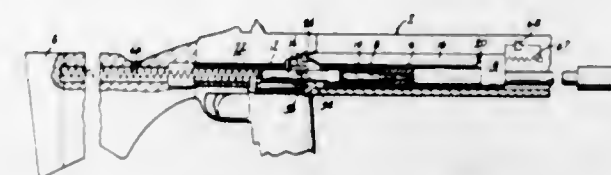


A hydraulic brake for gun recoil wherein a single uniform diameter cylinder is provided for both the brake piston and the temperature expansion compensation piston, with a control rod telescopically mounted within the brake piston and compensating piston being formed with a partition wall dividing the cylinder into the brake chamber and compensating chamber. The compensating piston is provided with an axially extending eccentric guide pin telescopically received within an end wall of the cylinder and provided with a pin radially extending through the cylinder to drive a pointer for indicating the position of the compensating piston.

**3,410,175**  
**RECOIL ASSEMBLY FOR FIREARM**  
James H. Johnson, New Haven and Julius E. Brooks, Branford, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia  
Filed Oct. 23, 1965, Ser. No. 505,313  
7 Claims. (Cl. 89—159)

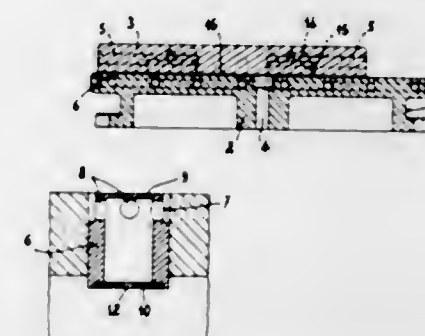
A firearm having reduced recoil effects on the shooter including a barrel having relative movement with the stock and a gas operated operating rod movable rela-

tive to the barrel and stock and connected to the firing mand signal fed to a summing point in a circuit associated pin and bolt to move the bolt relative to the barrel. A with the servoactuator, and transducer means responsive



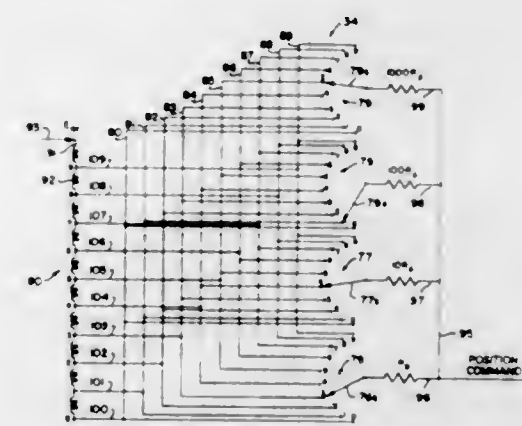
low rate spring is provided between the stock and the bolt and a mechanical damping and spring assembly is provided between the barrel and stock.

**3,410,176**  
**MOVABLE BENCH FOR MACHINE TOOL**  
Jean Auguste Christophe Van Straaten, 12 Qual de Serbie, Lyon, France  
Filed Jan. 19, 1966, Ser. No. 521,665  
Claims priority, application France, Feb. 2, 1965, 45,575  
1 Claim. (Cl. 90—58)



A movable bench for a machine tool in which an upper table supporting a workpiece is magnetically held in fixed position against a lower table until compressed air is fed, through nozzles in one of the tables, against the other of the tables to overcome the magnetic affect and allow the upper table to be displaced.

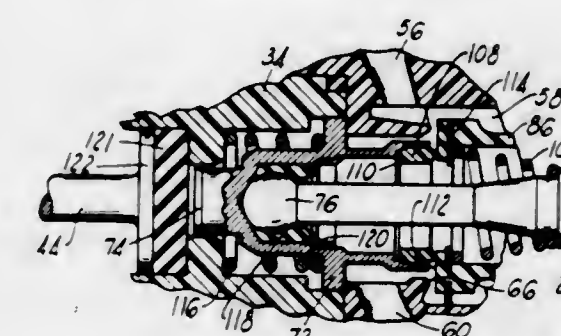
**3,410,177**  
**APPARATUS FOR PROVIDING A COMMAND SIGNAL FOR A SERVOACTUATOR**  
Louis G. Roem and Patrick M. Dark, East Aurora, N.Y., assignors to Moog Inc., East Aurora, N.Y., a corporation of New York  
Filed June 20, 1966, Ser. No. 558,649  
7 Claims. (Cl. 91—361)



Apparatus for deriving a command signal for a servoactuator to move a member, which includes manually settable multiple position switches associated with predetermined incremental voltage sources to develop discrete voltages which are summed to provide a com-

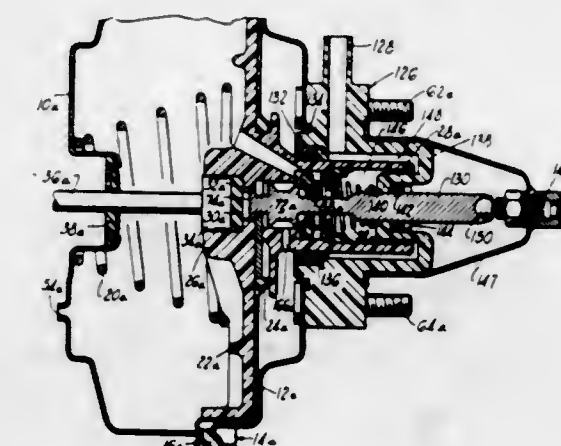
mand signal fed to a summing point in a circuit associated with the servoactuator, and transducer means responsive to the output of the member being arranged to transmit a feedback signal to the summing point.

**3,410,178**  
**VALVE MEANS FOR A FLUID PRESSURE SERVOMOTOR**  
Oswald O. Kytta, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware  
Filed Aug. 3, 1967, Ser. No. 658,093  
22 Claims. (Cl. 91—369)



A follow-up type valve means for a pressure differential type servomotor having a swivelable element on either the poppet member or the seat member to permit angular misalignment therebetween without incurring the problem of lapped leakage during such an event.

**3,410,179**  
**SUPERATMOSPHERIC FLUID PRESSURE SERVOMOTOR**  
Oswald O. Kytta and Thomas M. Julow, South Bend, Ind., assignors to The Bendix Corporation, a corporation of Delaware  
Filed Feb. 2, 1967, Ser. No. 613,486  
3 Claims. (Cl. 91—376)

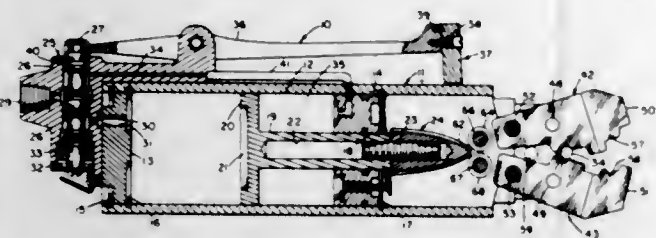


An adapter for a vacuum suspended fluid pressure servomotor which will permit the introduction of super-atmospheric air to the control valve.



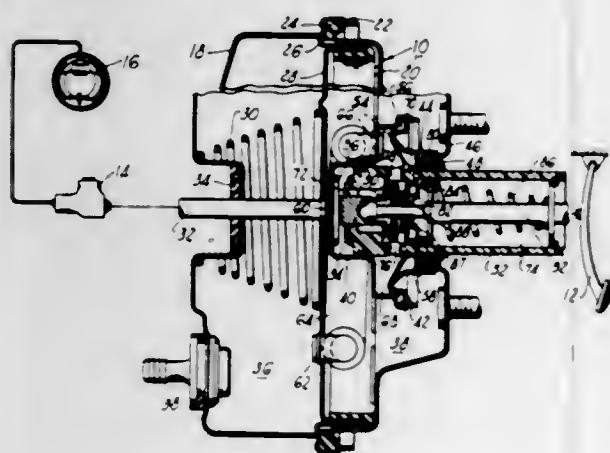
**3,410,180**  
**FULL STROKE COMPELLING MECHANISM HAVING A PRESSURE RESPONSIVE VALVE MEMBER WITHIN THE WORKING CHAMBER**

Paul J. Spangier, University Heights, and Alfred W. Schmidt, Jr., Le Roy, Ohio, assignors to ETC Incorporated, Cleveland, Ohio, a corporation of Ohio  
 Filed Aug. 3, 1966, Ser. No. 569,862  
 6 Claims. (Cl. 91-404)



A mechanism for insuring the full stroke of a fluid-operated piston within a cylinder. A normally open valve is provided in a wall portion of the cylinder and the valve is closed by the piston only when the piston completes a full stroke. If a full stroke does not obtain and the valve is not closed, piston return pressure will be exhausted through the open valve.

**3,410,181**  
**POSITION RESPONSIVE SERVOMOTOR**  
 Robert R. Hager, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware  
 Filed Dec. 16, 1966, Ser. No. 602,396  
 5 Claims. (Cl. 91-434)

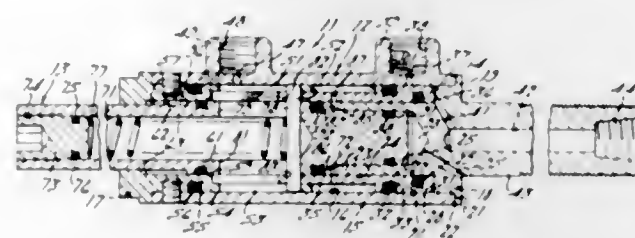


This invention relates to a fluid pressure servomotor having a valve means which is sensitive to the pressure responsive across a movable wall in the servomotor to position an operator-operated control member in accordance with the position of the movable wall to render same travel responsive so that the operator of the servomotor will sense the travel required to perform work by the servomotor.

**3,410,182**  
**FLUID STOP MECHANISM**  
 Joseph D. Snitgen, 9656 Artesian, Detroit, Mich. 48228  
 Filed Nov. 14, 1967, Ser. No. 682,748  
 13 Claims. (Cl. 92-13)

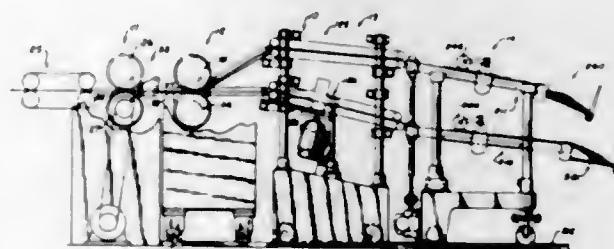
A fluid stop mechanism comprised of a fluid motor having a driven member and a stop member that is adapted to engage a workpiece or the like and exert very low force against the workpiece upon contact but which develops a substantial force in resistance of any tendency for the workpiece to move. A coil spring is interposed between the driven member and the stop member for exerting the contact force and for permitting relative movement between the members upon contact of the stop

member with the workpiece. The stop member forms a piston in a variable volume fluid chamber in which an incompressible fluid is contained. A port extends from this chamber and through the driven member, which port



is adapted to be closed upon the relative movement between the stop member and the driven member to provide a hydraulic lock in this fluid chamber. This hydraulic lock precludes any tendency for the stop member to undergo any reverse movement.

**3,410,183**  
**MATERIAL PROCESSING METHOD AND APPARATUS**  
 Albert J. Sarka, Fairview Park, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware  
 Filed Nov. 26, 1965, Ser. No. 509,754  
 26 Claims. (Cl. 93-36)

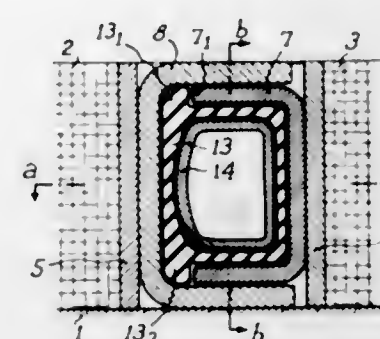


A material processing apparatus comprises a pair of cooperating cutting and creasing cylinders which cut and crease sheet material into a plurality of articles and waste. The articles are arranged on the sheet material in a plurality of rows extending transverse to the direction of movement of the sheet material with each row comprising a plurality of laterally adjacent articles. A stripper unit then strips the waste from the articles and the articles are then separated into a pair of paths. The articles are conveyed in the separate paths by a tape conveyor unit which laterally separates the adjacent articles as they are being conveyed. The tape conveyor unit delivers the articles to a shingling conveyor unit on which the articles are arranged in an overlapped relationship and which have trays which receive the overlapped articles.

**3,410,184**  
**EXPANSION AND COMPRESSION JOINT PARTICULARLY FOR ROAD SURFACES**  
 Denis Marcel Henri Hamel, Saint-Mande, Val de Marne, France, assignor to Pneumatiques Caoutchouc Manufacture et Plastiques Kleber Colombes, Colombes, France, a French body corporate  
 Filed May 23, 1966, Ser. No. 552,056  
 Claims priority, application France, June 4, 1965, 19,750  
 8 Claims. (Cl. 94-18)

An expansion and compression joint for a road surface layer comprises a metallic caisson formed by two facing channel members one sliding freely and transversely into the other, one or both channels having end plates, and resilient means between the channels. As protection

means against pinching and creep of the ends of the resilient means, a small tongue extension of the end wall of the resilient means is inserted between the side wall of the resilient means and the bottom of a channel member

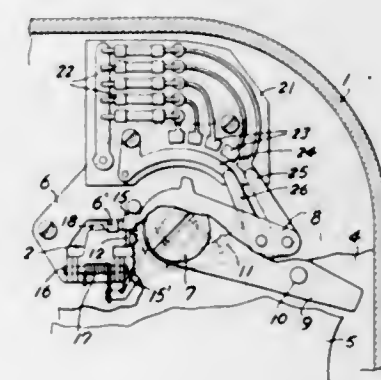


supporting it. The resilient means may enclose an air chamber or encase a separate inflatable bladder. The protection means may also be reinforced or harder rubber caps.

**3,410,185**  
**MARKING**  
 Thomas L. Harrington, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware  
 No Drawing. Continuation-in-part of application Ser. No. 314,492, Oct. 7, 1963. This application Aug. 8, 1966, Ser. No. 570,737  
 7 Claims. (Cl. 94-22)

A method for marking a pavement surface comprising (a) heating the surface of the pavement, (b) projecting solid, individual, pigmented particles having an organic thermoplastic phase toward the pavement, and (c) heating the parties as they proceed toward the pavement to soften the thermoplastic phase. The particles coalesce on the heated pavement as a film which is rapidly converted to a nontacky state capable of bearing road traffic.

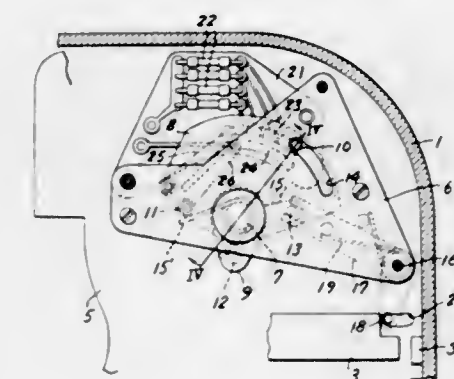
**3,410,186**  
**AUTOMATIC FILM SENSITIVITY SETTING MEANS FOR AN EXPOSURE CONTROL CIRCUIT OF A CAMERA**  
 Tatsuo Kaneko, Yono-shi, Japan, assignor to Fuji Shashin Film Kabushiki Kaisha and Fuji Shashin Koki Kabushiki Kaisha Ashigarakami-gun, Saitama-ken, Japan, both corporations of Japan  
 Filed Feb. 19, 1965, Ser. No. 433,958  
 6 Claims. (Cl. 95-10)



An improved camera for use with film magazines wherein the sensitivity of the film is represented by a slot on the magazine, the camera including unique mechanical sensing means and a latching control thereover so that the camera is automatically adjusted to function with the particular film when the cover is closed.

**3,410,187**  
**AUTOMATIC FILM SENSITIVITY SETTING MEANS FOR AN EXPOSURE CONTROL CIRCUIT OF A CAMERA**

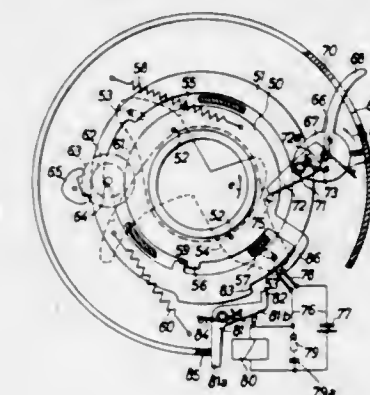
Tatsuo Kaneko, Yono-shi, Japan, assignor to Fuji Shashin Film Kabushiki Kaisha and Fuji Shashin Koki Kabushiki Kaisha Ashigarakami-gun, Saitama-ken, Japan, both corporations of Japan  
 Filed Feb. 19, 1965, Ser. No. 434,068  
 7 Claims. (Cl. 95-10)



An improved camera for use with film magazines wherein the sensitivity of the film is represented by a slot on the magazine, the camera including unique mechanical sensing means and a mechanism whereby the sensing means is actuated when the camera cover is locked in order to automatically adjust the camera to function with the particular film.

**3,410,188**  
**CAMERA SHUTTER WHICH ALSO FUNCTIONS AS A DIAPHRAGM**

Gerd Kiper, Unterhaching, near Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen, Germany  
 Continuation of application Ser. No. 400,539, Sept. 30, 1964. This application Feb. 20, 1967, Ser. No. 617,416  
 Claims priority, application Germany, Oct. 5, 1963, A 44,226  
 16 Claims. (Cl. 95-10)



1. In a camera, in combination, a plurality of shutter blades; coaxial leading and trailing shutter ring means operatively connected to said shutter blades for opening and closing the latter, said leading ring means returning from a cocked position to a rest position in advance of said trailing ring means for opening the shutter blades to make an exposure, the trailing ring means upon following the leading ring means to its rest position returning the blades to their closed position; first retard means operatively connected to said leading ring means for retarding the return thereof to rest position during the entire return movement of said leading ring means; adjustable second retard means operatively connected to said trailing ring means for retarding the release thereof, for return from a cocked to a rest position, to an extent which

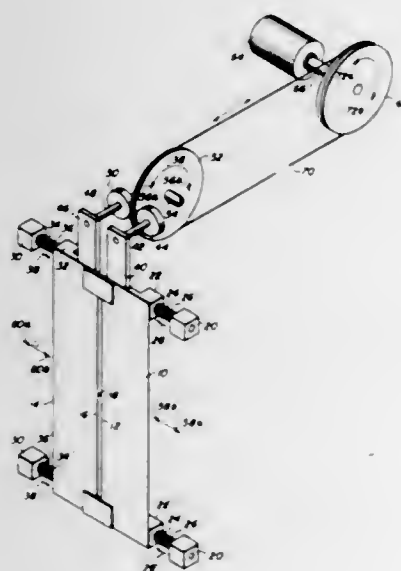


is adjustable for releasing said trailing means before, at, or after the end of the return movement of said leading ring means; and spring means urging said trailing ring means to said rest position thereof, said spring means opposing said second retard means and said second retard means when reaching a given release position, to which said second retard means is displayed by the force of said spring means, releasing said trailing ring means for substantially unrestrained return by said spring means to its rest position.

3,410,189

**VARIABLE WIDTH EXPOSURE SLIT**

Walter Spokowski, Wayland, Mass., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware  
Filed Feb. 11, 1966, Ser. No. 526,796  
4 Claims. (Cl. 95—12.5)



1. Apparatus for varying the width of an optical slit comprising:

- first and second aperture slit blades each having an edge, said edges opposed to one another to define an aperture slit by the separation therebetween;
- at least one of said blades slidably supported upon a pair of tracks;
- a bar affixed to and extending from said one blade;
- shaft rigidly affixed to said extended portion of said bar;
- cam follower attached to said shaft free to rotate about said shaft;
- cam having at least a first surface thereon coacting with said cam follower such that point contact is maintained between said surface and said cam follower;
- drive means coupled to said cam to rotate said cam thereby causing said slit to vary in proportion to the contour of said surface.

3,410,190

**COPYING METHOD AND APPARATUS**

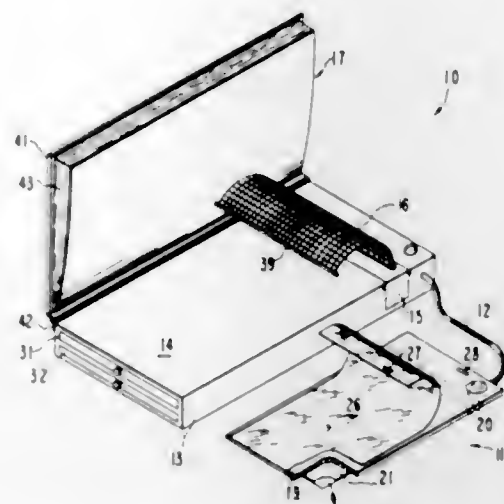
Iben Browning, 1176 Sesame Drive,  
Sunnyvale, Calif. 94087

Continuation-in-part of application Ser. No. 364,128,  
May 1, 1964. This application May 19, 1966, Ser.  
No. 551,274

13 Claims. (Cl. 95—13)

A method and apparatus for transferring information from the sensitive surface of a photonegative sheet to the sensitive surface of a photopositive sheet by utilizing a web matrix having interstices of a size suitable for retaining a predetermined amount of developing solution. The matrix is disposed within a container suitable for re-

ceiving the matrix in a rolled-up condition. When employed, the solution-retaining matrix is withdrawn from the container and placed in contact with the sensitive surface of one of the sheets to uniformly distribute the de-



sired quantity of solution along the sensitive surface. The sensitive surfaces are then brought into confronting registration to develop a mirror image of the information on the photosensitive sheet.

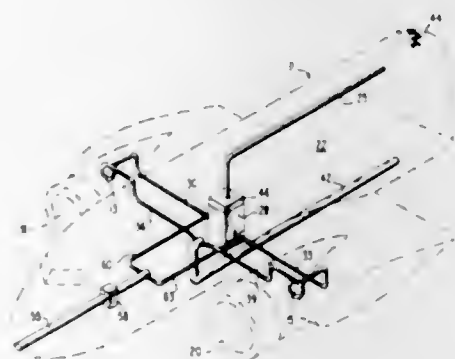
3,410,191

**METHOD AND APPARATUS FOR ATMOSPHERE CONTROL IN CLOSED COMPARTMENTS**

Carey B. Jackson, Pompano Beach, Fla., assignor, by mesne assignments, to "Automatic" Sprinkler Corporation of America, Cleveland, Ohio, a corporation of Ohio

Continuation-in-part of application Ser. No. 386,508,  
July 31, 1964. This application Aug. 31, 1966, Ser.  
No. 576,213

5 Claims. (Cl. 98—1.5)



Pressurized air in a closed but not hermetically sealed chamber surrounded by atmospheric air at a substantially lower pressure is cycled through a zone where harmful components are removed and oxygen is added. Enough air is admitted to the chamber from externally thereof to make up for leakage of air from the chamber.

3,410,192

**MOTOR VEHICLE EXHAUST DEFLECTORS**

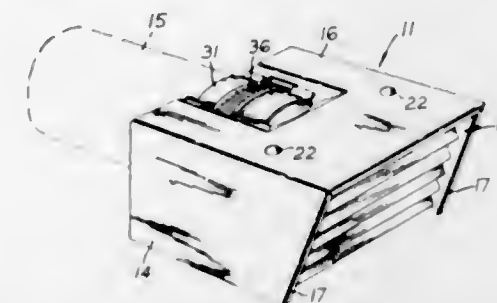
David Warwick Neale, Stourport, England, assignor to Raydyot Limited, Old Hill, England, a British company

Filed Jan. 10, 1967, Ser. No. 608,300  
Claims priority, application Great Britain, Feb. 17, 1966,  
6,947/66

2 Claims. (Cl. 98—2)

An inverted channel-shaped body having means for securing the same to the terminal portion of a tail pipe.

Spaced parallel louvres extend transversely in the rear opening. The cover is movably displaceable from the opening. The sidewalls are mounted on the roof adjacent the

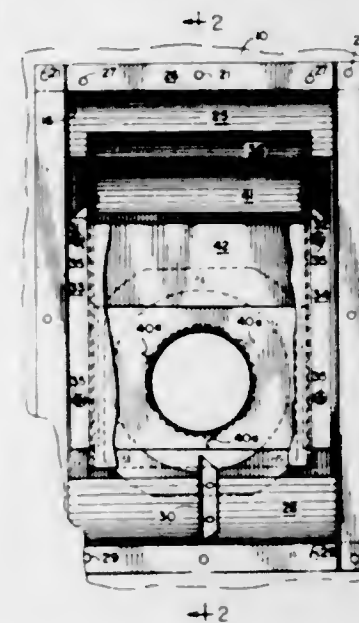


rearwardly slanting planes so as to deflect exhaust gases downwardly and rearwardly toward the ground.

3,410,193

**RECESSED VENT ASSEMBLY FOR SEALED COMBUSTION WALL FURNACE**

Dale L. Clark, Wichita, Kans., assignor to The Coleman Company, Inc., Wichita, Kans., a corporation of Kansas  
Filed Apr. 26, 1967, Ser. No. 633,938  
10 Claims. (Cl. 98—32)



A wall ventilation assembly for a natural draft, sealed combustion furnace. The fresh air intake and combustion air outlet are recessed in the wall with the mouth of the fresh air intake passage being set back further than the mouth of the combustion air outlet. The recessing of the vent assembly cooperates with a baffle structure to establish an air flow pattern substantially independent of the impact angle of wind gusts by directing such wind behind the combustion air outlet and into the fresh air intake while permitting combustion products to exhaust. The vent and baffle assembly are further designed to eliminate hot spots caused by exhaust gases and to prevent rain from entering the flues.

3,410,194

**VENTING STRUCTURE FOR ROOFS AND THE LIKE**

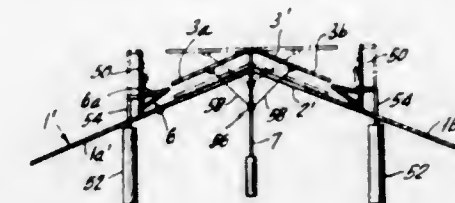
Gotthilf Reusch, Berkheim, near Esslingen, Germany, assignor to J. Eberspacher, Esslingen (Neckar), Germany

Continuation-in-part of application Ser. No. 532,715,  
Mar. 8, 1966. This application Dec. 7, 1967, Ser.  
No. 688,948

Claims priority, application Germany, Mar. 30, 1965,  
E 28,994

12 Claims. (Cl. 98—42)

A venting structure for a roof is formed of an opening in a roof, a cover for the opening, and variably positionable sidewalls for regulating the flow of air through the

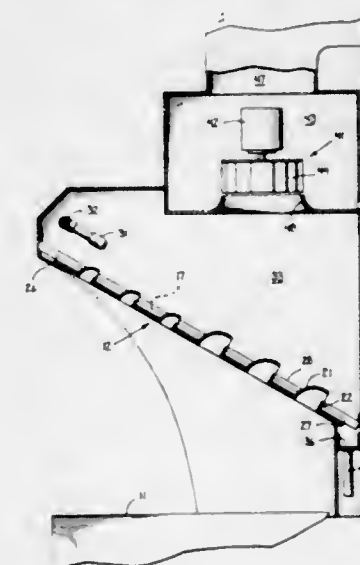


opening and are selectively movable upwardly and downwardly for varying the air flow conditions at the opening in the roof when the cover is displaced from the opening.

3,410,195

**KITCHEN EXHAUST HOOD**

Donald E. King, Louisville, Ky., assignor to Protection Instrument Company, a corporation of Kentucky  
Filed May 11, 1967, Ser. No. 637,844  
4 Claims. (Cl. 98—115)



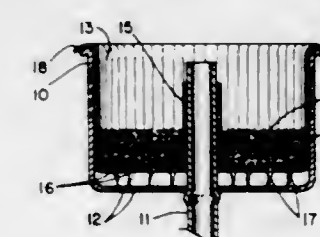
A kitchen exhaust hood having a drip-proof louver for receiving hot grease-laden air, water spray to cool the hot air and condense the grease and a blower for discharging air drawn into the hood and centrifugally separating water droplets therefrom.

3,410,196

**DISPOSABLE COFFEE BASKET LINER**

Celia F. Potts, 4284 Encino Lane,  
Ventura, Calif. 93001

Filed May 16, 1967, Ser. No. 638,874  
2 Claims. (Cl. 99—295)

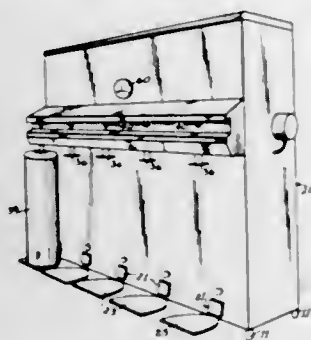


This disclosure relates to a liner for conventional coffee baskets made of thin aluminum material in a cylindrical shape such that it may readily be received in the cylindrical coffee basket to line the walls thereof. The central portion of the liner includes an upwardly extending tubular portion for receiving the coffee basket stem and thus lining the stem. The walls of the liner are corrugated and the floor portion of the liner includes a plurality of small openings. In order that water may properly pass through grounds disposed in the liner through the small openings and out through the bottom of



the basket, the floor portion of the liner includes bent down small tabs which engage the bottom of the basket and hold the floor portion of the liner in spaced relationship thereto.

**3,410,197**  
**COFFEE MAKING MACHINE**  
George H. Guess, 2108 S. Highland Park Ave.,  
Chattanooga, Tenn. 37404  
Filed Nov. 19, 1964, Ser. No. 412,468  
6 Claims. (Cl. 99—298)



A coffee making machine including a large heated water tank, a series of receiving stations adjacent the water tank for receiving smaller coffee brewing containers, and a control circuit for automatically filling the water tank and transferring water from the water tank to the coffee brewing containers.

**3,410,198**  
**MEAT-TURNING DEVICE**  
Alfred Lohr and Helmut Hemmann, Herborn, and Karl Tropp, Werdorf, Germany, assignors to Burger Eisenwerke Aktiengesellschaft, Wetzlar, Germany, a corporation of Germany  
Filed May 23, 1967, Ser. No. 640,533  
Claims priority, application Germany, May 25, 1966, B 87,281  
10 Claims. (Cl. 99—423)

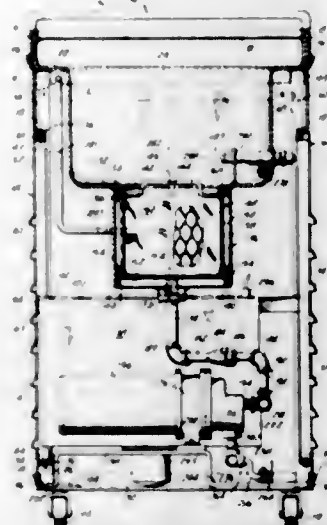


Apparatus for the turning, during cooking, of flat portions of meat wherein the comestible is advanced along a heated surface by a pusher, and at least one step is formed in the surface at an intermediate location and has a flange engageable with the leading edge of each portion of meat advanced by the pusher for temporarily retaining the leading edge whereby continued advance of the pusher flips the trailing edge of the respective portion about its leading edge.

**3,410,199**  
**DEEP FAT FRYER WITH AUTOMATIC FILTRATION AND STORAGE MEANS**  
Henry Quednau, deceased, late of Tampa, Fla., by Iwanna H. Quednau, executrix, Tampa, Fla., assignor to Food Research & Equipment Company, Tampa, Fla., a corporation of Florida  
Filed Feb. 2, 1967, Ser. No. 613,681  
20 Claims. (Cl. 99—403)

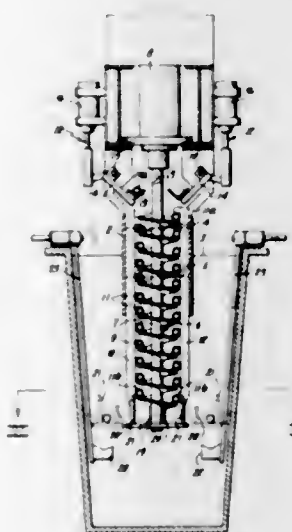
Deep fat fryer having a storage and closed circulating system for the cooking oil, including a storage tank and a heater tank for the cooking oil, both of which are completely filled to exclude air when the device is out of service. The system further includes a filter accessible through the bottom wall of the cooking pot, so that a filter

element can be inserted and removed through an opening in the bottom of the cooking pot. A pump and a three-way control valve having a FILL, OPERATE and STORE position complete the system. Thermostats in the cooking pot set at 325° F. and 365° F. provide a choice of cooking pot temperatures. A heater thermostat maintains oil in the heater tank at a temperature of 395° F. to quickly



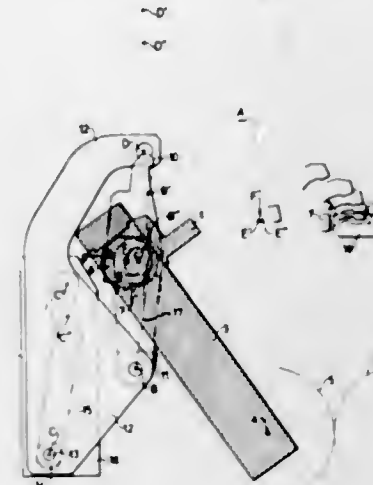
restore any drop in the cooking pot temperature as cold food is introduced. A safety thermostat on the heater tank cuts out the entire electrical system if the oil becomes heated to 410° F. Elements on a control panel signal closure of the main switch, show when the pump motor is running, when current is being supplied in the heater tank, and an overheated condition of the cooking oil.

**3,410,200**  
**AUTOMATIC EQUIPMENT FOR GALVANIZING TUBES**  
Charles Gillet, Paris, France, assignor to Societe Anonyme dite: Vallourec  
Filed June 14, 1965, Ser. No. 463,762  
Claims priority, application France, June 15, 1964, 978,239  
8 Claims. (Cl. 118—423)



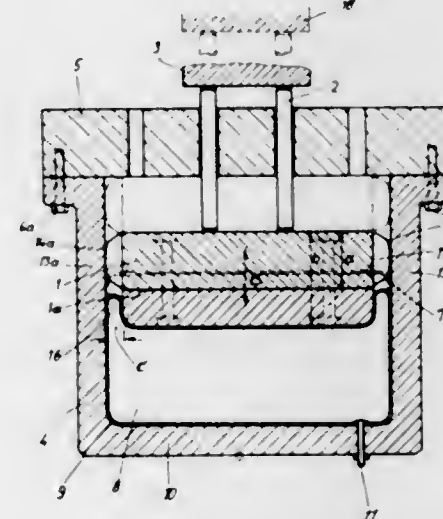
Equipment for galvanizing elongated objects comprising a tank, a pair of substantially vertical screws in the tank, swinging arms for loading said objects onto opposite sides of the screws at their tops, guides preventing lateral removal of the objects as they descend while the screws are rotated, transfer means for receiving the objects as they fall from the lower end of the screws, moving them clear of the screws, and swinging arms for lifting the treated objects out of the tank.

**3,410,201**  
**PRESS JAW SYSTEM**  
Harald Georg Swede, Malmo, Sweden, assignor to AB Tetra Pak, Lund, Sweden, a Swedish company  
Filed Apr. 8, 1966, Ser. No. 541,256  
Claims priority, application Sweden, May 6, 1965, 5,916/65  
4 Claims. (Cl. 100—264)



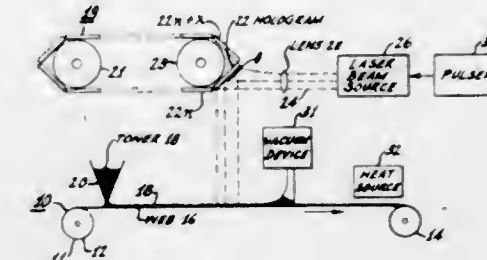
Apparatus to seal off a tube by pressing the tube closed between a set of jaws which are so mounted as to take advantage of the reaction forces in the system. A linkage system is used to simultaneously exert force on both jaws to bring them together by pushing on one jaw and pulling on the other jaw simultaneously.

**3,410,202**  
**PRESS**  
Paul Chrusaski, Ilsfeld, near Heilbronn, Germany, assignor to August Lapple G.m.b.H. & Co., Heilbronn am Neckar, Germany, a company  
Continuation of application Ser. No. 481,272, Aug. 20, 1965. This application Aug. 21, 1967, Ser. No. 662,183  
Claims priority, application Germany, Aug. 20, 1964, L 48,578  
8 Claims. (Cl. 100—264)



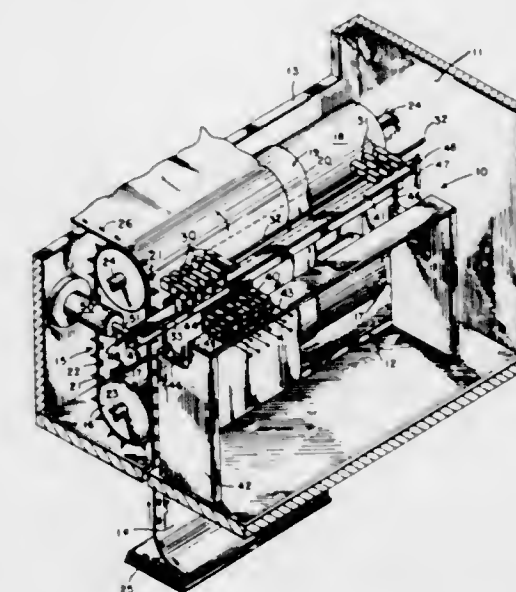
In a press having press rams movable vertically towards and away from each other, the rams are formed as hollow parts in which pressure pad plates are movably mounted. A sack of resilient material filled with air under pressure is arranged between the pressure pad plate and one wall of the chamber. The sack engages a pressure transmitting member connected to the pressure pad plate which is spaced around its periphery from the inner wall of the hollow part so that the sack can enter the space between such wall and the pressure transmitting member.

**3,410,203**  
**NON-IMPACT PRINTER EMPLOYING LASER BEAM AND HOLOGRAPHIC IMAGES**  
Kenneth H. Fischbeck, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware  
Filed Feb. 1, 1967, Ser. No. 613,282  
12 Claims. (Cl. 101—1)



A non-impact printing apparatus includes a hologram mounted adjacent a printing surface. The hologram contains a holographic image of the data to be printed whereas the printing surface contains toner to record the data to be printed. Light energy, such as that derived from a laser, is beamed onto the hologram to project a real image of the data to be printed onto the toner on the printing surface. The radiant energy in the laser beam fuses the toner to the printing surface in the shape of the printed data.

**3,410,204**  
**LINE PRINTER AND COORDINATED LINE FEED MEANS**  
Henry F. Burkhard, Eatontown, N.J., assignor to the United States of America as represented by the Secretary of the Army  
Filed Oct. 21, 1966, Ser. No. 588,639  
3 Claims. (Cl. 101—93)



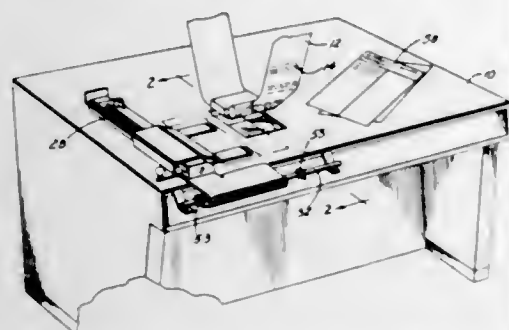
A printer is provided with print heads which are capable of printing on a print receiving medium during the line feed operation. A first group of print heads, at the beginning of the line, are moved from the normal printing location down one line width so that these print heads will be in position to start printing the next line. During the line feed operation, a sprocket mechanism will line feed both the medium and the first group of print heads in unison up to the normal printing location. As the medium and the heads are being fed, however, printing may take place since the heads and medium are at a zero relative velocity and the heads are properly aligned with the medium.



3,410,205

**DOCUMENT REGISTERING MEANS IN TRANSFER PRINTING MACHINE**

Albert F. Wike, South Euclid, and Albert C. Brown, Eastlake, Ohio, assignors to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware  
Filed Feb. 16, 1967, Ser. No. 616,641  
6 Claims. (Cl. 101—134.5)



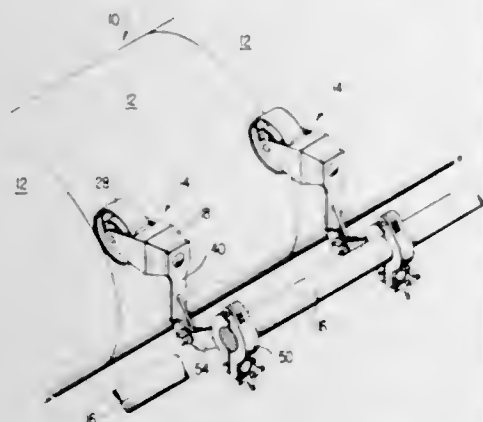
The drawings are not of a complete machine. The superstructure which drives the upper platen is eliminated for clarity of illustration. It is shown symbolically in FIGURE 2. A cross slide carriage provides transport for carrying a print-out document from a convenient location into a printing station of the transfer printing machine. An indicator at the convenient location away from the printing station is used to establish the loading position of the print-out document on the carriage.

Additionally, an improved viewing system is illustrated wherein a mirror is placed below the work table surface and a lamp house is used to back-light the web of material in order to enable positive reading of an image of the indicia without shadows and without requiring the operator to assume an unnatural working position.

3,410,206

**INK SEPARATOR**

Joseph P. Dorr, Silver Spring, Md., assignor to Capital Tool and Manufacturing Co., Inc., College Park, Md., a corporation of Maryland  
Filed Nov. 28, 1966, Ser. No. 597,403  
2 Claims. (Cl. 101—206)



An ink separator including a body having rotatably mounted therein a hard-surfaced roller for engaging an ink cylinder to remove ink therefrom, a pair of spring loaded scraper blades slidably mounted in the body in engagement with the roller to remove ink therefrom, and a mounting strap projecting from the body for securing the assembly with respect to a fixed support.

3,410,207

**PRESSURE CONTROL MEANS FOR TRAVELING ROLLER IN BED AND CYLINDER PRINTING MACHINES**

William P. Barbour, Alexandria, Va., assignor to Farrington Business Machines Corporation, Springfield, Va., a corporation of Massachusetts  
Filed Dec. 8, 1965, Ser. No. 512,353  
6 Claims. (Cl. 101—269)

A printing apparatus is disclosed of the type which

utilizes a portable printing plate for printing data on a document such as a sales invoice. In such apparatus, the printing plate is placed upon a print bed and over the plate is positioned the document. The operator then causes a carriage containing a platen assembly which includes a roller platen to be moved over the print bed to effectuate the printing operation. The level of the roller platen with respect to the print bed is optimized by providing within the carriage a pivotally mounted compensating bracket which is biased to a first position. The platen assembly is also pivotally mounted within the carriage such that it is rotated from a non-operative position into contact with the compensating bracket so that the level of the roller platen with respect to the print bed corresponds to the minimum combined thickness of the printing plate and the document anticipated for use with the printing

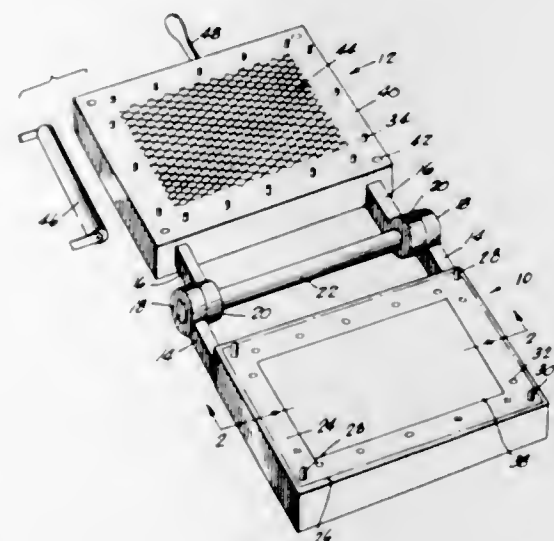


apparatus whereby the printing pressure for this condition is optimized. Movement of the carriage over the print bed causes the roller platen to engage the document and printing plate to thereby effectuate the printing operation. If the combined printing plate and document thickness exceeds the anticipated minimum combined thickness, the roller platen forces the compensating bracket away from its normal first position. The platen assembly follows the compensating bracket and thus the level of the platen roller relative to the print bed is increased to thereby maintain optimum printing pressure during the printing operation. A further member is mounted within the carriage, the purpose of which is to lock the roller platen at its raised position and thereby prevent print smudge due to the roller platen springing back against the document.

3,410,208

**METHOD AND MEANS FOR PRINTING AMBIENT LIGHT FILTERS**

Vern E. Hamilton, Palos Verdes Estates, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland  
Filed Dec. 2, 1963, Ser. No. 327,474  
17 Claims. (Cl. 101—316)



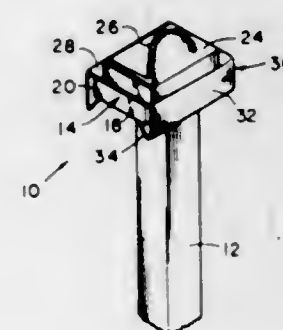
Apparatus to print grid pattern in perfect registry with index formations for laminating purposes includes planar

backing member to receive sheet, index-forming means movable toward backing member to produce index formations and hold sheet during printing, and grid-printing means movable toward backing member in exact registry with index-forming means to print grid pattern in proper location. Grid-printing means may be part of carrier member for index-forming means or may move back and forth through opening in carrier member.

3,410,209

**ADJUSTABLE TYPE CONSTRUCTION**

Bernard G. Bostrom, Woodland Hills, Calif., assignor to Reynolds Printasign Co., a corporation of Nevada  
Filed Apr. 22, 1966, Ser. No. 544,569  
1 Claim. (Cl. 101—368)

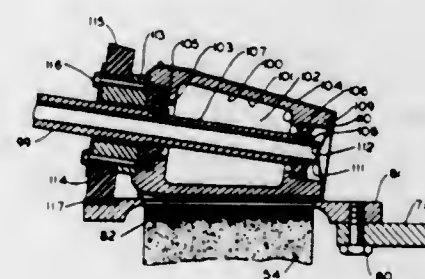


The invention is a type holding clip, bracket or device. The bracket or holder is one adapted for use with a type mounting stem having a flat end plate or head of larger area than the stem so that its edges overhang the sides of the stem. The holder or clip provides a flat surface to which the type is secured by suitable means, the clip or holder having depending parts which are spaced from the edges of the plate or head on the stem and which then have inwardly turned parts which engage the underneath surface of the overhanging edges of the plate or base. Preferably the depending parts are on opposite sides of the clip. This construction makes it possible to move the clip universally, that is in any direction including angularly to adjust the position of the type, and the clip is removable by sliding it endwise relative to the plate or head.

3,410,210

**WORK-SUPPORTING MEANS FOR SEMI-AUTOMATIC ELECTROSTATIC PRINTING SYSTEM**

James W. Edwards, Creve Coeur, and Shelly W. Mays, Jr., and Harry J. Larrigan, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
Original application June 11, 1965, Ser. No. 463,109, now Patent No. 3,302,560, dated Feb. 7, 1967. Divided and this application Nov. 9, 1966, Ser. No. 593,202  
6 Claims. (Cl. 101—407)



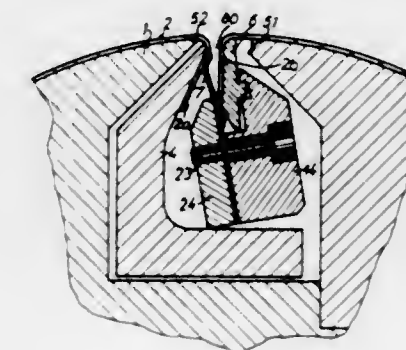
A mandrel for holding thin-walled containers by means of a vacuum. The mandrel is rotatably mounted on a

hollow shaft which merges into an end wall formed on the mandrel. An aperture is formed in the end wall communicating with the hollow shaft which is in turn connected to a source of pneumatic pressure. A plurality of radially spaced teeth circumferentially extend around the aperture and are adapted to engage the inner surface of the container bottom wall when the container is disposed upon the mandrel. The teeth will prevent an air flow past the bottom wall of the container thereby preventing the collapsing of the small portion of the bottom wall.

3,410,211

**PRINTING CYLINDER CLAMP FOR TENSIONING FLEXIBLE PRINTING PLATES**

Hans Grünig, Bern, Switzerland, assignor to Maschinenfabrik Winkler, Fallert & Co. A.G., Bern, Switzerland  
Filed Oct. 8, 1965, Ser. No. 494,188  
Claims priority, application Sweden, Oct. 26, 1964, 12,889/64  
14 Claims. (Cl. 101—415.1)



A device for fastening flexible printing plates within a recess formed in a printing cylinder includes a generally C-shaped holding piece over which one end of the printing cylinder is directed and at least one rail member which has means for clamping the opposite end of the printing cylinder. The rail member is rotatable for the purpose of tensioning the printing plate and for engaging the first end with a spring clamping element to hold this first end while the second end is being moved in a direction to tension the plate.

The clamping means includes two rail members which are arranged end-to-end and which may be moved in axial directions toward and away from each other to engage and disengage clutch elements defined on these ends for the purpose of providing combined or single movement of the rail members. The arrangement permits the clamping of a single wide printing plate or several narrow printing plates in a side-by-side arrangement on the plate cylinder.

3,410,212

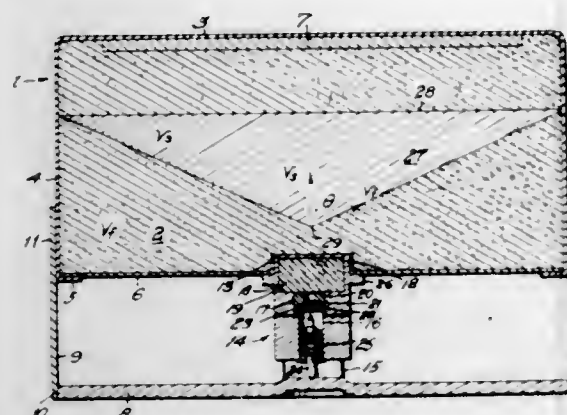
**ANTI-TANTRIC MINE WITH BINARY EXPLOSIVE CHARGE**

Bernard E. Drimmer, Brentwood, Md., assignor to the United States of America as represented by the Secretary of the Army  
Filed May 7, 1953, Ser. No. 353,697  
7 Claims. (Cl. 102—8)

1. In a demolition unit, a closed container having a shallow depth relative to its transverse cross-section and having a high velocity explosive charge received therein, an insert comprising a low velocity explosive completely embedded within said high velocity explosive and extending laterally to the side walls of said container, a heavy facing plate projectile substantially coextensive with the top wall of said container, and means below said insert for initiating said high velocity explosive charge, said insert retarding the peak velocity of the detonation wave



formed by said high velocity explosive charge to alter the shape of said wave from a concave to a flat wave casing under the influence of the retardation on impact in order to slide the safety sleeve, and with it a safety device



whereby said facing plate is propelled in one piece toward a target.

3,410,213

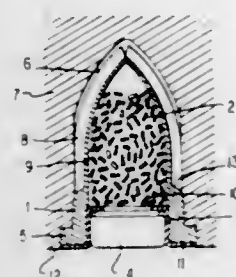
**PROPELLANT CARTRIDGE FOR COMMERCIAL POWDER DRIVEN APPARATUS**

Hans Stadler, Nuremberg, Heinz Gawlick, Furth, and Hans Umbach, Stadeln, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany

Filed Apr. 26, 1966, Ser. No. 545,487

Claims priority, application Germany, May 15, 1965, D 47,277

30 Claims. (Cl. 102—39)



A propellant cartridge for commercial powder-driven apparatus used to drive bolts, nails, or the like into walls, etc., to stun animals to be slaughtered, and to deform materials, as well as for other related purposes. The cartridge case is molded from a thermoplastic material to have a completely closed forward end and is provided with a plurality of generally axially extending ribs from the forwardmost axially central tip rearwardly to the start of the bottom piece for providing thin walled rupture webs therebetween that will rupture upon ignition of the propellant charge to quickly release the propellant charge.

3,410,214

**PERCUSSION FUZE**

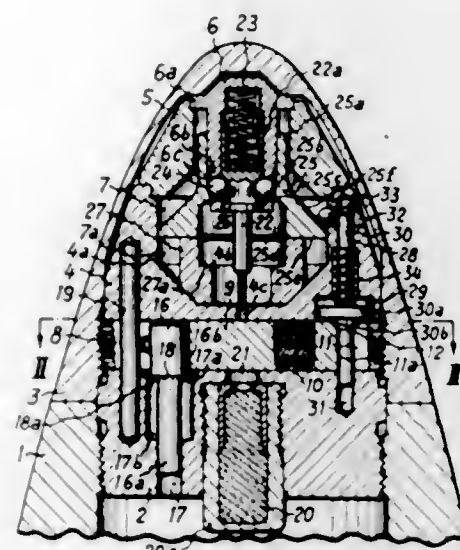
Ferdinand Irion, Baden, Switzerland, assignor to Oerlikon-Bührle Holding Ltd., Zurich, Switzerland

Filed Dec. 6, 1966, Ser. No. 599,430

Claims priority, application Switzerland, Dec. 6, 1965, 16,798/65

6 Claims. (Cl. 102—78)

A percussion fuze having a firing pin, supported axially slidable in the fuze casing is movable against a primer with a carrier for the firing pin spring-loaded in the same direction, which carrier, by means of locking bodies engaging in it and a slidable safety sleeve, when in an armed position is checked against sliding owing to the spring force. There is an impact or inertia body, movable in the



which has a locking component having a locking position for holding back the safety sleeve.

3,410,215

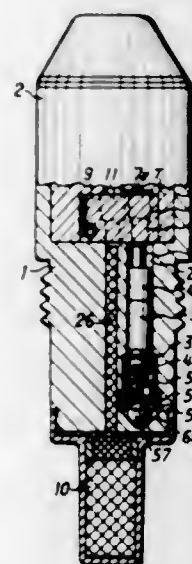
**IMPACT FUZE FOR PROJECTILES**

Robert Apothéloz, Wallisellen, Switzerland, assignor to Oerlikon-Bührle Holding Ltd., Zurich, Switzerland

Filed June 20, 1967, Ser. No. 647,521

Claims priority, application Switzerland, June 21, 1966, 8,975/66

4 Claims. (Cl. 102—78)



Mounted in an impact fuze for projectiles are two inertia members, one of which responds to a deceleration of the projectile in the axial direction and the other to a deceleration of the projectile transversely to the axial direction of the projectile. Through said two decelerations, two locking sleeves, which hold a striker pin in a locked position through locking members, are displaced into their forward position by the inertia members, and a spring is compressed which bears on the one hand against the striker pin and on the other hand against a locking sleeve. As soon as the deceleration ceases, the one locking sleeve is displaced into its initial position under the force of the spring and the striker pin is released for the firing.

3,410,216

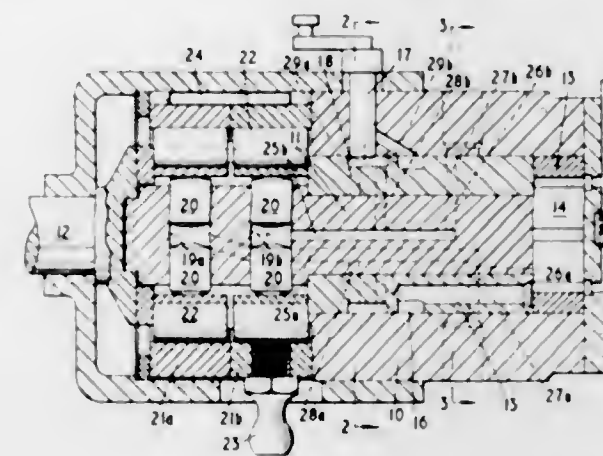
**LIQUID FUEL PUMPING APPARATUS FOR SUPPLYING FUEL TO MULTI-CYLINDER INTERNAL COMBUSTION ENGINES**

Kenneth Albert Walters Kemp, Ealing, London, England, assignor to C.A.V., Limited, London, England, a British company

Filed Mar. 24, 1967, Ser. No. 625,790

Claims priority, application Great Britain, Mar. 31, 1966, 14,222/66

11 Claims. (Cl. 103—2)



Pumping apparatus of the rotary distributor type for supplying fuel to an internal combustion engine, the distributor being provided with two transverse bores in which are located pairs of pumping plungers respectively, a pair of cams arranged to move the plungers inwardly as the distributor is rotated, the distributor having two sets of passages through which fuel flows to two sets of delivery ports, during the injection stroke and a common feed pump for supplying fuel to the transverse bores, there also being provided a common metering valve for controlling the quantity of fuel supplied to the bores.

3,410,217

**LIQUID CONTROL FOR GAS WELLS**

Kork Kelley, 518 W. 7th St., and Robert K. Kelley, 619 N. Pershing St., both of Liberal, Kans. 67901

Continuation-in-part of application Ser. No. 451,187, Apr. 27, 1965, now Patent No. 3,324,803, dated June 13, 1967. This application Apr. 25, 1967, Ser. No. 633,437

17 Claims. (Cl. 103—52)



A liquid removal system for gas wells, having a liquid-gas separator at the bottom of the tubing string to admit only liquid to the string, a gas lift valve in the tubing

string to expel the fluid from the string in slugs, using the gas in the casing as propellant, and a free piston member in the tubing string which assists in sweeping out the liquid slug. A catcher device is provided at the wellhead to assist in removing the free piston member for removal and inspection by optionally retaining the free piston member at the well head.

3,410,218

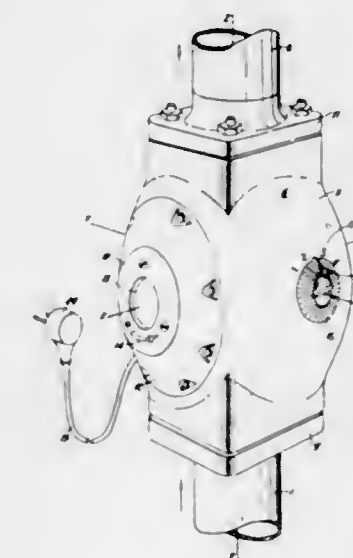
**MOTOR PUMP UNIT**

Pierre Albert Fivel, Argenteuil, France, assignor to International Standard Electric Corporation

Filed June 8, 1967, Ser. No. 644,570

Claims priority, application France, June 20, 1966, 66,103

5 Claims. (Cl. 103—87)



A sphere-shaped closely coupled booster pump having motor and dual pump sections amenable to immersion in the fluid. The common rotational axis of the motor and pumps is normal to the inlet and outlet piping.

3,410,219

**DISTORTIONABLE CHAMBER LOW LEAKAGE PUMP**

William H. Shope, Phoenix, Ariz., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Apr. 17, 1967, Ser. No. 631,405

6 Claims. (Cl. 103—149)



A rotary pump having an annular series of multiple pumping chambers separated by flexible elastomeric webs, the chambers being arranged to be sequentially distorted or constricted sufficiently by an eccentrically held porting shaft to give an inflow and discharge of fluid through the shaft.



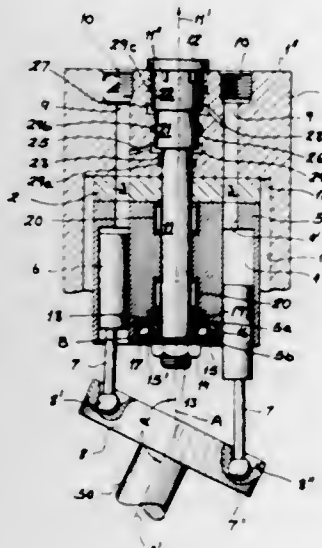
3,410,220

**AXIAL-PISTON MACHINE**

Dietrich Kratzenberg, Halbach, Franz Forster, Karlstadt, and Gerd Ahrens, Hombach, Germany, assignors to Linde Aktiengesellschaft, Wiesbaden, Germany, a corporation of Germany

Filed Nov. 30, 1966, Ser. No. 597,944  
Claims priority, application Germany, Dec. 1, 1965, L 52,283

7 Claims. (Cl. 103—162)



This disclosure is directed to the journaling of a cylindrical drum of an axial-piston hydraulic pump or motor in which a nonrotatable but axially shiftable central shaft rotatably carries the piston drum and bears axially thereupon (via an antifriction means) under hydraulic pressure developed in at least one chamber in the housing having an axially effective surface formed on the shaft.

3,410,221

**PRESSURE PUMP DEVICE**

Leo T. Erck, Rte. 4, Minot, N. Dak. 58701

Filed Nov. 14, 1966, Ser. No. 594,047

2 Claims. (Cl. 103—202)



The invention comprises an elongated removable well pumping device adapted to be introduced into a well tubing of a well comprising an elongated pipe structure with a pump at the lower end, a plurality of annular resilient collar-like sealers at spaced intervals along the length of the pipe structure with the uppermost one of said sealers set below the first line, a horizontal outlet connected to the well tubing below the uppermost sealer.

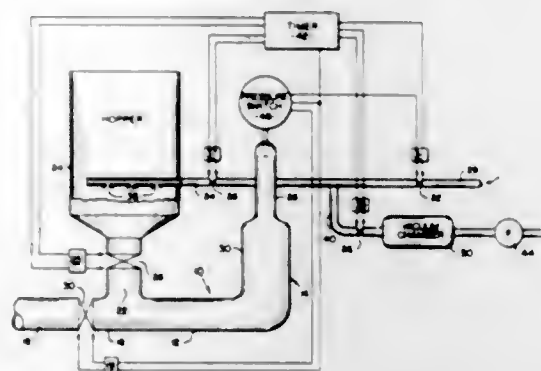
3,410,222

**SLURRY PUMP**

Walter Frederick Swanton, Avon, N.Y., assignor to Ritter Pfaudler Corporation, Rochester, N.Y., a corporation of New York

Filed Feb. 17, 1967, Ser. No. 616,834

7 Claims. (Cl. 103—240)



A pump for slaughter house waste materials and the like which is steam and/or compressed air operated. The pump includes two chambers, one larger than the other. The larger chamber receives the charge of material to be pumped while the smaller chamber receives a charge of compressed air and/or steam which is released for expansion into the larger chamber to discharge the material therein under rapidly diminishing pressure. The pump is controlled by a pressure switch and timer; the timer controlling the charging of the larger chamber with waste material and initiating the introduction of a charge of compressed gas to the smaller chamber; the pressure switch stopping the introduction of a charge of compressed gas into the smaller chamber, controlling the discharge of slaughter house waste materials from the larger chamber and resetting the time cycle of the timer.

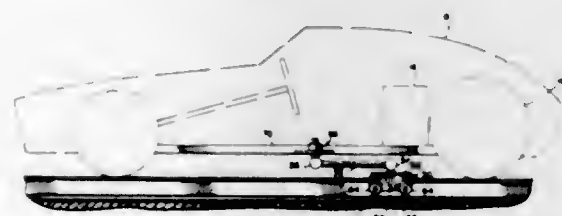
3,410,223

**RACE TRACK WITH COOPERATING RACE CAR RETAINING MEANS**

John H. Miller, 325 Lookout View Court, Golden, Colo. 80401

Filed Mar. 9, 1966, Ser. No. 533,045

10 Claims. (Cl. 104—60)



The combination of a self-propelled race car adapted to be driven by an occupant, and a track-equipped road for supporting the car, the car and track being interconnected by means of a dolly and a linkage assembly. The track, which is imbedded in the road, partially receives the dolly and such dolly is free to move along the track but is restrained against vertical and lateral movement with respect thereto. The linkage extends from the underside of the vehicle, from a point between the front and rear wheels thereof, to the dolly, with universal joints at both ends of the link joining it to the vehicle and dolly, respectively. A plurality of such tracks are provided in the road so that a number of such cars may be raced simultaneously, each restrained against excessive movement by its own track, dolly and linkage assembly, while at the same time being capable of a substantial range of lateral,

vertical, and horizontal rotational movement for the exercise of driving skill by the occupant of each car.

3,410,224

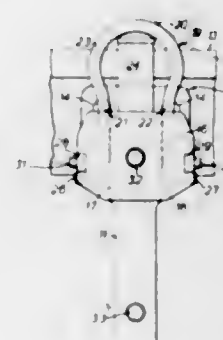
**TRACK-MOUNTED DEVICES FOR INFLUENCING THE SPEED OF RAILWAY VEHICLES**

John Charles Escott, Cheltenham, England, assignor to Dowty Mining Equipment Limited, Tewksbury, Gloucester County, England, a British company

Filed May 22, 1967, Ser. No. 640,294

Claims priority, application Great Britain, June 15, 1966, 26,647/66

5 Claims. (Cl. 104—162)



A fluid-operated telescopic device for exerting a speed-influencing force on a wheel of a railway vehicle, comprises a cylinder member which is fixed to a rail along which the wheel rolls, and a vertically movable piston member which acts against the flange of the wheel through the intermediary of a slidably guided head member, said head member serving substantially to relieve the piston member from the transverse component of wheel force.

3,410,225

**MECHANISM FOR ORIENTING PALLETS**

Stanley Stewart Saunders, Jr., Grand Rapids, Mich., assignor to Rapistan Incorporated, a corporation of Michigan

Filed Oct. 4, 1965, Ser. No. 492,503

8 Claims. (Cl. 104—172)



A conveyor apparatus for maintaining article orientation with conveyor change of direction including conveyor surfaces at angles to each other at a juncture, and a common article propelling drive extending along the first conveyor surface, through the juncture, and then along the second conveyor surface, with control means at the juncture cooperative with article engaging portions of said drive to cause disengagement of said portions from articles on said first surface upon said articles reaching the juncture, and re-engagement of said portions where re-oriented with the consistently oriented articles, along said second surface—the drive portions being cam followers biased into engaging position and the control means being camming means operable on said followers to cause controlled article disengagement and re-engagement.

3,410,226

**RAILROAD CAR DIAPHRAGM**

Carroll P. Krupp, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

Filed June 23, 1966, Ser. No. 559,789

8 Claims. (Cl. 105—10)



A vestibule between the end wall doorways of adjoining railway cars is made of two thick resilient sponge diaphragms which register axially to provide a continuous enclosed passageway from one doorway to the other doorway. Each diaphragm in its lengthwise direction conforms substantially to the configuration of the doorway against which it is mounted, and it completely surrounds the doorway including the vertical sides, overhead, and sill portions. The outer ends of each diaphragm abut each other, and preferably the diaphragms are axially compressed so that these edges remain engaged when the train passes around a curve. The foamed material of the diaphragm is covered with a durable flexible skin and both its internal and external surfaces are corrugated so that compression of the diaphragm does not significantly bulge the surface on the interior or the exterior. A floor structure extends through the diaphragms from one doorway to the opposing doorway.

3,410,227

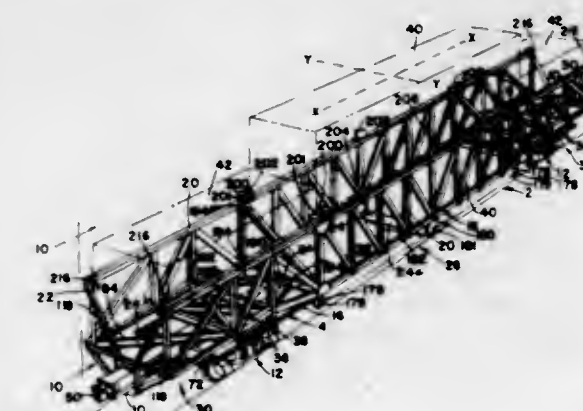
**RAILROAD CAR BODY**

Jack E. Gutridge, Dyer, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Continuation of application Ser. No. 498,730, Oct. 20, 1965, which is a division of application Ser. No. 484,059,

Aug. 31, 1965, now Patent No. 3,319,583, dated May 16, 1967. This application June 6, 1967, Ser. No. 653,286

17 Claims. (Cl. 105—366)



A railway car having an underframe having center sills and ribbon sills extending between and connected with the center sills at the bolsters and a railroad car body including



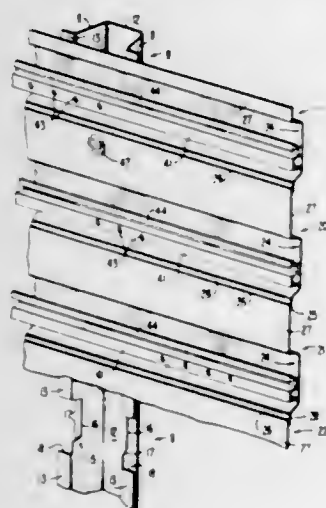
a pair of side walls connecting with and guiding and stabilizing the ribbon sills, and container securing means securing containers to the side walls, wherein the containers, the side walls and the ribbon sills co-operate together to define a structure which will withstand the buff and draft forces transmitted to the center sills, the side walls defining with end walls of the car, a lading holding well that extends above and below the coupler draft force lines of the car.

3,410,228

# FREIGHT CAR CONSTRUCTION WITH RECESSED LOAD SECURING MEANS

Linton B. Burr, William R. Yokel, Donald R. Williams, and Frank E. Cheshire, Evansville, Ind., assignors to International Steel Company, Evansville, Ind., a corporation of Indiana

Filed Aug. 29, 1966, Ser. No. 575,610  
10 Claims. (Cl. 105-409)



1. In a house-type railroad car, a car side assembly comprising: a plurality of spaced vertical formed car side posts having coplanar flanges toward the car interior disposed in a common vertical plane, a header member extending longitudinally of the car side connected to the upper terminal ends of said plurality of car side posts, metallic wall sheathing means connected in flush relation with said coplanar flanges and said header member, said car side posts having recessed notches therein opening toward the car interior with the notches of adjacent side posts substantially along the length of the car disposed in registration, a recessed portion opening inwardly of the car formed in said wall sheathing means and extending longitudinally of the car and connected throughout the length thereof in the registered recessed notches of said car side posts, and continuous securing rail means connected in said recessed portion and being substantially coextensive therewith and having an inner surface toward the car interior disposed flush with said wall sheathing means, whereby said wall sheathing means forms the interior and exterior walls of said car side assembly and said securing rail means is recessed within the vertical posts longitudinally of the car.

3,410,229

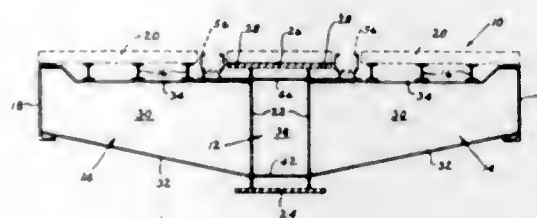
# RAILWAY FLAT CAR

Edwin A. Zambruski and Samuel P. Halcomb, St. Louis County, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed Sept. 26, 1966, Ser. No. 582,150  
2 Claims. (Cl. 105-419)

An underframe for a railway flat car having a horizontal connector plate extending between opposed crossbearer members through slots in the vertical webs of a center sill structure. The connector plate has tapered portions overlapping adjacent upper cover plates of the

crossbearer members and welded to the upper surfaces of the cover plates along the entire length of the lateral

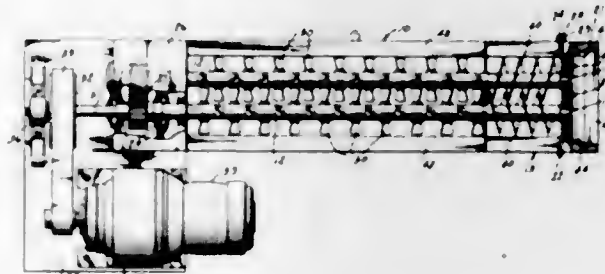


edges of the tapered portions for transmitting stresses between the center sill structure and the crossbearer members.

3,410,230

# TAFFY-PULLING MACHINE AND SYSTEM

Anthony J. Rossi, 40 Kashey St., Clifton, N.J. 07013  
Filed Dec. 23, 1966, Ser. No. 604,402  
9 Claims. (Cl. 107-14)



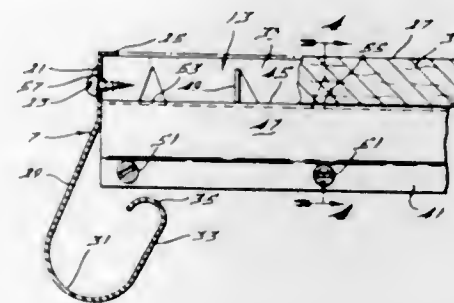
A process and apparatus for graining a viscous taffy candy product by pulling the product and stabilizing the grain thereof and then forming the taffy to size, by utilizing the principles of the double shafted pug mill, which grains the taffy candy product by pulling the taffy and conveys the taffy along the trough of the pug mill as pulled. The grained product is then stabilized by extruding the product through a graining plate by the use of two oppositely pitched scrolls forming continuations of the pug mill paddles. The scrolls further extrude the grained and stabilized product to size through a diverging extruding nozzle where the product may be collected on a pan or conveyor or like collecting device.

3,410,231

# CLOSET SHELF ASSEMBLY

William N. Fletcher, Lathrup Village, Mich., assignor to Ternes Steel Company, Roseville, Mich., a corporation of Michigan

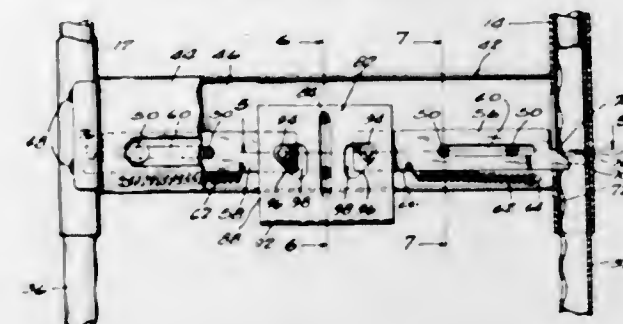
Filed May 12, 1966, Ser. No. 549,602  
8 Claims. (Cl. 108-30)



A shelf construction comprises a telescopic support bar affixed to the front edge of a shelf board and secured by sharp cleats formed on wall brackets to horizontal shelves formed on such brackets, the brackets having sharp cleats to penetrate the walls and hold the assembly in place.

# 3,410,232 HEIGHT ADJUSTMENT LOCK FOR TABLE LEGS

Allison F. Krueger, 226 Miramar Drive, Green Bay, Wis. 54301; Helen Van Nortwick Krueger, George E. Bills, F. N. Trowbridge, Sr., Phillip J. Hendrickson, and Kellogg Citizens National Bank of Green Bay, executors of said A. F. Krueger, deceased  
Filed Aug. 3, 1966, Ser. No. 570,073  
5 Claims. (Cl. 108-146)



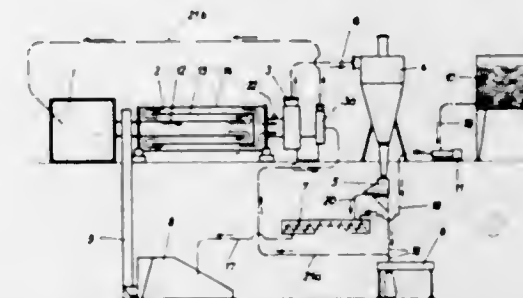
A pair of tubular legs are connected by a hollow stretcher in which are retractable dogs which interlock with extension legs telescopically reciprocable within the legs connected by the stretcher. The extension legs are preferably interconnected at their lower ends by a base or foot.

While the exemplification illustrated has a pair of legs hingedly connected with the table top, it is immaterial to the height adjustment whether the legs are thus pivoted.

3,410,233

# METHOD FOR THE DRYING AND BURNING OF SEWAGE SLUDGE AND PLANT FOR CARRYING OUT THIS METHOD

Hermann Seiler, Zurich, Switzerland, assignor to Hermann Seiler & Sohn AG, Zurich, Switzerland  
Filed Nov. 2, 1966, Ser. No. 591,551  
Claims priority, application Switzerland, Nov. 3, 1965, 15,153/65  
4 Claims. (Cl. 110-15)



Simplified method and means for drying, and burning of sewage sludge by admixing an absorbent carrier material to the sludge, drying the mixture by evaporation, separating the dried carrier material from the dried sludge, and recycling the dried carrier material to fresh charges of sludge.

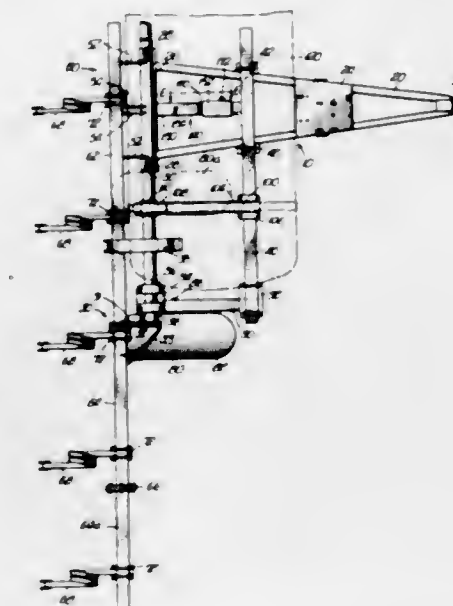
3,410,234

# SOIL CONDITIONER APPLICATOR

Charles D. Peifer, Shelbyville, Ill., assignor to P & H Sales, Shelbyville, Ill., a partnership  
Continuation of application Ser. No. 565,283, July 14, 1966. This application Dec. 4, 1967, Ser. No. 687,916  
19 Claims. (Cl. 111-7)

This invention comprises an applicator assembly for introducing conditioners such as fertilizers into soil. The assembly principally includes a draw bar with a rearward transverse bearing in which a transversely extending tool bar assembly is supported. An elongate frame member is also mounted on the draw bar spaced from the bearing, and extending a substantially equal transverse distance from each side of the draw bar. The tool

bar assembly is capable of orbiting vertically within said bearing means, and includes penetrators for breaking the soil and introducing a soil conditioner therein. In the preferred embodiment the tool bar assembly has foldable end sections, and the soil penetrators are releasably secured to the tool bar to permit the transverse spacing of said penetrators to be selectively varied. Linkage means and releasable locking means control the vertical positioning of the tool bar assembly. The tool bar assembly

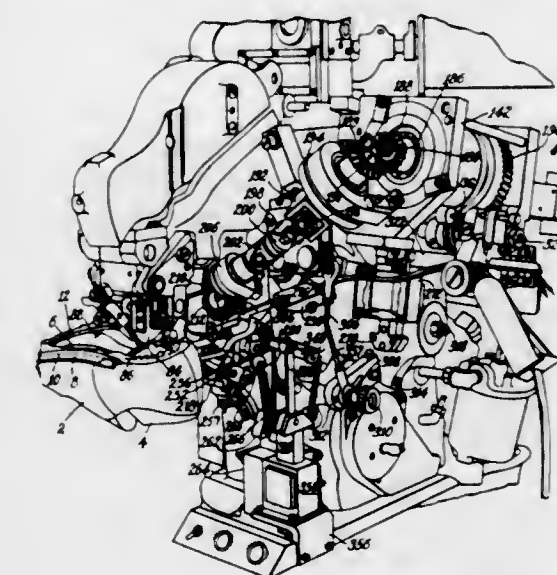


further includes a roll bar mounted in said bearing means which preferably has substantially the same transverse extent as the frame member. The assembly also includes means for supporting a soil conditioner storage tank and supporting wheel assemblies. The wheel assemblies are releasably secured to said frame member, and also preferably to said roll bar of said tool assembly in a manner which permits the wheel assemblies to be adjusted transversely with respect to each other and with respect to said tool bar assembly.

3,410,235

# SHOE MANUFACTURING MACHINES AND METHODS

Lloyd G. Miller, Beverly, and Robert W. Bradley, Marblehead, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., and Boston, Mass., a corporation of New Jersey  
Filed Oct. 21, 1965, Ser. No. 500,106  
21 Claims. (Cl. 112-46)

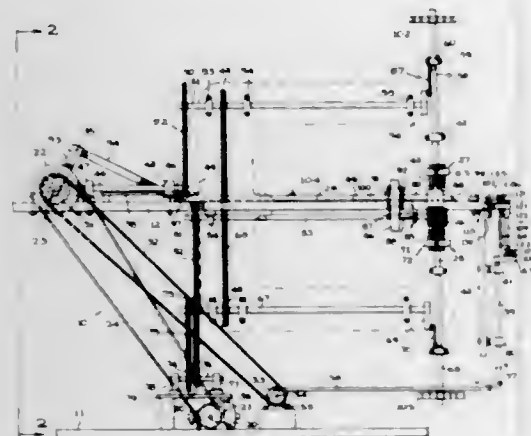


A shoe insole sewing machine including apparatus for progressively reducing the thickness of the welt in ad-



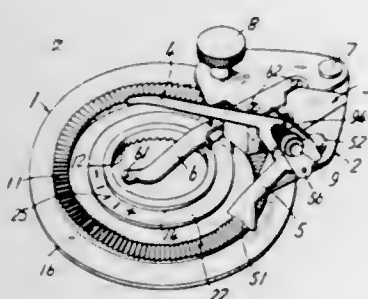
vance of the sewing point and for severing the welt to provide a tapered trailing end on the welt ahead of the severing point and a tapered leading end behind the severing point for the next welt attaching operation.

**3,410,236**  
**RUG FRINGE FORMING SEWING MACHINE**  
John D. Brock, Rte. 1, Resaca, Ga. 30735  
Continuation-in-part of application Ser. No. 517,384, Dec. 29, 1965. This application Aug. 14, 1967, Ser. No. 665,943  
4 Claims. (Cl. 112—64)



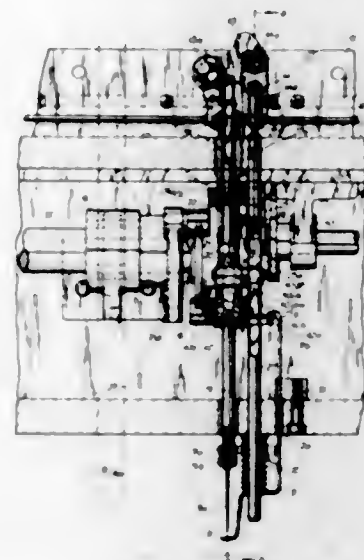
A pair of sewing machines are mounted to opposite sides of a fixed horizontally disposed bed plate and constructed to operate in conjunction with a yarn carrying shuttle tube which is reciprocated on the bed plate and normal to the direction of movement of the needle assemblies of the sewing machines to effect a weaving operation by which a rug fringe is formed having a woven border and a fringe on one side. The fringe is formed by looping the yarn carried in the shuttle tube and causing the loops to be cut as the border is advanced.

**3,410,237**  
**SEWING MACHINE ATTACHMENT FOR CIRCULAR STITCHING**  
Susumu Hanyu, Tokyo, Japan, assignor to Janome Sewing Machine Co., Ltd., Tokyo, Japan  
Filed June 23, 1966, Ser. No. 559,942  
Claims priority, application Japan, June 29, 1965, 40/52,620, 40/52,621, 40/52,622  
13 Claims. (Cl. 112—102)



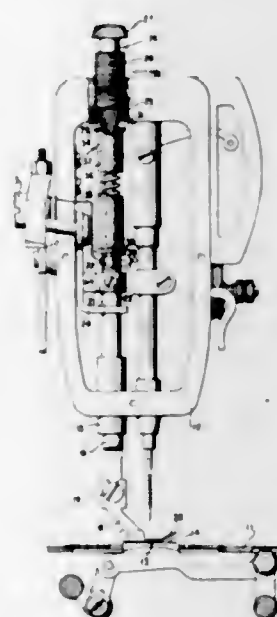
An attachment for a sewing machine has an annular driven rotary feeding member for rotating a fabric. The needle passes through a central opening of the feeding means and penetrates the fabric at a point spaced from the axis of rotation so that a circular seam is formed in the fabric.

**3,410,238**  
**NEEDLE BAR AND PRESSER FOOT CONTROL DEVICE FOR AUTOMATIC SEWING AND EMBROIDERING MACHINES**  
Hans Rolaufts, Krefeld, Germany, assignor to Maschinenfabrik Carl Zangs Aktiengesellschaft, Krefeld, Germany  
Filed Oct. 24, 1965, Ser. No. 504,362  
Claims priority, application Germany, June 25, 1965, M 65,711  
9 Claims. (Cl. 112—221)



Multiple needle machine having a presser foot for each individual needle with a driving mechanism common to all of the needles and operating continuously. Each needle has control means by which it can be made selectively operative or be held in retracted position. Each presser foot is lifted by the driving mechanism each time the respective needle retracts and is held in retracted position by the respective needle bar when the needle is held in retracted ineffective position.

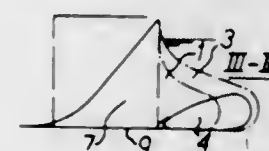
**3,410,239**  
**SEWING MACHINE PRESSER DEVICES**  
Ernest H. Doerner, Montvale, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey  
Filed Oct. 30, 1967, Ser. No. 678,884  
6 Claims. (Cl. 112—235)



An improved presser device including a metallic coil compression spring completely embedded in a resilient

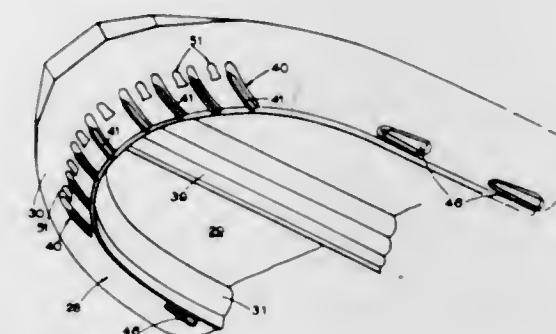
material and interposed between a presser bar carrying a presser foot and means for changing pressure exerted by the presser foot against a feed dog. The foregoing combination dampens vibrations of the presser foot induced by repeated hammerings of the feed dog in its successive feed lift motions.

**3,410,240**  
**HULL FORMS**  
Thomas Baird Hutchison, Oxshott, Surrey, England, and John Lamond Millar, Stamford, Conn., assignors to Esso Research and Engineering Company, a corporation of Delaware  
Filed Dec. 19, 1966, Ser. No. 602,858  
Claims priority, application Great Britain, Dec. 23, 1965, 54,514/65  
11 Claims. (Cl. 114—56)



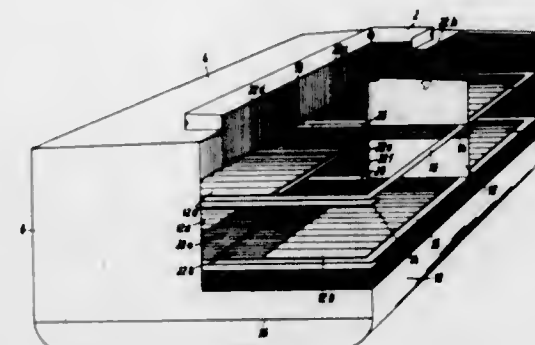
The instant disclosure relates to new hull forms which enable one to increase the deadweight of a vessel and still obtain satisfactory speed-power relationships. The above mentioned advantages may be obtained by the use of a marine vessel with a hull having a blunt bow in which a lower portion of said bow is extended longitudinally forward of the forward perpendicular to form a smooth protuberance and wherein the vessel has a flume extending aft from the bow in a downward direction, and terminating in the bottom of the vessel. Also disclosed is a preferred configuration for a blunt stern in which the lower aft portion of the hull has one or more longitudinally oriented tunnels.

**3,410,241**  
**AIR CUSHION VEHICLES PROVIDED WITH FLEXIBLE SKIRTS HAVING SUCTION REDUCING MEANS**  
Derek James Hardy, Cowes, Isle of Wight, and Lavis Albert Henry Riddle, East Cowes, Isle of Wight, England, assignors to Westland Aircraft Limited, Yeovil, Somerset, England  
Filed Oct. 7, 1965, Ser. No. 493,650  
Claims priority, application Great Britain, Oct. 28, 1964, 44,006/64  
10 Claims. (Cl. 114—67)



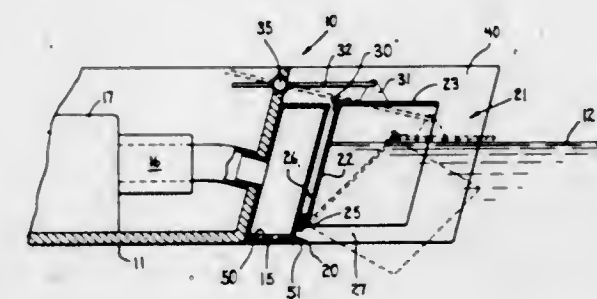
An air cushion vehicle is provided with air holes formed in an outer flexible skirt wall for reducing suction. Water-deflecting strips arranged on the outer wall serve as guides for streams of air issuing outwardly from the air holes.

**3,410,242**  
**SHIP AND CARGO DECK CONSTRUCTION**  
Hans K. Kloess, 3 Klugkiststrasse, Bremen, Germany, and Peter Horstmann, Hamburg, Germany; said Horstmann assignor to said Kloess  
Filed Jan. 26, 1967, Ser. No. 611,913  
6 Claims. (Cl. 114—72)



A cargo ship having moveable tween decks with hatches pivotally connected to the inside edges of the decks. This allows the tween decks to be loaded in an efficient manner since they can be rolled directly under the hatch opening.

**3,410,243**  
**BOAT PROPULSION DEVICE**  
Thomas E. Gravenstreter, 4419 Washington Blvd., Indianapolis, Ind. 46205  
Filed Jan. 3, 1967, Ser. No. 606,682  
2 Claims. (Cl. 115—11)



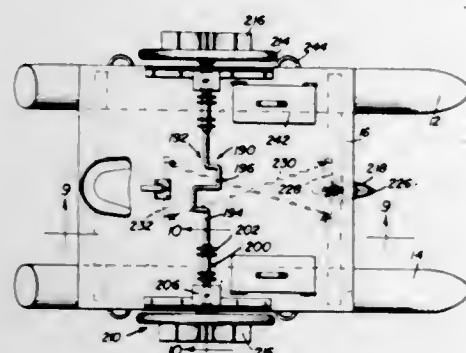
A propulsion method and device for a watercraft which operates by the low pressure discharge of air from the watercraft at a point below the surface of the water supporting the watercraft. The watercraft has a plate arrangement which is swingably mounted on the watercraft above the air discharge and which provides an adjustably inclined surface against which the air acts to propel the watercraft. An alternative embodiment has its air discharged into a water filled conduit which extends from the bottom to the rear of the boat.

**3,410,244**  
**AMPHIBIOUS BOAT**  
Vincent A. Graham, Rte. 1, Salem, S. Dak. 57058  
Continuation-in-part of application Ser. No. 512,186, Dec. 7, 1965. This application Feb. 18, 1966, Ser. No. 534,275  
6 Claims. (Cl. 115—23)

An amphibious boat including a pair of spaced floats generally in the form of pontoons interconnected detachably by a platform having a transverse axle supported therefrom and provided with a wheel and paddle assembly at each end thereof for propelling the boat when it is floating in water and when it is traversing land surfaces.



A combined land steering wheel and rudder is supported from the platform and controlled from an operator's seat



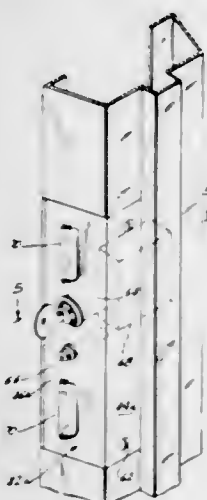
for controlling the direction of movement of the boat when in water and also when traversing land surfaces.

3,410,245

**ALARM DEVICE**

Richard Paul Kashden, East Rockaway, and Robert A. Larsen, Laurelton, N.Y., assignors to Continental Instruments Corp., Lynbrook, N.Y., a corporation of New York

Filed June 17, 1966, Ser. No. 558,379  
3 Claims. (Cl. 116-67)

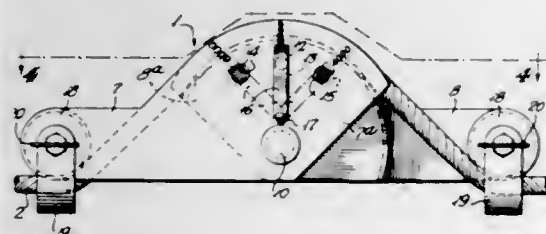


A structural assembly consisting of a door jamb adapted to house therein an alarm device in recessed condition. The door jamb has a hollowed portion therein which communicates with a cutout in the door jamb. A support member substantially complementary in shape to the cutout carries an alarm device and the support member is removably secured to the door jamb so that the alarm device is positioned in recessed condition within the hollowed portion of the door jamb.

3,410,246

**CABLE TENSION INDICATOR DEVICE**

James M. Lowe, 7647 MacArthur Blvd., Cabin John, Md. 20731  
Filed May 5, 1966, Ser. No. 547,927  
8 Claims. (Cl. 116-114)



A cable tension indicator device for use in material hoisting apparatus wherein a pair of arms are held in a first position by a shear pin which fractures when a ten-

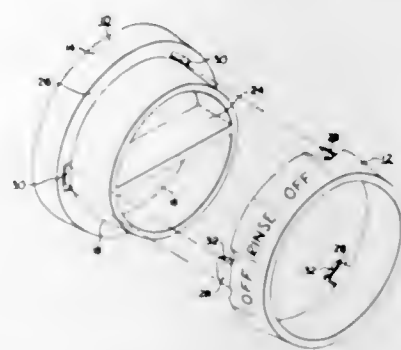
sion force above a predetermined value is applied to the cable to allow the arms to move to a second position thereby warning the crane operator to cease operation to prevent damage to the boom on which the cable is reeved.

3,410,247

**CONTROL KNOB ASSEMBLY**

Hal H. Dronberger, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 30, 1965, Ser. No. 443,811  
3 Claims. (Cl. 116-133)



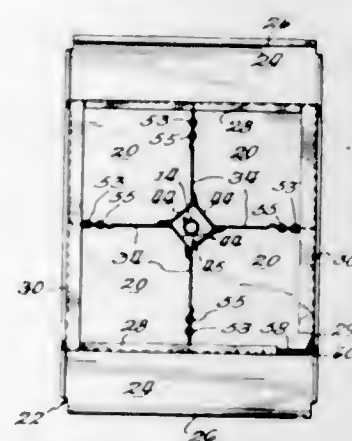
A control knob assembly in which a base having a forwardly facing seat is mounted on a control spindle in a particular angular disposition, and an indicator ring is mounted on the seat, the seat having openings and the ring having prongs which engage with each other and are arrayed in mirror image relation with each other, at least one of the openings and prongs being irregularly spaced with respect to the others so that the ring may be seated in a single angular position only relative to the base, the single angular position being that which correlates the indicia on the indicator ring with the respective rotative positions of the control spindle.

3,410,248

**BIRD HOUSE**

Arthur E. Vail, Griggsville, Ill., assignor to Trio Manufacturing Company, Griggsville, Ill., a corporation of Illinois

Filed Oct. 25, 1966, Ser. No. 589,254  
8 Claims. (Cl. 119-23)



A multiple dwelling bird house comprised of one or more tiers, each having a plurality of individual nesting compartments. The respective tiers include a floor, outer wall structure provided with apertures to permit the ingress and egress of the birds, and inner wall structure which defines the individual nesting compartments; the floor of an upper tier defining the ceiling or upper extremity of the lower, adjacent tier. The inner wall structure being comprised of a plurality of identical shaped structural elements. Each of said elements having a planar wall portion, an intermediate wall portion and unitary male and female

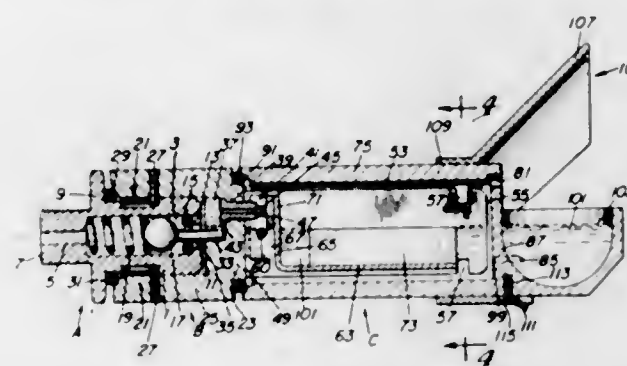
type connecting means provided thereon, whereby when assembled the female type connecting means of one of said elements receives the male type connecting means and the element disposed on one side thereof, while the male type connecting means of said one element is received by the female type connecting means of an element disposed of the opposite side thereof.

3,410,249

**AUTOMATIC DRINKING VALVE**

Maurice B. Allen, Burtonsville, and Neil E. Walter, Rockville, Md., assignors, by mesne assignments, to William Stone, Jr., Los Angeles, Calif.

Filed Mar. 21, 1966, Ser. No. 535,778  
14 Claims. (Cl. 119-79)



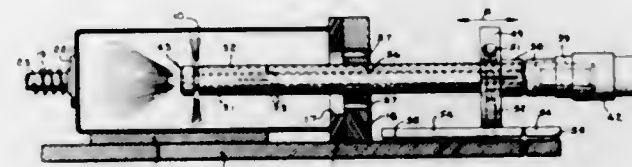
A valve assembly having a water reservoir in communication with and between a water feed means and a water supply member. A float valve is provided within the reservoir to stop flow of water from the feed means when the water within the reservoir reaches a predetermined depth, which is below the opening from the water feed means. The water supply member is connected to and in communication with the reservoir below its water level.

3,410,250

**SPRAY NOZZLE ASSEMBLY**

Dan Kulle, Brookfield, and Ansel A. Worley, Lombard, Ill., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 19, 1965, Ser. No. 498,030  
2 Claims. (Cl. 118-308)



A spray nozzle simultaneously coats both the flat end surface and the cylindrical walls within a container with a uniform layer of coating material. Coating material is forced from a cylindrical chamber into one of two concentric cylindrical tubes to form two separate streams of material. The outer stream is projected in a 360° spray substantially perpendicular to the tubes to coat the interior walls of the container while the inner stream passes through a venturi nozzle to coat the inside end of the container.

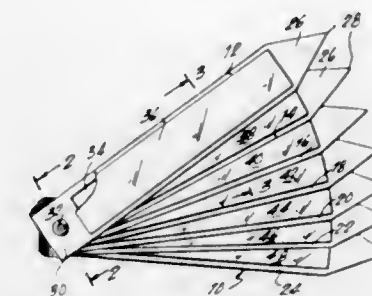
3,410,251

**MULTIPLE CORRECTION DEVICE**

Robert Glenn, 70-20 108th St., Forest Hills, N.Y. 11375, and Victor Barouh, 935 Plum Tree Road, Westbury, N.Y. 11590

Filed Aug. 29, 1967, Ser. No. 664,087  
1 Claim. (Cl. 118-506)

A multiple correction device for use in simultaneously correcting erroneous typewritten impressions on an original and on a plurality of carbon copies comprising



and shaped at the free end so as to facilitate insertion between typewritten sheets to be corrected.

**ERRATA**

For Class 119-23 see:  
Patent No. 3,410,248

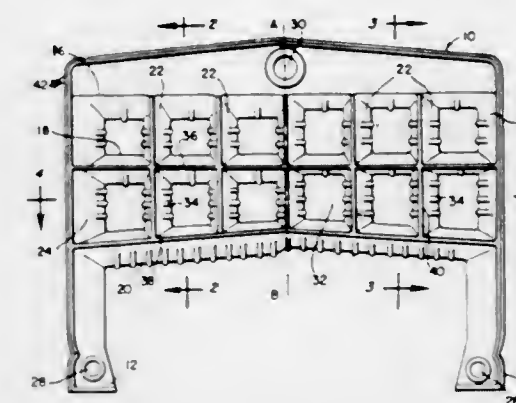
For Class 119-79 see:  
Patent No. 3,410,249

3,410,252

**CAST IRON SEGMENTAL BOILERS**

Woong Jun Ahn, 150-6 Hu-Am Dong, Yong San ku, Seoul, Korea

Filed Dec. 23, 1966, Ser. No. 604,336  
Claims priority, application Korea, Jan. 4, 1966,  
1966-3  
7 Claims. (Cl. 122-225)



A boiler made up of identical transverse segments consisting of a plurality of intersecting horizontal and vertical water passages forming an open network asymmetrical across the vertical centerline thereof. Each segment is reversed with respect to the next adjacent segments to provide irregular flow paths through flue passages formed by the open network.

3,410,253

**DRUM SUPPORT FOR STEAM BOILER**

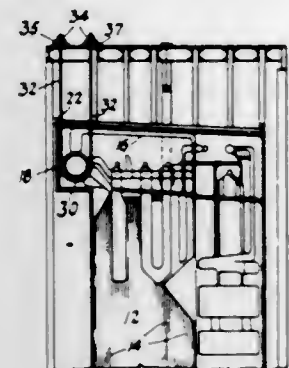
Konrad S. Svendsen, Bloomfield, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Jan. 13, 1967, Ser. No. 613,387  
6 Claims. (Cl. 122-510)

A support structure for supporting an elongated cylindrical vessel by means of U-hangers at each end with the legs of the U-hangers having means for adjusting the length thereof with respect to a fixed support structure from which the vessel is suspended, and the vessel being subject to lateral thermal forces tending to move the ends with respect to the fixed support structure, thereby creat-



ing undesirable bending stresses in the legs of the U-hangers. To reduce these bending stresses a near-frictionless cylindrical bearing having a fixed axis of rotation is inter-



posed between the adjusting means and the support structure with the bearing surface of the bearing preferably being lined with a self-lubricating metal liner.

3,410,254

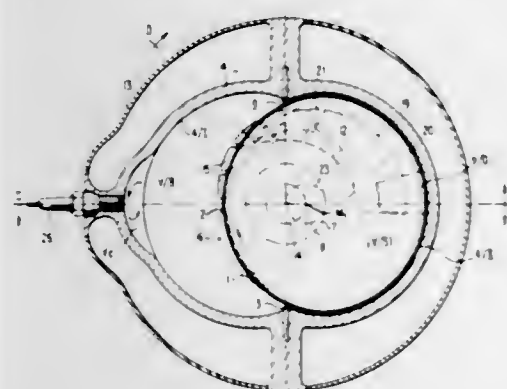
# **INNER-AXIAL ROTARY PISTON ENGINE WITH TROCHOIDAL PISTON RUNNER**

Franz Huf, Constance (Bodensee), Germany, assignor to Dornier System G.m.b.H., a German corporation of limited-liability

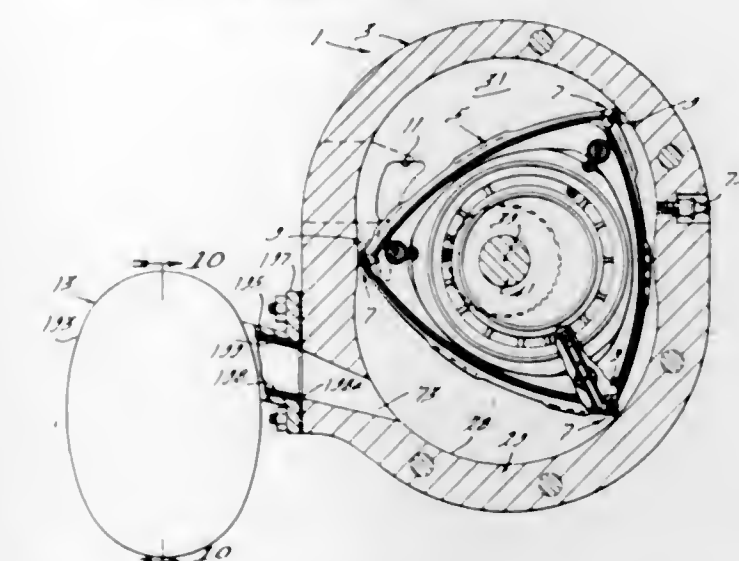
Filed Aug. 25, 1966, Ser. No. 575,171

Claims priority, application Germany, Aug. 28, 1965, H 57,011

23 Claims. (Cl. 123—8)



A rotary piston engine includes a rotatable piston runner having the configuration of an inflection-point-free cardioid which is rotatably mounted within a stationary housing means, the runner being axially parallel and eccentrically mounted within the housing. The inner surface of the housing corresponds to the outer enclosing curve of the piston runner. Gas inlet means and gas outlet means are formed in the side walls of the housing and are opened and closed by the piston runner. The edges of the inlet means and outlet means disposed remotely from the center of rotation are defined by trochoidal arcs which are coordinated with the positions of the piston runner at the desired time of the beginning of the opening operation and the end of the closing operation; and the inner edge of the outlet means nearest the center of rotation corresponds to the configuration of the inner envelope of the piston runner. In a first form of the invention, one working chamber formed between the runner and the housing is employed for combustion, and a second working chamber is employed as a scavenge pump. In a second form of the invention, a double acting engine has a symmetrical construction with two working chambers formed by two outer envelopes, the chambers being offset about 180° with respect to one another.



Rotary combustion engine having dual seals on each apex of a rotor, the seals being vented through the rotor to the intake ports for returning a portion of the unburned fuel which is tending to be forced past the seals to the intake ports, and an after-burner connected to the exhaust ports for facilitating combustion of unburned fuel discharged from the exhaust ports.

3,410,256

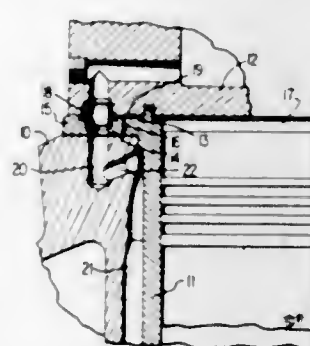
# **INTERNAL COMBUSTION ENGINE WITH LIQUID-COOLED CYLINDER LINERS**

Otto Herschmann, Fellbach, Württemberg, Germany, assignor to Daimler-Benz, Aktiengesellschaft, Stuttgart-Unterturkheim, Germany

Filed Jan. 3, 1966, Ser. No. 518,288

Claims priority, application Germany, Jan. 12, 1965, D 46,232

9 Claims. (Cl. 123—41.84)



An internal combustion engine having liquid-cooled cylinder liners, whose ends facing the cylinder head are each provided with a radial collar for the securing at the crankcase, and in which the cylinder head is secured at the crankcase by means of cylinder head bolts. The radial collar engages the topmost flat surface of the crankcase. A rigid spacer plate is provided between the crankcase topmost flat surface and the cylinder head for absorbing substantially all of the forces exerted by the cylinder head bolts. An easily compressible sealing ring is provided between the radial collar and the cylinder head, which will not unduly stress the radial collar. The liquid cooling bores extend through the spacer plate and into the annular space between the crankcase and the liners closely adjacent to the respective radial collars.

3,410,257

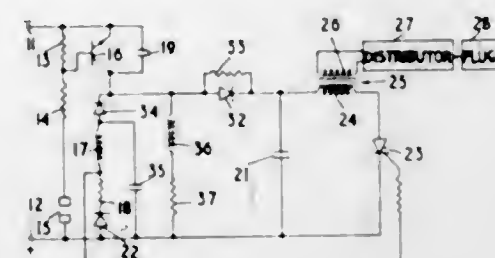
# **SPARK IGNITION SYSTEMS**

Brian Gilbert, Sutton Coldfield, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

Filed Mar. 9, 1966, Ser. No. 533,000

Claims priority, application Great Britain, Mar. 11, 1965, 10,330/65

12 Claims. (Cl. 123—148)



In spark ignition apparatus of the capacitor discharge type switch means is driven by the engine between open and closed conditions. When the switch means is closed, energy is stored in a storage inductor and in a control inductor, which can be constituted by the storage inductor or a separate inductor. When the switch means opens, the storage inductor transfers its energy to a storage capacitor, and the control inductor transfers its energy to a control capacitor, which where the storage inductor constitutes the control inductor will be constituted by the storage capacitor. Once the control capacitor has charged, it starts to discharge, and means is provided operable by this discharge for turning on a switch to permit the storage capacitor to discharge through the switch to produce the required spark.

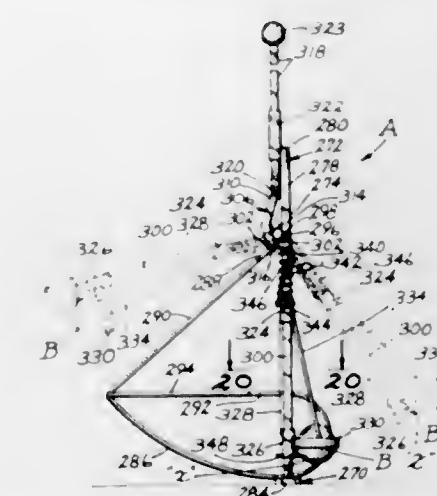
3,410,258

# **CENTRIFUGAL BALL PROPELLING DEVICE**

Robert E. Lee, Box 99, North Branch, Minn. 55056

Continuation-in-part of application Ser. No. 351,043, Mar. 11, 1964. This application Aug. 3, 1966, Ser. No. 569,927

10 Claims. (Cl. 124—6)



1. A ball propelling device comprising:

- (a) an upright frame,
- (b) a ball arm pivotally mounted on said frame and swingable from a rearwardly inclined ball-holding position to a forwardly inclined ball release position,
- (c) said ball arm having stop means secured to the lower end thereof,
- (d) a ball ring,
- (e) means for slidably mounting said ball ring on said ball arm for movement to and from said stop means,
- (f) means for normally biasing said ball ring mounting means and ball ring thereon adjacent said stop means to retain a ball in said ring,

- (g) a plunger carried by said frame and mounted for reciprocal movement thereon,
- (h) pivotal link means operatively connecting the lower end of said plunger and the upper end of said ball arm,
- (i) means for limiting the slidable movement of said ball ring mounting means on said ball arm when said ball arm is pivotally swung to a forward position to thereby separate said ball ring from said stop means against the action of said biasing means and allow the release of a ball from said ring and said stop means.

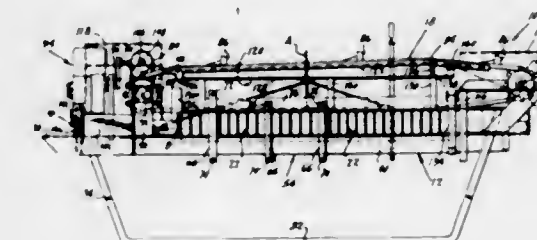
3,410,259

# **BRICK CLEANING DEVICE**

Walter Skirvin, Paul Skirvin, and Enoch Skirvin, all of Rte. 2, Box 1-M, Philomath, Oreg. 97370

Filed Sept. 14, 1965, Ser. No. 487,284

2 Claims. (Cl. 125—26)



Apparatus including an elongated frame having an elongated raceway thereon defined by a plurality of horizontal scrapers disposed in laterally spaced relation relative to one another longitudinally of the frame and upright scrapers slidably mounted on opposed sides of the frame in confronting relation relative to one another, the pairs of confronting scraper blades being mounted on the frame in longitudinally spaced relation relative thereto; tension means connected with and extending between each pair of confronting blades to constantly bias these blades for movement towards one another; and conveyor means extending into the raceway and engagable with brick to be scraped to push the brick from one end of the frame through the raceway over the horizontal scrapers and between the upright scraper blades for discharge at the other end of the frame.

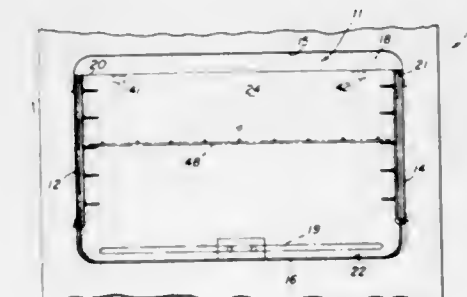
3,410,260

# **LINER SUPPORT USEABLE WITH OVEN ENCLOSURES OR THE LIKE**

Curtis L. Morgan, Sigel, Ill., assignor to Borg-Warner Corporation, a corporation of Illinois

Filed Oct. 31, 1966, Ser. No. 590,771

6 Claims. (Cl. 126—19)



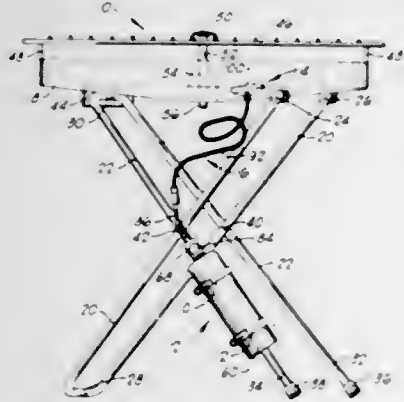
A support structure having readily removable and cleanable panels of a cooking range, the support structure being removably mounted on the side walls of the oven liner and including a cage having a pair of panel-engaging



assemblies held in spaced apart relationship by a longitudinal member with each assembly including a panel-holding carriage having inside and outside vertical members positioning the panel therebetween and being connected at their upper and lower ends to provide aligned elongated apertures in the carriages through which the panel is insertable and horizontally movable for support of the panel by the carriages.

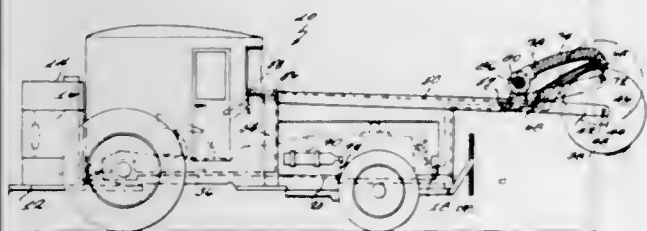
**3,410,261**  
**COMBINATION BARBECUE GRILL AND IGNITION DEVICE**

Milton V. Cooper, 4 Oakwood Drive, Oklahoma City, Okla. 73121, and Walter N. Slater, Del City, Okla., said Slater assignor to said Cooper  
Filed Nov. 21, 1966, Ser. No. 595,748  
1 Claim. (Cl. 126—25)



A charcoal grilling apparatus consisting of a container for holding heated fuel with a grill supported thereover and support means extending below the container, the apparatus including an ignition device in the form of a canister of flammable gas secured in a safe position and connected via flexible tubing to a burner head secured within said container.

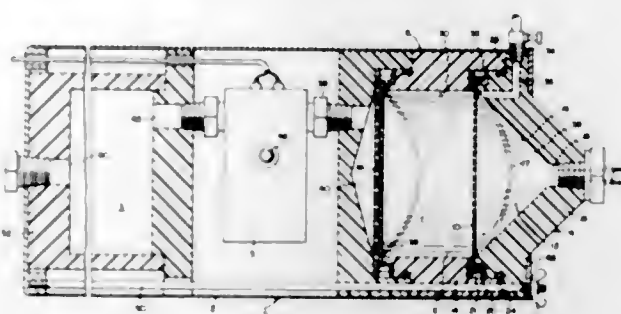
**3,410,262**  
**SNOW MELTING DEVICE**  
James A. Qualls, 308 Allen Ave., Hopewell, Va. 23860  
Filed Apr. 7, 1967, Ser. No. 629,168  
5 Claims. (Cl. 126—271.2)



Ice, snow and slush removal apparatus having a combustion chamber pivotably mounted on a vehicle and movable to several operative positions. The combustion chamber is provided with at least one aperture through which flame and combustion gas are discharged for direct contact with the ice, snow or slush to melt the same. A fuel supply also mounted on the truck is connected to the combustion chamber. An electric heater is used to preheat the fuel. The power for operating the fuel pump, the electric preheater, the ignition system in the combustion chamber and the blower means for delivering air to the combustion chamber and for discharging the combustion gases and flame are taken from the engine of the vehicle.

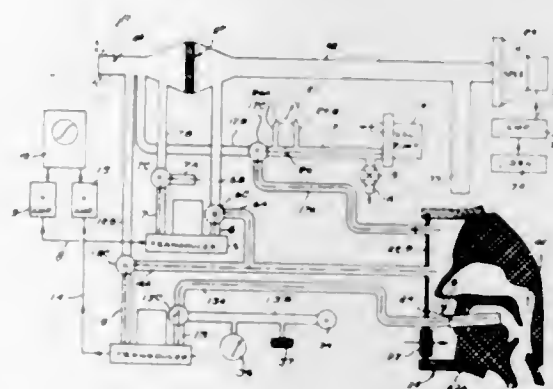
**3,410,263**  
**BLOOD-PUMPING APPARATUS PROVIDED WITH HEART SYNCHRONIZING MEANS**

Gerald E. McGinnis, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed May 13, 1965, Ser. No. 455,377  
5 Claims. (Cl. 128—1)



A unitary blood-pumping apparatus having a resilient diaphragm means which is alternately pneumatically-distended and self-returned to pulsedly supply and withdraw blood to and from the arterial system of a patient for diastolic pressure augmentation. A pneumatic storage volume in the unit, charged from a source of compressed gas for operating the diaphragm means during each period of return movement thereof, provides for rapid initiation of diaphragm distention during the blood pumping periods. A solenoid valve in the unit, synchronized with the patient's heart beat, controls the periodic supply from the storage volume to the diaphragm means and release from the latter.

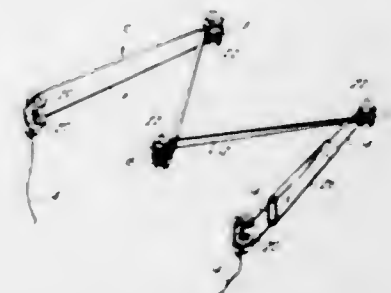
**3,410,264**  
**INSTRUMENT FOR MEASURING TOTAL RESPIRATORY AND NASAL AIR RESISTANCE**  
Willem Steven Frederik, 106 Suffolk Road, Wellesley Hills, Mass. 02181  
Filed June 2, 1966, Ser. No. 554,879  
9 Claims. (Cl. 128—2)



1. In an instrument for measuring alternatively, nasal air and total respiratory air resistances, a mask including an inlet in the form of a first pneumotachograph; a mouthpiece, means to generate and deliver to said mouthpiece, pressure oscillations at the approximate resonant frequency of the respiratory system, and a second pneumotachograph between said means and said mouthpiece; first and second differential pressure transducers each having first and second conduits and operable to convert variations in the air pressure in said conduits into electrical signals, a recorder, first and second circuits, each circuit including an amplifier, the first circuit being connected to the first transducer and to said recorder to deliver signals to one channel of said recorder and the second circuit being connected to the second transducer and to the recorder to deliver signals to the other channel of the recorder, a pump, the intake of said pump including first and second branches and valve means in control thereof.

control thereof, each transducer conduit including first and second branches and valve means in control thereof, the first and second branches of the first conduit of the first transducer being in communication respectively, with the interior of the mask and the side of the second pneumotachograph adjacent said generating means, the first and second branches of the second conduit of the first transducer being, respectively, open to atmosphere and in communication with the other side of the second pneumotachograph, the first and second branches of the first conduit of the second transducer being in communication, respectively, with the interior of the mask and the mouthpiece, the first branch of the second conduit of the second transducer including an oral probe and the second branch thereof being open to atmosphere, and the first and second branches of the pump inlet being in communication, respectively, with the interior of the mask and the mouthpiece side of the second pneumotachograph, the valve means including positions placing either all the first branches or all the second branches in communication with said transducers and said pump, said pump maintaining a positive flow through whichever branch of its inlet is placed in communication therewith by its valve means in control thereof.

**3,410,265**  
**INTRA-UTERINE CONTRACEPTIVE DEVICE AND DEVICE FOR INSERTING THE SAME**  
Marc E. Chaff, 8 Tripplett, Somerset, N.J. 08873  
Filed Dec. 6, 1965, Ser. No. 511,701  
19 Claims. (Cl. 128—130)



An intra-uterine contraceptive device consisting of a plurality of substantially straight elements hingedly interconnected at their ends by flexibly resilient joints, said elements normally disposed in divergent relation to one another, in accordion arrangement, and compressible at their joints, to be disposed in substantially parallel and substantially contacting relation; and an insertion device consisting of a tube and plunger with one of the ends of the tube adapted to receive the device when in compressed state.

**3,410,266**  
**SURGICAL APPAREL**  
Henrietta K. Krzewinski, Old Bridge, and Sidney F. Keoughan, Jr., Fanwood, N.J., assignors to Johnson & Johnson, a corporation of New Jersey  
Filed June 24, 1966, Ser. No. 560,194  
6 Claims. (Cl. 128—132)



1. An article of surgical apparel comprising a normally fluid repellent main fibrous sheet having a primary operative area, a secondary fibrous sheet overlying said main sheet in at least a portion of the primary operative area of said main sheet and secured to said main sheet, a fluid impervious organic film which is stable to heat at temperatures above about 160° F. interposed between said main sheet and said secondary sheet in at least a portion of the primary operative area of said main sheet and secured to at least one of said main sheet and said secondary sheet, said secondary sheet overlying essentially the entire fluid impervious film.

ative area, a secondary fibrous sheet overlying said main sheet in at least a portion of the primary operative area of said main sheet and secured to said main sheet, a fluid impervious organic film which is stable to heat at temperatures above about 160° F. interposed between said main sheet and said secondary sheet in at least a portion of the primary operative area of said main sheet and secured to at least one of said main sheet and said secondary sheet, said secondary sheet overlying essentially the entire fluid impervious film.

**3,410,267**  
**CARTRIDGE SYRINGE HOLDER**  
John Adolf Nöjd, Sodertälje, Sweden, assignor to Aktiebolaget Astra, Sodertälje, Sweden, a company of Sweden  
Filed Sept. 10, 1965, Ser. No. 486,427  
Claims priority, application Sweden, Sept. 18, 1964, 11,277/64  
24 Claims. (Cl. 128—218)



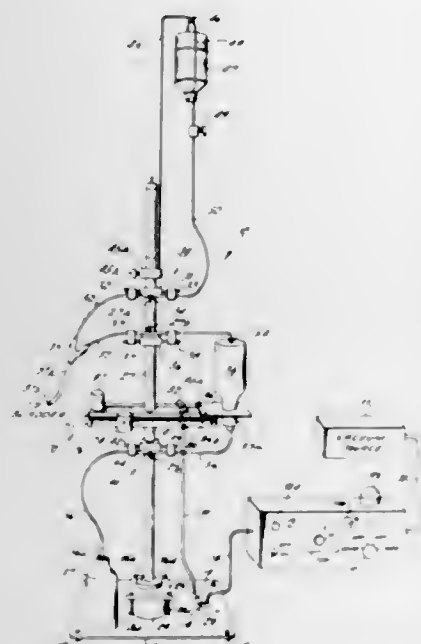
The disclosure herein relates to a hypodermic syringe comprising an ampule needle unit and a syringe body wherein the rear of the ampule needle unit is detachably secured to the forward end of the syringe body by the engagement of a peripheral flange formed on the rear end of the ampule with a contoured notch formed in an attaching member of the syringe body and by the relative longitudinal movement of a locking member along the attaching member which secures the flange within the notch by pressing the rear of the ampule and the forward end of the attaching member together.

**3,410,268**  
**AUTOMATIC BLADDER IRRIGATION APPARATUS OPERATED BY EITHER A VACUUM, HYDRAULIC OR PNEUMATIC SOURCE**  
Gino Leucci, Philadelphia, Pa., assignor to Irrigation Control, Inc., Philadelphia, Pa., a corporation of Pennsylvania  
Filed Oct. 4, 1965, Ser. No. 492,767  
12 Claims. (Cl. 128—227)

Apparatus for use in post-operative procedures and the like, incorporating vacuum apparatus or other similar hydraulic means for controlling irrigation and drainage of a bladder and including electronic timing means which is completely electrically isolated from the patient to prevent any danger from electrical shock. The vacuum apparatus controls the flow of fluid into the bladder for any preselected time period. In a second position the vacuum apparatus controls the drainage of fluid from the bladder



into an intermediate waste container before passage into a final waste container. Balancing means is provided for determining the amount of fluid drained from the bladder in order to provide a positive indication, including alarm means when an insufficient amount of fluid has been



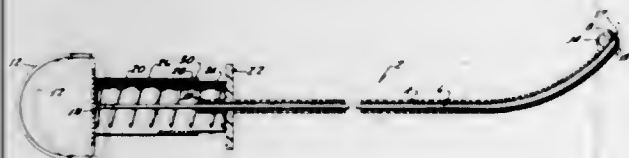
drained from the bladder. The system is normally biased to permit drainage in the case of a power failure so as to assure the fact that fluid will not be inserted into the bladder in such amounts as to cause any harm to the patient.

3,410,269

#### OBSTETRICAL INSTRUMENT FOR PUNCTURING THE AMNIOTIC MEMBRANES

Jack H. Hovick, Huntington Beach, Calif., assignor of thirty-three and one-third percent to James B. Gambrell, Santa Ana, Calif.

Filed Dec. 27, 1965, Ser. No. 516,354  
4 Claims. (Cl. 128—361)



A surgical instrument for rupturing the fetal membranes of a gravid female and the technique of using it are disclosed. The device can be preformed to approximate the contours of the vaginal canal of the patient. The sharp rupturing tip of the device is sheathed during insertion and withdrawal of the instrument to avoid damaging delicate surrounding tissues.

3,410,270

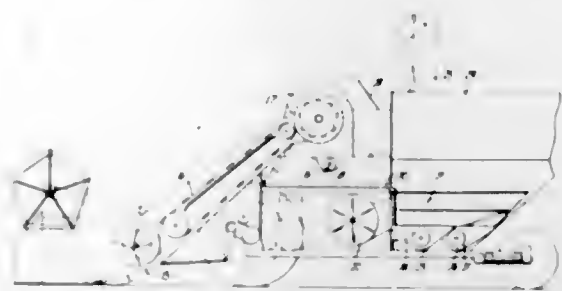
#### ADJUSTABLE THRESHING ASSEMBLY

Franz Joseph Herbsthofer, Kassel-Harleshausen, Germany, assignor to Massey-Ferguson G.m.b.H., Kassel, Germany

Filed Jan. 25, 1966, Ser. No. 522,856  
Claims priority, application Great Britain, Feb. 6, 1965, 5,270/65; Nov. 30, 1965, 50,710/65  
21 Claims. (Cl. 130—27)

1. A threshing and separating assembly including rotatable drive shaft, a threshing and separating drum mounted on said shaft and having a threshing section and a separating section, a reaction member surrounding said

drum and having a concave surrounding said threshing section and a separating sieve assembly surrounding said separating section, a crop inlet in said concave, a crop outlet in said sieve assembly, said drum and said reaction member being of greater diameter at said outlet than at



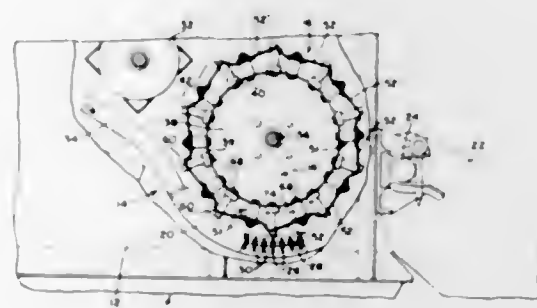
said inlet, said threshing section and said concave being mounted for axial movement relative to one another, and said separating section and said sieve assembly being mounted for axial movement relative to one another independently of relative movement of said threshing section and said concave.

3,410,271

#### REMOVABLE FILLER ELEMENTS FOR THRESHING CYLINDER

Edward J. Hengen and Vernon A. Maxson, Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware

Filed Dec. 6, 1965, Ser. No. 511,754  
9 Claims. (Cl. 130—27)



A combine threshing cylinder has a cylindrical supporting structure with a plurality of spike teeth attached to and extending radially outwardly from the periphery of the supporting structure, the teeth being disposed in axial rows equally spaced about the cylinder. An elongated plate is removably attached to the supporting structure over each row of teeth and has apertures through which the teeth project a short distance, the adjacent plates overlapping so that all the plates conjunctively form an approximate cylinder removably mounted around the supporting structure at the outer ends of the teeth.

3,410,272

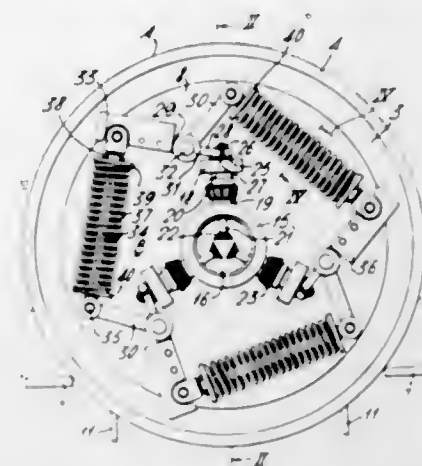
#### APPARATUS FOR REMOVING SPROUTS FROM A BRUSSELS SPROUTS PLANT

Nico Jacobus August van den Hemel, Zevenaar, Netherlands, assignor to Unilever N.V., Rotterdam, Netherlands, a company of the Netherlands

Filed July 25, 1966, Ser. No. 567,589  
Claims priority, application Netherlands, July 30, 1965, 6509872; June 13, 1966, 6608143  
12 Claims. (Cl. 130—30)

1. Apparatus for removing sprouts from a Brussels sprouts plant, comprising a cutting head which is rotatable about a central axis along which the stalk of the plant can be passed and which includes a plurality of cutting assemblies movable towards and away from said central axis of

rotation for cutting sprouts from the plant stalk, each cutting assembly comprising a rotary cutter which is arranged



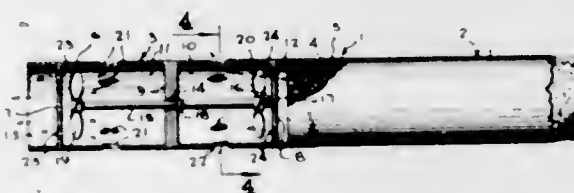
to rotate about an axis extending radially from said central axis.

3,410,273

#### CIGARETTE

James Chadbourn Bolles, 232 Cherokee Road, Charlotte, N.C. 28207

Filed Jan. 16, 1968, Ser. No. 698,205  
5 Claims. (Cl. 131—8)



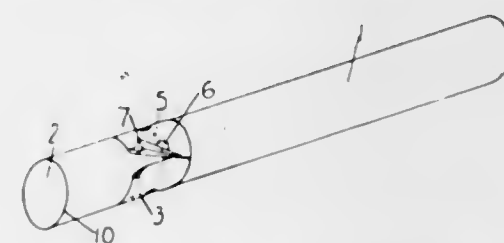
A cigarette having a fixed tip to allow a user to draw on the tip and cause burning of the cigarette without getting smoke into the mouth wherein the tip includes chambers aligned with one another and the cigarette. The chamber adjacent the cigarette has communication with the cigarette and atmosphere, and the chamber at the mouth end has communication with atmosphere and the user's mouth. Interconnected propellers in the chambers cause air flow through the cigarette to atmosphere when the user draws on the tip. A flavor disk may be used to flavor air drawn into the mouth.

3,410,274

#### CIGARETTES

Alfred Charles Davis, Westbury-on-Trym, Bristol, England, assignor to Imperial Tobacco Company (of Great Britain and Ireland) Limited, Bristol, England, a company of England

Filed Feb. 24, 1965, Ser. No. 435,004  
Claims priority, application Great Britain, Feb. 27, 1964, 8,091/64  
3 Claims. (Cl. 131—9)

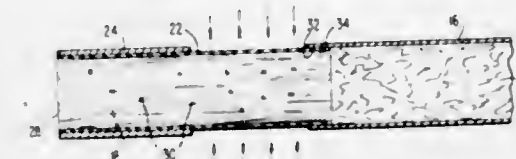


A cigarette having highly permeable areas formed in an otherwise impermeable band covering the joint between the tobacco portion and the stub portion of the cigarette so that as smoke is drawn through the stub air enters the joint through the highly permeable portions. The extent to which the permeable areas cover the joint and the degree of permeability of the areas determines the amount of air drawn in through the joint.

3,410,275

#### CIGARETTE FILTER

Irwin W. Tucker, 215-04 33rd Ave., Bayside, N.Y. 11361  
Filed Mar. 30, 1965, Ser. No. 444,006  
9 Claims. (Cl. 131—10)



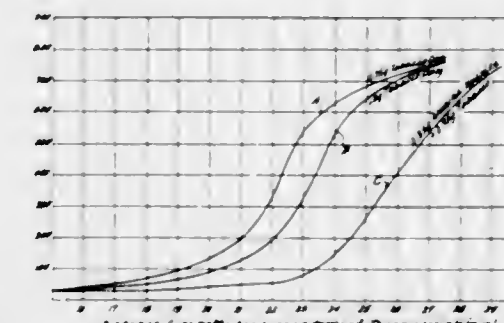
A cigarette filter having an exposed wrapper portion formed of inherently porous sheet material to permit air to be drawn into the filter material through said inherently porous material upon inhalation of the associated cigarette.

3,410,276

#### TOBACCO COMPOSITION

Bernard F. Armbrust, Jr., Benton, and Val G. Carithers, Little Rock, Ark., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware  
Continuation-in-part of abandoned application Ser. No. 372,305, June 3, 1964. This application July 28, 1965, Ser. No. 475,331

9 Claims. (Cl. 131—9)



Tobacco is mixed with about 5 to 35 percent by weight of a shredded sheet material made of a temperature control substance (such as alumina hydrate), a fibrous matrix material such as asbestos, and a vegetable gum binder (such as guar gum). The additive has a lowering influence on peak temperature and firms the ash when the tobacco is smoked. The shredded sheet may have rough exposed surfaces providing internal filtration of the smoke.

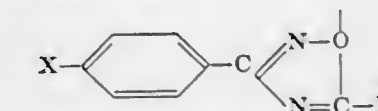
3,410,277

#### TOBACCO HAVING AN OXADIAZOLE ADDITIVE

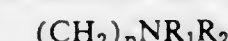
Tore Dalhamn, Stockholm, Sweden, assignor to P. Lorillard Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 10, 1966, Ser. No. 571,419  
4 Claims. (Cl. 131—17)

1. A smoking tobacco product consisting essentially of tobacco and a pharmacologically acceptable salt of an oxadiazole of the formula



wherein X is a member of the group consisting of hydrogen, halogen and lower alkyl having from 1 to 4 carbon atoms, and R is an amino radical of the formula



wherein n is an integer from 0 to 4 and R<sub>1</sub> and R<sub>2</sub> are each selected from the group consisting of alkyl and alkylol having from one to four carbon atoms, the amount of said oxadiazole being sufficient to antagonize at least partially the ciliastatic effect of tobacco smoke.



3,410,278

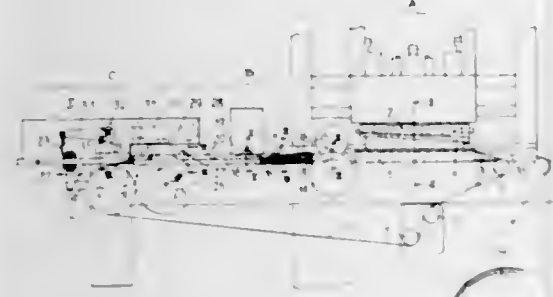
**METHODS AND MACHINES FOR THE MANUFACTURE OF CIGAR BUNCHES OR SINGLE-LEAF CIGARS**

Martinus Verbakel, Eindhoven, Netherlands, assignor to Arenco-P.M.B., n.v., Best, Netherlands, a company of the Netherlands

Filed May 11, 1966, Ser. No. 549,282

Claims priority, application Netherlands, May 19, 1965, 6506349

3 Claims. (Cl. 131—20)



A continuous string wrapping machine for cigars in which preshaped plugs of scrap-tobacco or filler are placed end to end along a wrapper of unlimited length.

3,410,279

**TOBACCO PRODUCT AND PROCESS FOR MAKING SAME**

Raymond J. Moshy, Westport, Conn., and Felix J. Germino, Palos Park, Ill., assignors to American Machine & Foundry Company, a corporation of New Jersey  
No Drawing. Application Aug. 20, 1965, Ser. No. 493,950, now Patent No. 3,364,935, which is a division of application Ser. No. 130,829, Aug. 11, 1961, now abandoned. Divided and this application Oct. 11, 1967, Ser. No. 674,581

6 Claims. (Cl. 131—140)

1. A process of manufacturing a smoking product article comprising the steps of creating a foam from a foam stabilizing agent, admixing a foaming agent therewith and refoaming the mix, combining tobacco particles with said foamed mix to form a tobacco-foam mixture slurry, at least one element of said mixture being adhesive, forming said slurry into a predetermined shape, and drying said shaped slurry to a preselected moisture content in which tobacco particles are spaced from each other by a gaseous media to form a stable foamed mass.

3,410,280

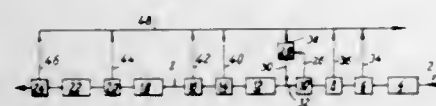
**METHOD AND APPARATUS FOR SEPARATING TOBACCO LEAF LAMINAE FROM TOBACCO RIBS**

Waldemar Wochowski, Hamburg, Germany, assignor to Hauni-Werke Korber & Co. KG., Hamburg-Bergedorf, Germany

Filed Sept. 2, 1966, Ser. No. 576,961

Claims priority, application Germany, Sept. 3, 1965, H 57,078

13 Claims. (Cl. 131—146)



A method and apparatus for separating laminae from tobacco leaves wherein the leaves are destalked to form a mixture which contains free laminae and ribs. The major percentage of laminae is separated from the mixture so that the remainder forms a secondary mixture. The major percentage of the remaining laminae is separated from the secondary mixture and the remainder of the secondary mixture is mixed with a third mixture.

3,410,281

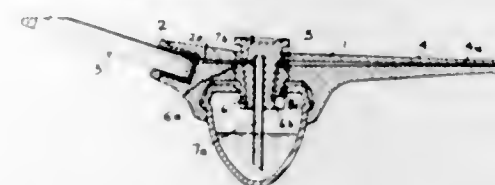
**SMOKING DEVICE FOR CIGARETTES AND CIGARS**

Zvi Ephron, Shaul Asnin, and Aaron Bor, Tel-Aviv, and Shalom Bor, Petach-Tikva, Israel, assignors to Smoklean Limited, Tel-Aviv, Israel, a corporation of Israel

Filed Nov. 29, 1966, Ser. No. 597,584

Claims priority, application Israel, Dec. 27, 1965, 24,880

2 Claims. (Cl. 131—173)



This invention is directed to a smoke washing cigarette pipe having a receptacle for water or the like and in which the receptacle may be inserted or removed by sliding same in a direction that is normal to the longitudinal axis of the stem of the pipe.

3,410,282

**FILTER MEDIUM FOR REMOVING HYDROGEN CYANIDE FROM TOBACCO SMOKE**

Theodore Roosevelt Walker and John Edward Kiefer, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
No Drawing. Filed Mar. 13, 1967, Ser. No. 622,470

6 Claims. (Cl. 131—267)

Tobacco smoke filtering mediums containing at least one amine salt for selectivity removing hydrogen cyanide from tobacco smoke. The particular salts are produced by reacting a primary alkyl or hydroxyalkyl amine containing no more than 8 carbon atoms with a carboxylic acid.

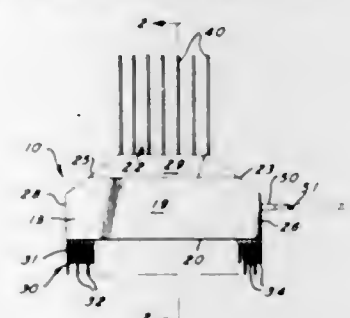
3,410,283

**COMBINATION IMPLEMENT FOR HAIRDRESSING**

Jules Goldberg, 8611 Thouron Ave., Philadelphia, Pa. 19150

Filed July 8, 1965, Ser. No. 470,519

5 Claims. (Cl. 132—120)



A combination hairdressing implement is disclosed for manipulating hair including the manipulation of stretching, back combing, teasing and smoothing. A comb and a brush are removably and interchangeably supported along one edge of a handle. Prongs extend from the opposite edge of the handle. An extensible rod, stiffer than said prongs, is received in said handle.

3,410,284

**CLEANING INSTALLATIONS FOR VEHICLES**

Horst Burger, Augsburg, Germany, assignor to Bowe Bohler & Weber KG, a corporation of Germany

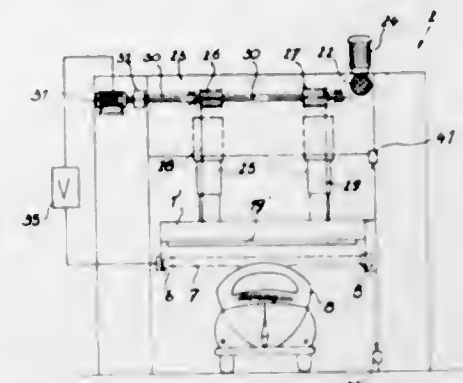
Filed Mar. 24, 1966, Ser. No. 537,112

Claims priority, application Germany, Mar. 26, 1965, B 81,177

4 Claims. (Cl. 134—57)

Treatment plant for automotive vehicles to be subjected to spraying or drying by a fluid stream emitted from a mobile source, such as one or more nozzles movable vertically along a frame through which a car to be

treated is being driven, the contour of the car being scanned by one or more electric eyes whose light beam or beams are intercepted by one or more photocells generating three signals in response to full, partial or low



illumination, respectively; the first signal causes an advance of the nozzle support toward the vehicle, the second signal arrests the support, and the third signal initiates its withdrawal from the vehicle.

3,410,285

**TILTABLE UMBRELLA WITH CLUTCH LOCK CONTROL FOR DUAL DRIVES**

Samuel N. Small, Valley Stream, N.Y., assignor to Alfred G. Cohen and Paul Weiss, Flushing, N.Y.

Filed Nov. 16, 1967, Ser. No. 683,525

12 Claims. (Cl. 135—20)



A tiltable umbrella assemblage for mounting in connection with a support, incorporating a toothless rack drive for movement of the umbrella top into open, tiltable and closed positions and drive means for rotating the top when in tilted position and, wherein, both drives of the assemblage have tension control clutch locks for retaining the dual drives against movement independently of the manually actuated means for operation of each of the drives.

3,410,286

**METHOD FOR PREVENTING ADHESION OF FLOURY MATERIAL TO THE SURFACE OF THE OTHER OBJECT**

Toshihiko Satake, 2-687 Oaza Saijyo Higashi, Saijyo-cho, Kamo-gun, Japan

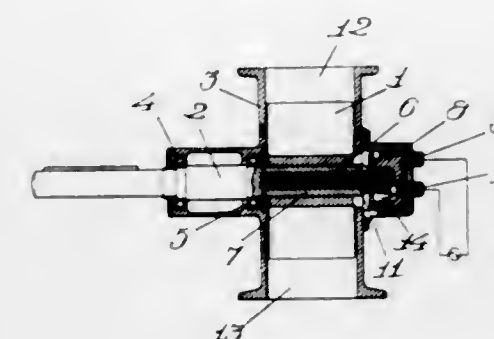
Filed July 6, 1965, Ser. No. 469,707

Claims priority, application Japan, July 15, 1964, 39/40,275

4 Claims. (Cl. 137—13)

A method of handling powdery and granular materials flowing through conveying means to prevent the adhesion of the flowing materials to the surfaces of the conveying

means, comprised of the step of heating the surfaces of the conveying means in contact with the flowing materials to a temperature higher than the dew point of the water content of the flowing materials and lower than the temperature of degeneration of the materials. Further, the



method includes the steps of maintaining the temperature of the contacting surfaces about 15° higher than the temperature of the material flowing through the conveying means, and thermostatically controlling the temperature of the contacting surfaces for maintaining the temperature thereof constant.

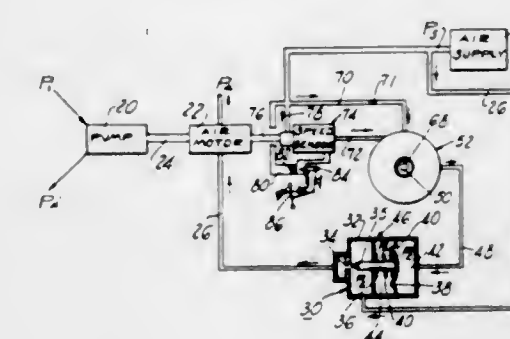
3,410,287

**PURE FLUID VELOCITY SENSOR CONTROL APPARATUS**

Jacq Van Der Heyden, Orlando, Fla., and George Russell Howland, South Bend, Ind., assignors to The Bendix Corporation, a corporation of Delaware

Filed May 16, 1966, Ser. No. 550,557

6 Claims. (Cl. 137—36)



1. Control apparatus for controlling the speed of a rotatable member in accordance with a request input signal, said control apparatus comprising:

casing means provided with a fluid inlet and defining a circular swirl chamber having a centrally located fluid outlet;

a source of fluid at substantially constant pressure connected to said fluid inlet;

rotatable means supported for rotation in said swirl chamber and connected to be driven by the rotatable member;

passage means in said rotatable means connected to receive pressurized fluid from said fluid inlet and to inject said pressurized fluid into said swirl chamber to generate a fluid swirl therein which varies in absolute velocity as a function of the rotational velocity of said rotatable means;

a control inlet port in said casing connected to receive pressurized fluid from said fluid source and inject the same tangentially into said chamber to thereby modify the swirl velocity of said generated swirl;

fluid flow control means responsive to the request input signal and connected to control the flow of pressurized fluid from said fluid source to said control inlet port as a function of the request input signal;



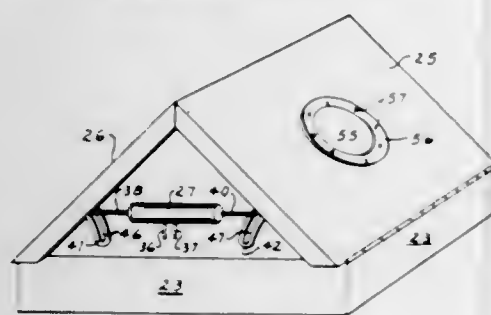
said fluid swirl acting as a variable impedance to fluid flow through said chamber from said passage means to said fluid outlet to produce a corresponding variable output fluid pressure signal at said fluid outlet; and means responsive to said output fluid pressure signal for controlling the speed of the rotatable member.

3,410,288

## RELIEF VALVE FOR FLUE SYSTEM

Ernest E. Hajek, Richmond, Calif., assignor to Kaiser Industries Corporation, Oakland, Calif., a corporation of Nevada

Filed May 1, 1963, Ser. No. 277,198  
7 Claims. (Cl. 137—71)



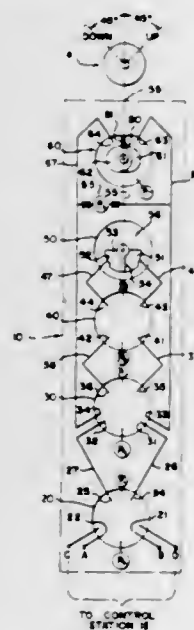
1. An emergency relief valve for a flue system for carrying gas which comprises means defining a vent in the flue system, a pivoted flap positioned to be held by gravity in sealing relationship with said vent, a motor connected to move said flap out of sealing relationship with said vent, and means responsive to a condition within said flue system to actuate said motor, wherein said flap is provided with an opening and said opening is sealed with a rupture disc comprising a perforated member on the exterior side of which a sheet of heat resistant material is placed, said sheet having a thickness such that it is readily ruptured by a small positive gauge pressure in said flue system.

3,410,289

## PURE FLUID REMOTE CONTROL SYSTEM

Edwin M. Dexter, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland

Filed Apr. 2, 1965, Ser. No. 445,003  
21 Claims. (Cl. 137—81.5)



A system for controlling the position of a movable member comprising a pure fluid element for producing a fluid positioning signal in response to the difference between a control signal and a position feedback signal. An

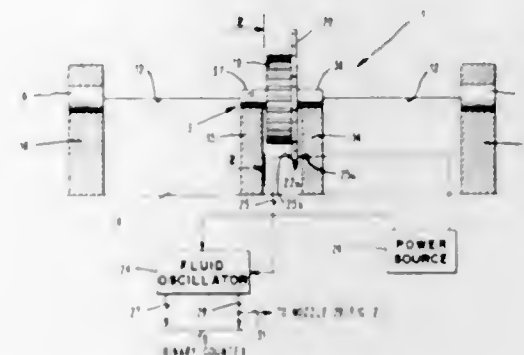
additional feature comprises a variable pressure differential signal generator wherein a pair of cams are simultaneously movable to variable impede fluid flow from a pair of sensor nozzles, the impedance to flow from said nozzles being sensed wherein said pressure differential signal is generated as a function thereof.

3,410,290

## FLUID CLOCK PULSE GENERATOR

Edwin R. Phillips, Rosemont, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 23, 1965, Ser. No. 503,962  
11 Claims. (Cl. 137—81.5)



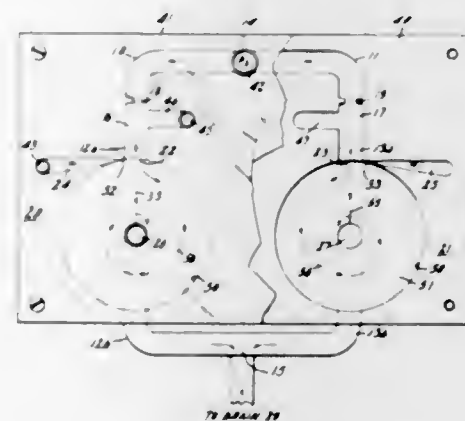
1. A fluid clock pulse generator, comprising in combination: a fluid oscillator having a predeterminable frequency of oscillation, a mechanical oscillator having a natural frequency of oscillation related to that of the fluid oscillator, first means connected between said fluid oscillator and said mechanical oscillator controlling the rate of oscillation of said fluid oscillator in accordance with the rate of oscillation of said mechanical oscillator, and means connected between said fluid oscillator and said mechanical oscillator for driving the mechanical oscillator.

3,410,291

## BRIDGE-TYPE FLUIDIC CIRCUIT

Willis A. Boothe and Jeffrey N. Shinn, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

Filed Apr. 30, 1965, Ser. No. 452,115  
12 Claims. (Cl. 137—81.5)



A bridge-type fluidic circuit wherein each of the four legs of the bridge includes a fixed or variable type of fluid flow restrictor. The variable flow restrictors are vortex fluid amplifiers utilizing the flow in the associated bridge leg as the main fluid flow which enters the vortex amplifier radially inward. A control fluid from a source of fluid logic enters the vortex amplifier tangentially to control the main fluid. Fluid is supplied to the bridge across two opposed bridge junctures and a load is connected across the remaining two opposed junctures.

3,410,292

## APPARATUS FOR DETECTING OR MEASURING THE CONDUCTIVITY OF A LIQUID

Cyril Frederick Bennett and Charles Stephen Etherton, Brentwood, Essex, England, assignors to N.V. Tools Limited, Brentwood, England, a company of England  
Filed June 2, 1965, Ser. No. 460,675

Claims priority, application Great Britain, June 2, 1964, 22,714/64  
2 Claims. (Cl. 137—93)



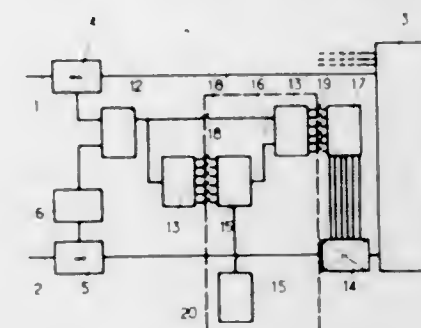
An apparatus for detecting or measuring the conductivity of a liquid whereby a probe senses and transmits a signal representative of the condition of the liquid via a pulsed square wave which is applied to a potential divider the output of which actuates the control means.

3,410,293

## IN-LINE BLENDING

Herbert Ernyei, Paris, France, assignor to Societe Lignes Telegraphiques et Telephoniques, Paris, France, a joint-stock company of France

Filed Mar. 22, 1965, Ser. No. 441,735  
Claims priority, application France, Apr. 6, 1964, 969,815  
5 Claims. (Cl. 137—112)



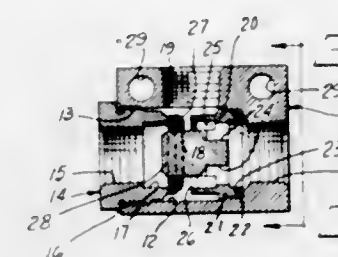
There is disclosed in the specification and the drawings a digital electronic control system for controlling the flow rates of two or more components being blended in an in-line blending system. The system comprises digital means for sensing the flow rate in each input line for a blending tank and generates a series of pulses the frequencies of which are functions of the individual flow rates. The pulses are subtracted by an inhibitor and a resultant lower frequency pulse train is applied as an input to at least one digital integrator which later circuit is operatively connected on its output side to at least one digital valve. The valve is located in a component feed line to the blending tank. The integrator provides a digital output signal which is a function of the rate of digital information applied to the integrator and it controls the operation of the digital valve.

3,410,294

## SHUTTLE VALVE

Robert J. Heldeman, Detroit, and William J. Chorkey, Farmington, Mich., assignors to Ace Controls Inc., Farmington, Mich., a corporation of Michigan  
Filed Dec. 27, 1966, Ser. No. 604,862

4 Claims. (Cl. 137—113)



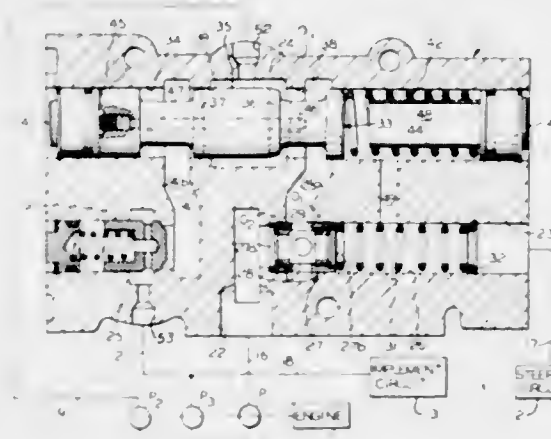
A valve body having a support member. An elastic valve element slidably mounted on said support member to be moved by fluid pressure into engagement with either of two aligned inlet ports.

3,410,295

## REGULATING VALVE FOR METERING FLOW TO TWO HYDRAULIC CIRCUITS

Thomas J. Malott, Kalamazoo, Mich., assignor to General Signal Corporation, a corporation of New York  
Filed Feb. 21, 1966, Ser. No. 528,700

5 Claims. (Cl. 137—114)



A hydraulic valve for combining the outputs of two pumps to provide a regulated supply rate to one utilization circuit and to provide an unregulated supply rate to a second such circuit. The valve includes a first flow path adapted to transmit continuously the output of one pump to the first utilization circuit, and a throttling valve adapted to receive the output of the second pump and to meter it in reverse senses to a pair of branch passages which lead, respectively, to the two circuits. A shuttle valve, which responds to the pressure drop across a pair of series-connected metering orifices in the first flow path, selectively connects one branch passage with the first path either at a point between the orifices or at a point upstream of both orifices. The throttling valve is operated by the differential between the pressures in said one branch and in the first flow path at a point downstream of both orifices.

3,410,296

## VACUUM RELIEF AND VENT VALVE

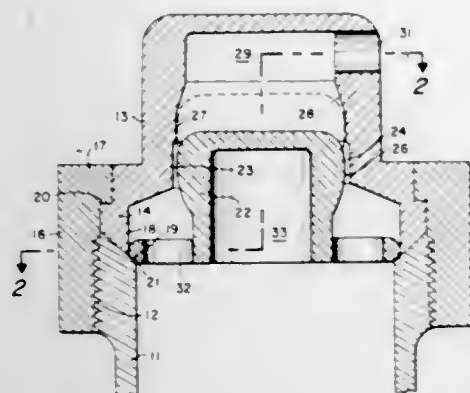
Jorgen D. Bering, Q-Controls, Occidental, Calif. 95465  
Filed Sept. 20, 1966, Ser. No. 580,806

5 Claims. (Cl. 137—199)

A vacuum relief and vent valve has a hollow body formed with a wide lower chamber communicating with a liquid conduit, a narrower throat, a still narrower seating surface and an upper chamber which has a vent to

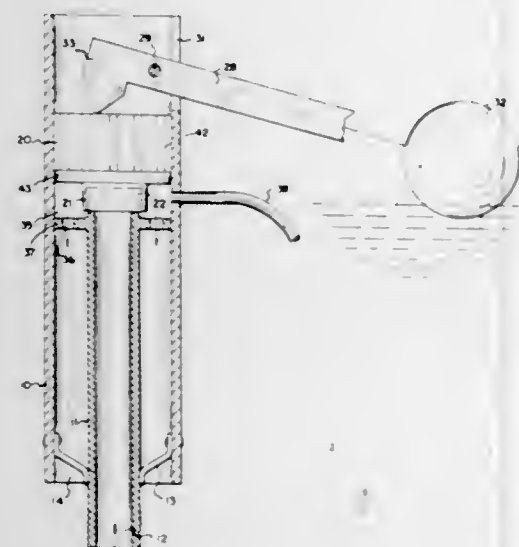


atmosphere. Reciprocating within the body is a plug having at its widest portion another seating section which, when the valve is open, provides a thin annular passage from said lower chamber past said throat in substantially a straight flow. When the plug is raised to closed position, the seating sections close off liquid flow. The valve closes by action of gravity until liquid flushes the plug into open position by the combined effect of kinetic action of liquid against the plug, friction of the liquid moving through the throat and liquid pressure. At other times the valve is open to permit air to enter and exhaust.



tion, the seating sections close off liquid flow. The valve closes by action of gravity until liquid flushes the plug into open position by the combined effect of kinetic action of liquid against the plug, friction of the liquid moving through the throat and liquid pressure. At other times the valve is open to permit air to enter and exhaust.

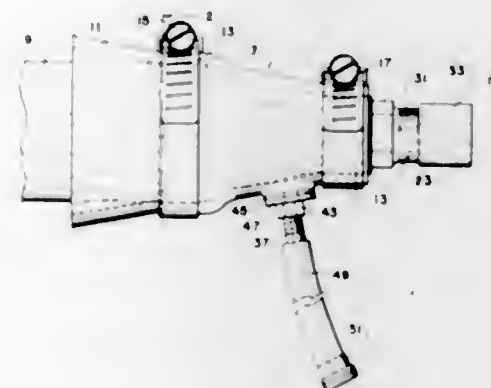
**3,410,297**  
**COLUMN VALVE FOR TOILET TANKS WITH ANTI-SIPHON FEATURE**  
Milton Perlman, 12785 Biscayne Bay Drive, North Miami Beach, Fla. 33161  
Filed June 8, 1966, Ser. No. 556,104  
4 Claims. (Cl. 137-218)



1. In a valve comprising an outer tube containing an inner tube, with the lower or inlet end of the inner tube being adapted to be connected to a water line, and the lower end of the outer tube being open to serve as a water outlet;  
a sealing plug in the outer tube above the upper end of the inner tube;  
said plug being of the diameter of the outer tube to fill it transversely and provided with an intake seal for engaging and sealing the upper end of the inner tube;  
and means for biasing the plug downwardly into sealing position and for releasing the plug to be moved upwardly out of sealing position by water pressure in the inner tube;  
the improvement comprising: air passages in the sealing plug connecting its upper and lower faces;

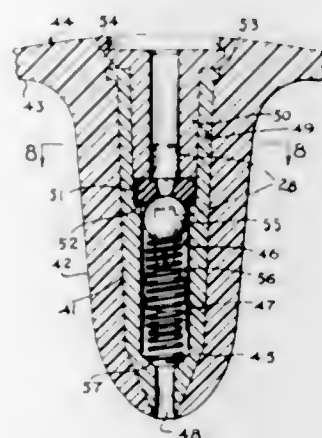
and an anti-siphon seal normally sealing the lower face of the plug and the lower ends of the air passages, as when there is water pressure in the inner tube; said anti-siphon seal moving down automatically to unseal the air passages when there is an absence of water pressure in the inner tube and at the same time the intake seal fails to seal the inner tube.

**3,410,298**  
**MEANS FOR INFLATING ARTICLES**  
Earl C. Pruitt and Calvin L. Hughes, El Dorado, Kans., assignors to Wayne D. Cox, Jr.,  
Filed Aug. 4, 1965, Ser. No. 477,327  
3 Claims. (Cl. 137-223)



This invention relates to a new means for inflating articles, and more specifically this invention relates to a new means for inflating articles with exhaust gases from an internal combustion engine. In a more particular aspect this invention relates to a means for inflating articles with exhaust gases from an internal combustion engine where the pressure of the gases in the inflated article are safely regulated. The inflating means of this invention includes a frusto-conical shaped body having one end attached to the exhaust pipe of an internal combustion engine, a valve means mounted at the opposite end thereof to regulate the amount of gases passing into and out of the inflating means, and an inflating hose assembly attached thereto for auxiliary pressure as required.

**3,410,299**  
**VALVE FOR INFLATABLE ARTICLE**  
Lloyd R. Whittington, Ashland, Ohio, assignor to The National Latex Products Company, Ashland, Ohio, a corporation of Ohio  
Continuation-in-part of application Ser. No. 468,758, July 7, 1965. This application May 18, 1966, Ser. No. 551,020  
6 Claims. (Cl. 137-223)



1. A valve as for an inflatable article of the type having a valve housing of elastic material in the wall thereof provided with a valve receiving aperture therethrough, comprising: a relatively rigid elongated stem having an outer end portion for anchoring reception

in air-sealing relation within said valve housing aperture to present at least an inner end portion of the stem within the article; said stem having an inflation needle receiving passage extending inwardly from an outer end of the same to a substantial depth; resilient guide means affixed in said passage including a guide opening aligned with an inner extent of said passage for inward yielding, air-sealing projection of an air-inflation needle therethrough to present an air outlet port in the inner end of the needle within said inner passage extent; and closure means carried by said stem and operable when said inflation needle is in said air-sealing relation to said resilient guide means for passage of inflation medium between said inner passage extent and the interior of the inflatable article, the outer end of said stem having a bore therein of greater diameter than said inner passage extent to define a peripheral seat for said resilient guide means and a guide plug being affixed in said bore to retain said guide means adjacent said seat, and having a guide passage therein constituting an outer extent of said needle-receiving passage, said stem having irregular portions adjacent the outer end thereof adapted to be anchoringly embedded in the elastic material of the valve housing, said irregular portions including extension of the material of said guide plug.

**3,410,300**  
**VALVE**  
Ralph L. Mondano, Lexington, Mass., assignor to Custom Materials, Inc., Chelmsford, Mass., a corporation of Delaware  
Filed Oct. 14, 1966, Ser. No. 586,792  
10 Claims. (Cl. 137-223)

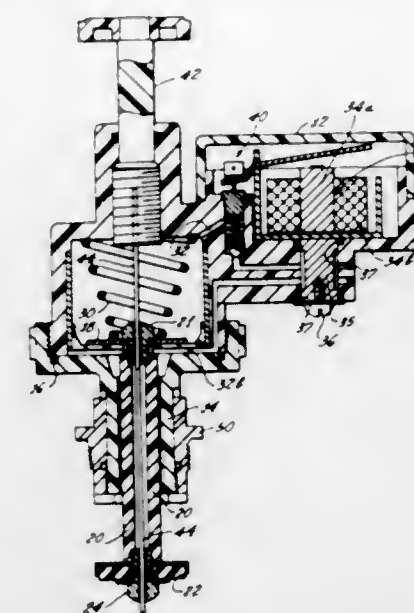


1. A valve for permitting introduction of fluid into a container through an aperture therein and for retaining fluid in the container against escape through said aperture, comprising a sealing member of sheet material, a coating of a pressure-sensitive adhesive on one face of said sealing member, and a strip of flexible sheet material having a face of a portion thereof adjacent one of its ends strippably adhered to a portion of said one face of said sealing member by said adhesive, said strip being adapted to be folded back upon itself to have a portion thereof adjacent said first mentioned portion thereof lie in contact with the face of the strip opposite the face secured to said sealing member, said sealing member being adapted to be attached by said adhesive to the interior surface of the container adjacent said aperture with the other end of said strip extending outwardly through said aperture and with at least part of said portions of said strip lying between the inner surface of the container and said portion of said sealing member and thereby preventing adhesion of said portion of the sealing member to the inner surface of the container, said strip being adapted to be removed through said aperture.

**3,410,301**  
**SOLENOID OR TIMER OPERATED PILOT VALVE FOR MAIN VALVE CONTROL**  
Delbert L. Merriner, Glendale, and Woodrow W. Miller, Los Angeles, Calif., assignors to Richdel, Inc., Los Angeles, Calif., a corporation of California  
Filed Sept. 22, 1966, Ser. No. 581,299  
4 Claims. (Cl. 137-269)

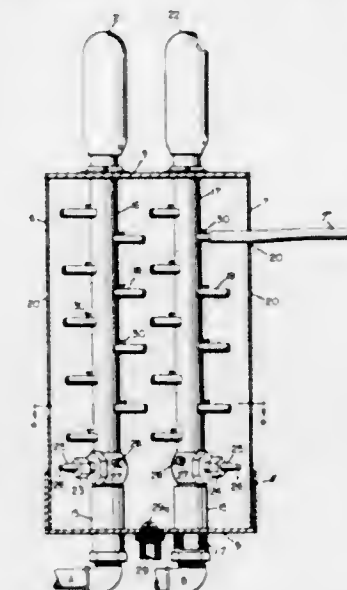
A valve assembly is provided for use, for example, in conjunction with lawn sprinkler systems, and which is of

the hydraulic, pilot-operated type, wherein the casing may receive either a solenoid or a timer actuator for the pilot



valve, and several pilot passages located in the casing are interconnected by a plug which cools the solenoid, in the solenoid actuated pilot embodiment of the device.

**3,410,302**  
**WATER DISTRIBUTION BOX**  
James A. Frick, 501 W. De Young St., Marion, Ill. 62959  
Filed Sept. 20, 1963, Ser. No. 310,305  
5 Claims. (Cl. 137-312)



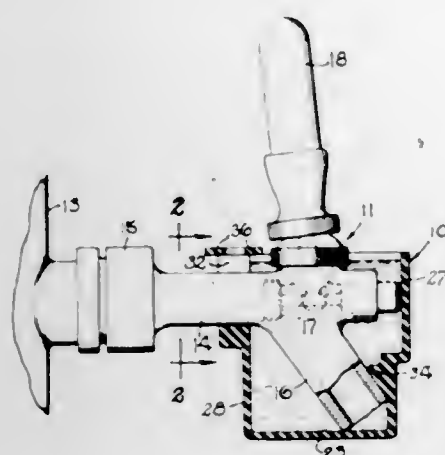
1. A water distribution assemblage comprising a box-like containing element dimensioned to be received in a building wall having therein a pair of hot and cold water standpipes of such capacity as to constitute reservoirs of hot and cold water, and a group of relatively small nipples projecting laterally from each of the standpipes, which nipples are adapted for the sweating thereon of conventional bendable, soft copper tubing and air chamber forming portions at the upper ends of said standpipes.

**3,410,303**  
**COVER FOR A DISPENSING FAUCET**  
Arthur L. Johnson, Jr., Rockford, Ill., assignor to Johnson Enterprises, Inc., Rockford, Ill., a corporation of Illinois  
Filed Nov. 9, 1966, Ser. No. 593,110  
7 Claims. (Cl. 137-381)

A cover for a beverage dispensing faucet is molded in one piece from flexible rubber and is formed generally



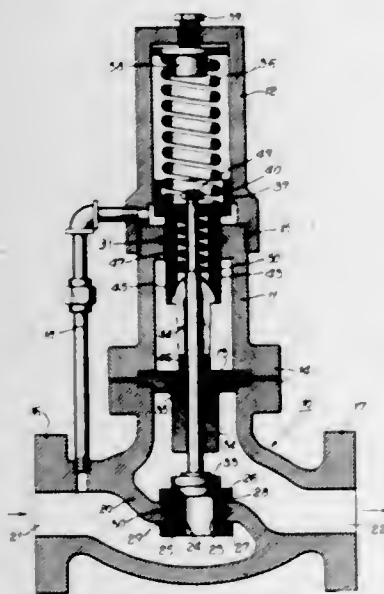
in the shape of a cup which may be filled with water and which is sufficiently deep to enable immersion of the spout and the valve of the faucet into the water to prevent the beverage from drying in the faucet when the lat-



ter is not in use. The cover may be attached releasably to the faucet by a strap molded integrally with the cup and adapted to be wrapped around the faucet to establish a water-tight seal between the cover and the faucet as an incident to attachment of the cover.

#### 3,410,304 RELIEF VALVES

Herman L. Paul, Jr., Stamford, Conn.  
(Box 388, Ansonia Station, New York, N.Y. 10023)  
Filed Jan. 19, 1966, Ser. No. 521,608  
4 Claims. (Cl. 137-494)

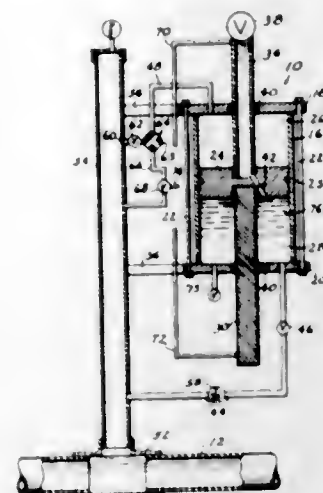


1. In a valve, a case having a valve seat, a closure seatable on said seat, a friction device for holding said closure in closed position, means to apply force to said friction device, a control member for releasing said force-applying means.

3,410,305  
CHEMICAL INJECTOR  
George W. Hicks, Jr., P.O. Box 11052,  
Oklahoma City, Okla. 73111  
Filed Mar. 25, 1966, Ser. No. 537,423  
3 Claims. (Cl. 137-564.5)

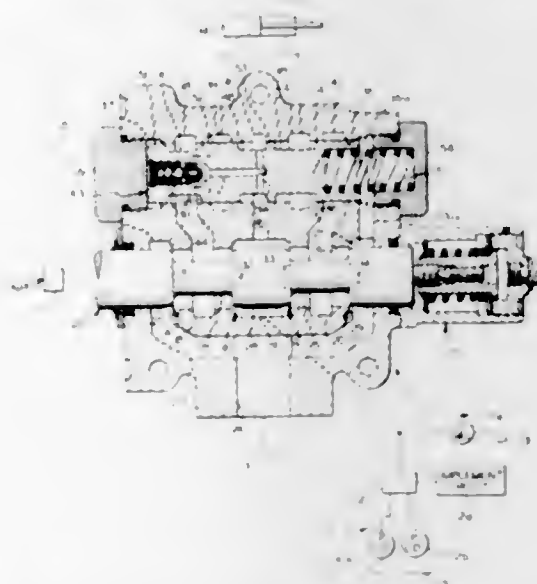
A piston divided upright chemical containing housing is supported by a gas tight tank in turn connected with an oil and gas containing flow line. Coaxially aligned diametrically equal piston rods project outwardly of respective ends of the housing. Tubing connects respective

ends of the housing to the tank. Gravitational attraction for the piston and equalized gas pressure in the housing



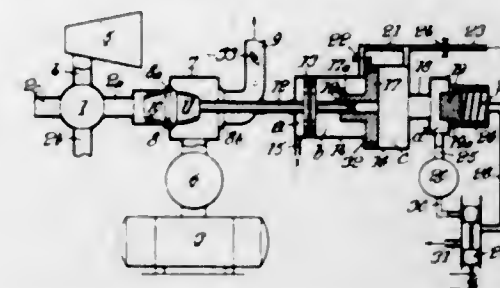
chambers forces chemical out of the depending chamber through a feed valve in the tubing forming a drain line.

3,410,306  
CONTROL VALVE WITH LOCKOUT ELEMENT  
Thomas J. Malott, Kalamazoo, Mich., assignor to General Signal Corporation, a corporation of New York  
Filed Oct. 27, 1966, Ser. No. 590,050  
5 Claims. (Cl. 137-596.2)



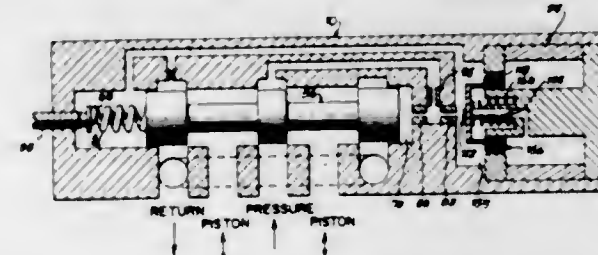
1. A control valve comprising
  - (a) inlet and exhaust passages, first and second delivery passages, and first and second motor passages;
  - (b) a metering valve having a neutral position in which it connects each delivery passage with both the inlet passage and the exhaust passage and being shiftable in opposite directions from that position to restrict communication between one or the other of the delivery passages and the inlet passage while restricting communication between the remaining delivery passage and the exhaust passage;
  - (c) a two-position lock valve having a closed position in which it isolates each motor passage from the other passages, and an open position in which it connects the first and second motor passages with the first and second delivery passages, respectively;
  - (d) actuating means responsive to movement of the metering valve for shifting the lock valve to its closed position when the metering valve is moved to its neutral position, and for shifting the lock valve to its open position when the metering valve is moved in either of said opposite directions; and
  - (e) means for damping movement of the lock valve from its open position to its closed position so that this movement lags movement of the metering valve to its neutral position.

3,410,307  
INSTALLATIONS COMPRISING SEVERAL FREE  
PISTON AUTOGENERATORS SUPPLYING A  
RECEIVER WITH DRIVING GASES  
Pinchas Paul Szereszewski, Asnieres, France, assignor to Societe d'Etudes et de Participations Eau, Gaz, Electricite, Energie, S.A., Geneva, Switzerland  
Filed June 9, 1965, Ser. No. 462,664  
Claims priority, application France, June 10, 1964, 977,819  
7 Claims. (Cl. 137-610)



The invention relates to means for automatically controlling the motion speeds of the valve members of three way valve systems between positions where they respectively connect the free piston autogenerators of an installation constituted of several of said autogenerators with either a receiver engine, such as a turbine, which is to be supplied with the driving gases produced by said autogenerators or the atmosphere, said autogenerators being connected with both for intermediate positions of said valve members. These means are adapted to restrain the speed of the motion of each of said valve members when it is desired to connect the corresponding autogenerator with the receiver engine as well as, preferably, on the last portion of the travel of said valve member in the opposite direction.

3,410,308  
MOVING COIL ELECTROHYDRAULIC  
SERVOVALVE  
William C. Moog, Jr. and Jerald D. Bidlack, East Aurora, N.Y., assignors to Moog Inc., a corporation of New York  
Continuation of application Ser. No. 453,391, May 5, 1965. This application Dec. 5, 1967, Ser. No. 688,265  
17 Claims. (Cl. 137-625.61)

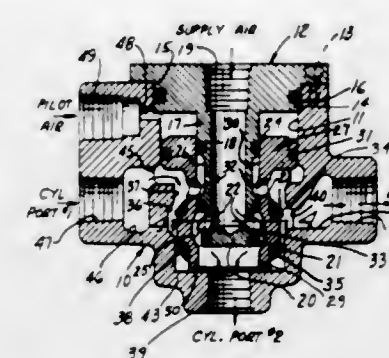


A servovalve is provided with an electromagnetic force motor including a signal input coil mounted on a movable reaction member impinged by fluid discharge by a nozzle, the spacing between the nozzle tip and the reaction member being responsive to an electrical command signal to the coil and thereby developing a pressure upstream of the nozzle which is applied to one end of a valve spool for controlling its position.

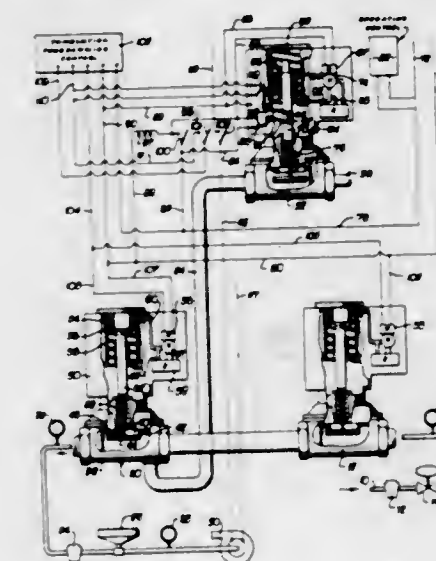
3,410,309  
FOUR-WAY VALVE  
Walter D. Ludwig, Bloomfield Township, Oakland County, Mich., assignor to Mac Valves, Inc., Oak Park, Mich., a corporation of Michigan  
Filed Nov. 30, 1966, Ser. No. 598,102  
11 Claims. (Cl. 137-625.66)

A four-way reversing valve including a pair of annularly formed valve members that are concentrically disposed

relative to a pressurized fluid supply chamber and which are movable relative to the outlet passage of a supply chamber for alternately directing fluid under pressure from the supply chamber to one of two transfer chambers,



3,410,310  
COMBUSTION VENTING SYSTEM  
William A. Ray, North Hollywood, Calif., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland  
Filed June 30, 1966, Ser. No. 562,159  
6 Claims. (Cl. 137-627.5)



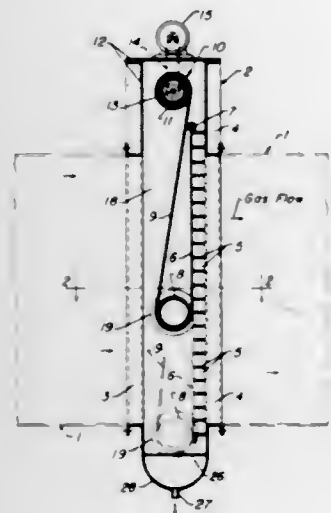
A fuel line is provided with a pair of hydraulically operated main valves and a vent valve located therebetween. Electric circuit and hydraulic sequence means control the valves such that the vent valve is closed first before the main valves are opened and the vent valve is not opened until the main valves have been closed.

3,410,311  
FLEXIBLE CURTAIN VALVE UNIT  
Joseph L. Burdock, Old Greenwich, Conn., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware  
Filed Apr. 22, 1966, Ser. No. 544,528  
3 Claims. (Cl. 137-625.28)

A flexible curtain valve for large gas ducts comprising a fixed upper drive roller, a vertically movable lower idle roller, and a downwardly looped flexible curtain running therebetween. The idle roller divides the curtain into a downstream panel portion and an upstream panel portion. The upper edge of the downstream panel is fixed, the downstream panel contacting and being supported by a lateral grid. The curtain passes under and around the



idle roller, the upstream panel portion of the curtain extending from the upstream tangential edge of the idle roller to the downstream tangential edge of the drive



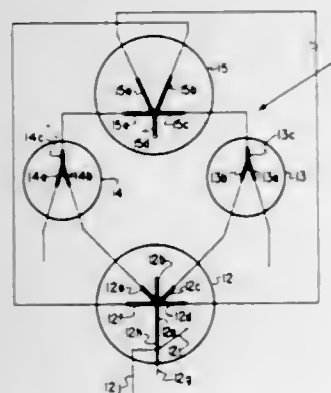
roller. This "reverse looping" arrangement assures continuous urging both of the idle roller and the downstream curtain panel into a tight seal with the grid.

3,410,312

**FLUID SHIFT FLIP-FLOP**

George R. Cogar, Frankfort, N.Y., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 19, 1965, Ser. No. 426,626  
3 Claims. (Cl. 137—81.5)



A fluid shift flip-flop is disclosed wherein a fluid tri-stable element is used to control a fluid bi-stable element. The first and second outputs of the tri-stable element are connected to the first and second control channels of the bi-stable element and input pulses are applied to the power input channel of the tri-stable element. The tri-stable element has the property of being insensitive to switch the input pulses between its first and second output channels in response to the establishment of control signals applied to its first and second control channels during an input pulse, but responsive to switch said input pulses between its first and second output channels in the presence of control signals which are established before the application of the input pulses.

3,410,313

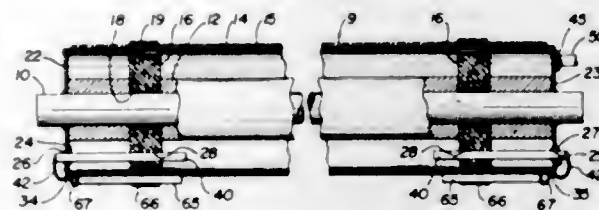
**CORROSION PROTECTED CONDUIT SYSTEM**

Joseph L. Martin, Wadsworth, Ohio, assignor, by mesne assignments, to New England Realty Co., Brecksville, Ohio, a corporation of Ohio

Filed May 4, 1965, Ser. No. 453,021  
9 Claims. (Cl. 138—103)

A conduit system having a sacrificial anode extending into a pipe casing through an end plate and located to lie

within any water that collects in the casing. The anode is supported in part by a pipe support within the casing.



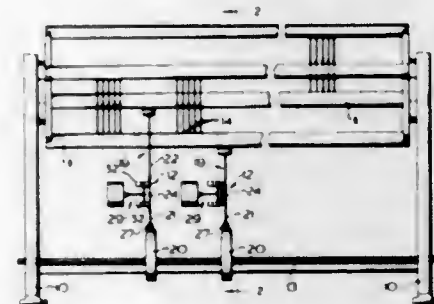
Gas under pressure is supplied to the casing. A sacrificial anode is secured to the outside of the casing.

3,410,314

**CONTROL DEVICE FOR MOVABLE THREAD GUIDES**

Hans Hopf, Dorfanger, Germany, assignor to The Continental Elastic Corporation, New Bedford, Mass., a corporation of Delaware

Filed Aug. 26, 1966, Ser. No. 575,297  
Claims priority, application Germany, Sept. 14, 1965  
G 44,670  
9 Claims. (Cl. 139—57)



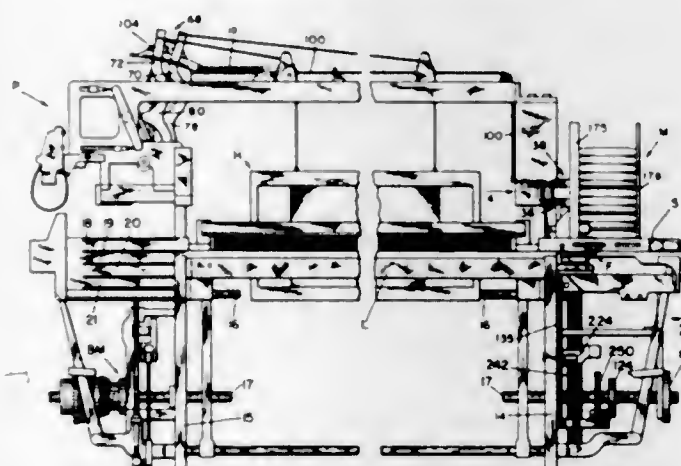
The present invention relates to a control device for movable thread guide devices such as harnesses of looms which are moved by an associated rotating eccentric cam with the interposition of an associated transmission element, the effective length of which may selectively be changed as by means of associated stop members.

3,410,315

**WEFT REPLENISHING LOOM**

Howard I. Nelson, Grafton, John J. Crowley, Worcester, and Philip A. Nims, Auburn, Mass., assignors to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts

Filed Oct. 11, 1965, Ser. No. 494,393  
14 Claims. (Cl. 139—232)



Bobbin releasing means for a multi-color magazine in which the release of a bobbin requires two steps. Two separate independently timed color selecting devices are used, the first device being effective to perform the first step preparatory to releasing a bobbin when a weft ex-

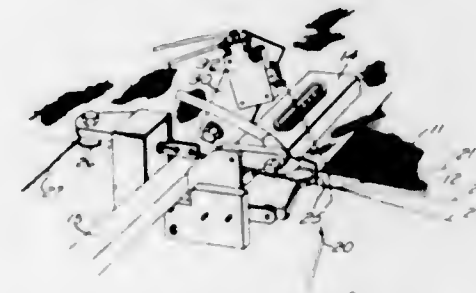
haustion feeler indicates weft exhaustion and the second device being effective to perform the second step to release a bobbin for which a first releasing step had been performed.

3,410,316

**WEFT DETECTOR FOR LOOM HAVING A WEFT INSERTED BY NOZZLE ACTION**

Joseph M. Giuttari, Cumberland, R.I., assignor to Greenhalgh Mills, Inc., a corporation of Rhode Island

Filed Mar. 15, 1967, Ser. No. 623,449  
4 Claims. (Cl. 139—370)



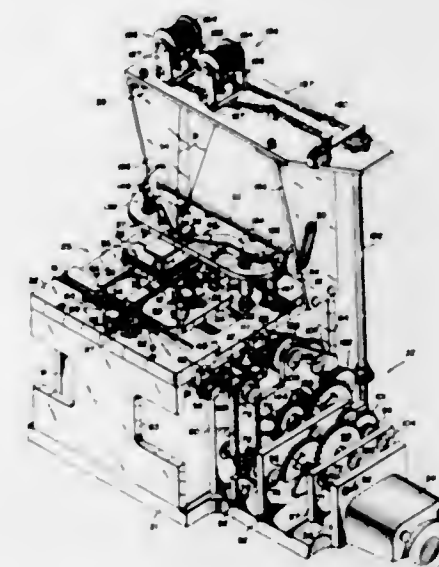
A weft detector positioned between the warp threads and the weft catching means of a loom in which the wefts are inserted by nozzle action and located ahead of a plurality of weft threads so that if any of the plurality of weft threads are present, the detector device will not stop the loom, but where all of the plurality of weft threads are absent, then the detector device will stop the loom.

3,410,317

**SOLENOID WINDING MACHINE**

Ivan Virgil Rondas, Compton, Calif., assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Sept. 16, 1964, Ser. No. 396,914  
11 Claims. (Cl. 140—93)



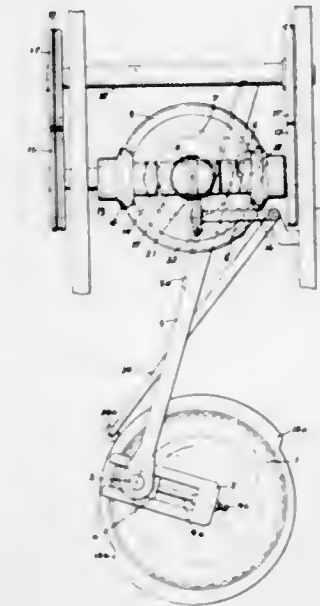
3. An electrical solenoid array winding machine comprising: a support and a plurality of individual solenoid pins disposed on said support for receiving individual solenoid coils; conductor supply means for supplying at least one conductor; guiding means for guiding said conductor to a respective solenoid pin for winding said conductor thereon; means coupled to said guiding means for moving said guiding means about one of said solenoid pins to wind the conductor about said one solenoid pin and thereby form a solenoid coil; a follow bar and a follow bar control means for positioning the follow bar in stationary relationship with respect to said support as said solenoid coil is being formed for holding the conductor against the said support with the conductor folded from the top of a previously wound solenoid.

3,410,318

**MACHINE FOR FEEDING TRANSVERSE WIRES INTO A WIRE MESH WELDING MACHINE**

Josef Ritter, Graz-Kroisbach, and Hans Gött, Graz, Austria, assignors to EVG Entwicklungs- und Verwertungsgesellschaft m.b.H., Graz, Styria, Austria, a corporation of Austria

Filed Mar. 7, 1967, Ser. No. 621,230  
Claims priority, application Austria, Mar. 9, 1966,  
A 2,239/66  
9 Claims. (Cl. 140—112)



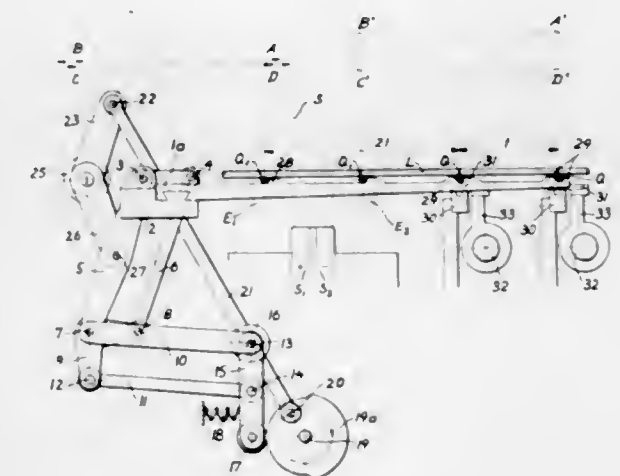
A mechanism for feeding transverse wires into a wire mesh welding machine. Said mechanisms operative to convert oscillatory rotary movement of a driving gear into intermittent rotary movement of a wire feed wheel drive shaft.

3,410,319

**MESH WELDING MACHINE**

Hans Gött, Graz, and Josef Ritter, Graz-Kroisbach, Austria, assignors to EVG Entwicklungs- und Verwertungsgesellschaft m.b.H., Graz, Styria, Austria, a corporation of Austria

Filed Mar. 20, 1967, Ser. No. 624,312  
Claims priority, application Austria, Mar. 22, 1966,  
A 2,748/66  
8 Claims. (Cl. 140—112)

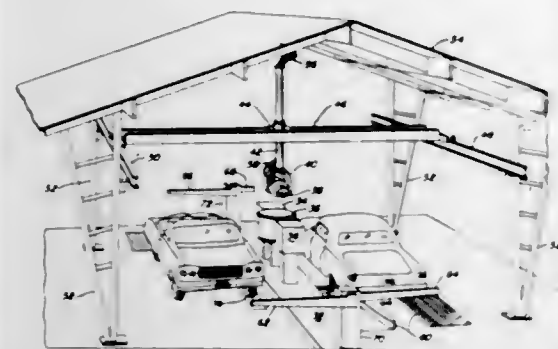


A reciprocating mechanism for advancing welded mesh through a wire-mesh welding machine. Said mechanism receiving lateral wires from a supply means, and advancing the lateral wires along with the welded mesh sequentially to and through the welding station during the advance strokes of the reciprocation, and being moved down-



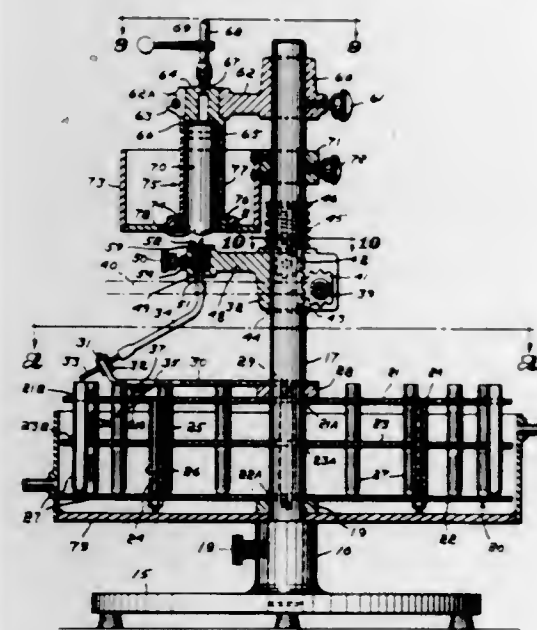
wards out of engagement with the wires during the return strokes.

**3,410,320**  
**MEASURING AND FILLING APPARATUS**  
Irwin Ginsburgh, Morton Grove, and Lawrence T. Wright, Homewood, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana  
Filed Mar. 19, 1965, Ser. No. 441,269  
6 Claims. (Cl. 141—98)



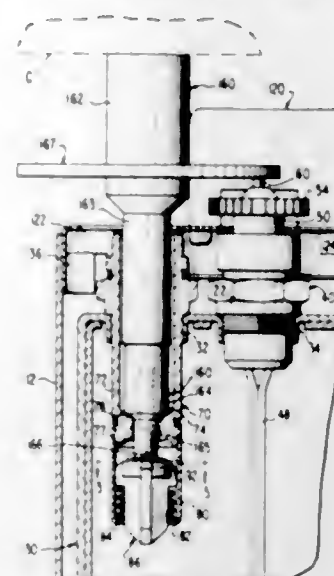
Apparatus for determining the distance from a datum plane to an object, including an extendable probe, a pressure sensitive switch on the extended end, a probe drive means having a control means, and a transducer sensitive to the movements of the probe to produce representative signals along the path of the probe.

**3,410,321**  
**FRACTION-COLLECTING APPARATUS**  
David F. Mitchell, Tewksbury, Mass., assignor to International Equipment Company, Needham, Mass., a corporation of Massachusetts  
Filed July 8, 1965, Ser. No. 470,399  
14 Claims. (Cl. 141—130)



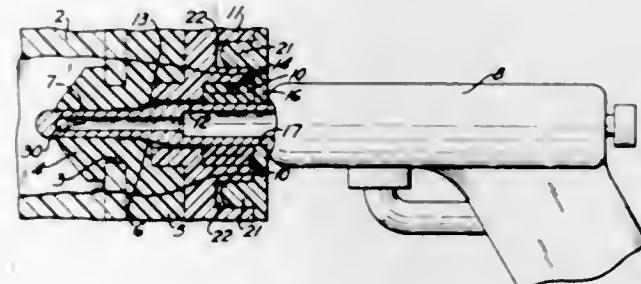
Fraction-collecting apparatus provided with a support to hold a specimen-containing tube vertically, the bottom of the tube being capable of being punctured without fracturing, a conduit having a needle for puncturing the bottom of the tube and supported in vertical alignment with the axis of the tube, a backing member engageable with the open end of the tube, and means to effect relative vertical movement between the needle and the container to effect the puncturing of the tube. The apparatus also including means to refrigerate the tube and to enable it to be used with tubes of different dimensions. The apparatus also provides backing members that are closures, the closures also having conduits.

**3,410,322**  
**FILL VALVE ASSEMBLY**  
John C. Lockwood, Atlanta, Ga., assignor to Scripto, Inc., a corporation of Georgia  
Filed Apr. 18, 1966, Ser. No. 543,167  
1 Claim. (Cl. 141—302)



The present invention relates to a fill valve assembly for a gas fueled lighter wherein the valve body is reciprocally mounted within the assembly and carries a sealing member on its upper portion and has a plurality of peripheral channel portions formed thereabout, at least one of which is utilized for the introduction of fuel into the reservoir when the valve is in its open position and the other non-filling channel being utilized to vent to the atmosphere any vaporized gas that is present in the reservoir.

**3,410,323**  
**FILLING VALVE FOR WET CELL BATTERY**  
James A. Richard, Monroeville, and Donald E. Bell, Pittsburgh, Pa., assignors to Mine Safety Appliances Company, a corporation of Pennsylvania  
Filed Nov. 26, 1965, Ser. No. 509,918  
12 Claims. (Cl. 141—348)

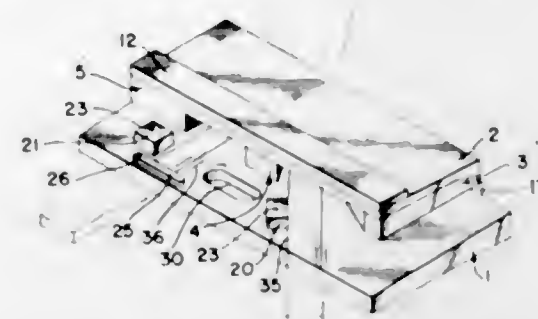


A wet cell electrical battery case has a port in one wall which is closed by a resilient valve provided with an open outer passage connecting with a normally closed inner passage. The entrance to the passages normally is closed by a pair of parallel straight resilient sealing elements extending across the outer end of the valve. A nozzle can be pushed between these elements and through the passages to permit water to be supplied to the inside of the battery.

**3,410,324**  
**SAW AND TRIM GUIDE**  
Glenn H. Thompson, 323 W. Main St. South Amherst, Ohio 44001  
Filed Sept. 30, 1966, Ser. No. 583,338  
10 Claims. (Cl. 143—6)

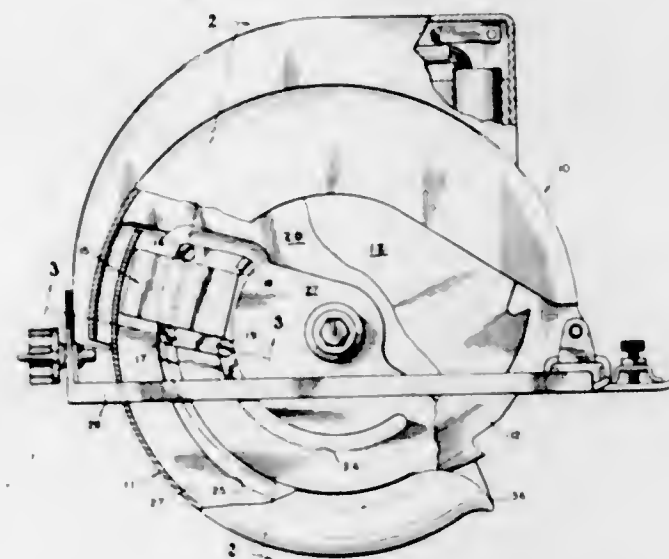
1. A saw and trim guide comprising:  
a base having front and rear portions;  
a saw table on which an electric saw may rest;

a saw guide mounted along the front side of said saw table at a predetermined distance so that a side of the electric saw may abut against it in order to insure that said electric saw moves in a linear fashion:



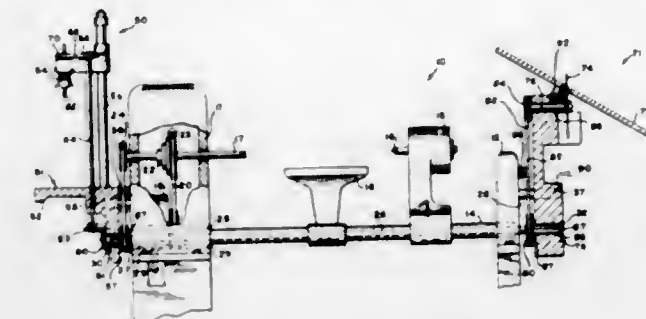
support blocks between and supporting said saw table and said base, the sides of said support blocks forming continuous paths for substantially the width of the saw table for the insertion of trim between said base and said saw table at predetermined angles; means on said base for varying said path of said trim.

**3,410,325**  
**ELECTRICALLY OPERATED PORTABLE SAW GUARD LIFTER**  
Robert O. Winther, Menominee, Mich., assignor to Vernco Corporation of Tennessee, Newport, Tenn., a corporation  
Filed Oct. 6, 1966, Ser. No. 584,790  
3 Claims. (Cl. 143—159)



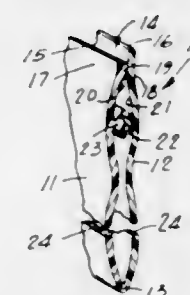
1. The combination with a portable rotary saw unit having  
a unit frame;  
a rotating saw blade carried by the frame; and  
a guard having a planar wall section with a cupped portion about a circumferential length of the periphery of the saw blade, the guard being rotatably carried by said frame and normally covering the underside of said periphery; of  
a stator carried and held stationary by said frame along a side of said wall;  
a keeper carried and held stationary by said frame along the other side of said wall opposite said stator; said wall being rotatable between the stator and the keeper;  
said wall being of a conductive and nonmagnetizable material; and  
electrical means associated with said stator and said keeper setting up a two-phase magnetic flux therebetween producing a torque in conjunction with said wall for rotating the guard.

**3,410,326**  
**MULTI-PURPOSE LATHE**  
Lionil Paquin, 71 Chandler St., Nashua, N.H. 03060  
Filed Aug. 19, 1966, Ser. No. 573,646  
8 Claims. (Cl. 144—1)



1. A multi-purpose lathe comprising  
a longitudinally extending frame having a headstock fixed to, and upstanding from one end, a tail piece fixed to and upstanding from the other end, a tail stock longitudinally slidable on said frame between said headstock and tail piece, the spindle of said headstock and the centre of said tail stock being aligned with each other, parallel to, and above, said frame, an electric motor mounted alongside said frame, the shaft thereof being parallel to and spaced from said spindle and drivingly connected thereto by belt and pulley means,  
a double ended drive shaft extending longitudinally of said frame and rotatably mounted in said headstock and tail piece, one terminal end of said shaft projecting beyond the outside of said headstock, and the other terminal end of said shaft projecting beyond the outside of said tail piece,  
power train means, including a clutch, drivingly connecting said spindle to said drive shaft for rotating the same,  
a plurality of longitudinally extending pins on the outside of said headstock and tail piece, parallel to the terminal ends of said drive shaft, and  
a plurality of wood working tool attachments, each having apertures for receiving said pins and drive elements socketed to receive, and be driven by, a terminal end of said shaft,  
whereby said lathe is useable for lathing or for driving one of said tool attachments at the headstock end or for driving one of said tool attachments at the tail piece end.

**3,410,327**  
**CONTAINER HAVING REVERSE PROFILE UNIDIRECTIONAL FASTENER**  
Steven Ausnit, 124 E. 61st St., New York, N.Y. 10021  
Filed Apr. 6, 1966, Ser. No. 540,714  
14 Claims. (Cl. 150—3)

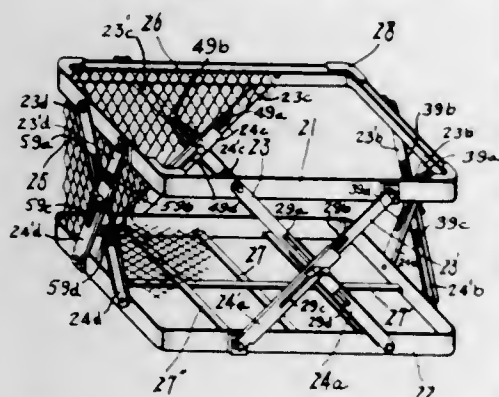


A flexible container having interlocking rib and groove elements wherein the container is closed by pressing the elements together and opened by drawing the elements apart. The rib element consists of a pair of profile arms formed at an angle to have an intermediate groove therebetween, and the groove element consists of a pair of hook



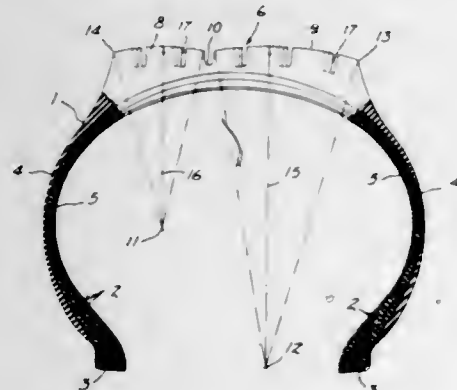
arms enveloping the profile arms and having an intermediate rib for being received within the intermediate groove of the outwardly extending profile arms. The combination of the profile arm and hook arm at the interior of the container is arranged to resist opening more than the similar combination formed at the outside of the container.

**3,410,328**  
**DELIVERY CONTAINER FOR PERISHABLE FOODS**  
Hideo Sasai, 2-183, Mineoka-cho, Hodogaya-ku, Yokohama, Japan  
Filed Oct. 1, 1965, Ser. No. 491,967  
Claims priority, application Japan, Oct. 5, 1964, 39/56,454  
4 Claims. (Cl. 150-49)



This invention relates to collapsible delivery containers for the transportation of perishable food products, such as fruit and vegetables, which are light and compact when empty. The container consists of bottom and top rectangular frame members which are connected by struts or rods which are lockably pivotally attached to slots in the bottom and top frame members, so that the space required and separating the bottom and top members is adjustable. A containing bag is attached to the inner circumference of the top frame member. The struts can be easily released to fold the bottom and top members together and adjusted in their relative positions. Pairs of struts on the respective sides of the bottom and top frame members are arranged in X form and at their point of intersection mid-way between the bottom and top frame members are pivotally connected together, and a removable latch arm locks two of the struts in fixed position. In a modified form provision is made for additional slots for further adjustment of the position of the struts.

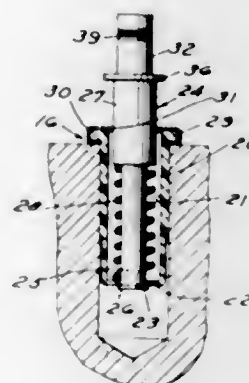
**3,410,329**  
**ASYMMETRICAL DUAL TREAD PNEUMATIC TIRES**  
William Bezbatchenko, Jr., Cuyahoga Falls, Ohio, assignor to The General Tire & Rubber Company, a corporation of Ohio  
Filed Mar. 14, 1967, Ser. No. 622,958  
5 Claims. (Cl. 152-352)



A pneumatic tire is provided with two ground engaging tread bands of unequal width and having different radii of

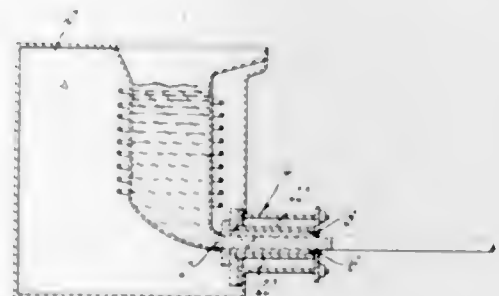
curvatures. The two tread diameters are equal, but the diameter of the narrow band shoulder is greater than that of the other shoulder. The tire exhibits very good turning stability when it is positioned so that the narrower band, representing between .30 and .45 of the total width of the tread, is located on the outside of the vehicle.

**3,410,330**  
**FOLDING DOOR CONSTRUCTION**  
John Matyas, % Alliance Metal Products, 13852 Keal Ave., Detroit, Mich. 48227  
Filed Sept. 16, 1966, Ser. No. 579,893  
12 Claims. (Cl. 160-206)



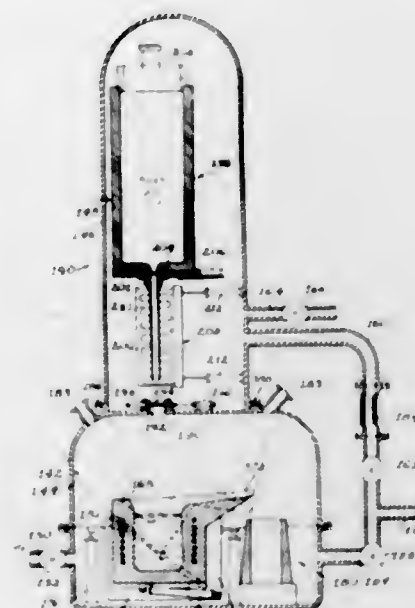
The folding door construction disclosed herein comprises an upper pivot assembly and a lower pivot assembly for pivoting a panel to a door opening and a guide assembly which guides the panel along the track. Each of these assemblies includes a sleeve of organic plastic material and a metal cap over the flanged end of the sleeve. The upper pivot assembly and the guide assembly include a spring loaded pin while the lower pivot assembly includes a threaded pin.

**3,410,331**  
**METHOD OF CASTING AN ALUMINUM-BASED BEARING ALLOY**  
Mark F. Miller, Madison Heights, and Fred J. Webber, Orchard Lake, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Mar. 16, 1966, Ser. No. 534,768  
7 Claims. (Cl. 164-51)



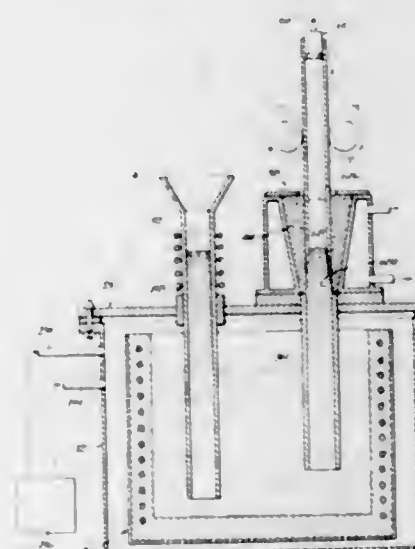
An aluminum-lead based bearing alloy and a method of its preparation is disclosed. In a preferred embodiment a homogeneous molten solution comprising a major portion of aluminum and a minor portion of lead and other alloying constituents is prepared by electromagnetic heating and stirring means. The solution is then continuously cast through an open-ended, horizontally disposed mold by employing a rate of cooling such that the lead separates from the molten aluminum in minute droplets and is distributed throughout the complete aluminum matrix. The concentration of lead particles increases in the direction from the top to the bottom of the casting.

**3,410,332**  
**METHOD AND APPARATUS FOR CASTING METALS IN A CONTROLLED ATMOSPHERE**  
James Woodburn, Jr., Wheaton, and John E. Crowe, Park Ridge, Ill., assignors to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey  
Filed June 7, 1965, Ser. No. 462,001  
8 Claims. (Cl. 164-61)



In an apparatus for pressure pouring molten metal in a controlled atmosphere, a mold in a gas-tight housing communicates with a ladle in a gas-tight tank. The tank and the housing may be pressurized or evacuated together or separately. A pressure differential is created between the tank and the housing forcing molten metal from the ladle into the mold. The tank may then be sealed and the mold may be removed from the housing while a controlled atmosphere is maintained in the tank.

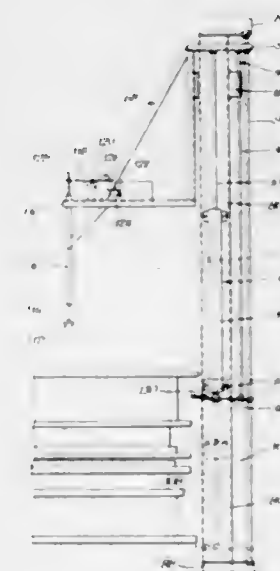
**3,410,333**  
**METHOD OF CONTINUOUS CASTING**  
James Woodburn, Jr., Wheaton, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey  
Continuation-in-part of application Ser. No. 327,641, Dec. 3, 1963. This application Aug. 10, 1966, Ser. No. 571,486  
4 Claims. (Cl. 164-83)



1. A method of continuous casting in an arrangement wherein a ladle of molten metal is sealingly enclosed in a tank, a mold having a continuous passage therethrough is positioned above the tank, and a pouring tube communicates with the ladle adjacent the bottom thereof and rises

through the tank for communication with the mold, comprising the steps of: applying superatmospheric pressure in the tank to force the molten metal through the pouring tube and through the mold, freezing the molten metal in the mold and continuously withdrawing the frozen metal upwardly from the mold through the top of said passage, and intermittently replenishing the supply of molten metal in the ladle without interrupting the continuous casting operation.

**3,410,334**  
**METHOD OF CONTROLLING MOLTEN METAL HEIGHT IN A SUCCESSIVE MOLDS CASTING OPERATION**  
William G. Dressel, Elk Grove Village, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey  
Original application Apr. 14, 1965, Ser. No. 448,017, now Patent No. 3,353,586, dated Nov. 21, 1967. Divided and this application Aug. 10, 1967, Ser. No. 659,655  
1 Claim. (Cl. 164-133)



A gauging and sensing device is used to terminate the flow of molten metal into successive molds of varying heights. The gauging device is a vertically movable rod that contacts an external surface of the mold after the mold has been moved into pouring position. The external surface mentioned is fixed relative to the casting cavity of the mold in order that molds of varying heights may be accommodated. The sensing device moves down with the gauging device and into a riser opening of the mold, serving to terminate the pouring operation upon contact with the rising level of molten metal.

**3,410,335**  
**COOLERS FOR MIXTURES OF GASES AND SOLID PARTICLES**  
Lennart Hugo Malmström and Carl Olof Malmström, Norrköping, Sweden, assignors to Svenska Carbon Black Aktiebolag Sjöfullsgatan, Norrköping, Sweden, a Swedish company  
Filed Jan. 4, 1967, Ser. No. 607,299  
Claims priority, application Sweden, Jan. 7, 1966, 184/66  
7 Claims. (Cl. 165-1)

A tubular cooler for mixtures of gases and solid particles (e.g. carbon black) has reciprocating scrapers in the tubes to prevent deposition of the solid particles. The scrapers are reciprocated by a shaft passing through a hole in the roof of the cooler. Escape of gas and solid particles through this hole is prevented through the provision of a liquid seal formed by a bell-shaped plate fixed to the shaft which clips into an annular chamber fixed



to the roof and filled with liquid (e.g. mercury). The depth of liquid in the chamber is such that the bell-shaped

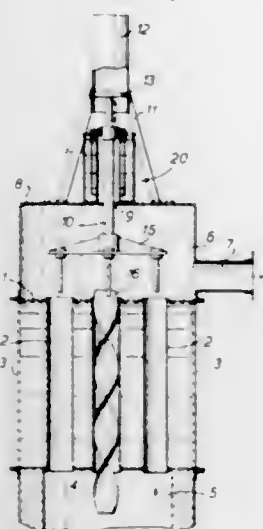
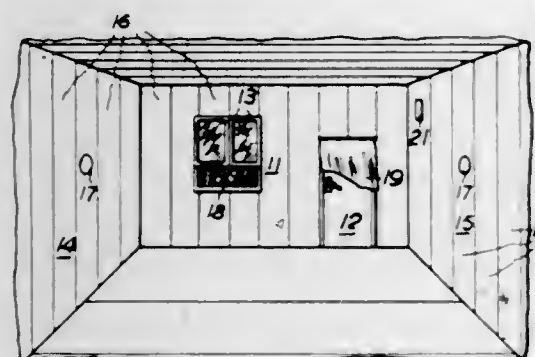


plate is at least partly immersed throughout the stroke of the shaft.

3,410,336

#### THERMAL CONDITIONING SYSTEM FOR AN ENCLOSED SPACE

Paul Eisler, 57 Exeter Road, London, N.W. 2, England  
Filed May 26, 1965, Ser. No. 458,925  
Claims priority, application Great Britain, May 26, 1964, 21,688/64  
27 Claims. (Cl. 165—21)



A space is maintained between 55 and 95 degrees Fahrenheit, and thereby below blood temperature. The boundary walls of the space are regulated as to temperature by a sensing device and a second sensing device controls the temperature and humidity of the air in the space. In this manner, the radiant heat loss from an occupant of the space to the walls amounts to about 400 B.t.u. per hour minus the heat exchange between the occupant and the air within the space.

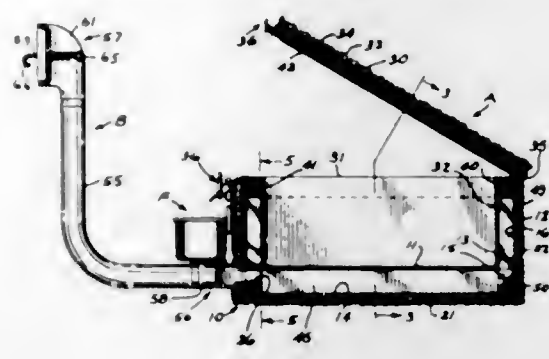
3,410,337

#### RECEPTACLE FOR TEMPERATURE-CONDITIONING FOOD, DRINK AND THE LIKE BY REMOTELY INITIATED MEANS

Edward Monroe Priest, 516-522 Tennessee Ave.,  
Etowah, Tenn. 37331  
Filed Aug. 20, 1965, Ser. No. 481,190  
5 Claims. (Cl. 165—41)

1. A receptacle for consumable materials, such as food and drink, including spaced apart bottom and upwardly extending inner and outer walls and baffles therebetween all defining passageways between said walls, an outer front portion of said upstanding outer wall being provided with spaced apart intake and exhaust ports; a lid, defining with said inner walls, a compartment for said consumable materials, means for connecting said intake port with the air conditioning means of a vehicle for the flow of conditioned air through said intake port and pas-

sageways and out of said exhaust port, said baffles including a baffle disposed upon said bottom wall and against the inner face of another portion of said upstanding outer wall and in overlying relationship with said exhaust port opposite the first-named portion, and being

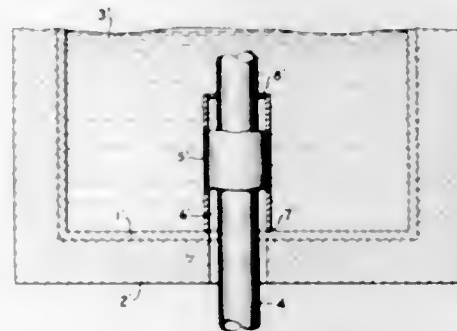


provided with one of said passageways, said one of said passageways having an intake mouth restricted in width over the widths of the other passageways and positioned to deflect conditioned air upwardly into another of said passageways.

3,410,338

#### THERMAL CONDUIT COUPLING FOR HEAT STORAGE APPARATUS

Willis Thompson Lawrence, Arlington, Mass., assignor, by mesne assignments, to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York  
Filed Nov. 7, 1966, Ser. No. 592,477  
6 Claims. (Cl. 165—47)



A coupling device especially adapted to withstand the thermal stress induced between the heat transfer fluid conduit and the container for an alkali metal hydroxide heat storage composition when the heat transfer fluid at a relatively low temperature enters initially into heat transfer relationship with the storage medium. The coupling device comprises a tubular sleeve through which the heat transfer fluid conduit passes. The tubular sleeve is sealed at one end of the container wall and at the other end to the heat transfer fluid conduit in such a manner as to form an insulative space around the conduit and provide for stress relief from expansion and contraction.

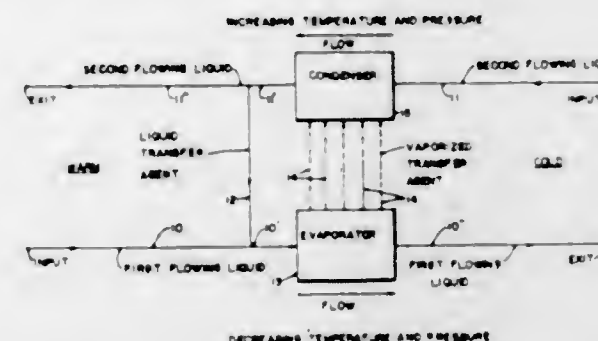
3,410,339

#### DIRECT CONTACT HEAT TRANSFER APPARATUS HAVING EVAPORATOR AND CONDENSING MEANS

Herbert F. Wiegandt, Ithaca, N.Y., assignor to Cornell Research Foundation, Inc., Ithaca, N.Y., a corporation of New York  
Filed May 18, 1964, Ser. No. 368,175  
2 Claims. (Cl. 165—105)

Apparatus for mixing a water immiscible transfer agent in a first flowing liquid at the high temperature level which is immiscible with respect thereto and which vaporizes without changing its composition when said mixture is subjected to a pressure which is lower than its vapor pressure; transferring the vaporized transfer agent for direct contact with a second flowing liquid by passing both down through a condenser structure containing porous

irregular packing so as to enhance intermixing and intimate contact therebetween with a minimum of pressure loss and so that the vaporized transfer agent is condensed to immiscible liquid relationship with the second flowing liquid; separating said liquid transfer agent from the other flowing liquid for return to immiscible relationship with the first flowing liquid; heat energy being removed from

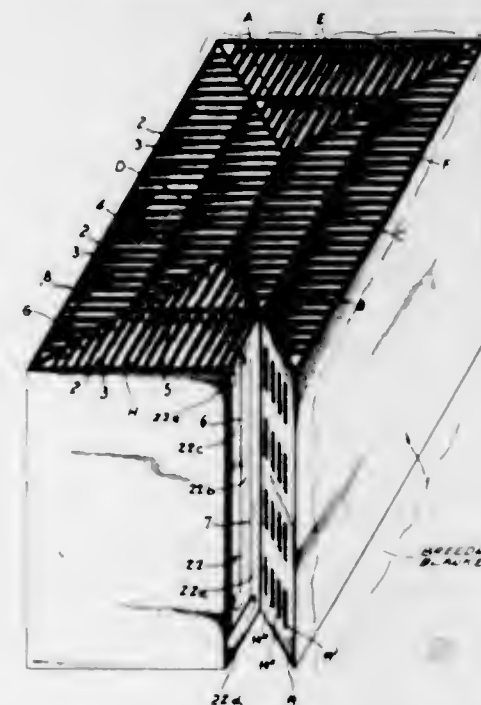


the first flowing liquid by the vaporization of the transfer agent and heat energy being added to the other flowing liquid by the condensation of said transfer agent. When the vaporization and condensation of the transfer agent between the two flowing liquids is accomplished in plural stages, the condensing means in each of the plural stages are placed at different elevations so as to eliminate the need for pumps between the condenser stages.

3,410,340

#### LIQUID-FUEL NUCLEAR-REACTOR-CORE WALL-AND-CHANNEL STRUCTURE

Uri Gat, Jülich, Stephan Schulze-Horn, Dortmund, and Heinz Vornhusen, Jülich, Germany, assignors to Kernforschungsanlage Jülich des Landes Nordrhein-Westfalen-e. V., Jülich, Germany, a corporation of Germany  
Filed June 1, 1966, Ser. No. 554,401  
Claims priority, application Germany, June 2, 1965, K 56,290  
6 Claims. (Cl. 165—166)



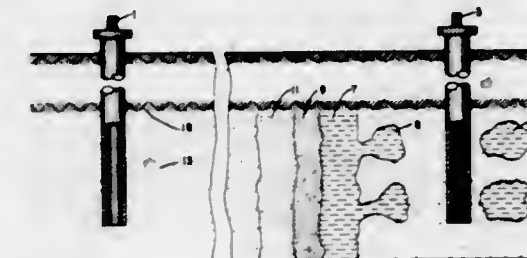
A wall-and-channel structure for liquid-fuel circulation nuclear reactor cores in which generally parallel plates define respective liquid-flow compartments and are interconnected by vertical edge bands bridging the longitudinal edges of the successive pairs of plates to maintain them in spaced relationship, the bands being contiguous to form a substantially continuous wall defining further compartments between the compartments defined by each pair of plates. An intermediate band bridges the plates to form upwardly and downwardly extending channels in the chambers between each pair of plates defining

a respective compartment. When the reactor is provided with a breeder blanket, a continuous wall extends transversely to the plates along other longitudinal edges to form a partition between the plates and the continuous wall.

3,410,341

#### TERTIARY OIL RECOVERY METHOD

William E. Brigham and John N. Dew, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware  
Filed May 5, 1966, Ser. No. 547,843  
13 Claims. (Cl. 166—9)



A tertiary recovery process for improving the recovery of oil from a reservoir which has been waterflooded. Said process comprises injecting a material which is somewhat soluble in water and more soluble in the reservoir oil, injecting a second material which is miscible with said first injected material, and injecting a third material which is miscible with said second injected material and which acts as a drive fluid to drive said oil through the reservoir and through a producing well in communication with said reservoir.

3,410,342

#### WATERFLOOD EMPLOYING NONIONIC SURFACTANT AND ORGANIC STABILIZING AGENT

Milton K. Abdo, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York  
No Drawing. Filed June 7, 1967, Ser. No. 644,123  
17 Claims. (Cl. 166—9)

This specification discloses a method of recovering oil from a subterranean formation employing flooding water containing a nonionic surfactant to lower the interfacial tension between the flooding water and the oil and containing an organic stabilizing agent. The nonionic surfactant is an alkyl phenol oxypoly(ethoxy)ethanol in which the alkyl group contains 8 to 9 carbon atoms, inclusive, and the poly(ethoxy) group contains 5 to 14 ethylene oxide groups, inclusive. The organic stabilizing agent is sparingly soluble in water and preferentially soluble in hydrocarbons. It is preferably an alcohol containing from 5 to 13 carbon atoms, inclusive, or an aromatic hydrocarbon such as benzene or toluene. Further, both an alcohol and an aromatic hydrocarbon may be employed as the stabilizing agent.

3,410,343

#### WATERFLOOD EMPLOYING A VISCOELASTIC, SHEAR-HARDENING, POSITIVE NONSIMPLE LIQUID WITH STABILIZING AGENT

Milton K. Abdo, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York  
No Drawing. Filed June 7, 1967, Ser. No. 644,108  
51 Claims. (Cl. 166—9)

This specification discloses a method of recovering oil from a subterranean formation employing flooding water containing a concentration of a soap system at least sufficient to induce the properties of viscoelasticity, positive nonsimplicity, and sheer hardening thereto and containing a stabilizing agent. The soap systems are one or more of three basic systems: (a) alkali metal soaps with a strong electrolyte, (b) ammonium soaps with an electrolyte, and (c) substituted ammonium soaps. By soap is meant the caustic neutralized product of a fatty acid

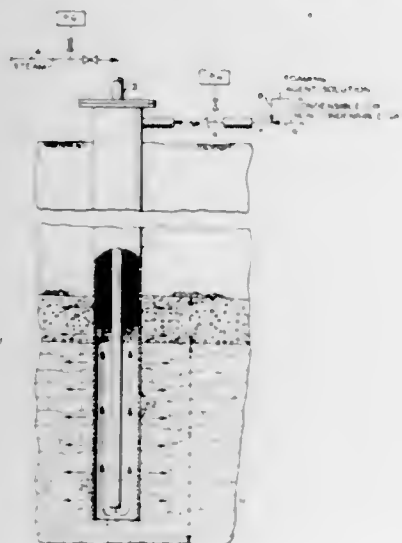


containing from 12 to 18 carbon atoms, inclusive. The stabilizing agent is sparingly soluble in water and preferentially soluble in hydrocarbons. It is preferably an alcohol containing from 5 to 13 carbon atoms, inclusive, or an aromatic hydrocarbon such as benzene or toluene. Further, both an alcohol and an aromatic hydrocarbon may be employed as the stabilizing agent.

3,410,344

## FLUID INJECTION METHOD

Archie J. Cornelius, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed July 25, 1966, Ser. No. 567,470  
8 Claims. (Cl. 166—40)



The invention contemplates the use of a column of foam pressure balanced against a flowing column of medium, e.g., a hot fluid such as steam or gas, being injected into a formation, such as an oil-bearing stratum, to control the level at which the injected medium is forced into the formation, so that the level at which medium injection occurs can be changed by altering the pressure on the foam column relative to that of the medium being injected. The use of this invention also reduces well bore heat loss as the foam insulates the tubing through which steam can be injected.

3,410,345

## STEAM GENERATION WITH HIGH TDS FEED-WATER FOR THERMAL FLOODING OF SUB-TERRANEAN OIL RESERVOIRS

Arthur Melvin Fradkin, Woodland Hills, Calif., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware  
No Drawing. Filed Mar. 24, 1966, Ser. No. 536,967  
4 Claims. (Cl. 166—40)

Secondary petroleum recovery processes embodying treating feedwater with sodium cation exchange resin and hardness-chelating ion exchange resin to provide water with less than one p.p.m. hardness, generating wet steam therewith, and injecting wet steam into subterranean petroleum bearing formation.

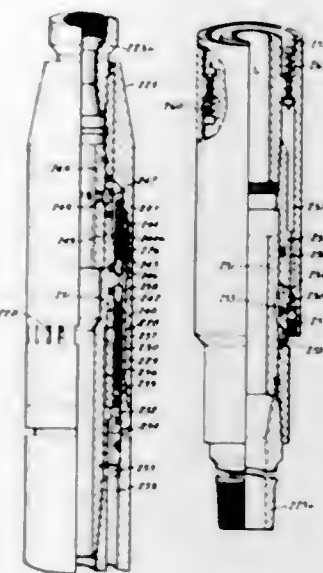
3,410,346

## WELL APPARATUS

Henry U. Garrett and Clifford M. Peters, Longview, and Robert W. Dinning, Kilgore, Tex., assignors, by direct and mesne assignments, to Henry U. Garrett, Longview, Tex.  
Application Apr. 16, 1962, Ser. No. 187,904, which is a division of application Ser. No. 484,164, Jan. 26, 1955, now Patent No. 3,045,759. Divided and this application June 3, 1966, Ser. No. 555,146  
8 Claims. (Cl. 166—53)

This patent discloses a system for maintaining a back pressure on a well and a number of different forms of

valves in which the charge chamber may have its pressure changed by changing the pressure externally of the valve and opening and closing a valve controlling an entrance passageway into the chamber by a means controlled from the surface. One form of valve illustrated

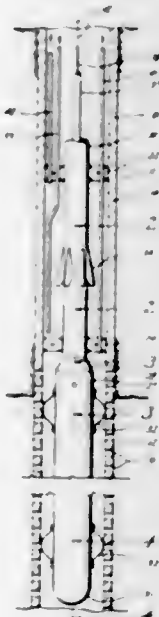


includes a means for changing the pressure within the charge chamber and a reservoir of pressure fluid so that fluid from the reservoir will be introduced into the charge chamber. One form of valve illustrated utilizes a resilient valve member. Another form of valve illustrated utilizes an annular sliding valve member.

3,410,347

## HEATER APPARATUS FOR USE IN WELLS

William C. Triplett and Walter H. Brauer, Ingleside, Tex., assignors of one-seventh each to George R. Garrison, Robert Hagans, John Ralston, Jr., William Fant, and Eugene Deadman, Corpus Christi, Tex.  
Filed Jan. 26, 1967, Ser. No. 611,977  
6 Claims. (Cl. 166—59)



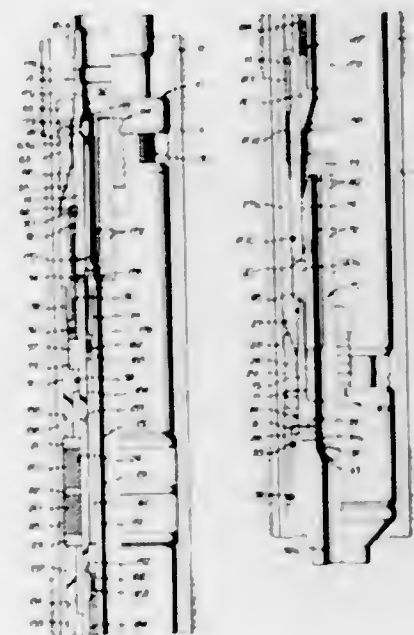
This invention pertains to heater apparatus for use in wells. The apparatus is particularly useful in connection with methods for solvent recovery of petroleum from wells. The heater apparatus utilizes heat energy derived from combustion of fuels to heat solvent disposed in wells, adjacent to petroleum bearing formations, prior to

introduction of the solvent into the formation to remove petroleum therefrom.

3,410,348

## RETRIEVABLE VALVED PACKER

John S. Page, 4112 Country Club Drive, Lakewood, Calif. 90712  
Filed Jan. 13, 1966, Ser. No. 520,470  
8 Claims. (Cl. 166—120)

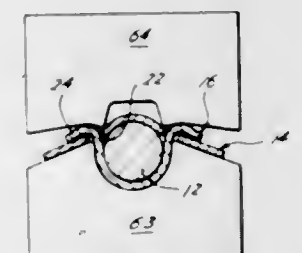


The disclosure concerns a well tool incorporating a packer run into the well on a body in a tubing string, the body incorporating upper and lower sections adapted for relative vertical displacement allowing setting of the packer in response to tubing internal pressurization and vertical displacement, there being a sleeve valve shiftable in the body to control by-passing of fluid around the packer.

3,410,349

## TUBING SCRAPER AND METHOD

Ted R. Troutman, Box 966, Old San Marcos Road W., Luling, Tex. 78648  
Continuation-in-part of application Ser. No. 141,810, Sept. 29, 1961, which is a continuation-in-part of application Ser. No. 83,519, Jan. 18, 1961. This application Jan. 2, 1964, Ser. No. 336,612  
14 Claims. (Cl. 166—176)

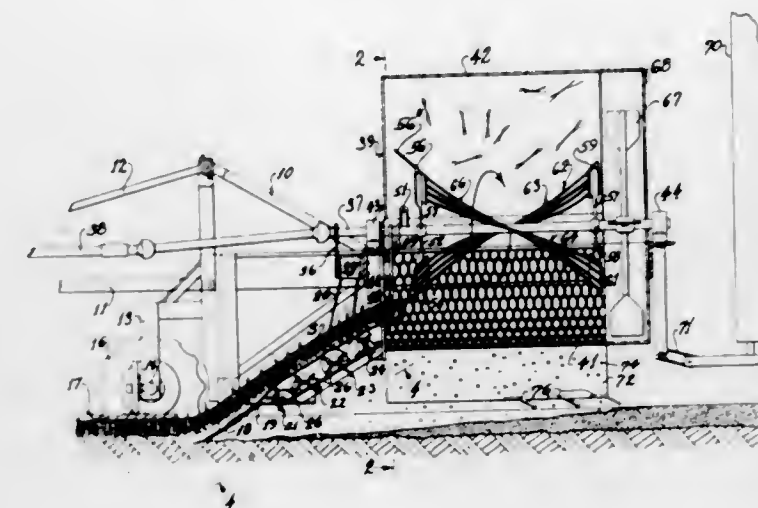


This patent discloses a sucker rod scraper and method of applying the scraper to a sucker rod in which a blade-like scraper is crowned to the sucker rod. A U-shaped clamping member is positioned on the opposite side of the sucker rod from the scraper and has ears extending through holes in the scraper. During the crowning action the ears are bent into snug engagement with the blade and hold the blade in crowned position. During the crowning action the blade is bent and the springback force of the blade holds the scraper firmly on the sucker rod.

3,410,350

## APPARATUS FOR HARVESTING SPRIGS

James K. Ware, Rte. 4, Box 105-G, Columbus, Miss. 39701  
Filed Mar. 3, 1966, Ser. No. 531,396  
12 Claims. (Cl. 172—32)

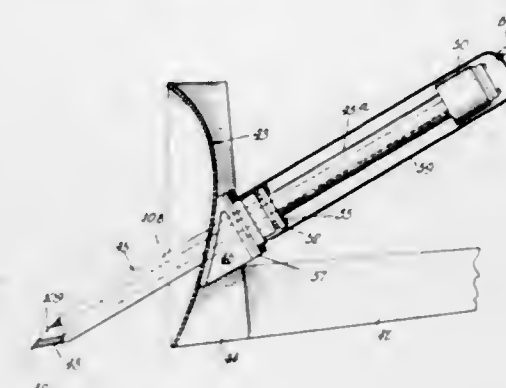


This invention relates to apparatus for harvesting sprigs and more particularly to apparatus for harvesting sprigs from sod, such as coastal Bermuda, turf grasses and the like.

3,410,351

## SONIC EARTH RIPPER BAR WITH TEMPERATURE GRADIENT CONTROL

Albert G. Bodine, Los Angeles, Calif.  
(7877 Woodley Ave., Van Nuys, Calif. 91406)  
Continuation-in-part of application Ser. No. 326,419, Nov. 27, 1963. This application June 2, 1965, Ser. No. 460,628  
2 Claims. (Cl. 172—40)



An earth ripping device which has an elongated bar like tool ending in a digging point. Fluid driven vibration producing means is coupled to the tool and vibrations of a frequency equal to the resonant frequency of the tool are imparted thereto. Part of the driving fluid is used for cooling the tool and is entrained in a conduct formed in the tool and allowed to exit at the digger point or along the front side of the tool.

3,410,352

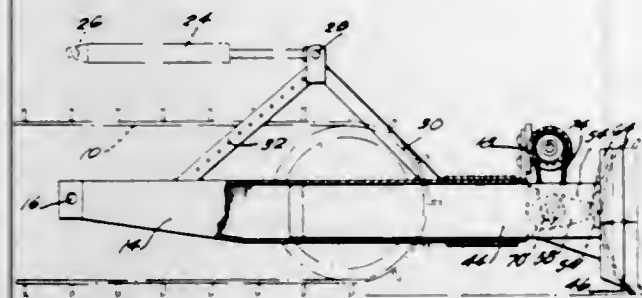
## RECIPROCATING BULLDOZER BLADE

Emery C. Tharp, 430 Powell St., Indianapolis, Ind. 46227  
Filed July 20, 1965, Ser. No. 473,440  
5 Claims. (Cl. 172—40)

A reciprocating bulldozer blade that is operable by a power unit that provides reciprocating motion to the blade. The blade is attached by a telescoping bar which is movable in a frame bar and necessary linkages, so that the

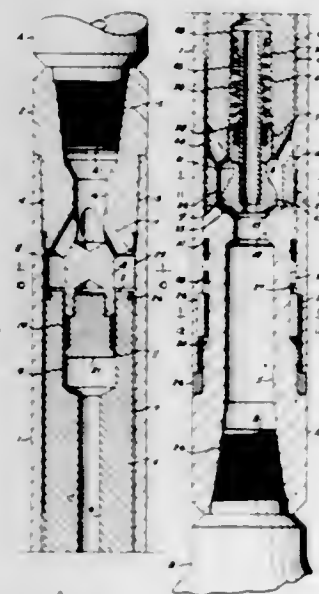


stroke of the blade may be changed by changing the cam arrangement in the linkage and the apparatus provides



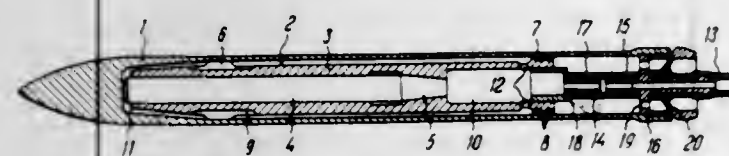
improved excavation of the load to which the bulldozer blade is applied.

**3,410,353**  
**PERCUSSION TOOLS**  
Leo A. Martini, 5818 E. University Blvd.,  
Dallas, Tex. 75206  
Filed Aug. 21, 1967, Ser. No. 662,072  
18 Claims. (Cl. 173—73)



A percussion tool operable by air, water, drilling mud or other suitable liquid or gaseous fluid under pressure for rotary drilling of oil and water wells, geophysical shot holes, quarry boring, mining and the like having automatic cycling means for producing sustained relatively high frequency percussive blows to a drill bit so as to greatly increase its rate of penetration and produce other desirable effects.

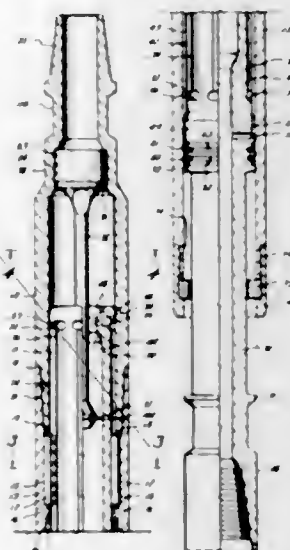
**3,410,354**  
**IMPACT DEVICE FOR DRIVING HORIZONTAL HOLES IN SOFT GROUND**  
Boris Vasilievich Sudnitsnikov, Krasny prospekt 56, kv. 61; Konstantin Konstantinovich Tupitsyn, Ulitsa Derzhavina 19, kv. 57; Konstantin Stepanovich Gurkov, Ulitsa Derzhavina 19, kv. 28; Alexandr Dmitrievich Kostylev, Ulitsa Derzhavina 19, kv. 44; Vladimir Vasilievich Klimashko, Ulitsa Novogodnyaya 44, kv. 23; and Vladimir Dmitrievich Plavskikh, Ulitsa Kamenetskaya 84-v, kv. 33, all of Novosibirsk, U.S.S.R.  
Filed Sept. 16, 1966, Ser. No. 580,014  
4 Claims. (Cl. 173—125)



An impact device in which a striker acts on a body under the action of compressed air which is fed to a cavity in the rear of the striker. The striker has holes in a wall

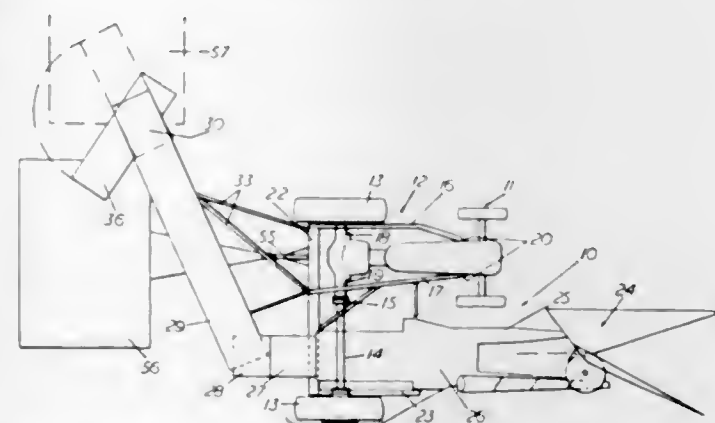
enclosing the cavity to cause retraction of the striker after the impact. A step bushing is fixed in the body to periodically close the holes in the wall of the striker and a flange with holes is secured in the rear of the body for exhausting spent air.

**3,410,355**  
**TELESCOPIC JOINT HAVING MEANS FOR SIGNALLING WHEN THE JOINT IS EXTENDED**  
William R. Garrett, Midland, Tex., assignor to Smith Industries International, Inc.  
Filed Aug. 2, 1966, Ser. No. 569,727  
5 Claims. (Cl. 175—40)



A signalling telescopic joint, especially suited for air drilling includes inner and outer tubes splined together, the outer tube having a stinger carrying a plug cooperating with a constriction in inner tube to restrict flow and signal that joint is near full extension. A seal retains fluid inside joint and prevents foreign material outside joint from entering spline. Spline communicates with interior of inner tube above and below constriction so spline groove is blown clean when plug enters constriction and creates pressure drop across spline. Stops limit extension and contraction of joint to less travel than allowed by spline. Removal of one stop allows further extension of joint to expose seal for replacement.

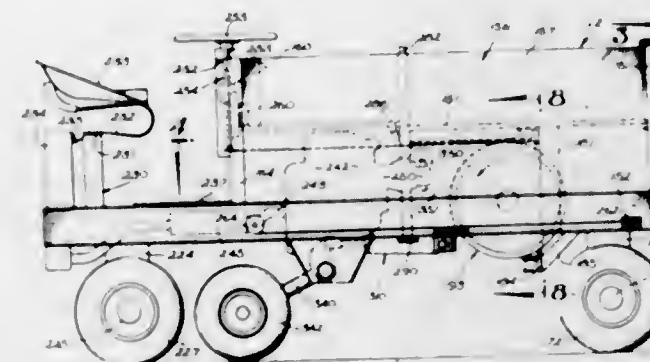
**3,410,356**  
**EXTENSION FRAME FOR SUPPORTING A TRACTOR MOUNTED HARVESTER**  
Ronald F. Spargo, Victoria, Australia, assignor to Massey-Ferguson (Australia) Limited, Victoria, Australia  
Filed July 5, 1966, Ser. No. 562,569  
Claims priority, application Great Britain, July 10, 1965, 29,352/65  
3 Claims. (Cl. 180—1)



An agriculture machine mounted on one side of a tractor having an extended rear axle supported by a drive wheel

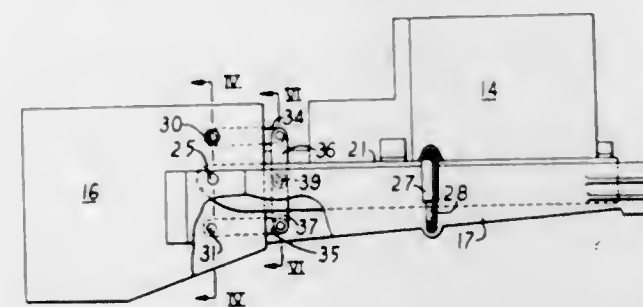
on the outside of the machine. A framework on the tractor supports the machine. The machine may be a harvester having a double conveyor arrangement that can discharge harvested crops in a variety of directions on the opposite side of the tractor from the machine.

**3,410,357**  
**GYRO STABILIZED VEHICLE**  
Thomas O. Summers, 3663 Royal Woods Drive,  
Sherman Oaks, Calif. 91403  
Filed Mar. 31, 1966, Ser. No. 539,186  
32 Claims. (Cl. 180—30)



A motorcycle-like vehicle is roll stabilized by precession of a gyro frame containing a gyro rotor of high moment of inertia spinning at high speed. The frame is pivotally secured to the chassis of the vehicle for unrestrained precessional freedom about an axis perpendicular to both the roll axis of the vehicle and the spin axis of the gyro. When random roll torque precesses the frame, equal and opposite internal gyroscopic counter-torque keeps the vehicle from tipping. When the frame is precessed away from its normal position, a sensor activates motors capable of selectively applying precessional roll torque to the vehicle. This torque precesses the frame toward its normal position. Selective precessional torque also is applied to the frame to cause roll precession of the vehicle; which precession produces equilibrating internal gyroscopic counter-torque. This counter-torque keeps the frame from being displaced by the precessional frame torque. The precessional frame torque, a function of the commanded roll torque, precesses the vehicle into an equilibrium position in which the commanded roll torque is substantially zero.

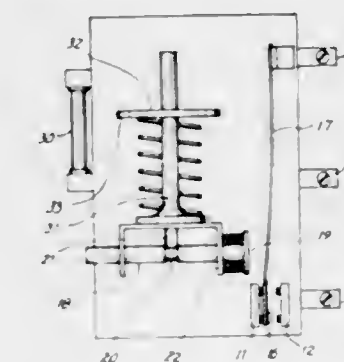
**3,410,358**  
**DAMPED AND TUNED DYNAMIC ABSORBER FOR VEHICLES**  
James C. Kennedy, Jr., and Daniel B. Shotwell, Washington, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California  
Filed Dec. 20, 1966, Ser. No. 603,197  
2 Claims. (Cl. 180—64)



A vibration absorbing mounting for a vehicle engine in which the engine is mounted on a frame movably connected to the vehicle frame and a tuning means in the form of a spring mounting is connected between the engine frame and the vehicle frame. A damping

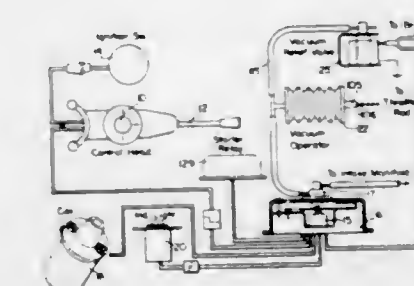
means such as a hydraulic shock absorber is also connected between the engine frame and the vehicle frame and the engine frame may be pivotally connected to the vehicle frame with the tuning means in the form of a torsion bar spaced from the engine frame pivot and connected to the engine frame by linkage means.

**3,410,359**  
**DEVICE FOR ISOLATING AND EARTHING THE ELECTRICAL CIRCUIT OF MOTOR VEHICLES IN THE EVENT OF A COLLISION**  
Paul Richard Mollison, Corner of Scarborough Beach Road and Loftus St., Mount Hawthorn, Western Australia, Australia  
Filed Aug. 29, 1966, Ser. No. 575,781  
Claims priority, application Australia, Sept. 3, 1965, 63,632/65  
6 Claims. (Cl. 180—103)



A device for isolating and grounding the electrical circuit of a motor vehicle in the event of a collision, which device includes a spring loaded trigger arranged to bear against a moving contact when the vehicle is subjected to a collision to force the moving contact away from a first fixed contact to open the electrical circuit of the motor vehicle and to contact a second fixed contact to ground the electrical circuit of the vehicle.

**3,410,360**  
**VEHICLE AUTOMATIC SPEED CONTROL**  
Nicholas T. Neapolitakis and Richard T. Race, Chicago, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois  
Filed May 9, 1966, Ser. No. 548,655  
3 Claims. (Cl. 180—105)



A speed control system for a vehicle wherein pulses representing each increment of movement of the vehicle are coupled to a pulse shaping network which includes a potentiometer for establishing an energy level of the pulses representing the desired speed of the vehicle. An amplifier network is coupled between the pulse shaping network and a transistor switch. The amplifier network is responsive to the energy level of the shaped pulses to bias the transistor switch to first and second operating states. A vacuum regulator including a solenoid is coupled to the transistor switch and is responsive to the first and

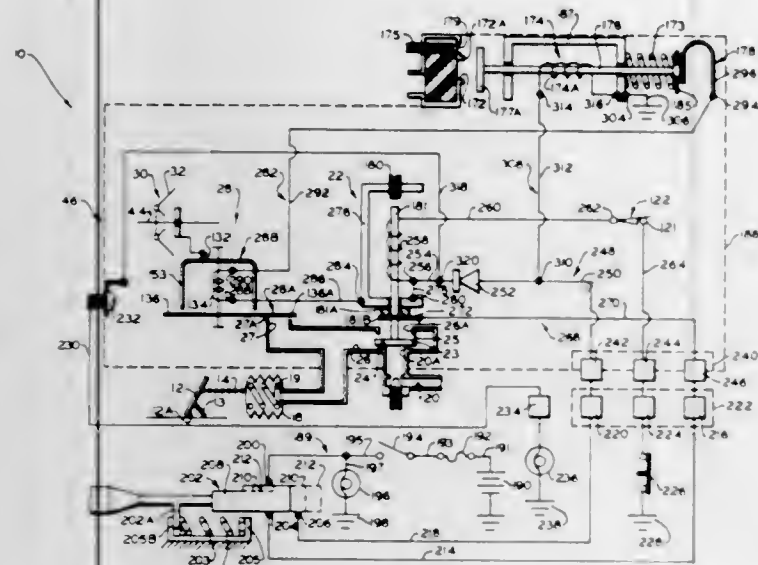


second operating states thereof to control the rate of speed of the vehicle.

3,410,361

**VEHICLE SPEED CONTROL DEVICE**

Robert Marie, Hagerstown, Ind., assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia  
Filed Sept. 28, 1966, Ser. No. 582,629  
33 Claims. (Cl. 180—108)



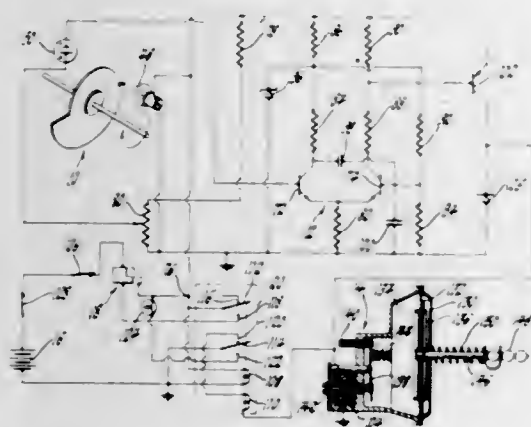
A speed control unit is provided comprising an electro-mechanical device that utilizes manifold vacuum, as modulated by atmospheric pressure to control an engine throttle and thereby maintain a vehicle at a desired speed. The speed control unit includes an electro-hydraulic arrangement so that the speed of the vehicle may be advanced or retarded with the new speed reached automatically maintained by the speed control unit.

3,410,362

**SPEED CONTROL SYSTEM**

Douglas I. Fales, Flint, Ronald L. Colling, Davison, and Jack H. Perry, Fenton, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed May 9, 1966, Ser. No. 548,716  
2 Claims. (Cl. 180—110)



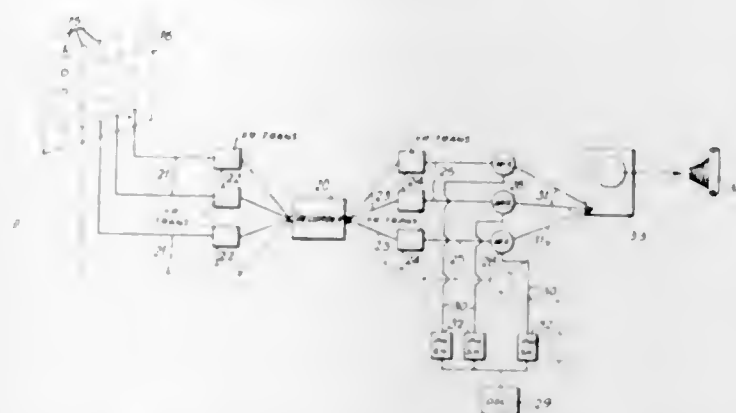
A speed control system having a photoelectric speed transducer which develops, over a predetermined speed range, a D-C error signal representing the difference between actual vehicle speed and a desired vehicle speed. The error signal controls a multivibrator which develops a pulsating output signal having a pulse duration proportional to the error signal. The pulsating output signal

drives a servomotor which in turn controls the vehicle throttle to maintain the actual vehicle speed at the desired vehicle speed.

3,410,363

**METHOD AND APPARATUS FOR TESTING THE WAVE-REFLECTING CHARACTERISTICS OF A CHAMBER**

Edmund I. Schwartz, Fairlawn, N.J., assignor to Devenco Incorporated, a corporation of New York  
Filed Aug. 22, 1966, Ser. No. 574,243  
9 Claims. (Cl. 181—5)

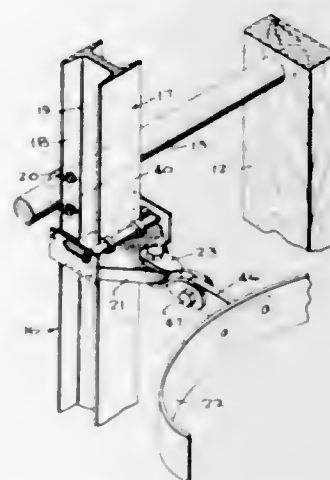


Coherent energy wave directed into chamber, and reflections from surfaces within chamber sensed at a plurality of points in a sensing plane. Sensed signals transmitted to a receiver and reference signal having phase coherency with energy wave added to sensed signals, to produce interference signals. Interference signals recorded on optical recording medium to produce a recording similar to a hologram, and recording illuminated by coherent visible light. Chamber may be an auditorium and energy wave may be sound waves; chamber may be anechoic chamber and energy wave may be microwaves.

3,410,364

**CLIMBING SAFETY DEVICE**

Cecil D. Fountain, 1006 E. Hillsborough Ave., Tampa, Fla. 33604  
Filed Apr. 17, 1967, Ser. No. 631,435  
14 Claims. (Cl. 182—9)



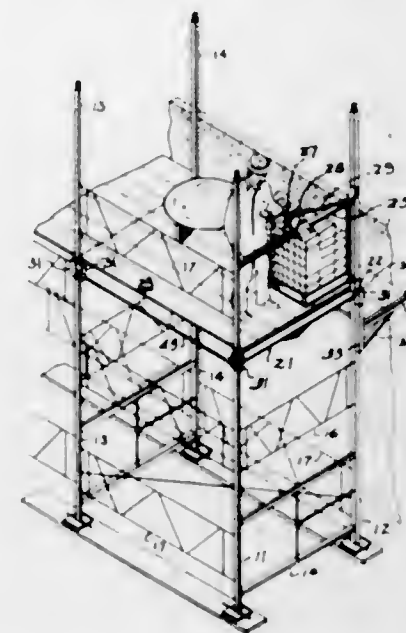
A climbing safety device suitable for use with a vertically disposed climbing member such as a ladder for preventing the fall of the user thereof, as the user ascends or descends along the vertically disposed climbing member, including a locking member secured to the user and operatively connected for sliding movement along a vertically disposed guide means which is operative to bind and thus lock onto the guide means under certain predetermined conditions to arrest the vertical movement of the user.

3,410,365

**SCAFFOLD STRUCTURE**

Joe A. Isbell, Memphis, Tenn., assignor to Union Metal Products, Incorporated, Memphis, Tenn., a corporation of Tennessee

Filed Mar. 6, 1967, Ser. No. 620,754  
8 Claims. (Cl. 182—179)

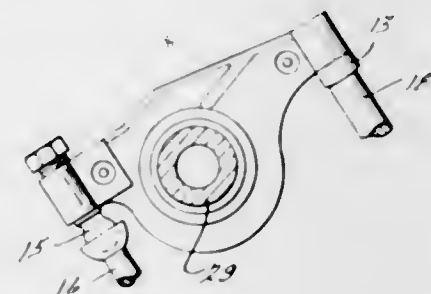


Scaffolding including load carrying members, with individual sleeves slidable vertically relative to each other on individual stationary uprights held spaced apart, there being sidewalk brackets each having an upright leg slidable vertically through one of said sleeves and positively supported by the sleeves automatically when inserted upwardly therethrough. A tie between and having lost motion connections at its ends to said sleeves limits the relative vertical movement of the sleeves, the load carrying members and the sidewalk brackets as the inclination of the tie shortens the horizontal distance between its ends and takes up the lost motion in its end connections between the tie and the sleeves.

3,410,366

**ROCKER ARM LUBRICATION SYSTEM**

John R. Winter, Jr., 4276 S. Shore Drive, Watkins Lake, Pontiac, Mich.  
Filed June 14, 1965, Ser. No. 463,480  
6 Claims. (Cl. 184—6)



Rocker arm levers for the overhead valves of internal combustion engines of the type wherein the engine block and rocker arm are inclined to the horizontal and which are provided with a forced feed lubrication system, are provided with oil passages which tend to offset gravitational effects upon oil flow, the passages leading to the lower or downwardly inclined ends of the rockers being smaller than the passages leading to the upper ends. In addition, the outer extremities of the passageways, in each instance, deliver the oil to the "high side" of the valve stem or push rod, as the case may be, so that the oil discharged toward the valve stem and push rod flows on to

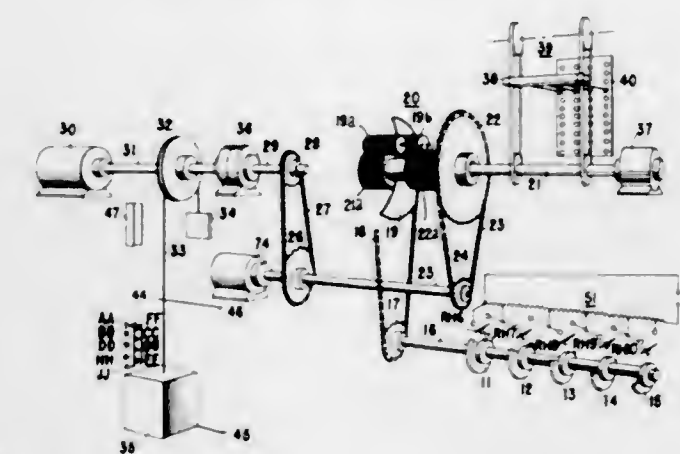
the higher sides of the engaging surfaces, rather than flowing away from such engaging surfaces.

3,410,367

**ELEVATOR MOTOR ACCELERATION CONTROL BY A STEPPED RESISTOR RESPONSIVE TO DISTANCE FROM FLOOR**

Robert O. Bradley and Paul F. De Lamater, Toledo, Ohio, assignors, by mesne assignments, to The Reliance Electric and Engineering Company, Cleveland, Ohio, a corporation of Ohio

Filed Feb. 7, 1964, Ser. No. 343,301  
5 Claims. (Cl. 187—29)

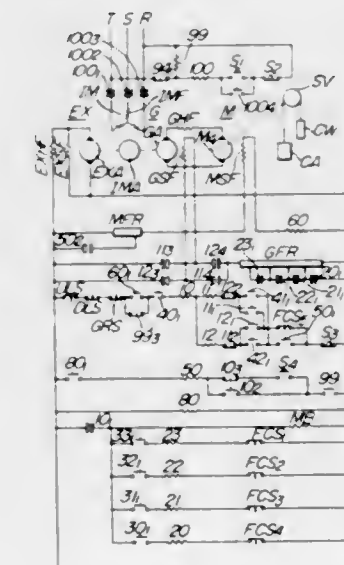


An elevator hoist motor control utilizing the means employed in the prior art to control the deceleration of the motor as a function of elevator spacing from a floor at which the elevator is to stop in bringing the elevator to its final stop as the means to control the acceleration of the hoist motor as a function of elevator spacing from a floor in starting the car away from the floor. Adjuncts include controls for integrating the control of the hoist motor by the car motion responsive devices other than the leveling controls for both acceleration and deceleration, and controls providing operation where malfunctions occur, or the elevator is stopped outside the range of the leveling control devices.

3,410,368

**AUTOMATIC FLOOR-STOPPING SYSTEMS OF ELEVATOR CAGES AT SUPPLY FAULTS**

Isao Inuzuka, Katsuta-shi, Japan, assignor to Hitachi, Ltd., Chujoda-ku, Tokyo, Japan, a corporation of Japan  
Filed Nov. 23, 1964, Ser. No. 413,147  
Claims priority, application Japan, Nov. 27, 1963, 38/63,271  
4 Claims. (Cl. 187—29)



An automatic floor-stopping system that operates upon the occurrence of a power supply fault for use in con-



trolling the operation of an elevator control system having a prime mover driven from an electric power supply by a Ward-Leonard motor-generator control apparatus that includes an exciter operated by the prime mover. A speed control circuit is energized by the output from the exciter to control the Ward-Leonard control apparatus which in turn drives the elevator cage. The system includes a power supply-fault detector for detecting a power supply fault and control circuitry for normally controlling the speed control circuit to cause the same to stop the Ward-Leonard control apparatus in response to a power supply fault. An additional over-riding control is provided which is responsive to the power supply fault detector for causing the speed control circuit to maintain operation of the Ward-Leonard control apparatus due to inertial energy stored in the apparatus and the cage even after the output voltage of the exciter decreases due to the power supply fault. The system is completed by stopping devices for stopping the cage at a predetermined floor level in the direction of the previous cage travel so that the elevator cage is caused to reach a predetermined floor by virtue of inertial energy stored in the elevator control apparatus and the cage after the occurrence of a power supply fault.

3,410,369

#### DAMPER CONSTRUCTION FOR DAMPING TORSIONAL VIBRATIONS OF A REVOLVING BODY

Mizuro Ishizuka, Tokyo, Japan, assignor to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan  
Filed Feb. 7, 1966, Ser. No. 525,672  
Claims priority, application Japan, Sept. 8, 1965, 40/55,060  
8 Claims. (Cl. 188-1)



A damper construction for damping torsional vibrations of a revolving body comprises an outer peripheral damper mass formed of first and second ring members which are interengaged. The ring members together define an intermediate annular groove and two groove portions of lesser diameter on each side of the annular groove. A damper fitting body of flat ring-shaped configuration is disposed between the damper ring members and extends peripherally into the intermediate groove. A viscous liquid is disposed in the intermediate groove and provides the frictional damping force. An elastic member is arranged on each side of the fitting body and is compressed between this fitting body and the adjacent walls of the groove portions on each side of the intermediate groove and provide a seal for the viscous liquid which extends into the intermediate groove around the damped fitting body.

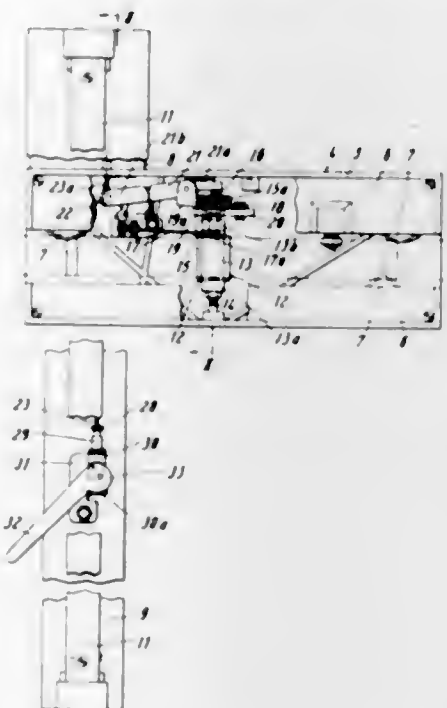
In accordance with the method of the invention, the damper is formed using two mass ring parts, a central flat fitting body, and an elastic ring for each side of the fitting body, by orienting the elastic rings on each side of the fitting body and positioning the assembly within an end groove and an intermediate groove of the first damper

mass ring. Thereafter, the second damper mass ring is pressed against the first damper mass ring and the elastic ring to compress both elastic rings and anchor the first and second damper mass rings together.

3,410,370

#### BRAKING DEVICE FOR CARRIAGE-TYPE DRAFTING MACHINES

Franz Kuhlmann and Otto Wackerfuss, Wilhelmshaven, Germany, assignors to Franz Kuhlmann K.G., Prazisionsmechanik und Maschinenbau, Wilhelmshaven, Germany, a corporation of Germany  
Original application Feb. 21, 1966, Ser. No. 528,881. Divided and this application Nov. 28, 1967, Ser. No. 686,041  
10 Claims. (Cl. 188-42)

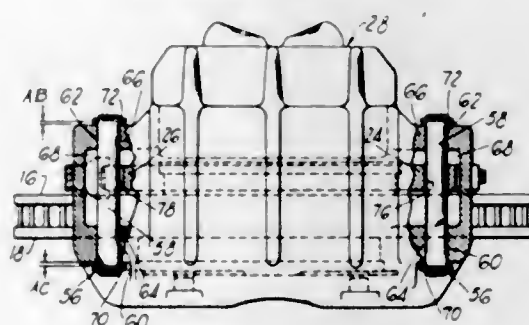


A braking device for immobilizing a carriage with respect to a trackway on which the carriage is slidably mounted, said device includes a yoke surrounding the trackway and carrying two diametrically opposed and axially aligned brake shoes, lever and support means so connected to said yoke and to one of said brake shoes that upon actuation of the lever, the yoke and one brake shoe move as a unit, while the other brake shoe moves oppositely thereto; the two brake shoes are adapted to engage the trackway simultaneously at two opposed locations spaced from one another transversally to the direction of travel of said carriage.

3,410,371

#### SUPPORT AND ADJUSTING MEANS FOR DISC BRAKE CALIPER

Richard T. Burnett, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware  
Filed Jan. 27, 1967, Ser. No. 612,238  
11 Claims. (Cl. 188-73)



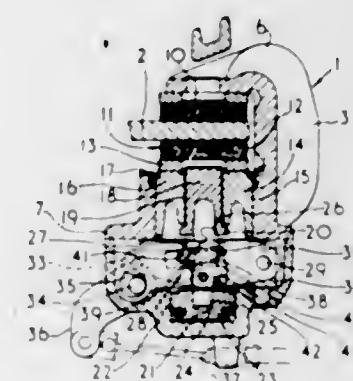
A floating head type of disc brake in which an actuator housing is slidably and adjustably carried on bearing

members in straddling relationship to a rotor disc for transverse movement with respect to said disc for engagement therewith to perform a braking function, which, when completed, results in repositioning said housing on its bearing members if there has been friction lining wear in excess of a given amount, to thereby maintain the desired relationship between the faces of the rotor disc and the friction lining.

3,410,372

#### SUPPORT MEANS AND ADJUSTING MEANS FOR A DISC BRAKE

Harold Hodgkinson, Fincham, and Anthony Colin Evans, Binley, England, assignors to Dunlop Rubber Company Limited, London, England, a corporation of Great Britain  
Continuation of application Ser. No. 516,187, Nov. 10, 1965. This application Jan. 11, 1968, Ser. No. 697,240  
Claims priority, application Great Britain, Nov. 19, 1964, 47,057/64  
16 Claims. (Cl. 188-73)

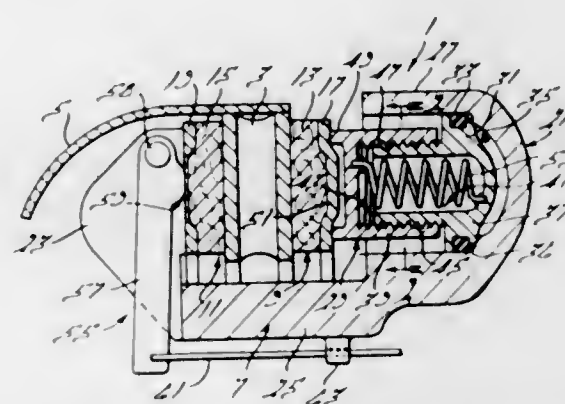


This invention comprises inter alia, a disc brake having a combination of mechanical and hydraulic brake applying mechanisms which are operable independently of each other so that the brake can be either mechanically or hydraulically operated. An adjustably elongated member forms part of the thrust connection between the friction element and both the hydraulic and mechanical applying mechanisms, to compensate for wear of the friction member which occurs during braking.

3,410,373

#### TORSION SPRING-OPERATED DISC BRAKE ADJUSTER

John G. Pace, Detroit, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware  
Filed Nov. 10, 1966, Ser. No. 593,424  
4 Claims. (Cl. 188-196)



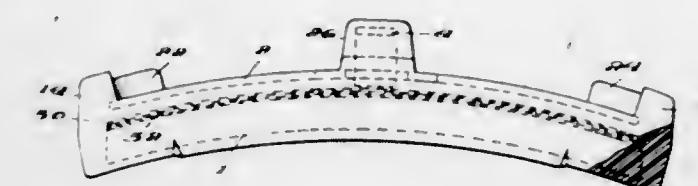
A disc brake mechanism including a cylinder and piston arrangement for actuating one brake shoe member against the rotatable disc. The piston is extensible and includes

first and second threaded members having a threaded connection therebetween. A torsion spring is located inside both threaded members and is adapted to cause rotation of one threaded member relative to the other to extend the length of the piston and maintain the brake shoe member in close proximity to the rotatable disc.

3,410,374

#### RAILWAY BRAKE SHOES AND COMPOSITIONS SUITABLE FOR USE THEREIN

Clarence Gordon Haupt, Blacksburg, Va., assignor to Walker Machine & Foundry Corporation, Roanoke, Va., a corporation of Virginia  
Filed Sept. 6, 1966, Ser. No. 577,223  
12 Claims. (Cl. 188-251)

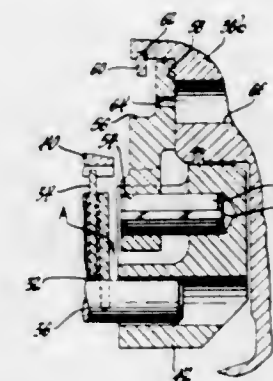


Composition railway brake shoes are provided which are capable of extended service, and which lack well known shortcomings commonly encountered in the prior art. The particular composition which is capable of being utilized in brake shoes according to the invention also finds utility in other applications which demand a controlled sliding friction engagement, and is formed from a moldable and pourable combination of components consisting essentially of specified quantities of a resinous binder containing an epoxy resin and curing agent, graphitic carbon, and an abrasive substance in a quantity capable of substantially diminishing the lubricity of the graphitic carbon.

3,410,375

#### LIQUID COOLED SELF-ADJUSTING DISC BRAKE

Jack W. Schmidt, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed July 3, 1967, Ser. No. 650,728  
9 Claims. (Cl. 188-264)



A multiple disc brake having a wear adjusting member and coolant supply means is disclosed wherein the adjusting member and the coolant supply means are interconnected by friction engagement which permits relative movement between them to compensate for brake wear when the brake is applied. A coolant supply means has a valve member which opens and closes as the brake is engaged and disengaged respectively and is unaffected in the operation by brake wear compensation of the adjusting means.



### 3,410,376 CARRYING BAG

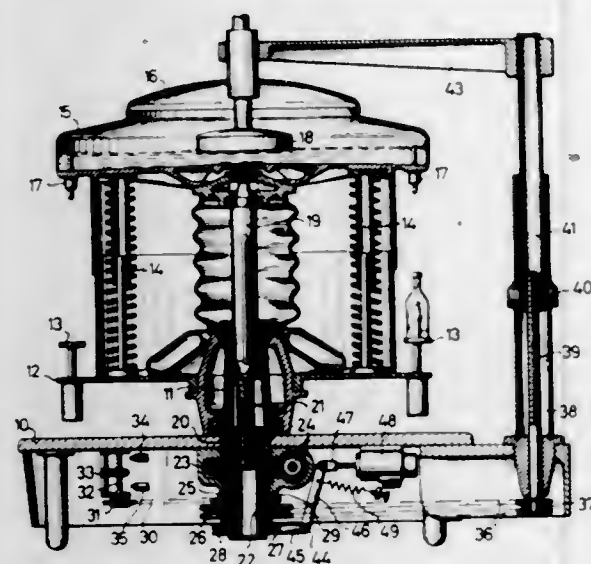
Howard A. Benzel, Lancaster, N.Y., assignor, by mesne assignments, to Automatic Sprinkler Corporation of America, Cleveland, Ohio, a corporation of Ohio  
Filed Jan. 3, 1967, Ser. No. 606,817  
9 Claims. (Cl. 190-44)



The carrying bag has a main enclosure and a convertible auxiliary section including a detachable panel carrying a collapsible bag. The panel is mounted on an external side wall of the main enclosure and is reversible between stored and use positions of the collapsible bag. The collapsible bag is detachable from the panel.

### 3,410,377 BOTTLE FILLING MACHINE

Rudolf Riedel and Gerhard Uth, Bad Kreuznach, Germany, assignors to Seitz-Werke G.m.b.H., Bad Kreuznach, Germany  
Filed Sept. 26, 1966, Ser. No. 581,802  
Claims priority, application Germany, Oct. 1, 1965, S 99,887  
9 Claims. (Cl. 192-02)



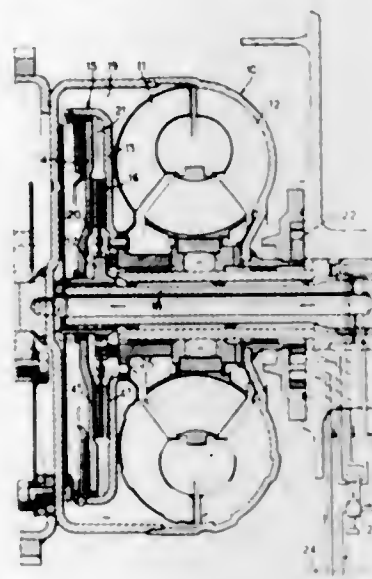
A bottle filling machine, especially vacuum filling machine, with a filling container adjustable as to height by a screw drive, and with a float controlling the liquid level in the container, said float being connected to a supporting member likewise provided with a screw drive and operatively connected with the container drive through the intervention of a chain adapted to be made ineffective by a disengageable clutch interposed in the driving connection between the container drive and the float drive and adapted at an upper or lower end position of the filling container to be prepared by control means for engagement

or disengagement, while the control means are in each instance controlled by an upper or lower abutment means in the form of a limit switch or the like for limiting the container stroke.

### 3,410,378 FLUID COUPLING WITH FLUID OPERATED MODULATED CLUTCH

Jean Maurice, Paris, France, assignor to Societe Anonyme Francaise du Ferodo, Paris, France, a corporation of France

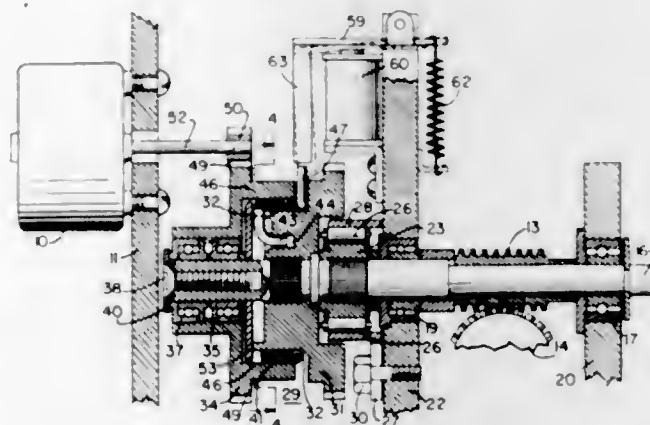
Filed Feb. 27, 1967, Ser. No. 618,822  
Claims priority, application France, Mar. 3, 1966, 51,807  
13 Claims. (Cl. 192-3.33)



The friction disc of a clutch is immersed in a fluid such as oil, and is provided with valves which control the passage of the oil into the disc at the level of the friction linings of the disc, in order to control the progressiveness of the engagement and disengagement of the clutch. One of the valves is a centrifugal valve mounted in series with a second valve controlled in dependence on the direction of transmission of the torque between the friction disc and its hub, and is intended to prevent any abrupt engagement at the moment of starting.

### 3,410,379 COIL CLUTCH WITH ONE-WAY BRAKE

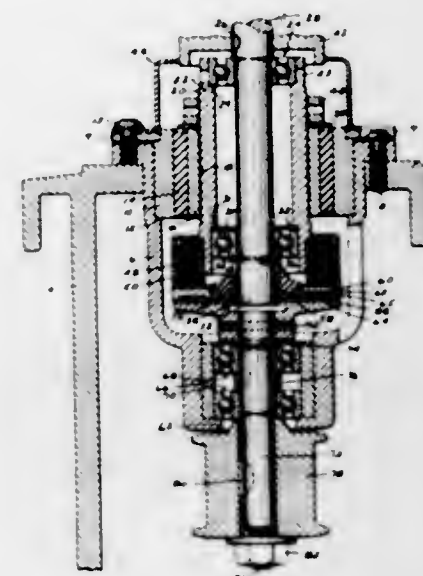
Karl Maierhofer, Park Ridge, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois  
Filed June 1, 1966, Ser. No. 554,482  
2 Claims. (Cl. 192-12)



A spring clutch is maintained in a completely disengaged position by the use of a one-way brake on the output shaft to prevent energy stored in the spring clutch mechanism from causing reverse rotation of the output shaft.

### 3,410,380 CLUTCH AND BRAKE CONSTRUCTION FOR SPINNING AND TWISTING FRAMES

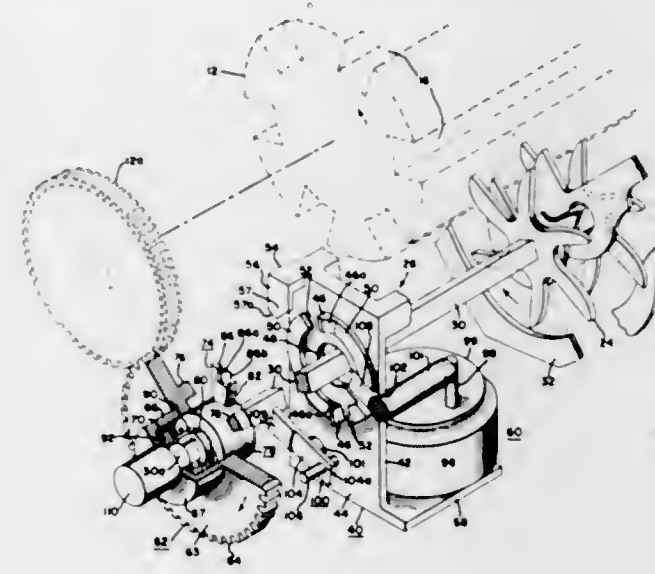
John A. Koolstra, North Andover, Mass., assignor to Davis & Furber Machine Company, North Andover, Mass., a corporation of Massachusetts  
Filed May 18, 1967, Ser. No. 639,375  
6 Claims. (Cl. 192-18)



This invention relates to a new type of clutch and brake to be located between a spindle and a driving shaft in a spinning or twisting frame whereby upon release of the clutch, the spindle will be immediately braked to a stop for doffing while the driving shaft continues in normal operation. The disengagement of the clutch and braking of the spindle is effected by an electromagnet surrounding the lower end of the spindle and located immediately above the clutch member. The electromagnet may be activated by manual operation of a switch by the operator or by automatic means set in motion upon the breaking of the yarn during the spinning or twisting.

### 3,410,381 CLUTCH MECHANISM CONTROL MEANS

Robert W. Henshaw and Douglas P. Tassie, Burlington, Vt., assignors to General Electric Company, a corporation of New York  
Filed May 12, 1967, Ser. No. 637,982  
5 Claims. (Cl. 192-24)



Improvements to a clutch mechanism having a rotating drive member and a driven member including a shaft on which a shiftable member is mounted for rotation therewith, as well as controlled reciprocal movement therealong between the drive member and a stationary declutching

support member in spaced opposition to the drive member. The shiftable clutch member includes traveling lug members adapted to selectively engage with similar lug members on the stationary and drive members under the control of cooperating knife-edged blade declutching control means, comprising a fixed blade on the stationary member and traveling blades on the shiftable clutch member, to prevent unwanted lockup between the several clutch mechanism parts.

### 3,410,382 Highburst Capacity Clutch with a Two-Piece Pressure Plate

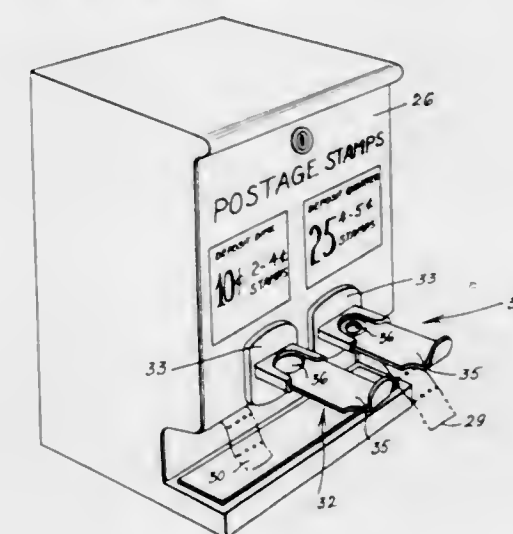
Robert S. Root and Eugene E. Young, Syracuse, N.Y., assignors to Life-Rollway Corporation, Syracuse, N.Y., a corporation of New York  
Filed July 26, 1966, Ser. No. 572,870  
1 Claim. (Cl. 192-107)



A disc type clutch having an increased centrifugal burst capacity, including a two-piece pressure plate having a cast portion and a stamped portion, said cast portion having radially and circumferentially extending driving lugs, and said stamped portion affixed to outer periphery of the cast portion by a flange which has apertures through which the driving lugs of the cast portion pass, and the stamped portion having means to affix clutch levers and compression springs thereto.

### 3,410,383 POSTAGE STAMP VENDING MACHINE

Jesus Agustin De Fex, 336 W. 88th St., New York, N.Y. 10024  
Filed June 7, 1967, Ser. No. 644,324  
6 Claims. (Cl. 194-2)

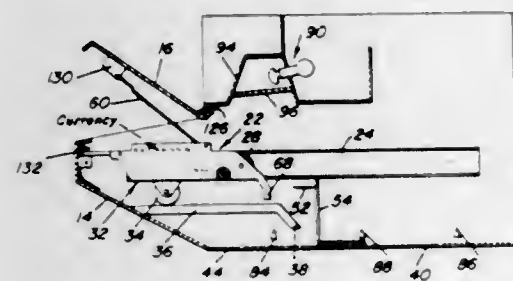


A vending machine for postage stamps including a case, a single or a pair of coin receiving slides for driving a



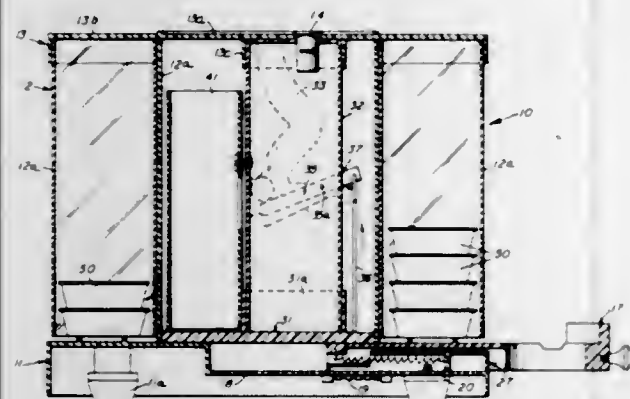
pair of postage stamp dispensing mechanisms each of which dispenses postage stamps of different denominations, the mechanism including means for setting the number of stamps to be dispensed at each operation, a novel pushing foot for pushing the stamps out of the machine, and a trip mechanism to lock the dispensing mechanism after the device is emptied of stamps so as to not accept more coins from further prospective customers.

**3,410,384**  
**PAPER CURRENCY ACCEPTOR**  
Jerry E. Travioli, 1022 Valley St.,  
Visalia, Calif. 93277  
Filed Aug. 3, 1965, Ser. No. 476,962  
16 Claims. (Cl. 194-4)



A paper money accept-reject mechanism for use with a vending machine. A closure in the mechanism housing is opened to expose a paper money received tray pivotally mounted on a reciprocable carriage. Closing of the closure operates switch means controlling operation of a reversible motor for movement of the carriage away from the closure, such movement locking the closure. Movement of the carriage to a detection position initiates operation of infrared radiation detection means to authenticate the paper money. If acceptable, the carriage is advanced to a delivering position at which the tray is pivoted depositing the paper money. If not acceptable the carriage is returned to its initial position unlocking the closure.

**3,410,385**  
**VENDING MACHINE**  
Robert W. Freet and Thomas G. Freet, both of  
R.D. 1, Box 397, Etters, Pa. 17319  
Filed July 3, 1967, Ser. No. 650,685  
6 Claims. (Cl. 194-39)



A check controlled dispenser for small flat cuplike articles stored in transparent vertical tubes arranged in an angular manner and rotatable to a dispensing position about a central tower mounted on a base. The base has a radially extending article receiving slide to receive an article under one of the vertical tubes brought into dispensing position thereabove. The central tower supports a removable locked on transparent top having two different slots to receive checks of different size to operate the machine, such as one dime for one and two nickels for the other. The tower has a wrong check rejector for each de-

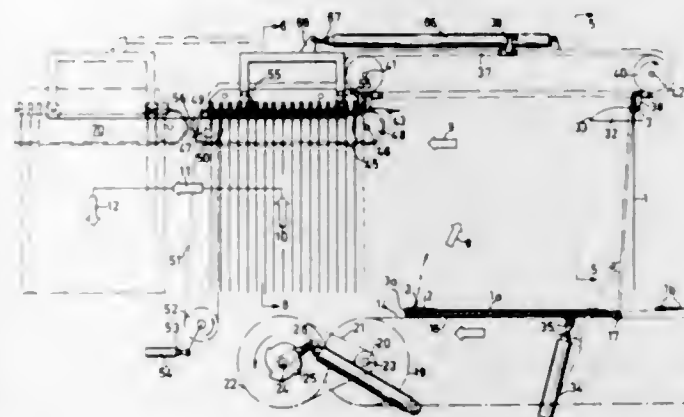
nomination of check and check passages leading to check receiving pivoted arms connected with lock means for the dispensing slide. Passages in the tower lead to a check collecting container positioned adjacent the tower. The lock means for the slide includes a vertically extending rod connected with one of the check receiving pivoted arms that is moved vertically out of a recess in the slide by a check of one size or by a cross connection means from the other check receiving pivoted arm. The other check receiving pivoted arm is connected to a vertically extending rod that rides in a camming ramp in the slide so that on unlocking of the slide it is permitted to be slid inward to an article pick-up position and the camming ramp moves the vertical rod riding thereon upward to pivot the check receiving pivoted arms to pivot further so as to release the checks resting thereon and permitting them to roll into the check collecting container.

**3,410,386**  
**RECORD MATERIAL FEED CONTROL**  
George C. Beason and Charles J. Drozd, Dayton, and  
Burl H. Vick, Vandalia, Ohio, assignors to The National  
Cash Register Company, Dayton, Ohio, a corporation of  
Maryland  
Filed Feb. 4, 1966, Ser. No. 525,238  
2 Claims. (Cl. 197-114)



A mechanism for automatically controlling a line-spacing mechanism for operation in a business machine whenever a predetermined transaction key is operated twice during the same machine operation. An electromagnetic member operated by the actuation of a transaction key to condition a circuit means for operation, the circuit means being operated by the actuation of the transaction key a second time to operate the mechanism which controls the line-spacing mechanism of the machine.

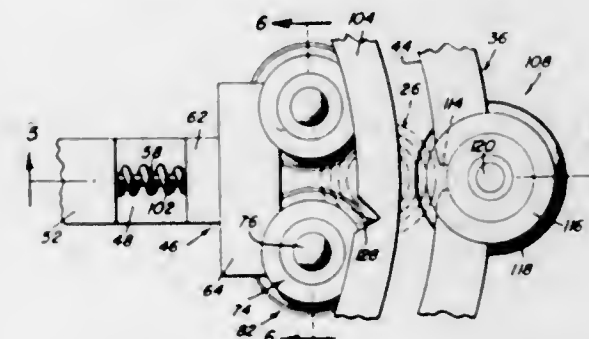
**3,410,387**  
**APPARATUS FOR THE HANDLING OF START SHEETS FOR ELECTROLYTIC REFINEMENT OF COPPER**  
Olov Carl Gustav Wennberg, Georg Lennart Konstantin Forsberg, and Stern Otto Svensson, Karlstad, Sweden, assignors to AB C J Wennbergs Mekaniska Verkstad, Karlstad, Sweden, a corporation of Sweden  
Filed Dec. 12, 1966, Ser. No. 601,130  
Claims priority, application Sweden, Dec. 17, 1965, 16,395/65  
5 Claims. (Cl. 198-27)



The invention relates to an apparatus for handling start sheets of electrolytic refinement copper. Said apparatus

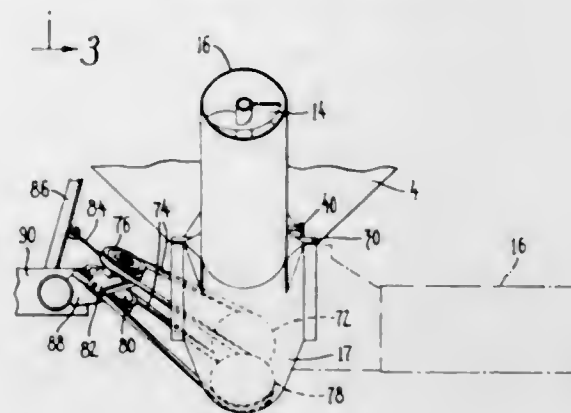
includes means by which the very thin sheets may be conveyed in a flat state to an apparatus in which the electrolytic process takes place, the flat state of the sheets being necessary to avoid short circuits in the electrolytic bath in which the sheets are suspended. The apparatus comprises a support pivoted to a horizontal axis extending transversely of the feed direction of said conveying means. The start sheets are fed onto that support when the latter takes a horizontal position and after they have been provided with suspension rods at one edge. They are turned up to a vertical position while resting in a flat state on said support and are received by a suspension conveyor above the beforementioned conveying means, and they are moved further suspended from the suspension conveyor by their rods. All means are constructed to avoid deformation of the sheets which maintain their flat state during the entire conveying operation.

**3,410,388**  
**BOTTLE HANDLING APPARATUS**  
Robert D. Hendrickson, R.R. 2, and Robert B. Horn, 554  
W. Washington, both of Winchester, Ind. 47394  
Filed Feb. 3, 1967, Ser. No. 613,797  
19 Claims. (Cl. 198-33)



A machine for receiving and moving a bottle along a predetermined path for the performance of various operations with regard to the bottle at stations along the path of movement thereof. The bottle holding portion of the machine engages the bottle, at least at the operative stations, solely at the upper finish portion and lower edge thereof in a manner which insures an exact location of the bottle and an exposure of all of the area thereof for the performance of specific operations, the bottle holding means being self-adjusting.

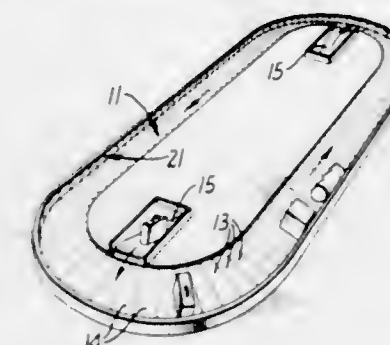
**3,410,389**  
**GRAIN HANDLING APPARATUS**  
Robert Ashton, Islington, Ontario, Wilbert D. Weber, Nashville, Ontario, and Walter Hirsch, Don Mills, Ontario, Canada, assignors to Massey-Ferguson Industries Limited, Toronto, Ontario, Canada  
Filed Mar. 20, 1967, Ser. No. 624,558  
5 Claims. (Cl. 198-114)



An unloading auger conveyor for a combine grain tank swivelly mounted on the tank permitting the auger to be

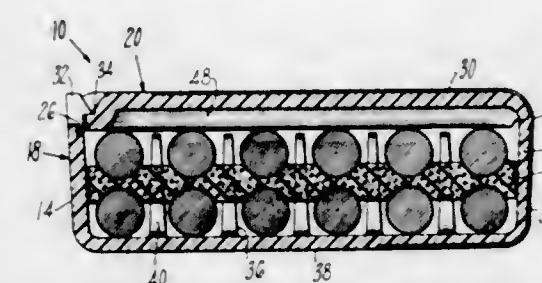
moved to a storage or inoperative position lying closely alongside the tanks, and an unloading position projecting upwardly and outwardly from the tank to discharge the grain, and including a belt-drive arrangement for accommodating the swivel movement.

**3,410,390**  
**CONVEYOR APPARATUS**  
George C. Petersen, 349 Connecticut St.,  
San Francisco, Calif. 94107  
Filed Jan. 13, 1967, Ser. No. 609,116  
9 Claims. (Cl. 198-129)



A baggage dispensing conveyor is formed of articulated pallets providing a continuous inclined surface. The pallets are joined by linking arms which permit articulation of the pallets with respect to each other so that the load bearing surface maintains its incline as it goes around corners. Each pallet has a depressed lip on one edge overlying the adjacent pallet to provide the continuous load-bearing surface. A cogged drive belt meshes with corrugations on the underside of the pallets to move the conveyor, and the pallets have a ribbed bumper at their lower end to stop lateral movement of the baggage.

**3,410,391**  
**STORAGE AND SHIPPING CONTAINER**  
Spencer I. Kanter, Wethersfield, Conn., assignor to The  
Hanson-Whitney Company, Hartford, Conn., a corpora-  
tion of Connecticut  
Filed July 6, 1967, Ser. No. 651,434  
7 Claims. (Cl. 206-17)



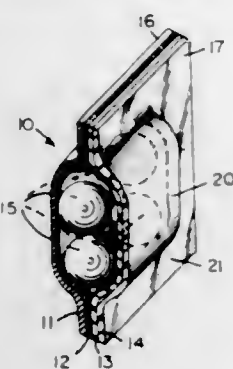
A compartmentalized one piece packaging unit for storing and shipping multiple layers of elongated articles includes aligned spaced partitions projecting inwardly from opposite sides of the unit to form individual compartments and a compartment-traversing foam interlayer contacting and immobilizing the individual parts positioned within the separate compartments.

**3,410,392**  
**COMPOSITE SIDE WALL AND RESEALABLE SEALED PACKAGE CONTAINING CORROSION PREVENTIVE MEANS**  
William A. Hermanson, 1284 Beacon St.,  
Brookline, Mass. 02146  
Filed Aug. 21, 1964, Ser. No. 391,099  
12 Claims. (Cl. 206-46)

A composite side wall for use in forming heat sealed and heat resealable packages is provided with the side wall



comprising a paper web having a surface coating of substantially uniformly distributed polyethylene particles mixed with corrosion inhibitor granules in a dry film of a non-heat sealable binder. The polyethylene particles have



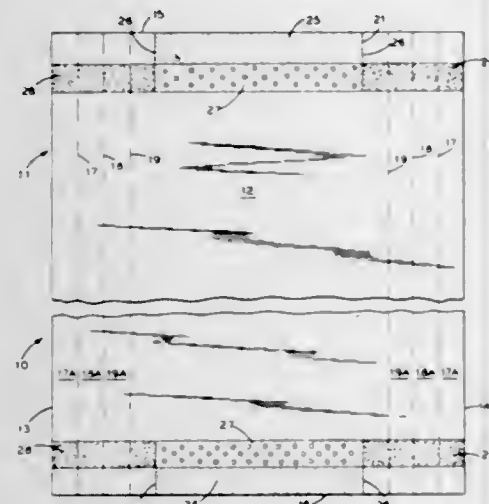
a particle size of at least 8 microns. Preferably the side wall is used to form a package with similar side wall material to enclose metal parts and protect them against corrosion.

3,410,393

**PEELABLE PACKAGING**

Robert L. Lee, Norwalk, Conn., assignor to Acme Backing Corporation, Stamford, Conn., a corporation of New York

Filed June 23, 1967, Ser. No. 648,470  
8 Claims. (Cl. 206—46)



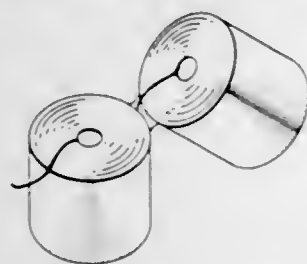
A package having a gusseted construction and including a panel peelable from the body of the package for dispensing the contents thereof.

3,410,394

**PACKAGING ARTICLES WITH HEAT SHRINKABLE TUBING**

Charles A. Jackson, Bartlesville, and Elmer C. Beason and Dan G. Duncan, Washington County, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 16, 1964, Ser. No. 404,331  
14 Claims. (Cl. 206—59)

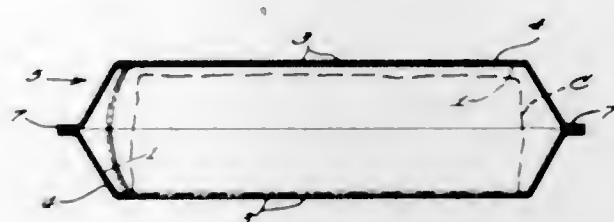


Two or more cylindrical articles are packaged by inserting the articles into a length of heat shrinkable tubular materials, the ends of said tubular material extending past the ends of said objects, and shrinking said material around said objects.

3,410,395  
**STEAM STERILIZABLE PACKAGE AND METHOD OF MAKING THE SAME**

John C. Sellers, Barrington, Ill., assignor to General Binding Corporation, Northbrook, Ill., a corporation of Delaware

Filed July 14, 1967, Ser. No. 653,406  
8 Claims. (Cl. 206—63.2)



A steam sterilizable package is made by punching steam passage holes through a generally impervious heat sealable film while carried on a backing sheet and then bonding the film to an impermeate steam-pervious paper sheet. Completion of a container about contents to be protected in sterile condition is effected by marginally peelably seaming the film or the backing sheet to a confronting packaging sheet or panel, steam sterilization then being effected through the paper sheet at the holes.

3,410,396

**ARTICLE AND TRAY PACKAGE**

Bruce G. Copping, Akron, Ohio, assignor to Geo. J. Meyer Manufacturing Co., Cudahy, Wis., a corporation of Wisconsin

Filed June 15, 1965, Ser. No. 464,143  
10 Claims. (Cl. 206—65)



A method of forming an article comprising placing a top member upon the tops of articles in a tray having articles therein, and positioning a transparent, heat shrinkable plastic film around the exposed vertical margins of the tray and article assembly. The opposed marginal edge portions of the film are secured to the tray and to the top member, and the film is heat shrunk into tight engagement with the top member, tray and article assembly.

3,410,397

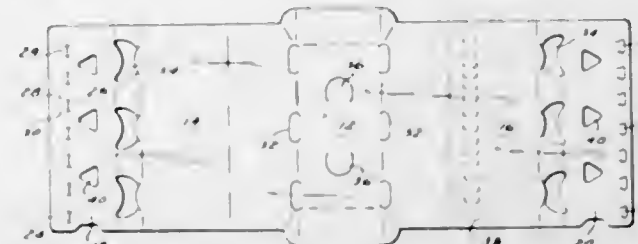
**WRAP-AROUND CARTON AND APPLICATION OF THE SAME TO ARTICLES**

Carl P. Cato, Lynchburg, Va., assignor to Dacam Corporation, Lynchburg, Va., a corporation of Virginia

Filed May 10, 1966, Ser. No. 548,972  
15 Claims. (Cl. 206—65)

A sleeve type multi-pack carton is wrapped around a group of articles, typically glass beverage bottles. The bottles may vary somewhat in size, and the present improvement adjusts the band size to compensate for minor variation in bottle size. For this purpose the closure panels are moved into overlapping relation with a desired force

in order to fit snugly around the articles, and only thereafter is the lock tab formed from one panel and forced through the other panel. One panel may be pre-cut to form lock tabs and the other panel may be pre-cut to form embryo friction tabs of variable length, and the lock forming operation completes the making of friction tabs



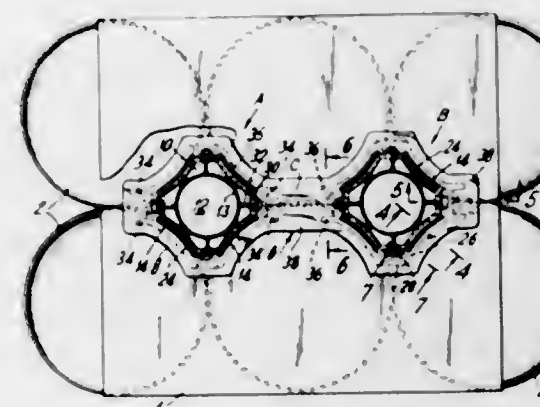
of proper length. In preferred form the friction tabs are initially defined by an end cut and by side perforations, and only the necessary number of side perforations are used to give the tab its desired length. The compensation at one end of the carton may differ from that at the other end, as may be needed for the desired snug fit around the outside of the bottles.

3,410,398

**CLIP AND WRAPAROUND PACKAGE COMBINATION**

Edwin L. Arneson, Hackensack, N.J., assignor to Federal Paper Board Company, Inc., Bogota, N.J., a corporation of New York

Filed July 17, 1967, Ser. No. 653,979  
13 Claims. (Cl. 206—65)



A plastic clip which engages the beads of a plurality of containers to maintain the containers in assembled relationship, and which engages a wraparound made of paperboard, for example, which is partially wrapped around the assembled cans to hold the wraparound in assembled relationship with the cans to provide additional support for the assembled cans and to provide advertising or billboard space.

A plastic clip for assembling in side by side abutting relationship a plurality of beaded cans, the clip having a plurality of blades extending upwardly from a frame to engage the can side and the bottom surface of the bead and a plurality of downwardly depending flanges which engage the inner surface of the bead. The clip also includes depending flanges or abutments which conform to and fit within corresponding openings or apertures in the wraparound to hold the wraparound in assembled relationship with the array of containers.

3,410,399

**METHOD FOR DISPERSING CLAY**

Joseph L. Hunter, Metuchen, N.J., assignor, by mesne assignments, to Engelhard Minerals & Chemicals Corporation, Edison, N.J., a corporation of Delaware

No Drawing. Filed Dec. 14, 1966, Ser. No. 601,559  
5 Claims. (Cl. 209—5)

The selective froth flotation of colored impurities from discolored clays to produce high brightness clay pigments

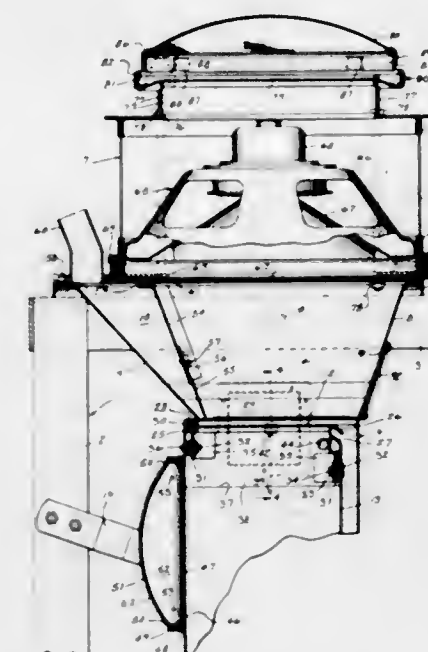
requires the use of the clay in the form of a well-dispersed aqueous pulp in which the colored impurities are separated from the clay particles originally associated with the impurities. In order to improve the response of stockpiled (aged) gray clay crudes to flotation beneficiation, the dispersion step is carried out with specific reagents, namely a combination of sodium hydroxide, sodium carbonate and sodium silicate.

3,410,400

**RECIPROCATING AIR COLUMN SIFTER**

Charles W. Ward, Milwaukee, Joseph P. Lorbiecki, New Berlin, and Robert L. Schurrer, Milwaukee, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Nov. 26, 1965, Ser. No. 509,746  
8 Claims. (Cl. 209—21)



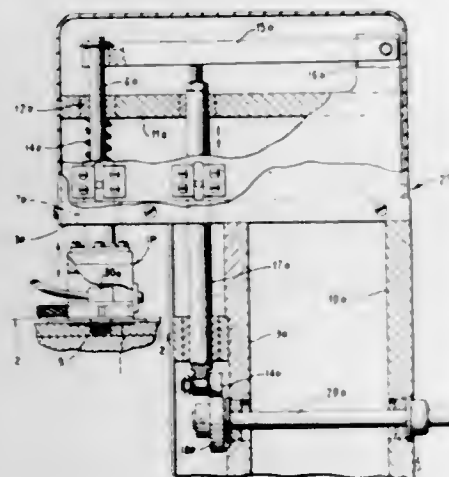
A reciprocating air column sifter has a screen housing and a speaker housing mounted thereon. The screen housing has a cover with a speaker opening. A protective diaphragm covers the opening, and the speaker flange rests on the diaphragm. A cylindrical wall rests on the flange, and atop the wall is a top plate which has a tuning opening aligned with the speaker opening and surrounded by an upstanding rim. Threaded posts extend upwardly through the cover, diaphragm edge and flange, along side the wall, and through the top, and are used to hold said elements together, and extend above the top near the rim. An elastic tuning diaphragm with a hoop larger than the rim is across the tuning opening, and a rigid guard screen above this diaphragm has arms which rest on the hoop and receive the ends of the posts. Nuts above the arms are used to secure the guard and tighten and loosen the diaphragm to vary resistance to movement of the speaker cone. The screen housing has a side access opening with a removable door, and horizontal ledges on its front and rear walls against which the edges of a screen lie. Slide members operable through the access opening have cam mountings on the front and rear walls and are adapted to clamp the screen against the ledges in a horizontal position. A tapper on the door is operable when the door is in place to periodically tap the screen. The screen housing has an inlet above and to the rear of the screen, an outlet below the screen, and a waste opening near the front of the screen. Photosensitive means are provided to read the flow of material through the screen and are coupled to the speaker to continuously vary the power applied to the speaker in response to the flow of material through the screen.



3,410,401

**SUBSTRATE REWORK CONTROL CIRCUIT FOR A CHIP POSITIONING MACHINE**

Joseph G. Drop, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York  
 Filed May 27, 1965, Ser. No. 459,382  
 12 Claims. (Cl. 209—72)



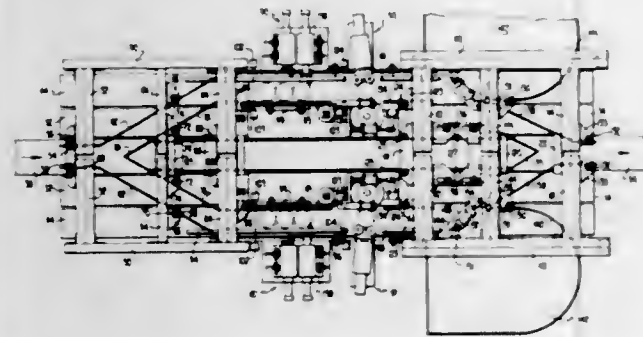
5. In a machine, for positioning semiconductor chips upon printed-circuit substrates and having a sensor for detecting the pattern of the chips present on each substrate and a rework head actuable to reject a substrate, a rework control circuit comprising:

program means for selectably varying the number and locations of chips constituting an acceptable chip pattern for each substrate,  
 means responsive to said program means and said sensor to determine whether each substrate at the sensor has an acceptable chip pattern thereon, and  
 control means to actuate said rework head to reject the substrate if said substrate does not have an acceptable chip pattern thereon.

3,410,402

**GLASSWARE INSPECTION DEVICE**

John H. Gundrum, Lampeter, and Victor B. Hensel, Lititz, Pa., assignors to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania  
 Filed May 26, 1966, Ser. No. 553,137  
 7 Claims. (Cl. 209—73)

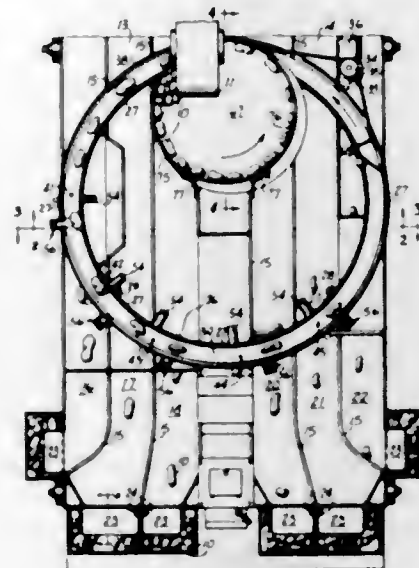


A conveying, inspection and sorting arrangement utilizing a plurality of endless conveyor belts adjacent to and parallel the main conveyor belt wherein guide means are provided for transferring articles traveling on said main conveyor belt to said auxiliary conveyor belt for testing and sorting. Articles passing inspection are subsequently diverted back to said main conveyor belt whereas articles not passing inspection are allowed to continue along one of said auxiliary conveyor belts to a reject station. The inspection apparatus is adapted to be mounted along one of the auxiliary conveyor belts and is comprised of means for gripping and rotating the article for inspection and braking or stopping rotation of the article upon release of the article.

3,410,403

**SEPARATING AND SORTING APPARATUS**

L. D. Adcox, Shelley, Idaho, assignor to Adcox-Smith Company, Shelley, Idaho  
 Filed Mar. 27, 1967, Ser. No. 626,208  
 13 Claims. (Cl. 209—73)

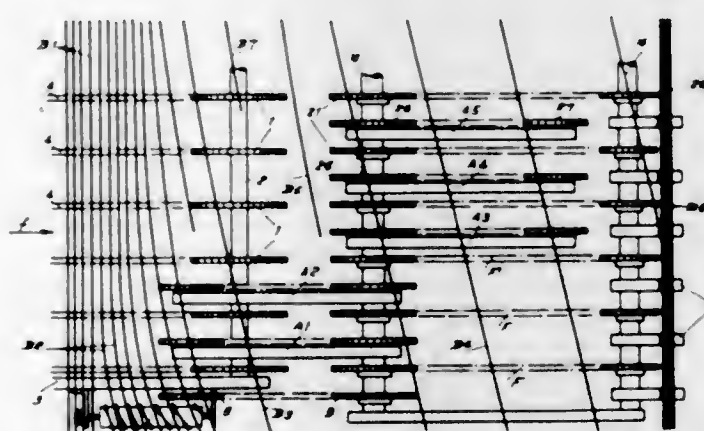


The disclosure describes a preferred embodiment of my invention concerning a separating and sorting apparatus for non-uniform articles such as potatoes having a rotating transfer ring 30 overlying a plurality of conveying surfaces 16-18 and 20-22. Sorting stations 41-45 are angularly spaced about the transfer ring 30 for grading successively spaced potatoes carried on the transfer ring 30 and ejecting the potatoes inwardly from the transfer ring 30 onto the conveying surface 16-18 and 20-22 according to their size and shape. A separator 66 is tangentially mounted within the transfer ring 30 for receiving the potatoes from a supply 11, aligning the major axes of the potatoes along their line-of movement, successive spacing potatoes and progressively discharging the potatoes onto the transfer ring 30. The separator has a conical rotating surface 67 eccentrically overlaid by a guide 75 for guiding the movement of the potatoes as they proceed on the rotating conical surface 67.

3,410,404

**SORTING AND COUNTING UNIT**

Jean Emile Glasson, Argenteuil, France, assignor to Societe a Responsabilite Limitee dite: Botalam, Paris, France, a corporation of France  
 Filed Feb. 9, 1967, Ser. No. 614,894  
 Claims priority, application France, Feb. 18, 1966, 50,217  
 11 Claims. (Cl. 209—82)



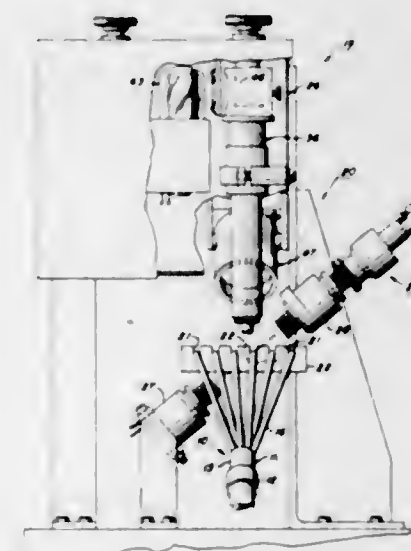
A sorting apparatus having an accelerator located along one edge of a conveyor for engaging one end of the rods carried on the conveyor and moving same forwardly at a speed which is greater than the conveyor speed to trans-

fer the rods one at a time to a separator having a conveyor-type selector which engages the advanced end of the rods as same are discharged from the accelerator. The selector includes a plurality of pivotable arms having movable conveyor elements thereon, the arms being movable from a position adjacent the accelerator to a position remote from the accelerator whereupon the selector can be adjusted to transfer only rods having at least a predetermined minimum length.

3,410,405

**APPARATUS FOR DETECTING COLORED MATERIALS**

Frank Theodore Cysky, Jr., Warren Township, Somerset County, and Carl Bernard Haehner, Jr., Raritan Township, Hunterdon County, N.J., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York  
 Filed Apr. 23, 1965, Ser. No. 450,348  
 13 Claims. (Cl. 209—111.6)



12. A photoelectric, color-discriminating system for identifying colored conductors from a multiplicity of individually insulated, color-coded conductors, which comprises:

means for applying illumination of a predetermined frequency band to the conductors;  
 means responsive to illumination from the conductors for generating a signal, the polarity and magnitude of the signal being indicative of the color of a conductor;  
 means for causing relative movement between the conductors and the means responsive to illumination from the conductors to sequentially inspect each conductor;  
 a photosensitive cell positioned on one side of the path of travel of the conductors;  
 a second light source positioned on the opposite side of the path of travel of the conductors, the second light source emitting light through the path of travel of the conductors toward the photosensitive cell; the movement of the individual conductors between the second light source and the photosensitive cell acting as shutters for the photosensitive cell, the interruption of the light beam causing an electrical signal to be generated by the photosensitive cell; the relative positions of the various elements being such that the signal generated by the photosensitive cell which is associated with a given conductor occurs a predetermined time ahead of the generation of the current indicative of the color of that particular conductor;  
 a logic circuit containing two channels, each channel containing a plurality of stepping switches, one chan-

nel for each of the colors to be selected, a stepping switch in each channel being associated at any one time with a particular group of conductors, the stepping switches being stepped by the electrical signal generated by the photosensitive cell and the stepping of the associated stepping switches being terminated when the current of a predetermined polarity and magnitude indicative of a predetermined colored conductor is generated;

a plurality of electrically operated elements selectively connected to associated contacts on the stepping switches to pull loops in the selected conductors when the conductors arrive at a subsequent loop-pulling station;

means for programming the stepping switches in the logic circuit so that the electrically operated elements are energized through the stepping switches associated with the particular group of conductors when the respective conductors arrive at the subsequent loop-pulling station; and

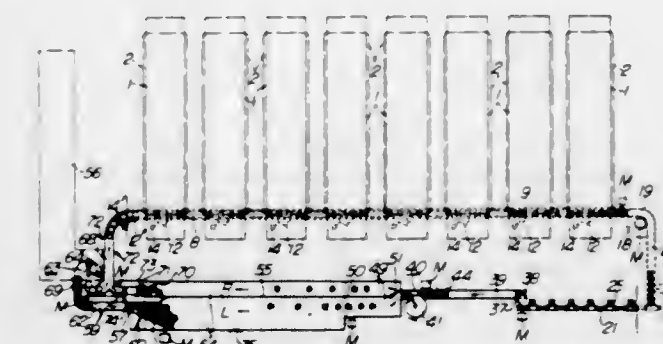
means for detecting malfunctioning of the system and an excessive number of conductors of preselected colors.

3,410,406

**METHOD OF AND APPARATUS FOR AUTOMATICALLY FEEDING COPS OF SPUN YARN**

Nobuyuki Tsuda, Neyagawa-shi, Kiyoharu Kurokawa, Anjo-shi, Mititoshi Mural, Marugame-shi, and Masaaki Miyamoto, Kagawa-ken, Japan, assignors to Kurashiki Spinning Co., Ltd., Kurashiki-shi, Japan, a corporation of Japan

Filed Mar. 17, 1967, Ser. No. 624,054  
 Claims priority, application Japan, Apr. 4, 1966, 41/21,324; Apr. 5, 1966, 41/21,620; Apr. 6, 1966, 41/21,900; Apr. 8, 1966, 41/22,345  
 7 Claims. (Cl. 209—121)



A method of and apparatus for automatically feeding cops to an automatic winder from a spinning frame successively, which method comprises suspending the cops from a conveyor, travelling around the spinning frame by means of magnets, dropping said cops into respective cylindrical hollow holders being carried on a conveyor arranged therebelow, discriminating said cops in terms of weight as they are held in said holders, feeding only those cops having a prescribed weight to the winder upon segregating the underweight cops, and returning the resulting empty holders to their original positions.

3,410,407

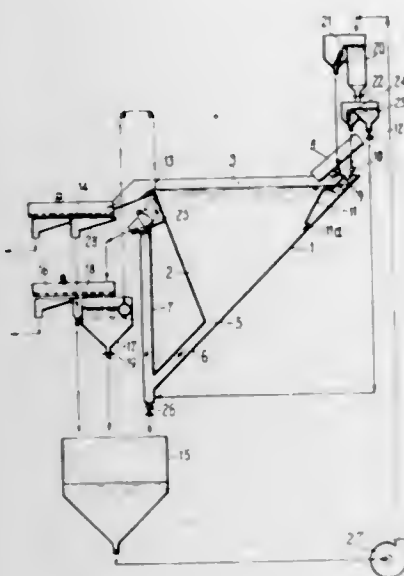
**QUIESCENT ZONE HEAVY MEDIA SEPARATOR**

Klaas F. Tromp, 80 Julianalaan, Bilthoven, Netherlands  
 Filed Feb. 11, 1966, Ser. No. 526,771  
 4 Claims. (Cl. 209—172.5)

Gravity separation of solid particles having different specific gravities is effected by introducing liquid suspen-

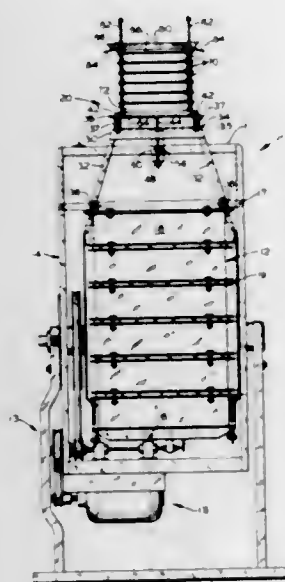


sion substantially along and at the liquid level of a body of the liquid suspension and also introducing liquid suspension at a level well below the liquid level. Liquid suspension and entrained lighter solid particles are removed



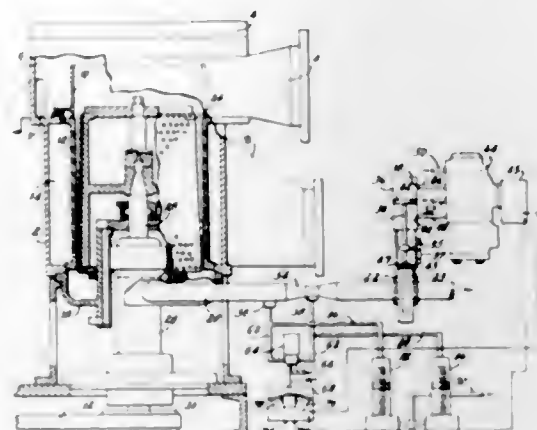
at the liquid level and liquid suspension with entrained heavier particles is removed at a lower level and the liquid suspension introduction flows and liquid suspension removal flows are balanced to effect a quiescent zone between the two levels of liquid suspension introduction.

**3,410,408**  
**PULSATORY SCREENING DEVICE**  
Burt D. Tonjes, Malinta, Ohio, assignor to Gilson Screen Company, Malinta, Ohio, a partnership  
Filed Apr. 7, 1966, Ser. No. 540,980  
10 Claims. (Cl. 209—237)



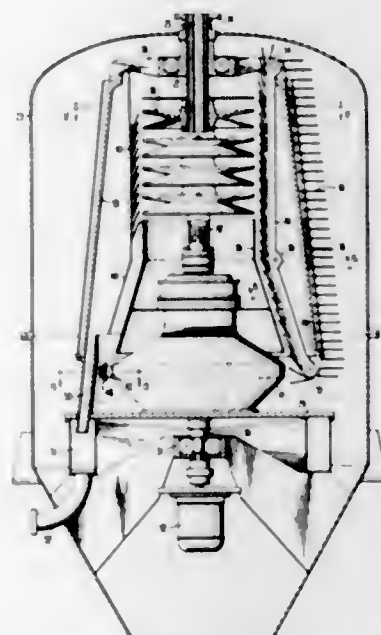
A device for supporting and releasably clamping a stack of testing or sorting screens, having a transparent lid, between a pulsating member and a stationary member, comprising: springs between said members to permit vibration of the device, and an adjustable pivoted link between said members for (a) vibrating the device and including an abutment means for positively stopping the device during each upward vibratory movement, and (b) for varying the amplitude and intensity of said vibrations. The stationary and pulsatory members may be parts of another and larger screening device to which the present device may readily be attached.

**3,410,409**  
**SCREENING APPARATUS CONTROL**  
Earl G. Rittenhouse, Canton, Mass., and Douglas L. G. Young, Quebec, Quebec, Canada, assignors to Bird Machine Company, South Walpole, Mass., a corporation of Massachusetts  
Filed Jan. 18, 1966, Ser. No. 521,308  
3 Claims. (Cl. 209—256)



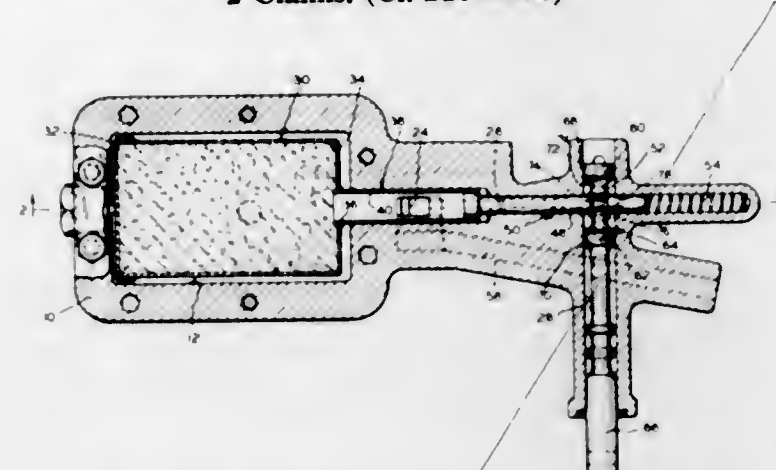
A screening apparatus with a throttle valve in the rejects line capable of being set to an optimum throttle setting and an actuator which opens the valve from the throttle position when a predetermined minimum flow is sensed. The system restores the valve to its former throttle setting after solids are removed, by sensing increase in the flow. The optimum continuous flow setting is thereby resumed. Also disclosed for the system are a venturi tube differential pressure sensor, fiber-free flow sensing lines and a V-ported control valve.

**3,410,410**  
**FILTER SCREENS AND FILTERING PROCESSES**  
Hasso Hofmann, 7014 Kornwestheim, Lenzhalde 43, Hamburg, Germany  
Filed Mar. 30, 1964, Ser. No. 356,694  
Claims priority, application Germany, Apr. 2, 1963, H 48,727  
8 Claims. (Cl. 210—78)



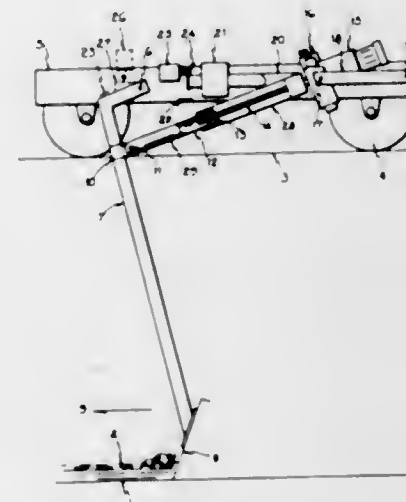
A filter is formed by a plurality of overlap layers of strip brushes having channel shaped bristle holders pivotally attached to a moving belt or chain for cleaning. The pivotal movement may occur as the belt or chain makes a sharp turn and the filtered material is flung from the brushes. A plurality of vertically moving curved brush carriers are positioned to form a centrifugal drum filter.

**3,410,411**  
**FILTER AND VALVE ASSEMBLY**  
Donald S. Dence, Brooklyn, Mich., assignor to Clark Equipment Company, a corporation of Michigan  
Filed Sept. 30, 1966, Ser. No. 583,275  
2 Claims. (Cl. 210—100)



A filter and valve assembly having a first movable valve and a second movable valve which is interlocked with the first valve. Movement of the first valve is caused by fluid pressure on the filter and prevents movement of the second valve. This prevents operation of the fluid system when the filter becomes clogged.

**3,410,412**  
**SLUDGE SCRAPER MECHANISM**  
Leonhard Emil Fechter, Michelbach, Germany, assignor to Passavant-Werke (near Michelbach, Nassau), Germany, a corporation of Germany  
Filed Dec. 23, 1966, Ser. No. 604,477  
Claims priority, application Germany, Dec. 23, 1965, P 38,422  
13 Claims. (Cl. 210—143)

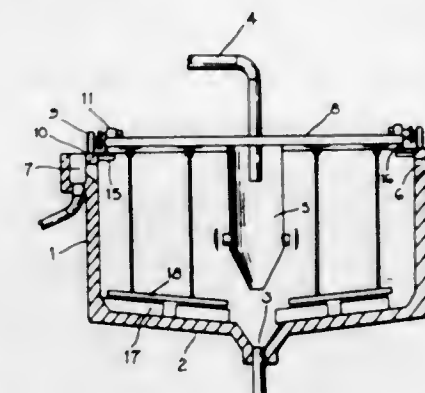


A drive motor powers an arm mechanism which positions and loads a sludge scraper blade in a sludge tank, and is capable of automatically repositioning the blade if it drops or is raised up by variations in the sludge level in the tank.

**3,410,413**  
**APPARATUS FOR SUPPORTING AND GUIDING A BRIDGE AROUND A CIRCULAR SEDIMENTATION TANK**  
Leonhard Emil Fechter, Michelbach, Germany, assignor to Passavant-Werke (near Michelbach, Nassau), Germany, a corporation of Germany  
Filed Dec. 16, 1966, Ser. No. 602,318  
Claims priority, application Germany, Dec. 17, 1965, P 38,371  
9 Claims. (Cl. 210—519)

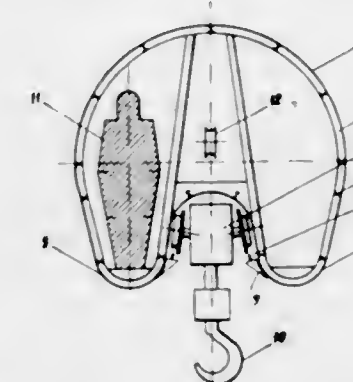
This invention relates to an improved way of mounting a bridge for rotation about a circular sedimentation tank

commonly used in the sewerage and waste water treatment industries. The center pier to support and guide the bridge is replaced with a multi-wheeled carriage on the



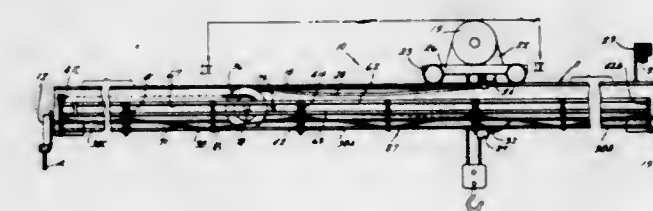
end of each bridge arm which travels on the tank rim to evenly distribute the vertical load and to decrease the horizontal load component on the bridge and tank.

**3,410,414**  
**CRANE SHELL SPAN**  
Jozef Szulc, Ul. Lobzowska 35/5, Krakow, Poland  
Filed Nov. 18, 1965, Ser. No. 508,475  
Claims priority, application Poland, Nov. 21, 1964, P 106,349  
5 Claims. (Cl. 212—13)



1. A bridge crane comprising a shell member, said member having a lower region with two equal semi-circular surfaces defining a semi-circular groove therebetween, support means mounted on each of the semi-circular surfaces within said groove, rails mounted on said support means for accommodating a wheeled crab positioned within the groove, and a skeleton support structure for said shell member.

**3,410,415**  
**SELF-PROPELLED DRUM SUPPORT**  
Roger T. Becker and George R. Pierce, Kalamazoo, Mich., assignors to Aero-Motive Manufacturing Company, Kalamazoo County, Mich., a corporation of Michigan  
Continuation of application Ser. No. 511,728, Dec. 6, 1965. This application Jan. 23, 1968, Ser. No. 699,974  
23 Claims. (Cl. 212—21)



A self-propelled device and cooperating structure whereby unidirectional movement of the device can be effected along a predetermined path. The self-propelled device includes carriage-supporting motor means connected



to a rotatable drum which is engageable with an elongated, flexible element having spaced portions relatively movable along said path. The drum is connected to actuating means and the carriage is mounted on track means whereby said element is continuously held under tension to remove slack therefrom as one said portion of the flexible element is moved with respect to the other.

### 3,410,416 HYDRAULIC CUSHIONING DEVICE FOR RAILWAY VEHICLES

William H. Peterson, Homewood, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Filed May 11, 1967, Ser. No. 637,788  
8 Claims. (Cl. 213-43)

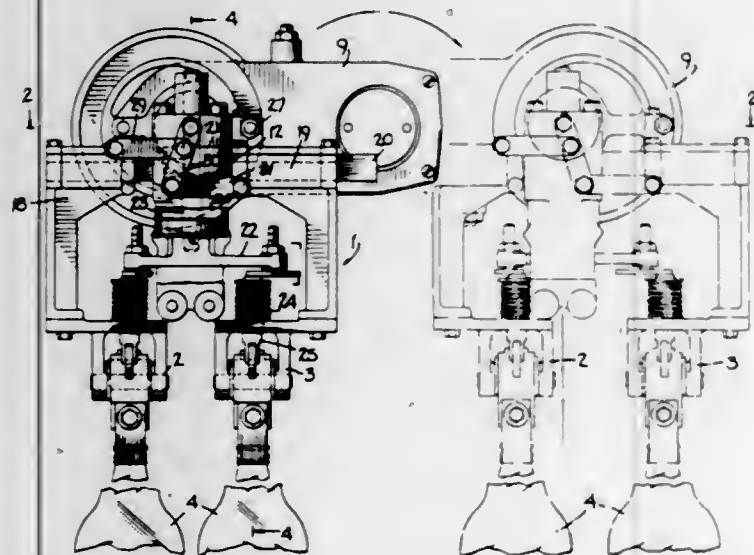


A hydraulic fluid extensible cushioning device having a pair of concentric cylinders connected together with one of said cylinders including a low pressure reservoir and a first bore in which a piston member is slidable, the piston member including a tubular elongated piston rod slidable relative to the second cylinder and including a rolling seal connected to the second cylinder adjacent the piston member and having an end portion connected to the tubular piston rod, the said rolling seal being substantially coextensive with the bore provided between the second cylinder and the tubular piston rod, and including an expansible chamber within said tubular piston rod having supported therein coextensive with the length of said chamber an accumulator bag having a gas under pressure therein, the end of said accumulator bag having a portion thereof received in a concave recess of said piston member and being disposed relative to the piston member so as to be compressed during movement of the piston member to its contracted position, said accumulator bag during the contracted position serving to provide means to return the piston member and rod to its extended position.

### 3,410,417 ARTICLE TRANSFERRING MEANS

Frederick Z. Fouse, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware

Filed Oct. 23, 1965, Ser. No. 503,197  
4 Claims. (Cl. 214-1)

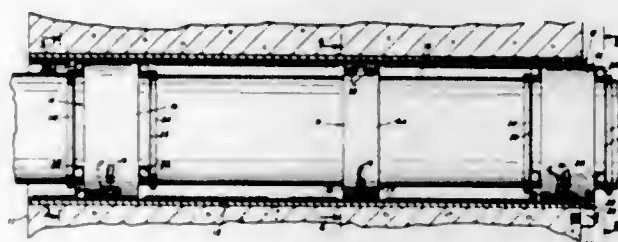


A takeout mechanism for removing spaced glass articles from forming molds and for transferring them to a

platform to be cooled while simultaneously changing the spacing between the articles. Separate article engaging jaws are each supported by a carriage mounted on a track on a pivoted transfer arm. The track attitude is maintained fixed during the rotation of the transfer arm and one of the article supporting carriages is moved along its mounting track as the transfer arm pivots by a cam operated linkage for adjusting the relative positions or spacing of the carriages in accordance with the transfer arm position.

### 3,410,418 ROLLER TRUCK MOUNT

Frank G. Chesley and Lester W. Haaker, Red Wing, Minn., assignors to Central Research Laboratories, Inc., Red Wing, Minn., a corporation of Minnesota  
Filed Feb. 21, 1966, Ser. No. 529,057  
12 Claims. (Cl. 214-1)



1. A roller truck mount unit for the through tube of a remote-control master-slave manipulator including a master arm and a slave arm pivotally connected to opposite ends of a horizontal through tube adapted to extend through a protective barrier wall, said mount unit comprising:

- (a) an annular member adapted to receive said through tube therein and to be received within a horizontal circular opening through said barrier wall,
- (b) at least two rollers journaled in the bottom wall of said annular member to rotate about axes generally perpendicular to radial planes extending through the longitudinal axis of said annular member,
- (c) said rollers being arrayed generally symmetrically relative to the vertical centerline plane through said annular member,
- (d) the peripheries of said rollers extending beyond the outer periphery of said annular member to support the same within said circular opening, and
- (e) means for preventing relative longitudinal movement between said through tube and said annular member.

### 3,410,419 DEVICE FOR SECURING REMOTE-CONTROL MANIPULATORS AGAINST ROTATION

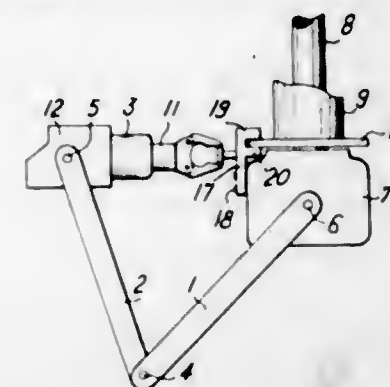
Roland G. Mas, Aix-en-Provence, France, assignor to Commissariat à l'Energie Atomique, Paris, France  
Filed Apr. 5, 1966, Ser. No. 540,350

Claims priority, application France, Apr. 23, 1965, 14,488

2 Claims. (Cl. 214-1)

1. Device for locking remote-control manipulators against rotation comprising an arm, a fore arm and a wrist pivotally coupled with one degree of freedom for respective displacements in the same vertical plane, a grab mounted for rotation about the axis of said wrist, a control motor in a casing, a pivot on said casing, said arm being pivotally mounted on said pivot, a shaft, said motor driving said arm in rotation about a cylindrical bushing mounting, said shaft being rotatably mounted in said bushing, a stationary external annular flange on said bush-

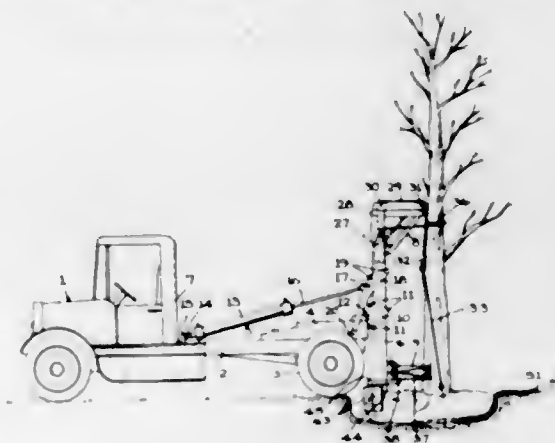
ing, a clamp fixed to said casing, jaws for said clamp, said jaws gripping said stationary annular flange and pre-



venting rotation of said arm around said cylindrical bushing, said jaws being capable of actuation by said grab.

### 3,410,420 MOBILE TREE TRANSPLANTING MACHINE

Jean G. Butts, Cato, N.Y. 13033  
Filed Jan. 26, 1967, Ser. No. 611,982  
8 Claims. (Cl. 214-3)



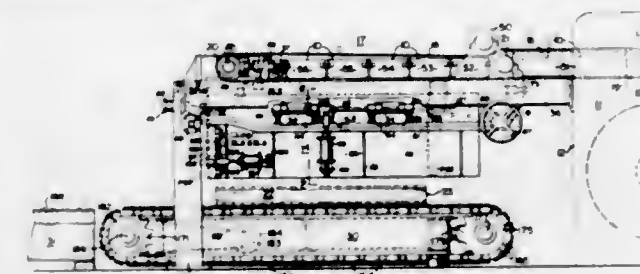
The invention comprises a mobile tree lifting and transporting frame capable of rocking or pivotal movements in a vertical plane about a transverse axis, as well as capable of longitudinal movements relative to the transverse axis aforesaid, either in unison with the rocking or pivotal movements, or independently thereof, through the selective control of hydraulic power means operatively connected with the frame to control the movements thereof preparatory to securing a tree to the frame, subsequently lifting the tree to free it from the ground, and thereafter moving the tree to a relatively reclining position while transporting the tree to a new site, and finally repositioning and lowering the tree into an upright, reset position at a new site, all without injury or damage to the tree and while maintaining a sizable earth ball around the roots of the tree during the removal of the tree from the original site, as well as during transportation and resetting of the tree. The frame includes power operated hoist means which assists in stabilizing the tree during removal, transportation and resetting thereof, and also includes an improved trunk engaging saddle and earth ball support means cooperative therewith, all contributing to stabilization of the tree during handling and transportation thereof.

### 3,410,421 SHEET STACKER

Alvin F. Groll, P.O. Box 391, Napoleon, Ohio 43545  
Filed Apr. 1, 1966, Ser. No. 539,403  
11 Claims. (Cl. 214-6)

A stacker including a sheet delivery conveyor extending to a stacking station, a stack conveyor extending from the stacking station and a stacking path from the sheet conveyor to a stack receiver at the stacking station. Corner

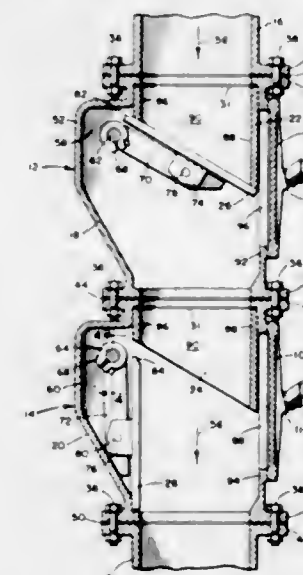
gates define the stacking path and are retractable to permit movement of the stack. Sheet catchers are extendable into the stacking path to permit continued feed of sheets to the stacking station while a stack is being removed therefrom. Automatically sequenced controls sense the accumulation of a desired stack, extend the sheet catchers,



open the corner gates, move the stack from the stacking station, close the gates when cleared by the stack and retract the catchers to release the sheets in the stacking path to a stack receiver in the stacking station. The system is arranged for automatically or manually loading a plurality of stacks on a single stack receiver.

### 3,410,422 DUST TRAP AND VALVE FOR HIGH TEMPERATURE OPERATION

Urgel Ramual Carpentier, 3 Bailey Ave., Plattsburgh, N.Y. 12903  
Filed Sept. 26, 1966, Ser. No. 581,830  
6 Claims. (Cl. 214-17)



Disclosed is a dust trap and double flapper valve assembly for removing dust and other foreign particles from closed systems. Each valve is provided with an access door and removable flapper and valve seat to permit simple inspection, cleaning and/or replacement. The valve flappers are actuated by shafts mounted on spaced bearings and provided with adjustable shaft seals rendering the device less susceptible to wear and damage due to hot gases or high temperatures. Double acting cylinders insure positive opening and closing of the valves. The flappers are constructed with a tapered extension to minimize valve clogging.

### 3,410,423 STACKING DEVICE FOR HOSE DRAWING MACHINES

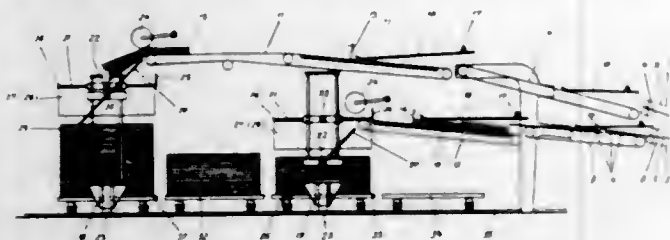
Friedrich Franz Brockmüller, Lengerich, Germany, assignor to Windmoller & Holscher, Lengerich, Germany  
Filed June 28, 1965, Ser. No. 467,260  
Claims priority, application Germany, July 4, 1964, W 37,112

5 Claims. (Cl. 214-6)

An apparatus for automatically forming and depositing loose batches of tube sections such as those produced by

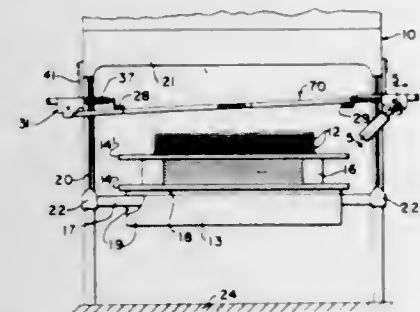


a tube-forming machine including at least two first belt conveyors alternately receiving the tube sections, a second conveyor belt following each first conveyor belt and running at a slower speed than the normal feeding speed of the first conveyors, and a third conveyor belt following each of the second conveyor belts. A stop plate is associat-



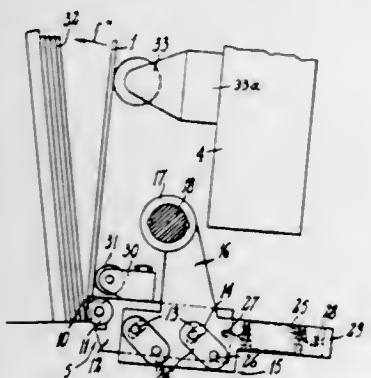
ed with each of the third conveyor belts for collecting the tube sections thereon in loose batches. A depositing table inclined downwardly away from the delivery end of each of the third belt conveyors receives the collected batches of tube sections and a second stop plate at the back end of the table collects the batches thereon in such a way as to remove the slightest tube section irregularities.

**3,410,424**  
**RACK FOR HOLDING A STACK OF PRINTED SHEETS**  
George F. Rooney, Jr., 2353 May St., Cincinnati, Ohio 45206  
Filed Feb. 27, 1967, Ser. No. 618,704  
1 Claim. (Cl. 214-6)



A rack for holding a stack of printed sheets having spaced parallel board supporting flanges which can be moved inwardly to a board holding position and outwardly to a board released position, a handle locks in both positions. The handle turns shafts that drive cranks which are linked to flange driving members.

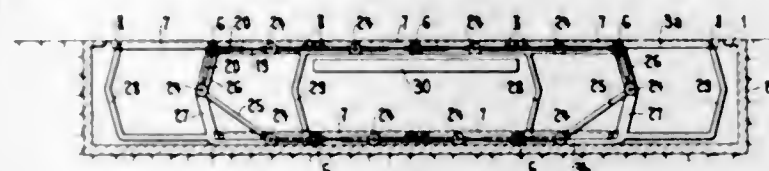
**3,410,425**  
**SHEET HANDLING APPARATUS AND METHOD**  
Yves Guillaume, Saint Gobain, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France  
Filed Feb. 3, 1966, Ser. No. 524,801  
Claims priority, application France, Mar. 29, 1965, 11,033  
13 Claims. (Cl. 214-7)



Sheets of material such as glass come from a production line and are sequentially pivoted from a horizontal to

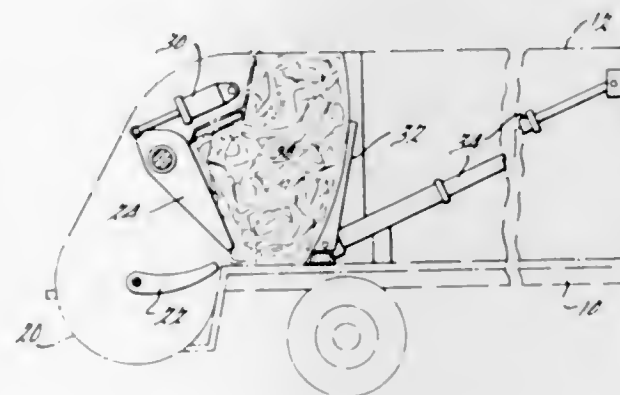
an essentially vertical position. As each sheet approaches the vertical, its increasing weight component acting upon abutments in contact with the lower edge of the sheet, acts to retract the abutments to allow the sheet to descend a short distance onto a mobile truck or pallet. At the same time rollers associated with the abutments, nudge the lower edge of the sheet into full line contact with a sheet previously emplaced. The sheet then pivots slightly into full surface contact with the previous sheet.

**3,410,426**  
**TELESCOPIC LINK PARKING DEVICE**  
Hans Beat Fehlmann, Zurich, Switzerland, assignor to Mobile Parking S.A., Geneva, Switzerland  
Filed Oct. 15, 1964, Ser. No. 404,115  
Claims priority, application Austria, Oct. 16, 1963, A 8,302, A 8,303, A 8,304  
15 Claims. (Cl. 214-16.1)



A storing device, particularly a parking device or garage for vehicles, having platforms mounted on an endless chain of links guided along an endless guideway, means for advancing said platforms and chain respectively, said chain comprising telescoping rods constituted by a piston and cylinder containing fluid.

**3,410,427**  
**REFUSE PACKING SYSTEM**  
John McCarthy, Dearborn, Mich., assignor to Gar Wood Industries, Inc., a corporation of Michigan  
Filed Dec. 27, 1965, Ser. No. 516,603  
10 Claims. (Cl. 214-83.3)

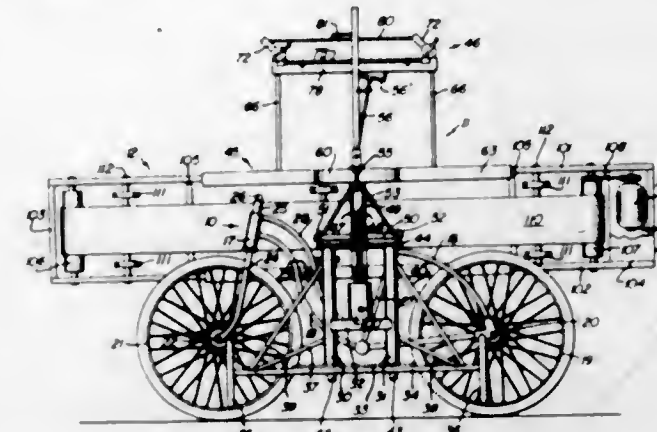


A refuse packing and storage system in which successive batches of refuse are packed against a longitudinally movable panel within the refuse storage compartment.

**3,410,428**  
**MATERIAL HANDLING APPARATUS**  
Pat Maher, Broadus Stage, Miles City, Mont. 59301, and Bernard E. Owens, Delta, Utah 84624  
Filed June 21, 1966, Ser. No. 559,312  
10 Claims. (Cl. 214-83.26)

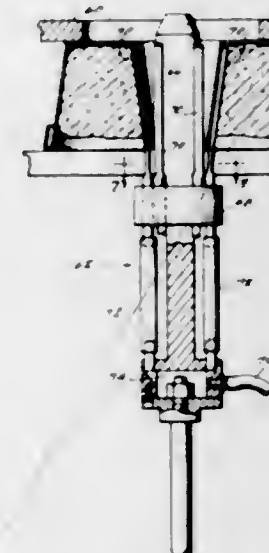
1. Material handling apparatus comprising: a bicycle-type frame, having a rear axis that is fixed with respect to the frame, a front wheel, journaled about a front axis arranged to be turned with respect to the rear wheel and the frame, and

means for turning said front axis to thereby steer the said front wheel and the said frame; an endless conveyor, adapted to be carried on said frame;



means on said frame for moving said conveyor from a position alongside the frame to a position above the frame; and means for releasably holding sheet material on said conveyor.

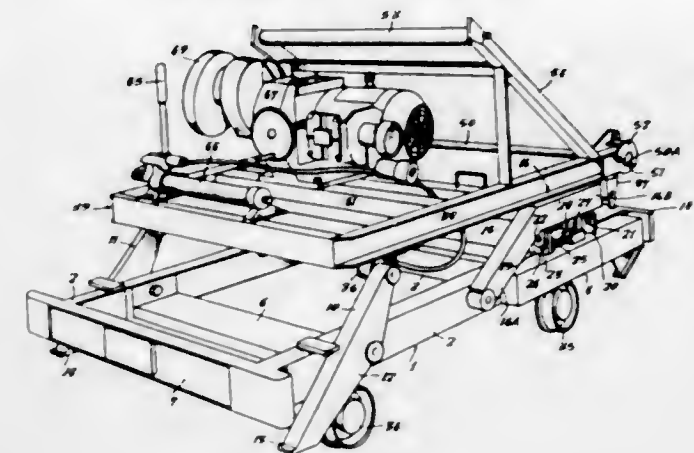
**3,410,429**  
**METHOD AND APPARATUS FOR CAKE DEPANNING**  
Edward J. Eschenroeder, Cincinnati, and Frank P. McDowell, Columbus, Ohio, assignors to The Kroger Co., Cincinnati, Ohio, a corporation of Ohio  
Filed Aug. 16, 1966, Ser. No. 572,791  
9 Claims. (Cl. 214-310)



Apparatus is provided for effecting the sequential, essentially two-step method of efficiently depanning bakery products, and particularly angel food cakes, from their pans in an assembly-line operation. In the preferred operation, the angel food cake-containing pans are inverted and placed upon a conveyor which automatically carries the pans individually to successive indexing stations. At the first such station, an automatically actuated cylinder presses a solid member, preferably in the form of an annular ring, against the crusty seal which forms a junction between the cake material and the sides of the pan, to generally rupture that seal. At the second indexing station, hollow fingers are automatically inserted into the cake pan, so as to extend between the cake material and the pan surfaces. Compressed air is then expelled through the fingers generally toward the bottom of the pan so that the entire cake is dislodged from the pan surfaces to complete the method of removal. Variations in the shape and number of solid members for initially rupturing the cake-pan seal are contemplated.

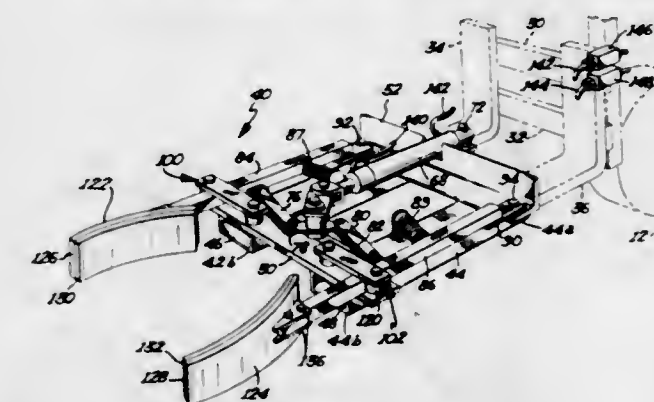
856 O.G.—16

**3,410,430**  
**HAULING AND LIFTING MACHINE**  
Robert Henry Walton, Winstan, England, assignor to Robinson Campbell (Industrial Products) Limited, North Shields, Northumberland, England, a company of Great Britain and Northern Ireland  
Filed Dec. 28, 1966, Ser. No. 605,428  
Claims priority, application Great Britain, Dec. 28, 1965, 55,004/65  
9 Claims. (Cl. 214-515)



1. A hauling machine comprising in combination, a chassis frame, wheels at opposite end regions of the chassis frame to support said frame, the wheels at one of said regions being mounted on a bogey frame detachable relative to said chassis frame, levers pivoted to said chassis frame on an axis at the other end region of the chassis frame, a winch frame pivotally secured to said levers, a rotary shaft and driving means for said shaft mounted on the winch frame, ram means mounted on the chassis frame to raise the winch frame on said levers, said detachable bogey frame being readily removable out of a supporting position from the chassis frame when the winch frame is raised by the ram means, static means secured to the chassis frame at said one end engaging the ground when the bogey frame is detached from the chassis frame and engagement means for detachably securing said bogey frame to said chassis frame.

**3,410,431**  
**CLAMP MECHANISM FOR MATERIALS HANDLING EQUIPMENT**  
Albam M. Vik, New Brighton, Minn., assignor to Inventors Engineering Inc., Minneapolis, Minn., a corporation of Minnesota  
Filed July 6, 1966, Ser. No. 563,135  
9 Claims. (Cl. 214-620)



A clamp mechanism for fork lift trucks and other materials handling equipment consisting of a supporting framework with parallel tubular members positioned to slide over the horizontal portions of the lift truck forks. Two clamp arms are pivotally secured at their rearward ends to the rearward portion of the framework. The arms extend forwardly from pivots and each is supported at its

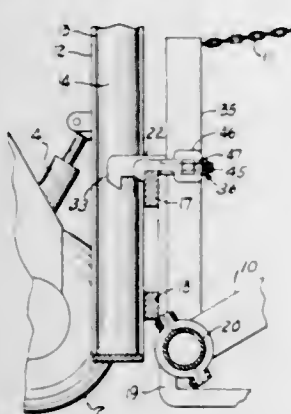


approximate center by a slide plate affixed at the forward end of the framework. The free ends of the arms are moved toward or away from one another in a horizontal plane by a hydraulic actuator that is connected to a crank mounted for pivotal movement between the arms. A pair of laterally extending link members are connected between the crank and the arms. Suitable jaws are mounted upon the free ends of the arms.

3,410,432

**BOOM ATTACHMENT FOR A LIFT TRUCK**  
Richard W. Foss, Lyndhurst, and Frank B. Robb, Timberlake, Ohio, assignors to Jos. Dyson & Sons, Inc., Eastlake, Ohio, a corporation of Ohio

Filed Dec. 30, 1966, Ser. No. 611,525  
6 Claims. (Cl. 214-620)

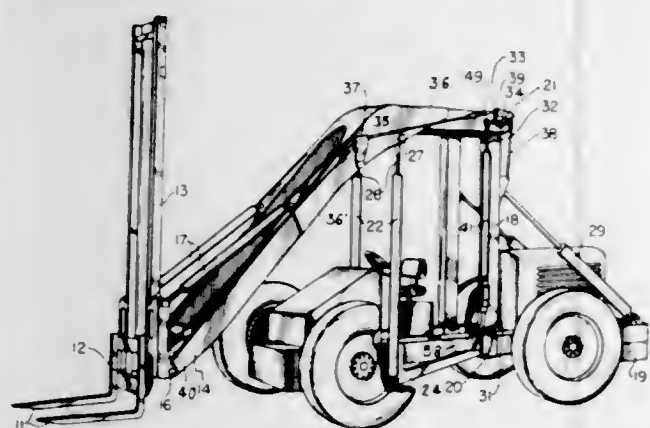


This invention discloses a universal boom attachment for lift trucks, which includes parts making the boom attachment easily attached to and removed from the lift frame of such trucks, which lift frame in certain trucks includes a frame member of one width and in a different lift truck, the comparable frame is of another width. The main purpose of the invention is to facilitate the attachment of the boom unit to any lift truck, irrespective of the width of the particular frame member to which the unit is attached. This is accomplished by using a reversible yoke together with hook members whose reach may be varied by reason of the construction thereof. By manipulating and reversing the position of the yoke and/or availing of the hooks whose reach variation is incorporated in the form thereof, substantially any lift truck may be availed of for support of the attachment thereon.

3,410,433

**SERVO SELF-LEVELING MECHANISM**  
Wilburn Kelly Brown, Morton Grove, Ill., assignor to Pettibone Mulliken Corporation, Chicago, Ill., a corporation of Delaware

Filed Dec. 23, 1966, Ser. No. 604,393  
5 Claims. (Cl. 214-763)



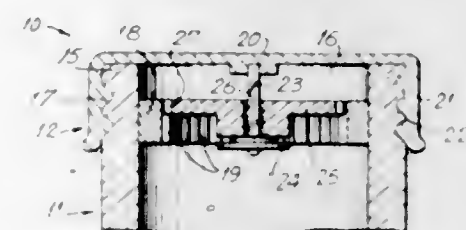
In a fork-lift truck with a pivoted boom, the fork or other loading engaging device can be automatically maintained level as the boom rises without the usual self-level-

ing linkage that would be objectionable with long booms. This is accomplished by controlling the tilt cylinders, provided for other reasons, for adjusting the angularity between the load engaging device and the boom, and controlling these cylinders automatically by a servo valve. The servo valve is controlled by cables or light linkages to supply hydraulic pressure fluid to the tilt cylinders as required to maintain the load engaging device level. The servo leveling can be overridden manually. To permit this, and for safety the servo control linkage includes means which yields when the limits of valve movement are reached. The invention is illustrated in connection with a boom carried by a reaching linkage, for which it is especially beneficial. Other details are disclosed.

3,410,434

**SAFETY CONTAINER CONSTRUCTION**  
Lawrence Simons, 1063 Shore Parkway, Brooklyn, N.Y. 11228

Filed July 20, 1966, Ser. No. 566,650  
8 Claims. (Cl. 215-9)

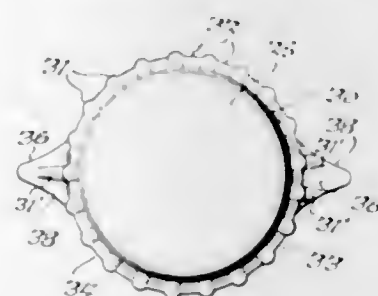


A receptacle provided with slidable gravity-biased means adapted to retain the closure portion of the receptacle against rotation relative to the container portion of the receptacle. Upon inversion of the receptacle, the said means is biased by gravity downwardly, thereby permitting relative rotation of said closure to the container portion.

3,410,435

**SCREW CROWN FOR A CONTAINER**  
John F. Koczynski, 1671 Sweeney Place, North Tonawanda, N.Y. 14120

Filed Feb. 8, 1967, Ser. No. 614,734  
5 Claims. (Cl. 215-39)



A crown cap having a series of spaced outwardly protruding ribs is press-fitted around a container having a threaded neck to form a discontinuous thread in the portions of the cap separating the ribs. The cap has a pair of integral wings at diametrical sides to provide finger-pieces for unscrewing the cap.

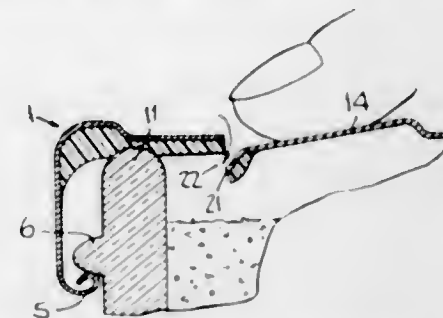
3,410,436

**CLOSURE CAP WITH VENTING MEANS**  
George J. Foss and Daniel D. Acton, Lancaster, Ohio, assignors to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware

Filed Sept. 23, 1966, Ser. No. 588,230  
10 Claims. (Cl. 215-40)

A closure cap provided with a vent means in its cover which may be opened by the finger pressure of a user to permit a controlled release of the pressure within the container and which will automatically close and reseal

the package upon release of the venting pressure. The vent comprises a scoreline, perforation or similar weakened portion in the resilient cover material of the cap and a gasket positioned on the underside of the cover beneath the weakened portion. The application of finger pressure to the weakened portion causes its edge to rupture the

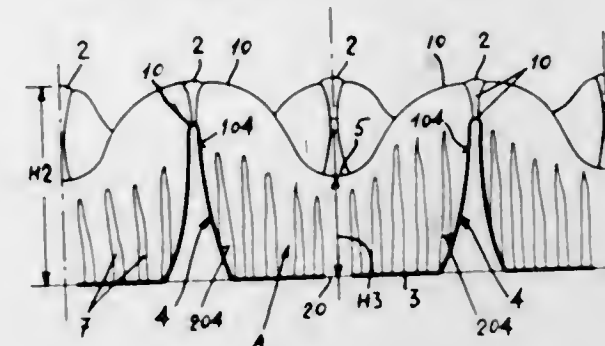


sealing gasket material thereby connecting the interior of the package with the atmosphere and releasing the pressure therein. Upon release of the finger pressure the resilience of the cover material will return the edge of the weakened portion into substantial alignment with the surrounding cover material and the severed gasket material comes together to reseal the package.

3,410,437

**TRAYS OR THE LIKE FOR PACKING AND CARRYING FRUIT OR LIKE ARTICLES OF ROUNDED SHAPE**

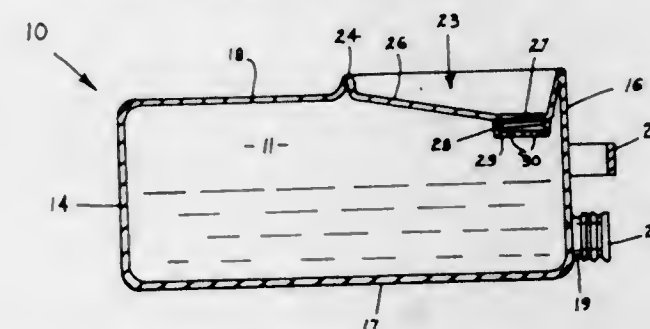
Guido Martelli, Nerio Martelli, and Francesco Martelli, all of 17 Via Calanco, Bologna, Italy  
Filed June 26, 1967, Ser. No. 648,835  
11 Claims. (Cl. 217-26.5)



Fruit packing tray of thermoplastic foil 0.1 to 0.3 mm. thick with fruit cells having triangular upper rims and nontriangular bases, the cell walls merging gradually over the height from triangular to nontriangular shape, the inscribing circle of the triangular top having preferably a radius  $R_1$  greater than the largest fruit radius  $R_2$ , the ratio  $R_2/R_1$  preferably being between 1.0 and 1.5.

3,410,438

**DRIP RECEPTACLE**  
Richard O. Bartz, 6016 Arbour Lane, Edina, Minn. 55424  
Filed Oct. 20, 1965, Ser. No. 498,489  
5 Claims. (Cl. 220-1)



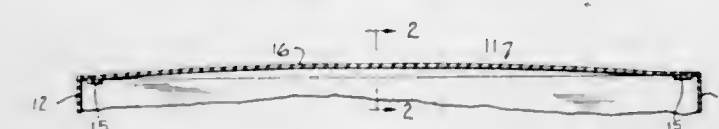
A container for collecting and storing liquid having a flat bottom and a flat lower end wall for selectively sup-

porting the container in prone and erect positions. A funnel-shaped section formed in the upper end of the top wall has a downwardly directed tubular threaded extension located contiguous to the upper end of the wall. The extension has a passage opened into the container adapted to be closed with a thread cap. An outwardly directed ridge surrounds the funnel-shaped section. The upper end wall has a handle and a normally closed drain opening.

3,410,439

**CROWNED ROOF FOR CARGO CONTAINERS**  
Alfred A. Burda and William F. Bottoms, El Sobrante, and Donn E. Brandow, Sacramento, Calif., assignors to Compass Container Company, Inc., Richmond, Calif., a corporation of California

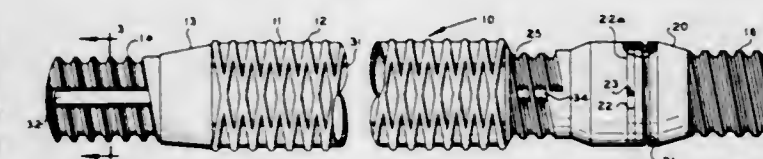
Filed Aug. 1, 1966, Ser. No. 569,343  
4 Claims. (Cl. 220-1.5)



A cargo container of the type used for bulk shipment and handling of various commodities is described which has a roof having a configuration preventing accumulation of water and yet which permits a similar cargo container to be stacked thereon. The roof is formed of a multi-layer wood laminate and has a flat marginal flange securing same to the side walls of the container. The central portion of the roof is gradually curved upwardly from the flange to a peak. The wood laminate is a flexible material which permits deflection of the roof to a flat configuration under the load of a similar cargo container stacked thereon and resilient return of the roof to the crown configuration on removal of the load.

3,410,440

**CONTAINER**  
William E. Thomas, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed May 12, 1966, Ser. No. 549,659  
6 Claims. (Cl. 220-4)



The invention relates to containers suitable for use in packaging of explosives which comprise a blow-molded tubular container having longitudinal reinforcing ribs associated with the threaded ends of said container, said ribs comprising interruptions of said threads and having substantially the same thickness as the valleys of said threads, and having longitudinal and helical or circular reinforcing ribs on the body of said container having substantially the same thickness as said container.

3,410,441

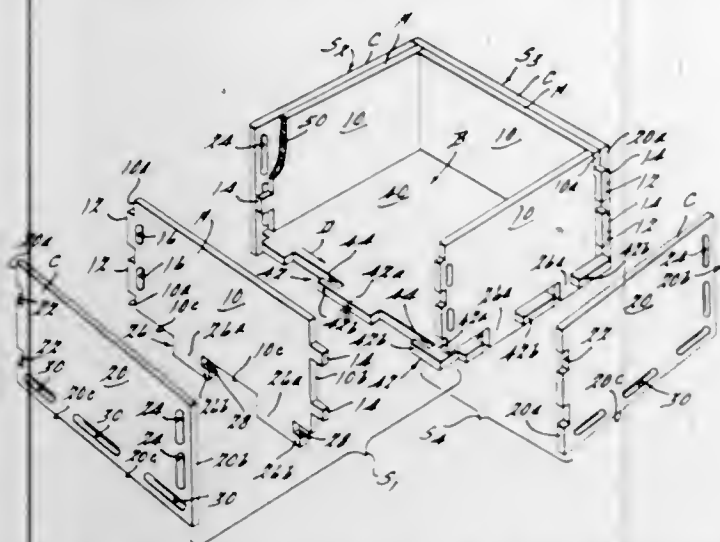
**CONTAINER**  
Jeff S. Rhyne, 537 E. Lafayette St., Marianna, Fla. 32446  
Filed June 29, 1966, Ser. No. 561,584  
8 Claims. (Cl. 220-4)

The method of forming and the construction for a container especially suitable for use as a drawer. A plurality of generally rectangular sides are provided with inner and outer panel members disposed in face-to-face



relationship to form a laminar construction. Means are formed integral with the panel members to interlock one

formable thermally insulating synthetic-resin foil, opposite ends of the rectangle being bent toward one another to impart a generally cylindrical tubular configuration to the body. The body is open at its opposite axial extremities, while the ends of the rectangle, which are turned toward one another, do not overlap and define a gap between them along a generatrix of the body.



**3,410,444**  
**CONTAINER HAVING SEPARATE CHAMBERS**  
**AND PROVIDED WITH MEANS FOR CON-**  
**NECTING SAID CHAMBERS**

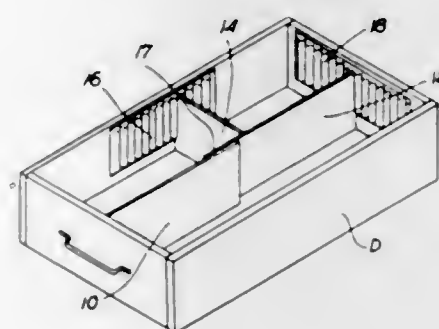
Bruno Morane, Paris, France, assignor to  
L'Oreal, Paris, France  
Filed Oct. 2, 1967, Ser. No. 672,078  
Claims priority, application France, Oct. 20, 1966,  
80,894  
4 Claims. (Cl. 220—20)



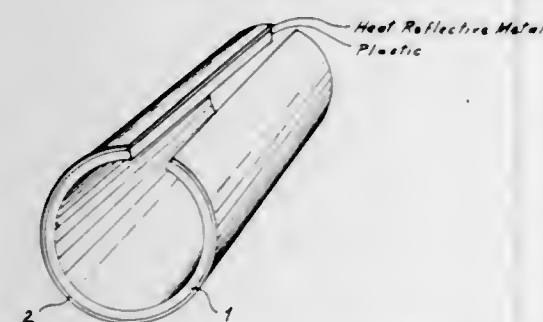
A container having two stoppered chambers for keeping two constituents separate, a connecting cylinder having an end slidable in the mouth of each chamber, and removable spacer means for preventing said cylinder from sliding far enough into said mouth to eject said stoppers until said spacer is removed at the moment of use.

**3,410,445**  
**DRAWER DIVIDERS**

Vivien Pilley, 7 Hill Road, St. Johns Wood,  
London 8, England  
Filed Oct. 11, 1966, Ser. No. 585,952  
Claims priority, application Great Britain, Oct. 15, 1965,  
43,917/65  
2 Claims. (Cl. 220—22)



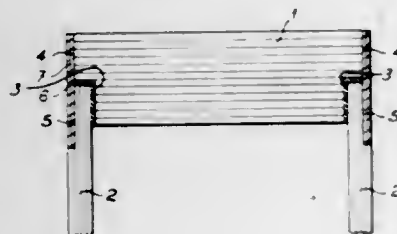
A set of parts for dividing a drawer having a plurality of dividers each of which is composed of sheet material and ribbed plastics material having a strip of plain plastics material coated on both sides with an adhesive.



Rigid thermally insulating filler bodies composed of aluminum foil laminated to rectangular plastically de-

**3,410,442**  
**TANK JOINT SEALS**

Henri Paul Vayson, Paris, France, assignor to Societe  
Generale de Constructions Electriques, et Mecaniques  
(Alsthom), Belfort, France, a body corporate of France  
Filed Oct. 15, 1965, Ser. No. 496,263  
Claims priority, application France, Oct. 15, 1964,  
2,556  
5 Claims. (Cl. 220—9)

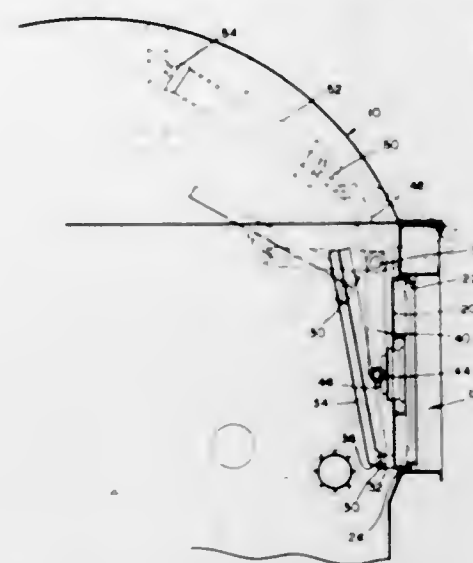


A sealed joint for a tank composed of laminated insulating material for containing a cryogenic substance comprises two wall portions of a laminated insulating material which are held together by synthetic resin adhesive along a ledge. The edge of the bonding surfaces is covered by a collar of glass cloth impregnated with synthetic resin and then polymerized in situ. One of the wall portions may be cylindrical and the other in plate form.

**3,410,443**  
**THERMALLY INSULATING FILLER**  
Albert Hofmann, Munich-Grunwald, Germany, assignor  
to Linde Aktiengesellschaft, a corporation of Germany  
Filed May 17, 1966, Ser. No. 550,846  
Claims priority, application Germany, May 18, 1965,  
L 43,633  
3 Claims. (Cl. 220—9)

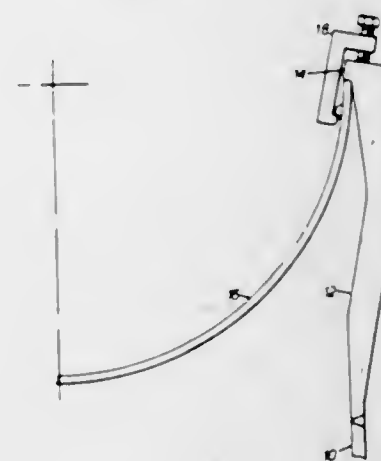
**3,410,446**  
**DOOR FOR PRESSURIZED TANK**  
Harold R. Wilcox, Maynard, Mass., assignor to Riggs  
& Lombard, Inc., Lowell, Mass., a corporation of  
Massachusetts

Filed Sept. 22, 1966, Ser. No. 581,290  
6 Claims. (Cl. 220—25)



A door is provided for use particularly with pressurized tanks. The door is mounted on the inside of the tank and adapted to span an opening formed through the tank wall. The door is pivoted on the end of an arm within the tank and the arm is drivingly connected to a power mechanism which rotates the arm from one position to the other. The edge of the door engages a fixed guide extending inwardly and to the side of the opening. The door is opened by first relieving the pressure in the tank and then operating the arm so that the door first swings inwardly and then swings and tilts away from the opening to provide clear access through the opening.

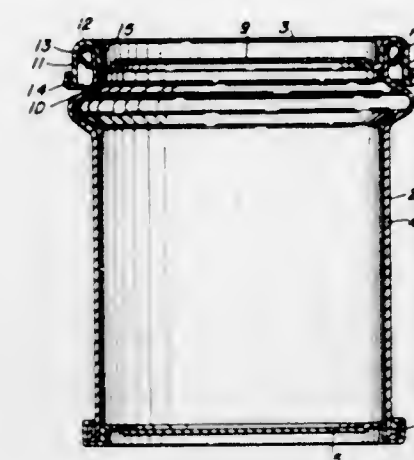
**3,410,447**  
**PRESSURE VESSEL CLOSURES**  
John McFarland, Norton-on-Tees, England, assignor to  
Imperial Chemical Industries Limited, London, Eng-  
land, a corporation of Great Britain  
Filed Nov. 16, 1966, Ser. No. 594,714  
Claims priority, application Great Britain, Nov. 18, 1965,  
49,083/65  
9 Claims. (Cl. 220—25)



A pressure vessel including an inwardly dished cover and, in the vessel mouth, a sealing face of smaller diameter than the cover, the cover being distortable elastically to permit insertion into the vessel mouth, is disclosed. Alternatively the closure includes a cover held in position by a retaining ring securable to the vessel shell and preferably a seal formed between the cover and both the vessel mouth and the retaining ring.

**3,410,448**  
**CONTAINER CONSTRUCTION**  
John J. Hudson, Chicago, Ill., assignor to The Sherwin-  
Williams Company, Cleveland, Ohio, a corporation of  
Ohio

Filed June 7, 1965, Ser. No. 461,938  
2 Claims. (Cl. 220—42)



A container having a removable and replaceable cover member held thereon by frictional engagement with the interior and exterior of the container.

**3,410,449**  
**CABINET CONSTRUCTION**  
Richard T. Cornelius, Minneapolis, Minn., assignor to The  
Cornelius Company, Anoka, Minn., a corporation of  
Minnesota  
Filed Feb. 20, 1967, Ser. No. 617,375  
3 Claims. (Cl. 220—81)



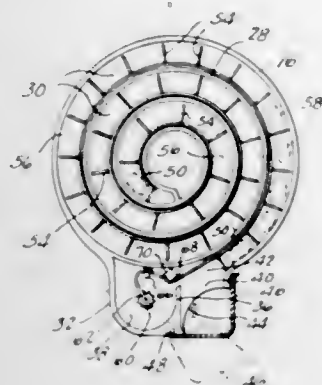
A refrigeration cabinet liner of pre-finished material includes a joint extending along three sides of each end wall by which the end walls are joined to the front, bottom and rear walls. The joint includes a marginal portion of U-shaped cross section in one sheet which receives a flexible strip of U-shaped cross section which receives a marginal portion of the other sheet, the strip having a fillet that engages the inner surface of both sheets.

**3,410,450**  
**SANITARY PILL DISPENSER WITH INDICATOR**  
Jerry A. Fortenberry, 936 N. Main St.,  
Columbia, Miss. 39421  
Filed June 16, 1967, Ser. No. 646,625  
10 Claims. (Cl. 221—7)

A sanitary pill container and dispenser with indicator comprising a small flat receptacle whose interior is partitioned to define a spiral chamber, a tape bearing pills at spaced intervals disposed in said spiral chamber and having one end secured to a spindle, an external operating knob connected to said spindle for winding the tape to successively move the pills thereon toward a release position and a dispensing aperture, and an indicator dial operatively connected to the tape to indicate the release of each successive pill. In one embodiment, the spiral tape is provided with upstanding flaps which together with the walls of the spiral chamber define individual pill holding compartments along the tape. In a second em-



bodiment, the tape is formed of superimposed strips sealed together at spaced intervals to define pill holding compartments between the strips, and the pills are released by separating the strips by operation of the external knob.

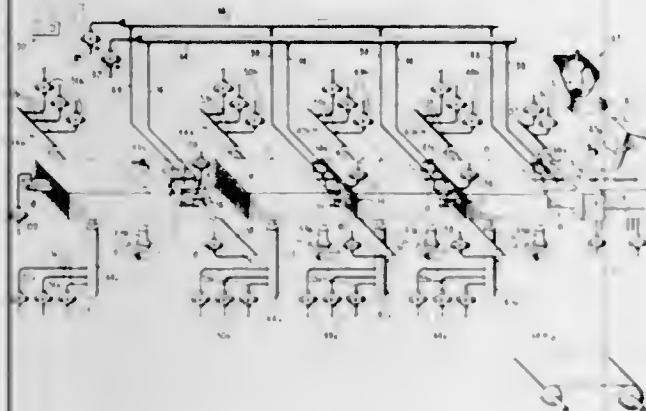


partments between the strips, and the pills are released by separating the strips by operation of the external knob.

3,410,451

**DOCUMENT RETRIEVAL SYSTEM**

Richard K. Wilmer, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York  
Filed June 5, 1963, Ser. No. 285,644  
15 Claims. (Cl. 221-13)



A device for selecting a record from any one of a plurality of storage bins arranged along a common path of travel and delivering it to a utilization station. Each one of a first bin and one or more intermediate bins is capable of vertical and lateral movement so that a selected card can pass through an empty record position in any intermediate bin in a straight line of travel to the utilization station.

3,410,452

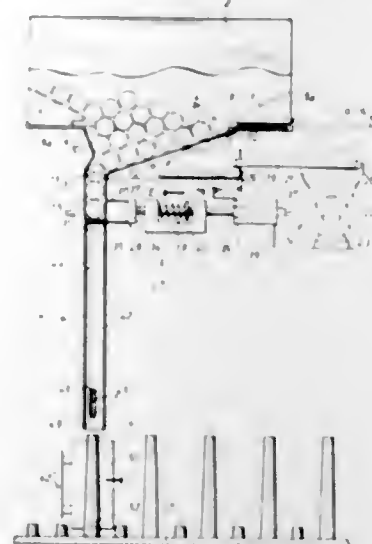
**APPARATUS FOR LOADING BOBBINS ON HOLDERS**

Wolfgang Igel, Ebersbach (Fils), Werner Weber, Esslingen, and Hansjuergen Walk, Ebersbach (Fils), Germany, assignors to Zinser-Textilmaschinen Gesellschaft mit beschränkter Haftung, Ebersbach (Fils), Germany  
Filed Nov. 4, 1966, Ser. No. 592,112  
Claims priority, application Germany, Nov. 6, 1965, Z 11,849

17 Claims. (Cl. 221-13)

An apparatus for loading bobbins has bobbin storage means including an outlet portion permitting passage of bobbins in substantially horizontal position. The apparatus also includes chute means associated with this outlet portion and dispensing means located between the outlet portion and the upper end of the chute means for successively releasing single bobbins from the storage into the chute means. The apparatus also includes operating means for successively operating the dispensing means set forth above, and sensing means for sensing a bobbin

holder when the same is transported to a position under the chute means, and for actuating the operating means

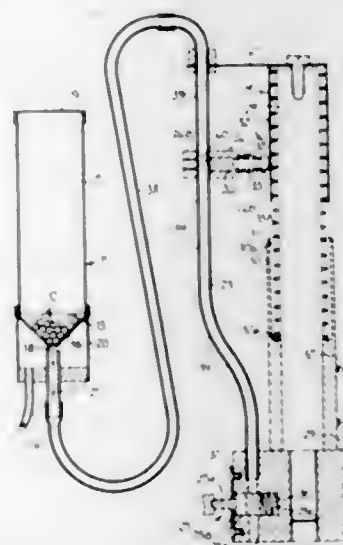


for operating the dispensing means so that a bobbin passing through the chute means is placed on the holder.

3,410,453

**BALL AND LIKE FEEDING**

Joseph Robert Christopher Lawrence, 92 Chaworth Road, West Bridgford, Nottingham, England  
Filed Apr. 10, 1967, Ser. No. 629,638  
2 Claims. (Cl. 221-175)



A mechanism to dispense a predetermined number of discrete article. The mechanism comprises of a hopper adapted to house the articles, air pressure means to agitate the articles positioned adjacent the outlet of the hopper. A tube guide member connected to the hopper outlet adapted to accommodate the articles as they are delivered from the hopper. Spaced valves are positioned adjacent the free end of the guide member and means to actuate the valves alternately whereby when the top valve is opened and bottom valve is closed, articles will flow into the zone between the valves and thereby supported by the bottom valve. Upon reversing the valves, the top valve will arrest the entry of articles into the valved zone and the bottom valve will allow the free flow of the articles from the valved zone.

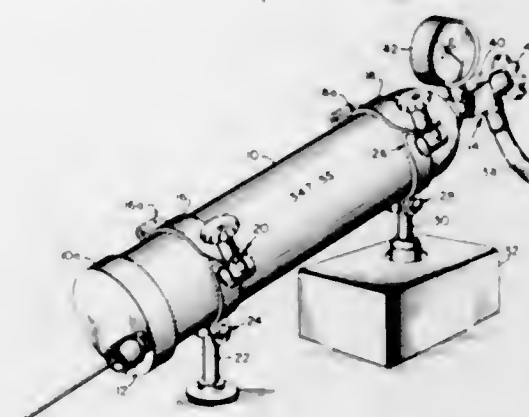
3,410,454

**WELDING ROD DISPENSER**

Warner H. Simon, 6511 Comanche Ave., Canoga Park, Calif. 91306  
Filed Oct. 22, 1965, Ser. No. 502,681  
4 Claims. (Cl. 221-204)

A welding apparatus for containing, dispensing, protecting, and identifying welding wire. Welding wire is

protected from contaminants by a pure inert gas. A container is provided wherein a plurality of welding rods is stored. The rear end of the container is inclined upwardly and a vibrator is used to keep the rods agitated. At the front of the container is an off-center opening covered by a diaphragm with expandable lips forming an aperture through which a rod will pass. These lips are eccentric to the longitudinal axis of the cylinder to prevent reinsertion of a rod through this end. The con-

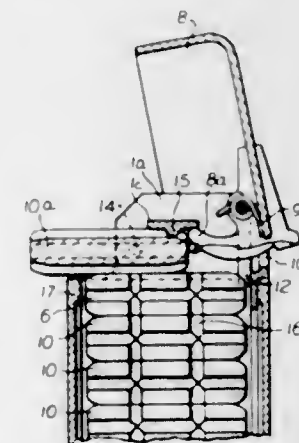


tainer is manually rotatable so that the lips of the diaphragm will receive rods at the top of the pile within the container as the top of the pile dwindles in use. Upon vibration of the container a rod in alignment with the lips, with the aid of gravity, will jiggle its way through the lips and be ejected. When vibration ceases the lips close and seal the container. In the alternative a fixed opening may be used and a cap closure placed over it to seal the container.

3,410,455

**DISPENSING DEVICE FOR TABLETS**

Eduard Haas, Vienna, Austria, assignor to Centromint Company (Establishment) Vaduz, Liechtenstein, a corporation of Liechtenstein  
Filed Dec. 13, 1966, Ser. No. 601,520  
Claims priority, application Austria, Dec. 30, 1965, A 11,775/65  
5 Claims. (Cl. 221-229)



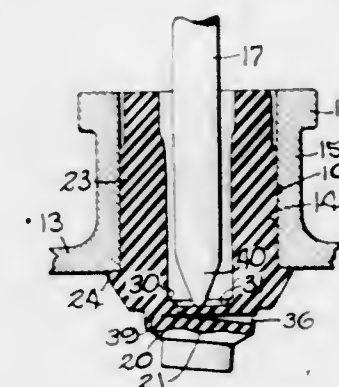
A dispensing device for tablets of longitudinal shape, particularly of prismatic configuration, comprising a housing adapted to receive a plurality of tablets in the form of a pile, the tablets constituting a first member, the housing having a bottom and an intermediate bottom disposed in the housing intermediate its open upper end and the bottom, spring means disposed between the intermediate bottom and the bottom of the housing and urging the intermediate bottom to its uppermost position, and the housing defining a tablet receiving range and in its upper position a dispensing range adapted to dispense the uppermost of the pile of tablets disposed substantially in the tablet receiving range. A cover member is provided

swingably mounted on top of the housing and the cover includes the sliding-out member entering the dispensing range upon swinging the cover member from its housing-closing position to its open position. The dispensing range of the housing is defined by at least three walls, constituting second members and dispensing laterally the uppermost of the tablets in the direction perpendicular to the direction of movement of the tablets in the pile and at least one of the members has at least one projection extending into the dispensing range of the projection and is adapted to be received by a complementary recess of the other of the members, so that having no recesses cannot be dispensed by the device.

3,410,456

**SEALING PLUG FOR A CONTAINER**

Arthur L. Johnson, Jr., Rockford, and Marlow W. Dodge, Loves Park, Ill., assignors to Johnson Enterprises, Inc., Rockford, Ill., a corporation of Illinois  
Filed May 22, 1967, Ser. No. 640,012  
8 Claims. (Cl. 222-82)



A plug made of resiliently yieldable rubber and formed with a thin membrane for sealing the tap hole of a beer keg. As the draw tube and the gas tube of a tap are inserted into the keg, the membrane is punctured and seals around the gas tube to establish a seal between the tap and the keg. A hinged flapper formed integrally with the inner end of the plug seals the puncture in the membrane and reseals the keg when the tap is removed from the keg.

3,410,457

**SEASONING FORK**

Chester A. Brown, 208 E. 60th St., Chicago, Ill. 60637  
Filed June 24, 1966, Ser. No. 560,197  
2 Claims. (Cl. 222-191)



A fork for barbecue grilling of meats and the like having a stem and tines with registering small diameter bores, a handle on the end of the stem and a squeeze bottle de-



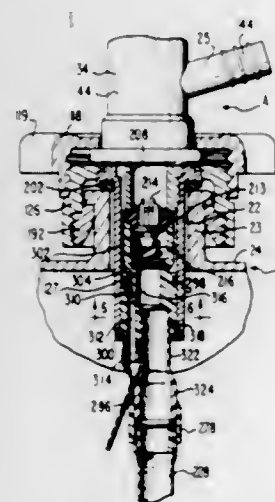
tachably connected to the handle and contoured to complete the handle. A plurality of squeeze bottles are supplied with each fork and will contain different fluid materials such as seasoning, tenderizers, oil or the like. The contents of the squeeze bottles are forceably ejected through the bores of the stem and tines to be discharged at the points of the tines for direct injection into the meat or the like food stuff receiving the tines. The squeeze bottles are equipped with caps to seal the contents thereof when not attached to the handle.

3,410,458

## BEER TAPPING DEVICE

Mack S. Johnston, Rolling Hills, Calif., assignor to Johnston Enterprises, Inc., East Kalispell, Mont., a corporation of Montana  
Continuation-in-part of application Ser. No. 587,627, Oct. 18, 1966. This application Jan. 25, 1967, Ser. No. 611,610

17 Claims. (Cl. 222-400.7)



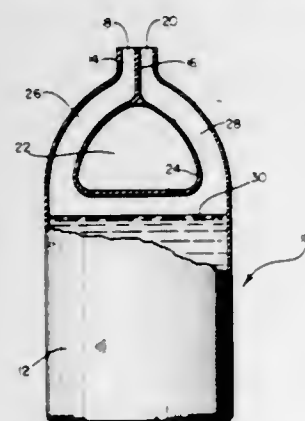
This invention relates to a beer tapping device and especially to an improved adapter for attachment in the beer outlet of a standard keg. It comprises a unit insertable from outside the keg and having a transition element forming a part of separate liquid and gas passageways. At least the liquid passage through the transition element has its lower end offset to take optimum advantage of the limited space available, while at the same time rendering the unit compatible with existing systems.

3,410,459

## BOTTLE STRUCTURE

William J. Conley, Brockton, Mass., assignor to Centerchem, Inc., New York, N.Y., a corporation of New York

Filed Oct. 24, 1966, Ser. No. 588,991  
2 Claims. (Cl. 222-479)



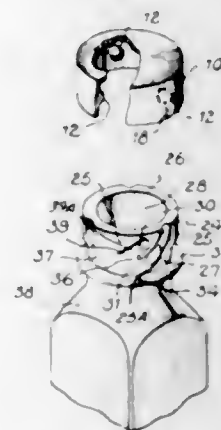
A bottle has a main chamber and a neck communicating with it. A central partition in said neck divides it into

two passages providing an inlet and an outlet therein. Said body has a hole extending laterally and centrally therethrough which provides a handle and divides the body opposite thereto into passages that communicate with the first two passages.

3,410,460

## DOUBLE SAFE CONTAINER CLOSURE AND MEASURING DEVICE

Arthur A. Musher, Silver Spring, Md., assignor to Arthur A. Musher & Associates, Silver Spring, Md.  
Filed May 2, 1967, Ser. No. 635,544  
11 Claims. (Cl. 222-490)

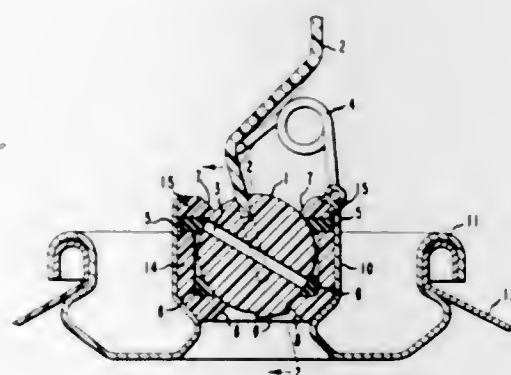


A closure and plug for a container is provided with elements inter-engaging with other elements on the mouth of the container to secure it against opening by young children. In one modification, the closure is provided with a combination safety plug and measuring device.

3,410,461

## SPHERICAL AEROSOL VALVE

Arthur Frederick Barker, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
Filed May 31, 1966, Ser. No. 553,778  
4 Claims. (Cl. 222-516)



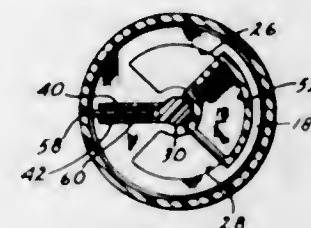
A self-sealing aerosol valve for automatically closing off the discharge opening from the atmosphere. The valve consists of a spherical member having a passageway through it, and is provided with means to alternately rotate the spherical member between an open position and a closed position. In rotating to the closed position, knife edges scrape discharge particles from the orifices of the passageway. In the closed position, the passageway orifices abut resilient members, forming an air-tight seal. The valve may be equipped with a dip tube by providing a second passageway in the spherical member from the interior of the aerosol can to the first passageway.

3,410,462

## SPRING BIASED DISPENSING CLOSURE

Donald W. Donovan, Glastonbury, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Apr. 18, 1967, Ser. No. 631,821  
8 Claims. (Cl. 222-516)

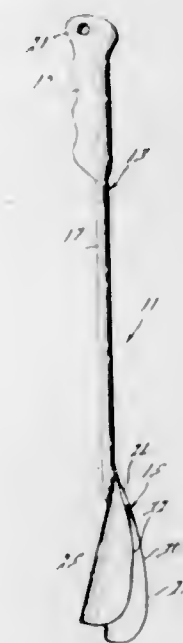


This invention relates to a dispensing closure and particularly to a dispensing closure of two-piece construction wherein an inner cap portion is engaged so as to close the open end of a container and an outer cap portion is adapted to be in movable overlying relation therewith and wherein spring means are provided which normally bias an opening within the outer cap in staggered position in regard to an opening formed within the inner cap so as to present the closure in a normal, non-dispensing closed position.

3,410,463

## SHOE HORN

James A. Carlos, 5801 Streefkerk, Apt. D-27, Warren, Mich. 48092  
Filed May 12, 1966, Ser. No. 549,592  
3 Claims. (Cl. 223-119)



A shoe horn for invalids who have difficulty reaching their feet. An elongated handle has a pair of spaced uninterrupted inner and outer covering portions so shaped and dimensioned as to receive a shoe heel stay and firmly grip it at its sides.

3,410,464

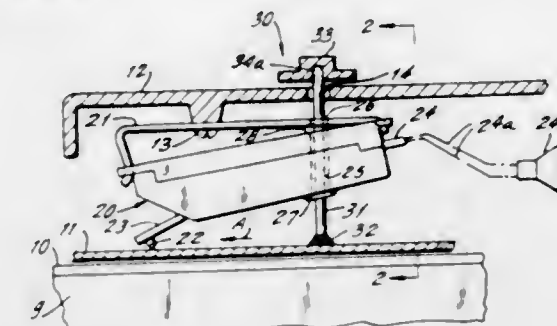
## PHONOGRAPH RECORD PLAYER CARTRIDGE WITH GROOVE CLEANING ATTACHMENT

Morris S. Shatavsky, White Plains, N.Y., assignor to Sonotone Corporation, Elmsford, N.Y., a corporation of New York

Filed Oct. 31, 1966, Ser. No. 590,605  
10 Claims. (Cl. 274-47)

1. In combination, a phonograph record player tone arm assembly comprising a tone arm and a cartridge assembly which has a stylus means attached thereto; and a record groove cleaner attachment therefor,

said groove cleaner attachment comprising a cleaning member and a shaft; said cleaning member being mounted on a first end of said shaft; said shaft extending into said aperture; said aperture being of such width that said shaft moves freely therein; first means for preventing said shaft from falling out of said aperture;



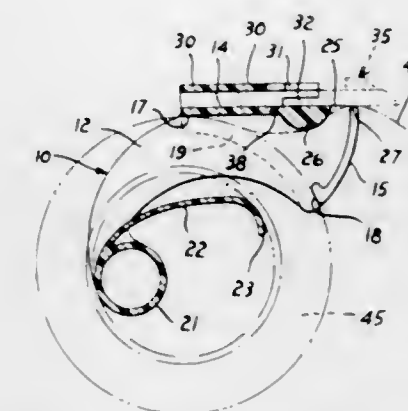
said stylus means and said cleaning member being positioned to be able to engage a phonograph record; said groove cleaner attachment being so positioned that when said stylus means and said cleaning member engage the phonograph record, said shaft is freely movable in said aperture, such that said cleaner attachment exerts a minimal downward force component on said tone arm assembly and thereby has a minimal effect on stylus means tracking force.

3,410,465

## TAPE DISPENSER

Alfred P. Costello, North Vancouver, British Columbia, Canada, assignor to Universal Patent and Development Ltd., Vancouver, Canada, a corporation of British Columbia, Canada

Filed Feb. 14, 1966, Ser. No. 527,334  
6 Claims. (Cl. 225-65)



A dispenser and cutter for a roll of pressure sensitive tape. A resilient retainer journaled the roll, and constructed to act as a brake preventing unrolling thus facilitating dispensing and cutting. A tape discharge opening of T shape for threading.

3,410,466

## APPARATUS AND METHODS FOR ADVANCING AND POSITIONING SHEET MATERIAL

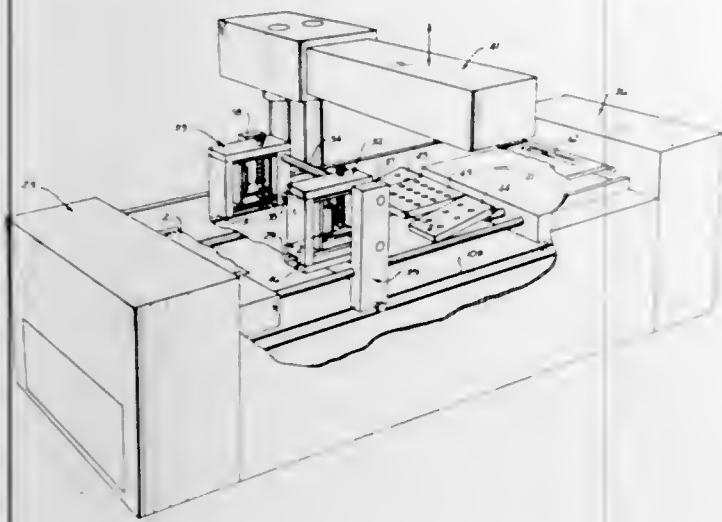
Richard A. Harris, High Point, and Henry V. Stanfield, Greensboro, N.C., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed June 14, 1966, Ser. No. 557,501  
10 Claims. (Cl. 226-6)

Apparatus and methods for advancing and positioning sheet material having guide holes therein which include



moving an expandable member into a guide hole, providing slack in the sheet material, expanding the member to grip the sheet material, and advancing the gripped



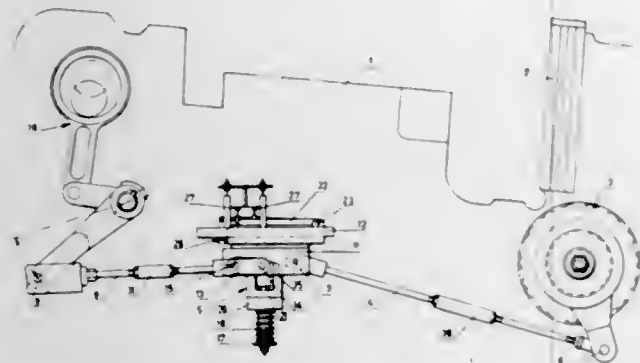
and slackened sheet material to a fabricating station. After advancement, the remaining slack is removed so that a fabricating operation can be accurately performed on the advanced material.

3,410,467

#### DEVICE FOR SUPPLYING A STRIP OF MATERIAL IN A CONTROLLED STEP BY STEP MOTION TO AN OPERATING STATION IN A MACHINE

Antonius Augustinus Flick, Rotterdam, Netherlands, assignor to Hunter Douglas International Ltd., Montreal, Quebec, Canada, a corporation of Quebec, Canada  
Filed Nov. 9, 1965, Ser. No. 506,944  
Claims priority, application Netherlands, Nov. 10, 1964, 6413061

8 Claims. (Cl. 226—32)



A device for supplying a strip of material in a controlled step by step motion to an operating station in a machine incorporating a correction mechanism having a slidable carriage connected to both the strip actuating mechanism and a pivoting rod system from the main drive, and which may be adjusted by cooperation of the carriage with abutment cams and connection through the pivoting rod system allowing uninterrupted continuous motion of the main drive.

3,410,468

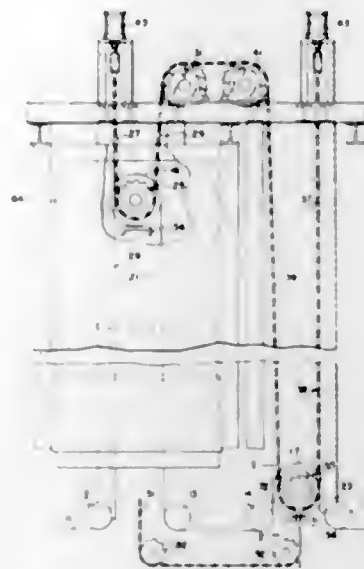
#### DANCER ROLL APPARATUS

Milan Zobenica, Parma, Ohio, assignor to Industrial Ovens, Incorporated, Cleveland, Ohio, a corporation of Ohio

Filed Aug. 3, 1966, Ser. No. 569,943  
5 Claims. (Cl. 226—44)

A dancer roll assembly for varping the loop length of tensioned strip material which includes at least one loop

maintaining roll. The roll is provided with a sprocket at each end and each sprocket is received in its own downwardly extending chain loop. The chain loop comprises a free-hanging take-up reach for varying the elevation of the dancer roll and a holding reach which extends



along a back-up member. The tensioned strip material is guided to and from the dancer roll so that the tension of the strip material biases the dancer roll and its sprockets against the holding reaches and their back-up members so that the sprockets and their holding reaches interact as rack and pinion linkages.

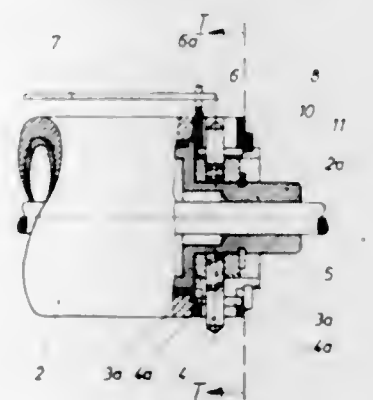
3,410,469

#### ARRANGEMENT FOR EFFECTING THE OPTIONAL IN-AND-OUT MOVEMENT OF GUIDE PINS ON TYPEWRITER PLATENS

Reinhard Deeg, Ellmendingen, via Pforzheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware  
Filed July 27, 1967, Ser. No. 656,394

Claims priority, application Germany, Aug. 6, 1966, St 25,728

6 Claims. (Cl. 226—81)



According to the arrangement, the guide pins are acted upon in the radial direction by springs, and project with their transversal bolts into the range of the curved tracks of two concentrically arranged cam plates. These curved tracks are congruent, and one of the cam plates can be turned so that the tracks can be brought into and out of congruence.

3,410,470

#### TAPE DRIVE MECHANISM

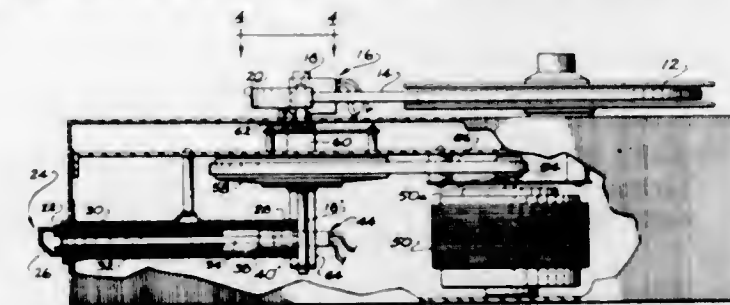
Robert G. Metzner, Beverly Hills, Calif., assignor to Rheem Manufacturing Company, New York, N.Y., a corporation of California

Filed Sept. 6, 1966, Ser. No. 577,495

3 Claims. (Cl. 226—109)

A tape drive mechanism, having an integral shaft in

which the shaft has a first capstan for driving a first tape, and a second capstan for driving a second tape, and a



flywheel located on said shaft intermediate of said capstans and driving both said capstans.

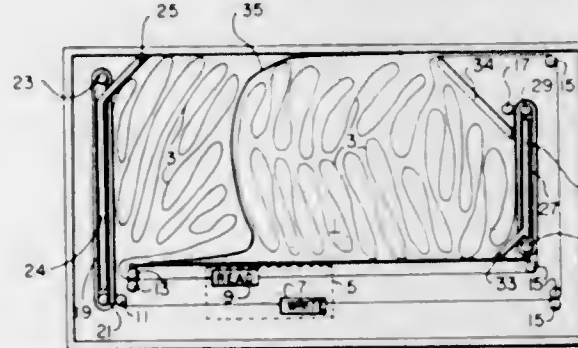
3,410,471

#### STORAGE DEVICE FOR A FLEXIBLE RIBBON

Donald S. Ironside, King of Prussia, Pa., assignor, by mesne assignments, to DASA Corporation, Andover, Mass., a corporation of Massachusetts

Filed Jan. 21, 1966, Ser. No. 522,261

5 Claims. (Cl. 226—200)



This invention specifically relates to a storage device wherein a predetermined length of a flexible ribbon, or tape, may be stored without using either a feed roll or a take-up roll. The storage device, herein contemplated comprises a volume (or area) sufficient to store a predetermined length of flexible ribbon, such volume (or area) being divided into two parts by a flexible separator so that the amount of the flexible ribbon stored in each of the two parts may be varied without changing, to any significant degree, the packing density of the flexible ribbon in either of the two parts.

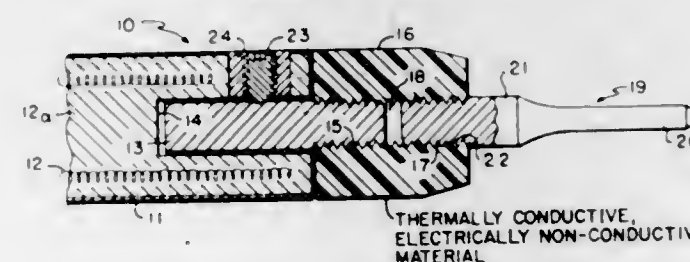
3,410,472

#### ELECTRICALLY ISOLATED COPPER SOLDERING IRON TIP

Carroll E. Weller and Ronald L. Dieselberg, Cincinnati, Ohio, assignors to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed Feb. 6, 1967, Ser. No. 614,293

9 Claims. (Cl. 228—51)

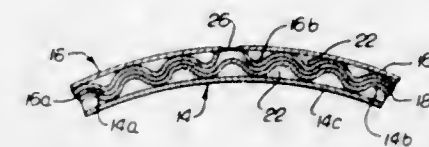


The invention embodies an electrically isolated copper soldering iron tip constructed by the insertion of a thermally conductive, electrically non-conductive spacer, such as beryllium oxide, between the heat-producing element and the working surface of the tip, for maintaining the advantages of a standard copper tip yet providing substantially complete electrical isolation to accommodate the soldering of delicate micro-electronic assemblies.

#### 3,410,473 CORRUGATED BODIES AND METHOD OF FORMING SAME

Robert M. Petrie, 8268 Fernadel, Pico Rivera, Calif. 90660

Filed Aug. 22, 1966, Ser. No. 573,963  
17 Claims. (Cl. 229—4.5)



A container is fabricated by intermeshing in the desired configuration at least two sheets, each having one substantially planar layer and one corrugated layer, assembled to define channels therebetween, and each reinforced with higher modulus filler in the channels, prior to intermeshing.

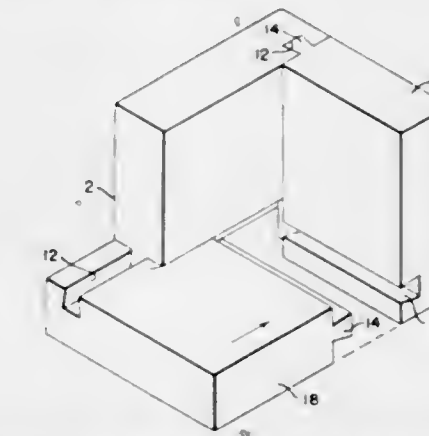
3,410,474

#### PROTECTIVE CORNER PAD FOR PACKING

Carl C. Keil, North Attleboro, Mass., assignor to Keil Brothers, Inc., Mansfield, Mass., a corporation of Massachusetts

Filed May 10, 1967, Ser. No. 637,458

6 Claims. (Cl. 229—14)



This invention relates to the packaging art and comprises a protective corner assembled from three identical modules to form a hollow corner shaped packaging article, the three modules being held together by dove-tailed tongue and groove joints, each module containing an extending dove-tailed tongue and a recessed dove-tailed groove, the tongue of the first module fitting into the groove of the second module, the tongue of the second module fitting into the groove of the third module, and the tongue of the third module fitting into the groove of the first module. The packaging material is made of a resiliently-compressible, shock-absorbing material such as, for example, expanded polyethylene. As a result of the compressibility of the material, the tongue and groove structure is enabled to be put together in locking manner so that the assembly is self-sustaining.

3,410,475

#### CONTAINER

Franklin J. Wagner, Kansas City, Kans., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

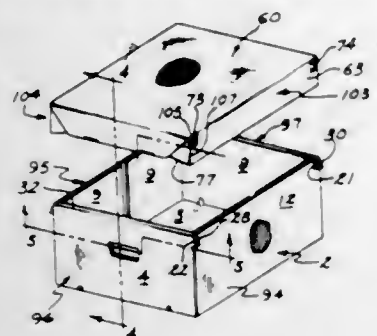
Filed July 18, 1966, Ser. No. 565,947

16 Claims. (Cl. 229—34)

A paperboard, waterproofed container for packaging food products packed in ice. The container comprises a container cover having lock tab receiving openings and a container body having integral lock tabs for engaging the openings. The container body is erected from a single, flat, substantially rectangular blank and is held together by integral end and side flaps. The cover can be fitted on

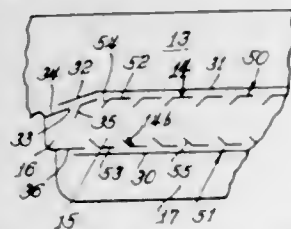


the container body with its top spaced above the body to accommodate extra ice. Then as the ice melts, the



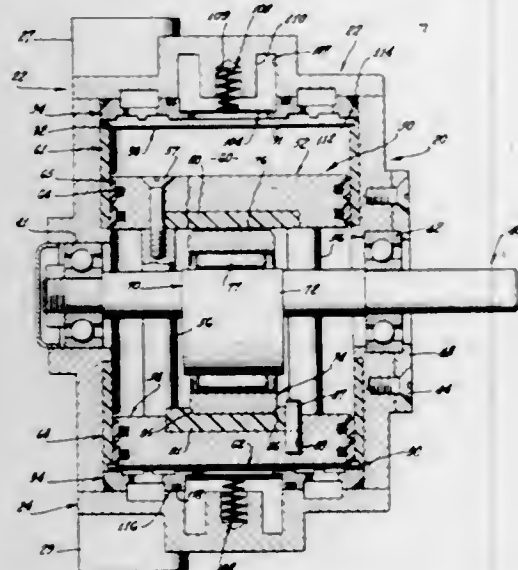
cover can move to a locked position with the tabs engaging the openings.

**3,410,476**  
**RECLOSABLE CARTON HAVING IMPROVED TEAR STRIP**  
Kenneth T. Buttery, Kalamazoo, Mich., assignor to Brown Company, a corporation of Delaware  
Filed May 11, 1966, Ser. No. 549,340  
10 Claims. (Cl. 229-51)



A carton including bottom, front, rear, and end wall panels, a cover, a tear strip having a tapered tab at one end provided in the cover defined by at least one severance line, and a cut score line spaced apart from the severance line to control tearing as the tear strip is removed.

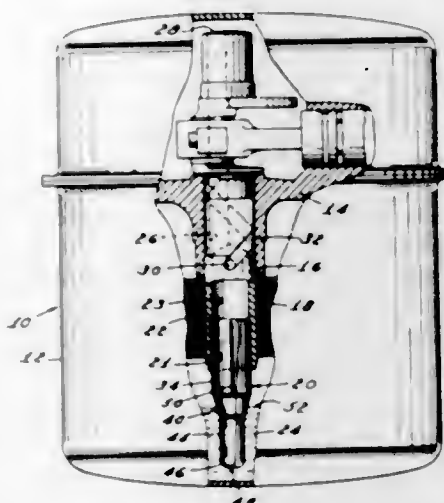
**3,410,477**  
**VACUUM PUMP**  
Ezra Dale Hartley, 2700 Jalmia Drive, Los Angeles, Calif. 90046  
Continuation of application Ser. No. 567,632, July 25, 1966. This application Jan. 31, 1968, Ser. No. 702,132  
11 Claims. (Cl. 230-185)



A double chambered vacuum pump, a piston in each chamber, the pistons being joined to move in unison, an eccentrically mounted means between the pistons for rollably reciprocating the pistons within their respective chambers and limiting piston rotation, passageways formed in the pump body for intercommunicating the chambers whereby to permit selective operation in parallel, two-stage or independent modes, and check valves in the inlet and outlet openings of each chamber including thin metallic members movable between open and closed po-

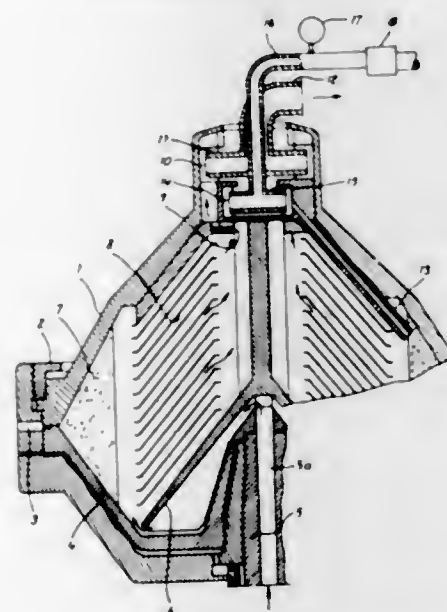
sitions and having closure peripheries which are large relative to their distance of movement between open and closed positions.

**3,410,478**  
**LUBRICATING DEVICE FOR A MOTOR COMPRESSOR**  
Arthur J. Gelsenhafer, Tecumseh, Mich., assignor to Tecumseh Products Company, Tecumseh, Mich., a corporation of Michigan  
Filed May 5, 1967, Ser. No. 636,476  
7 Claims. (Cl. 230-206)



A hermetic type motor compressor unit in which oil is centrifugally pumped from the oil-refrigerant sump of the compressor casing up into the oil passageway of a vertically oriented crankshaft by a vertically oriented oil pick-up tube secured to the lower end of the crankshaft. Due to its smaller diameter, the lower extremity of the oil pick-up tube has a surface velocity when rotated at crankshaft operational speed which is slow enough to prevent cavitation of the liquid oil and refrigerant in the vicinity of the inlet aperture of the pick-up tubes. If any cavitation does occur, it will occur farther up the tube where it is sufficiently remote from the inlet to prevent interruption of oil feed through the inlet.

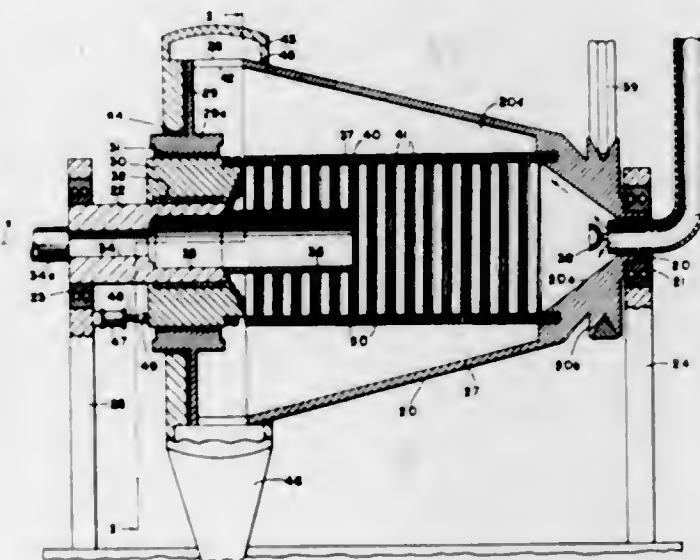
**3,410,479**  
**SLUDGE LEVEL INDICATING DEVICE FOR CENTRIFUGAL SEPARATORS**  
Carl-Goran Nilson, Tullinge, Sweden, assignor to Alfa-Laval AB, Tumba, Sweden, a corporation of Sweden  
Filed June 30, 1966, Ser. No. 561,890  
Claims priority, application Sweden, Aug. 23, 1965, 10,972/65  
3 Claims. (Cl. 233-20)



The rotor of the sludge centrifuge has a channel extending inwardly toward the rotor axis and opening at its

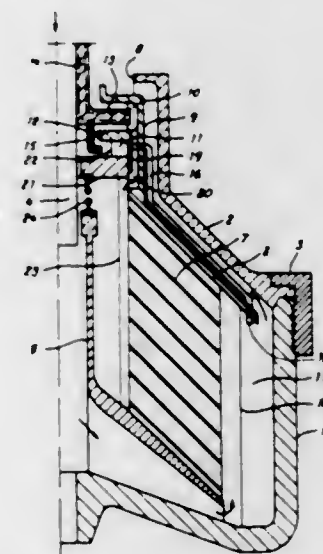
outer end into the peripheral space for accumulating sludge separated in the separating chamber of the rotor, and a stationary duct outside the rotor communicates with the inner end of this channel. Means are provided for generating a pressure pulse intermittently in the channel and also for indicating pressure changes in the stationary duct, and clogging of the channel with sludge is indicated by the resulting increased response of the pressure indicating means to the pressure pulses.

**3,410,480**  
**SLURRY CONCENTRATING APPARATUS**  
Burton A. Fierstine, Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York  
Filed May 5, 1967, Ser. No. 636,427  
11 Claims. (Cl. 233-20)



A slurry concentrator which comprises an axially compressible helical spring defining an open tubular structure with a slurry feed inlet at one end and an outlet for separated liquid at the other end, means for compressing the spring and closing the passages between the convolutions of the spring, means for then rapidly rotating the tubular spring structure around its essentially horizontal length axis to remove liquid from the slurry, and finally means for expanding the spring to open passages between the convolutions of the spring and discharge the concentrated slurry.

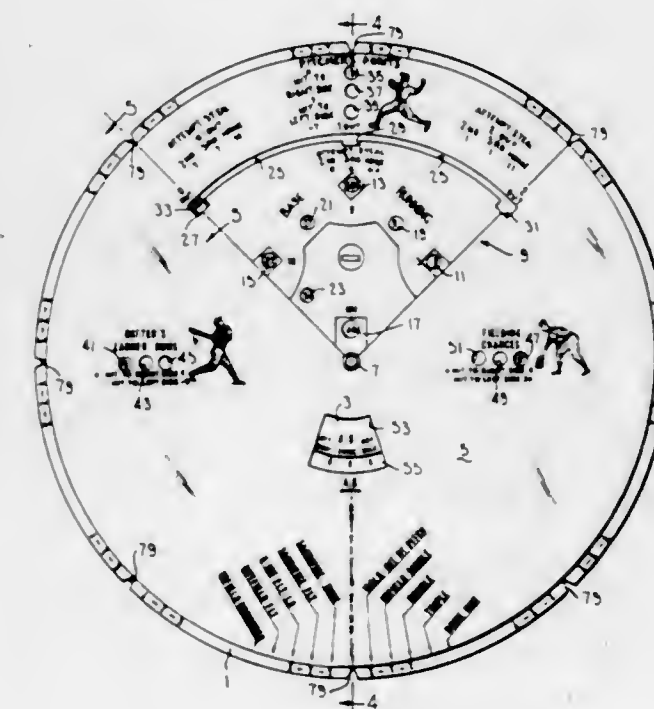
**3,410,481**  
**CENTRIFUGE**  
Bengt Ingmar Dahlberg and Jarl Gregar Volle, Tullinge, Sweden, assignors to Alfa-Laval AB, Tumba, Sweden, a corporation of Sweden  
Filed Dec. 1, 1966, Ser. No. 598,247  
7 Claims. (Cl. 233-29)



1. A centrifuge for separating two liquids from each

other while maintaining a substantially constant interface between the liquids, the centrifuge comprising a centrifugal rotor having an inlet for a mixture of the two liquids and also having two outlets for the respective separated liquids, one of said outlets being of the level maintaining type and the second outlet being of the type adapted to be throttled, and a movable wall for throttling said second outlet and subjected on opposite sides in the rotor to the pressures, generated by centrifugal force, of liquid columns of different size and of substantially the same liquid.

**3,410,482**  
**DEVICE FOR EVALUATING BASEBALL PLAYERS**  
Elmer G. Strum, 3108 N. Twelve Oaks Drive, Peoria, Ill. 61604  
Filed Oct. 18, 1965, Ser. No. 497,129  
5 Claims. (Cl. 235-88)



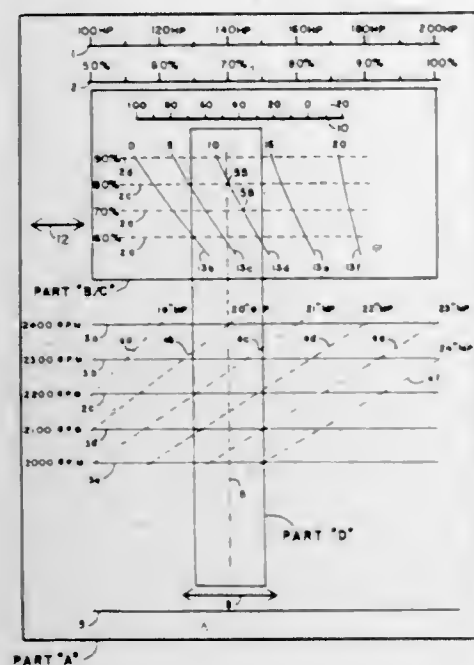
A device for use in the practical evaluation of the batting, base running, pitching and fielding ability of baseball players in accordance with a system based upon statistical analysis consists of a first circular member mounted on a central support, a second circular member mounted above the first member and rotatably movable with respect to the first member, and a third circular member mounted above the first and second members and rotatably movable with respect to the first and second members. By rotating or moving the second and third members relative to the first member for each play of a baseball game, the various values representative of a player's skill as a batter, fielder, base runner or pitcher can be derived from the device and the player's skill then evaluated on a more comprehensive basis than is now available.

**3,410,483**  
**HORSEPOWER COMPUTER**  
Jimmie S. Hogan, 4501 Creekbend Drive, Houston, Tex. 77035  
Filed Apr. 19, 1967, Ser. No. 632,518  
13 Claims. (Cl. 235-89)

A device for determining a variety of combinations of engine speed and manifold pressure which can be utilized to achieve the production by an engine of a specific horsepower or percentage of maximum horsepower under variable conditions of air temperature and pressure altitude, and variable desired air fuel ratios; the device comprising a plurality of elements movable with respect to each



other, indicia indicative of engine functions being fixed with respect to each other and indicia representative of



variable operating conditions being movable relative thereto.

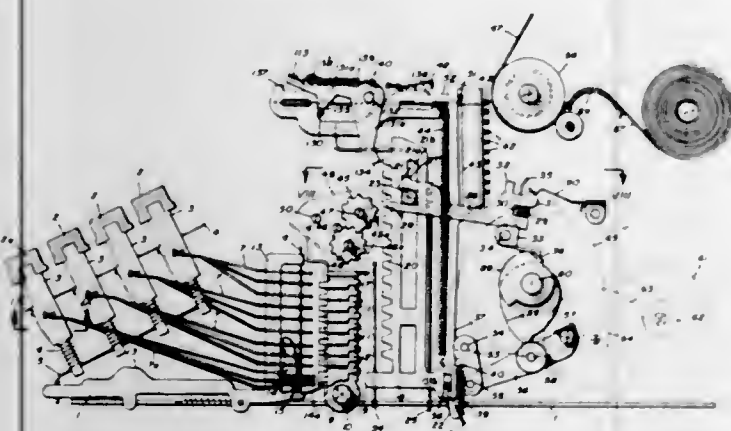
3,410,484

**TENS TRANSFER MEANS FOR PRINTING ADDING MACHINE WITH REDUCED KEYBOARD AND SIMPLIFIED ACTUATING MECHANISMS**  
Gian Piero Barozzi and Giancarlo Horeschi, Tokyo, Japan, assignors to Ricoh Company Ltd., Tokyo, Japan

Continuation-in-part of application Ser. No. 307,179, Sept. 6, 1963. This application July 23, 1965, Ser. No. 474,401

Claims priority, application Italy, Sept. 25, 1962, 27,468/62

3 Claims. (Cl. 235—137)



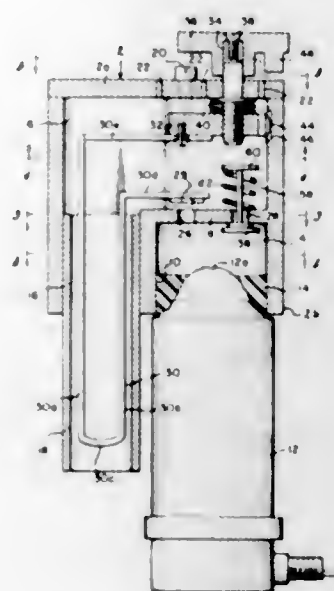
An adding machine with a reduced keyboard having means for setting up digits and a setting up carriage actuated by such means. A set of racks have their vertical travel restricted by the carriage. Tens transfer means are associated with the racks and a totalizer having gears cooperates with such racks. The tens transfer means comprises a slide slidable substantially horizontally associated with the gears and the vertical racks. The racks each have a slot with step stops spaced apart by a distance corresponding to one tooth of a rack so that in respect of two different positions taken up by said racks in a straight line motion they can make a return shift differing vertically by a distance equal to a rotation of one tooth of said gears.

3,410,485  
**TEMPERATURE AND VACUUM RESPONSIVE CONTROL VALVE**

Timothy J. Sullivan, Butte, Mont., assignor to Sullivan Valve and Engineering Company, Butte, Mont., a corporation of Montana

Filed Feb. 21, 1966, Ser. No. 529,123

7 Claims. (Cl. 236—61)



Temperature and vacuum responsive control valve controlling operation of the steam radiator from room temperature. Bimetal strip automatically closes the discharge of the air valve when the room temperature is up and vacuum breaker will automatically open when steam pressure is down or vacuum exists in the radiator allowing air to enter the radiator, and automatically proportions the radiator to the room temperature. Without this vacuum, steam would automatically fill the radiator even though room temperature was up and bimetal strip has closed the valve from temperature.

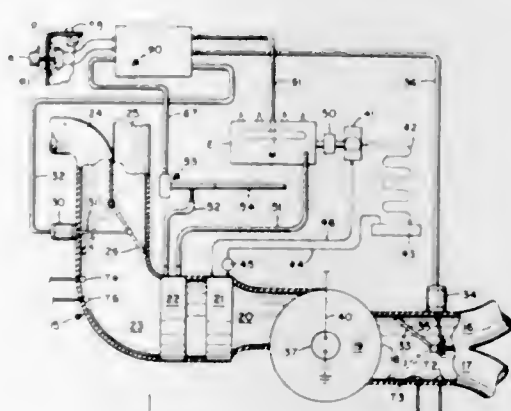
3,410,486

**CONTROL SYSTEM FOR HEATING AND COOLING APPARATUS**

Gerald Loyd Rodgers, Worthington, Ohio, assignor to Ranco Incorporated, Columbus, Ohio, a corporation of Ohio

Filed Nov. 10, 1965, Ser. No. 507,133

9 Claims. (Cl. 236—68)



A system for controlling the air temperature in a space into which tempered air is discharged from air tempering means. The system includes control means regulating the temperature of air discharged from the tempering means having a thermally responsive element which is operable to govern the amount of heat transfer between tempering means in the air and circuitry for controlling the thermally responsive element in response to sensed air tempera-

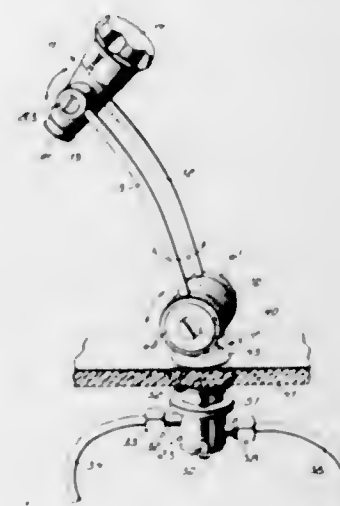
ture in the air space. The control circuitry includes first and second signal circuits which produce signals in response to sensed air temperatures and means permitting only one of the circuits to control operation of the control circuitry.

3,410,487  
**FAUCET**

Robert W. Hyde, Crystal River, Fla., assignor to Pryde, Inc., Cincinnati, Ohio, a corporation of Ohio

Filed Aug. 29, 1966, Ser. No. 575,865

10 Claims. (Cl. 239—26)



A hot-cold water faucet in which the temperature of the water, the volume of the water, and the direction of the flow of water issuing from the spout may be controlled by grasping and manipulating a single knob that is on the spout. The faucet includes a base that is adapted to be mounted on the rear deck of a sink. Two lines, which may be made in one integral piece, one for hot water and one for cold water, extend from the base to the spout. Provision is made for raising and lowering the spout relative to the base which controls the volume of water issuing from the spout. Turning the knob on the spout controls the temperature of the water issuing from the spout. Provision is also made for swinging the spout from side to side about a vertical axis through the base. Additionally, provision is made for rotating the spout about a horizontal axis extending through it. Thus, by rotating the spout around its horizontal axis, by raising and lowering the spout, and by swinging the spout from side to side the stream of water issuing from the spout may be directed into any part of the sink. Additionally, the spout is arranged such that as it is rotated about its own horizontal axis to direct a stream of water such that it might otherwise escape the bowl, the stream is shut off so that no water can escape the bowl.

3,410,488

**AUTOMATIC PERFUME ATOMIZER**

Sadakichi Sugimura, 11 3-chome, Senbon-Midori-cho, Numazu-shi, Japan

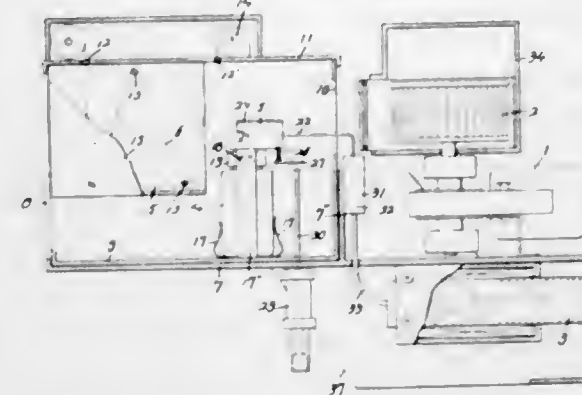
Filed Dec. 20, 1965, Ser. No. 514,949

Claims priority, application Japan, Dec. 22, 1964, 39/72,078; July 28, 1965, 40/45,303, 40/45,304; Sept. 16, 1965, 40/56,325

9 Claims. (Cl. 239—55)

A perfume atomizing device by which a perfume spray is dispersed comprising a casing formed with a discharge outlet, means for holding a supply of perfume formed with the dispersion outlet within the casing, and a lid member for covering and uncovering the dispersion outlet. An electric operated air pump is provided for sucking perfume from the perfume holder through the dispersion outlet when the lid member uncovers the dispersion outlet. Means are provided for feeding an electric signal discon-

tinuously to the air pump for discontinuously operating the air pump and simultaneously feeding an electric signal to actuate the lid member, so as to uncover dispersion outlet discontinuously and simultaneously when the air pump is operated. A fan is provided for continuously supplying



currents of air adjacent the dispersion outlet for carrying and discharging the sucked perfume through the discharge outlet to outside of the casing, and a porous material is disposed between the discharge outlet and the dispersion outlet.

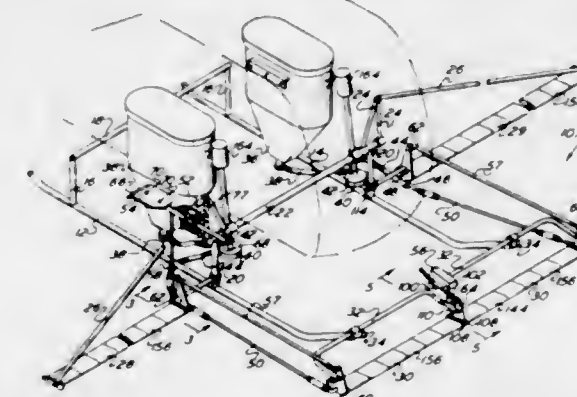
3,410,489

**AUTOMATICALLY ADJUSTABLE AIRFOIL SPRAY SYSTEM WITH PUMP**

John E. Waldrum, Ambler, Pa., assignor to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware

Filed Jan. 5, 1967, Ser. No. 607,488

9 Claims. (Cl. 239—171)



An automatically adjustable airfoil spray system with pump so constructed that the position of the spray boom can be changed automatically in accordance with changes in wind direction. This is accomplished by means of a vane that is sensitive to the wind direction such that changes in wind direction will actuate a microswitch device which in turn will actuate a motor to bring about a pivoting of the spray boom to align the boom with the new wind direction. It is preferred that the spray boom be in airfoil form and be composed of detachable segments to achieve flexibility and ease of repair. The material to be sprayed is pumped to the spray boom from storage tanks with the liquid level in the storage tanks being maintained at all times below the level of the pump motor, and in this way it is not necessary to provide liquid seals for the pump motor.

3,410,490

**AGRICULTURAL CHEMICAL SPRAYING**

Basil Smith, Lubbock, Tex., assignor to W. R. Wood, Lubbock, Tex.

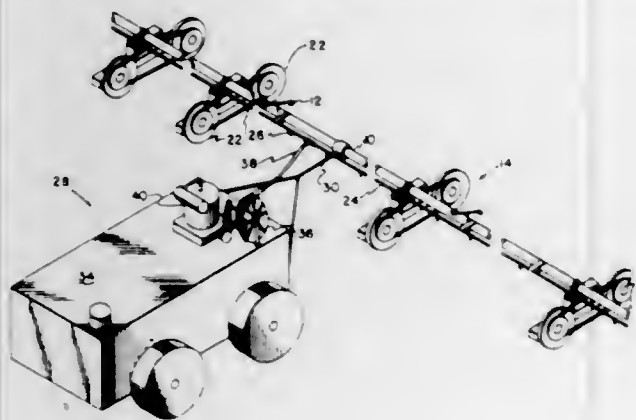
Substituted for abandoned application Ser. No. 323,371, Nov. 13, 1963. This application Aug. 1, 1967, Ser. No. 661,161

1 Claim. (Cl. 239—212)

1. A combination irrigation system and agricultural chemical applicator system comprising: an elongated pipe



adapted to carry water under pressure and having a plurality of sprinklers thereon for sprinkling water onto a field, a plurality of vehicles attached to and supporting the pipe for moving the pipe over the ground in a transverse direction with respect to the longitudinal axis of said pipe, means for propelling said vehicles including an elongated shaft extending between vehicles whereby all vehicles may be driven from a common power source, an elongated tube of smaller diameter than said pipe attached to said pipe and supported thereby, said tube extending the full length of said pipe, a plurality of spray nozzles on said tube, means attached to said pipe and



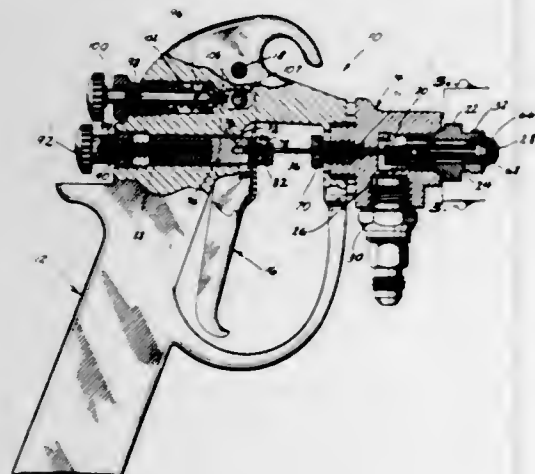
vehicles for supplying agricultural chemicals to said tube to be dispensed from said spray nozzles on said tube, said last mentioned means including a trailer adapted to be towed along behind said pipe and vehicles, container means for agricultural chemicals on said trailer, a motor drivingly connected to a pump mounted on said trailer, said pump having an intake connected to said tank and an output conduit connected to said tube, the combination irrigation system and agricultural chemical applicator system being cooperatively associated whereby the two systems may be operated independently of each other and whereby agricultural chemicals may be quickly sprayed onto the field wherein the irrigation system is located.

3,410,491

## VALVE MEANS

Jerry P. Malec, Omaha, Nebr., assignor to Tri-Matic Equipment Co., Omaha, Nebr., a corporation of Nebraska

Filed Aug. 26, 1966, Ser. No. 575,353  
16 Claims. (Cl. 239-526)

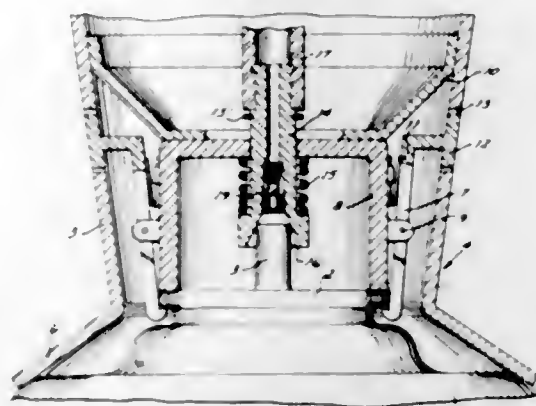


A device having a chamber with inlet and outlet openings and a valve member for opening and closing the spray outlet opening. An actuating member extends through a seal into the high pressure valve chamber for engagement with the valve member through a lost motion connection. A spring may be employed in the valve chamber in the lost motion connection to assist in snapping the valve member to an open position.

3,410,492

## HAIR SPRAY APPLICATOR

George B. Douglas, 550 40th St., and Roland C. Eberhardt, 753 W. 8th St., both of San Pedro, Calif. 90731  
Filed Jan. 28, 1966, Ser. No. 523,666  
2 Claims. (Cl. 239-573)

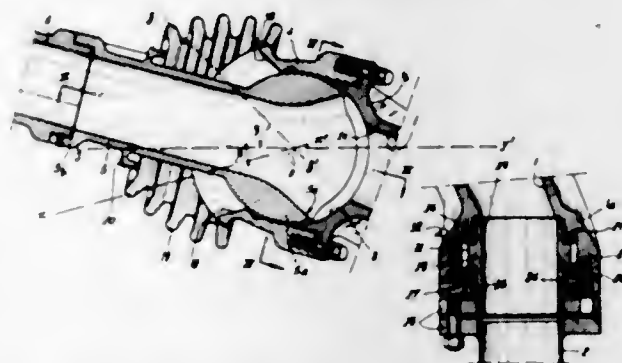


In a hair spray applicator where a flexible conduit is connected to the aerosol can by suitable means, this flexible conduit extends to a hand controlled nozzle. The conduit fills with fluid, and if the conduit is maintained in a fluid filled condition and under pressure it will not congeal or clog during the intervals it is not in use. Also when the applicator is removed from the aerosol can the flexible conduit is maintained in a filled condition because of a check valve which prevents fluid from flowing out of the conduit during the time that it is disconnected from the aerosol can.

3,410,493

## FIXED JOINTED NOZZLES

Guy Dion-Biro, 82 Rue de Silly, Boulogne-sur-Seine, France  
Filed May 3, 1965, Ser. No. 452,526  
Claims priority, application France, May 5, 1964, 973,315  
1 Claim. (Cl. 239-587)



An adjustable nozzle wherein a pair of tubes are connected at adjacent ends for limited universal tilting movement to each other in such a manner so as to provide in each position of the tubes relative to each other unrestricted, substantially turbulence-free flow of fluid therethrough, and in which one of the tubes is sealingly connected at its other end to a socket so as to permit this one tube to turn easily about the axis of the socket.

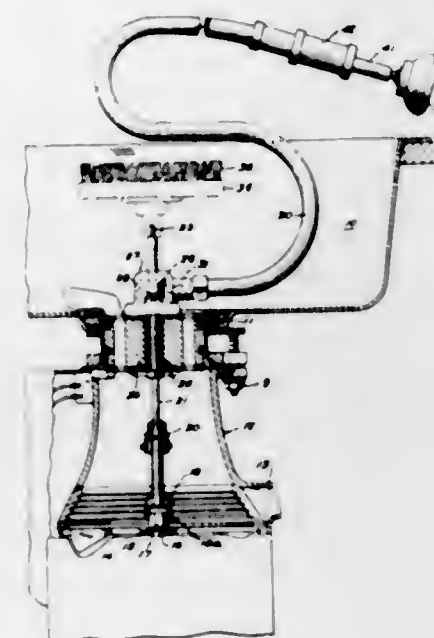
3,410,494

## DISHWASHER ATTACHMENT FOR GARBAGE DISPOSAL UNIT

Brooks Walker, Jr., 1280 Columbus Ave., San Francisco, Calif. 94133  
Filed Oct. 23, 1965, Ser. No. 502,951  
3 Claims. (Cl. 241-46)

A power takeoff device driven by the nut which secures the rotor to the motor of a garbage disposal unit mounted under a sink. A centering device is slidably mounted in

the conduit connecting the unit and sink and rotatably supports a shaft. One end of the shaft is provided with a socket congruent with the shape of the nut. The socket is provided with a flared opening to aid in the engagement of socket and nut during assembly since the parts are un-

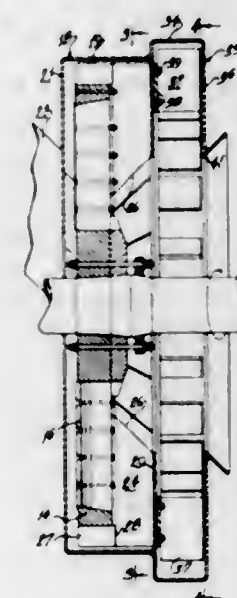


seen. In one form of the invention a universal joint connects the socket to the shaft in order to provide for misalignment between the rotating centers of shaft and nut. The other end is shaped to drive a selected auxiliary device and is provided with a takeoff in the form of a flexible shaft.

3,410,495

## WOOD CHIPPER

Henrik J. Eklund, Pittsfield, Mass., assignor to Beloit Corporation, a corporation of Wisconsin  
Continuation-in-part of application Ser. No. 318,865, Oct. 25, 1963. This application July 22, 1966, Ser. No. 567,218  
3 Claims. (Cl. 251-278)



1. A wood chipper embodying a rotary disc having angularly spaced knives and angularly spaced passageways therethrough together with means to feed wood to one side of the disc whereby the wood is cut into chips which pass through the passageways to the other side of the disc;

(a) a circular housing surrounding said other side of the disc,

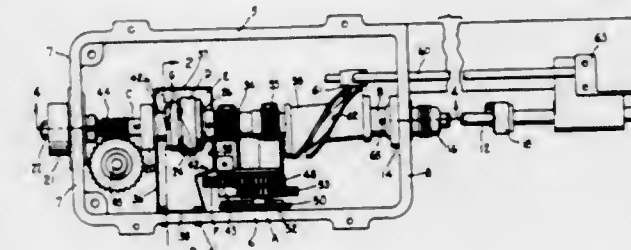
- (b) angularly spaced blades carried by said other side of the disc and disposed to rotate within said circular housing with a relatively close fit to convey chips therethrough,
- (c) an annular plate mounted for rotation with said disc at the opposite sides of said blades which rotate within said circular housing from the sides thereof nearest said disc,
- (d) an involute housing surrounding the opposite side of said annular plate from the side thereof nearest said disc,
- (e) other angularly spaced blades carried by said annular plate and disposed to rotate within said involute housing to circulate air therethrough,
- (f) a tangential outlet for said circular housing for discharging chips therefrom,
- (g) a circumferential outlet for said involute housing adjacent and alongside said tangential outlet for discharging air therefrom, and
- (h) a discharge conduit communicating with said tangential outlet and said circumferential outlet to receive chips discharged through said tangential outlet and air discharged through said circumferential outlet whereby the air discharged through said circumferential outlet aids in conveying the chips through said discharge conduit.

3,410,496

## STRAND WINDING MACHINE LUBRICATING DEVICE

William F. Isbell, 313 Lyonswood Drive, Anderson, S.C. 29621, and James E. Grant, Rte. 1, Townville, S.C. 29689

Filed Apr. 10, 1967, Ser. No. 629,682  
4 Claims. (Cl. 242-27)



An automatic bobbin winding machine having an enclosed casing containing a clutch and other working mechanisms with means for transferring a lubricant from the bottom of the casing to the clutch, and other mechanisms, the clutch having passageways for conveying the transferred lubricant to the interior of the clutch.

3,410,497

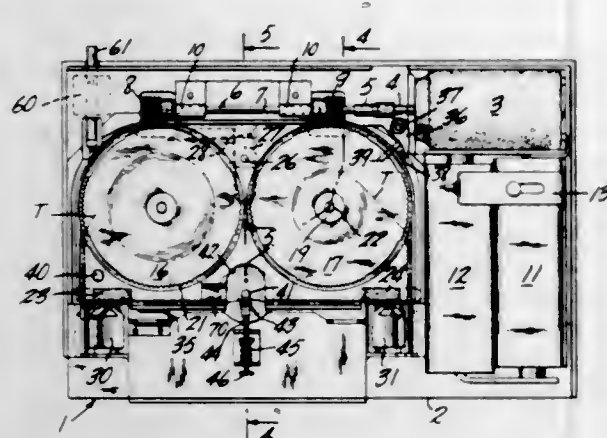
## RIM DRIVEN REELS WITH SPEED CONTROL MEANS

Miguel Lopez-Henriquez, 240 W. 73rd St., New York, N.Y. 10023  
Filed July 18, 1963, Ser. No. 295,925  
3 Claims. (Cl. 242-55.13)

A tape recorder having a motor on a chassis of the recorder and a toothed driving member. A cartridge for a pair of tape-carrying reels rotatably supports the reels. Each reel has a toothed rim. The cartridge is movably mounted on the chassis for movement to a first driving position in which the toothed driving member is in driving engagement with the toothed rim of one of the reels and to a second driving position in which the driving member engages the rim of the other reel to wind tape from one reel to the other. Sensing means senses the lineal speed of the tape and a tape-speed control means respond



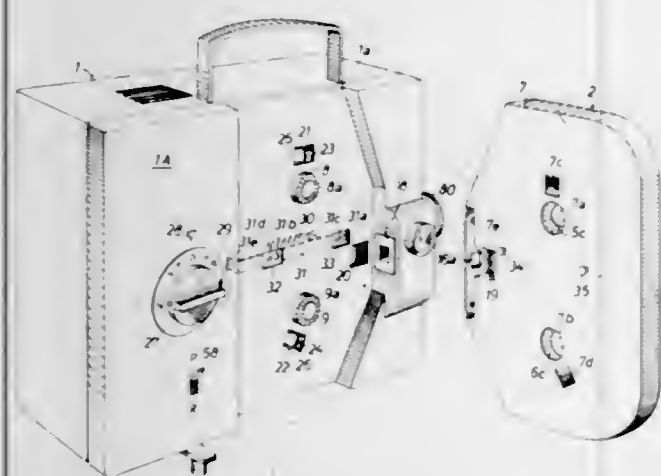
to the sensing means for controlling the speed of the motor to drive the reel engaging the driving toothed



member at an angular speed to provide a selected lineal tape speed.

### 3,410,498 CINEMATOGRAPHIC APPARATUS

Alfred Winkler, Munich, Erich Filsinger, Unterhaching, near Munich, and Karl Bammesberger, Munich-Untermenzing, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany  
Filed Feb. 8, 1966, Ser. No. 525,877  
Claims priority, application Germany, Feb. 26, 1965, A 23,327  
15 Claims. (Cl. 242—55.13)



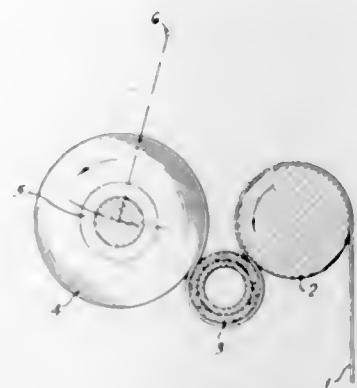
A motion picture projector which can be coupled with a magazine containing two reels for exposed and developed motion picture film. The drive which transports the film is automatically coupled with the reels when the magazine is detachably secured to a side wall of the projector housing. Scanning members which track the edge faces of convoluted film on the reels arrest the drive when the supply of film on the respective reels is nearly exhausted.

### 3,410,499 WEB MATERIAL WINDING APPARATUS

Willi J. Schmidt, Kelkheim, Taunus, Germany, assignor to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany  
Filed Apr. 15, 1965, Ser. No. 448,531  
Claims priority, application Germany, Apr. 17, 1964, K 52,723  
4 Claims. (Cl. 242—67.1)

The present invention relates to a process and an apparatus for winding up webs of material, e.g., small tapes

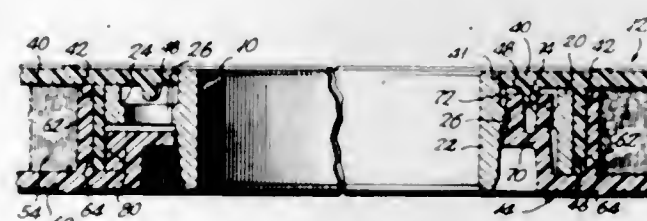
of synthetic plastic film, wherein winding is effected with straight edges and a particularly suitable web tension. The apparatus of the invention includes a guide roller, a driven winding core of a series of driven winding cores mounted side-by-side, the distance of which from the guide roller may differ correspondingly to the increasing radius of the winding roll, one or several transmission rolls, depending on the number of webs which are in-



corporated between the guide roller and the corresponding wind-up roll in a loop of the web, which are not otherwise supported and which are at least as long as the web is wide. The width of the gap between the outer surface of the guide roller and the outer surface of the wind-up roll is maintained smaller than the diameter of the transmission roll.

### 3,410,500 TAPE REEL

Robert L. Elliott, Opelika, Ala., assignor to Perfection Plastics, Inc., Opelika, Ala., a corporation of Alabama  
Filed Jan. 30, 1967, Ser. No. 612,460  
10 Claims. (Cl. 242—71.8)



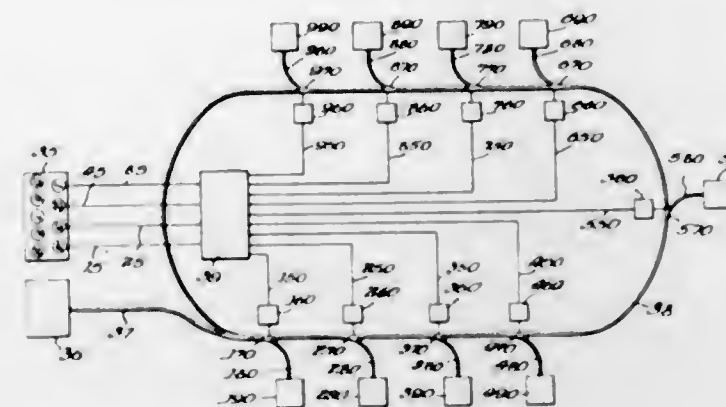
A reel for receiving tape comprises a rigid preferably metal hub with spaced apart outer and inner flanges connected by a web with holes therein, reel flanges with similar concentric skirts surrounding and secured about the outer hub flange, and one of the reel flanges having spaced tapered pin slots extending into and beyond the holes in the hub web and into which pin slots an annular bead is inserted and expands said pin slots thus to firmly engage the same with walls defining the said holes in the web.

### 3,410,501 FLUID SIGNAL ADDRESSING SYSTEM

David H. Thorburn, Oak Park, Ill., assignor to The Power Regulator Company, Skokie, Ill., a corporation of Illinois  
Filed Apr. 12, 1967, Ser. No. 630,448  
10 Claims. (Cl. 243—5)

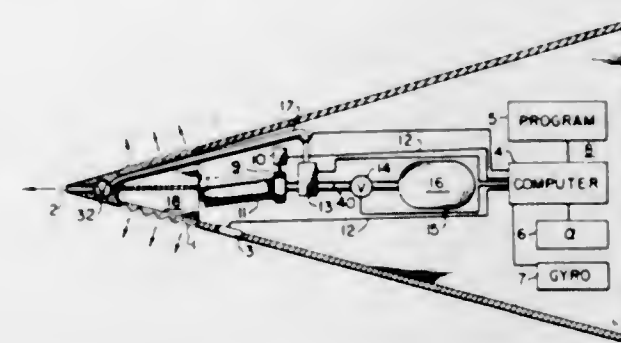
A fluidic addressing system particularly suitable for use with multistation pneumatic conveyors. The station address is binary-coded at the sending station and decoded to a decimal address near the receiving stations, using mono- and bistable fluid relays. As a result, only binary

signals need be communicated for long distances. The decimal address signal operates a conveyor switch for the



addressed receiving station. The system may also be used to switch between conveyor loops.

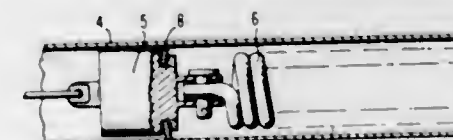
3,410,502  
THERMAL ATTITUDE CONTROL DEVICE  
Bernard M. Leadon, Gainesville, Fla., and Wilbert V. Carter, La Jolla, and William H. Gallaher, Lakeside, Calif., assignors to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware  
Filed Aug. 6, 1965, Ser. No. 477,817  
10 Claims. (Cl. 244—1)



A cooling and attitude control device for hypersonic vehicles having an internal source of high pressure coolant and control fluid which is distributed to a nose cooling orifice and to selected ones of a plurality of porous control orifices spaced about the nose portion of the vehicle. The valve controlling the distribution can produce a pitch or yaw correction despite vehicle roll and can distribute additional fluid for supplemental cooling.

### 3,410,503 DAMPING DEVICE FOR TOWED AIR TARGET BODIES

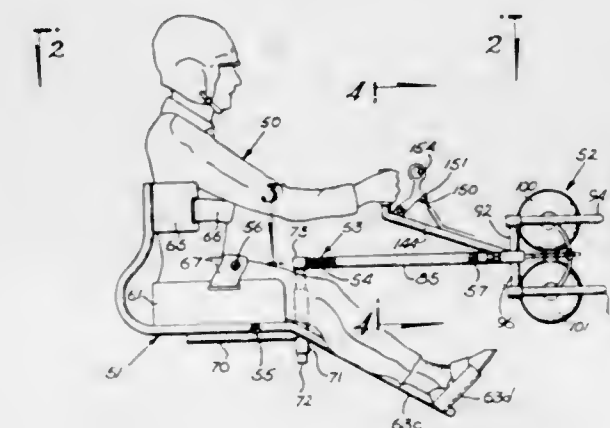
Heinz Busch, Kressbronn, Albert Dietrich, Markdorf, and Ernst Wieland, Langenargen, Germany, assignors to Dornier System G.m.b.H., Friedrichshafen, Germany, a limited-liability corporation of Germany  
Filed Oct. 12, 1965, Ser. No. 495,197  
Claims priority, application Germany, Mar. 10, 1965, D 46,738  
6 Claims. (Cl. 244—1)



A towed air target body has a damping device mounted therein adjacent the rear portion thereof. The damping

device includes a resilient means connected between the rear portion of the body and a tow line. The resilient means in a first form of the invention comprises a spring which is stretched beyond its elastic limit by a maximum load. In a second form of the invention a resilient clamping plate is associated with the resilient means and is adapted to jam against an interior portion of the body in one direction of movement. In a third form of the invention means is associated with the resilient means and includes a plurality of balls adapted to be wedged against an interior portion of the body in one direction of movement.

3,410,504  
ARTICULATED TWO-BODY PROPULSION SYSTEM  
Warren H. Straly and Robert W. Adlhoeh, Canoga Park, Calif., assignors to The Marquardt Corporation, Van Nuys, Calif., a corporation of California  
Filed Oct. 18, 1965, Ser. No. 497,101  
11 Claims. (Cl. 244—1)



A two-body propulsion system in which one body comprises the operator and seat and the other body comprises a propulsion device for pulling the operator and seat. The two bodies are articulated by a universal connection and the propulsion system consists of rocket motors which are movable by the operator in order to control flight direction by producing a desired torque about the system center of mass. The operator controls pitch by pushing forward or pulling backwards on the propulsion device and controls yaw by pushing the propulsion device to one side or the other. Roll control is obtained by rotating one motor downwardly and the other motor upwardly. After change in direction, the system will move in the desired direction without operator control because of the inherent stability of the system.

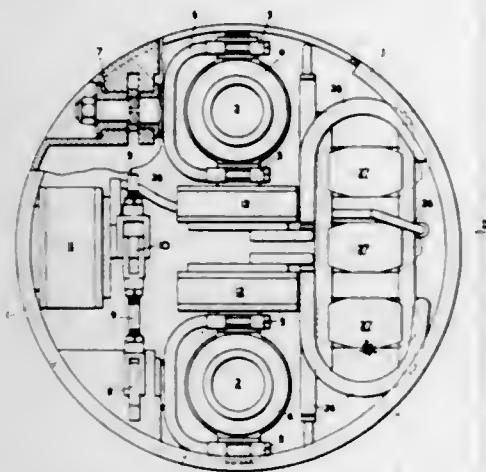
### 3,410,505 CONTROL SYSTEMS FOR AERIAL MISSILES AND LIKE VEHICLES

Walter James Gildon, 16 The Drive, Bexley, Kent, England, and Thomas George Ferguson, 8 The Old Walk, Otford, Sevenoaks, Kent, England  
Filed Oct. 16, 1959, Ser. No. 847,017  
Claims priority, application Great Britain, Oct. 17, 1958, 33,304/58  
4 Claims. (Cl. 244—3.22)

1. A control system for aerial missiles and like vehicles having two control venturi symmetrically situated one on either side of and parallel to the missile axis; two pairs of mounting brackets fixed to the missile, one bracket on either side of each venturi; a rectangular frame surrounding each venturi and rotatably mounted in the associated pair of brackets, the axis of rotation being perpendicular to the axial plane of the missile through the venturi; a tubular deflector surrounding and extending rearwardly of each venturi exit and rotatably mounted in the associated rectangular frame, its axis

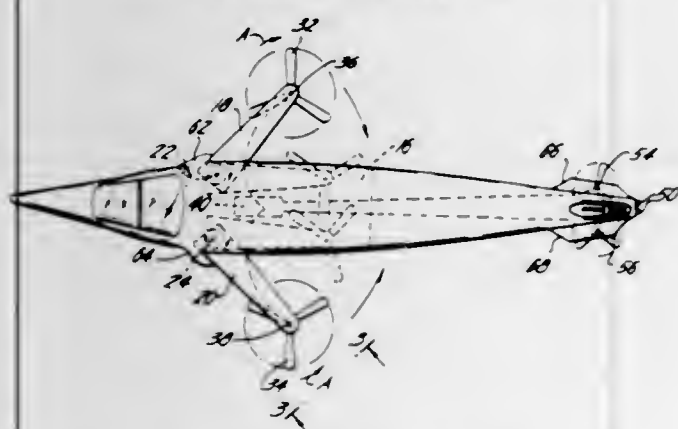


of rotation being perpendicular to that of the frame; a pressure fluid operated, rotary vane actuator mounted on each rectangular frame in alignment with the axis of rotation of the frame and operatively connected to the frame and one mounting bracket, for deflecting the frame; a second similar actuator attached to an adjacent arm of each frame and operatively connected to the frame and



the tubular deflector, for rotating the deflector relative to the frame; an electrically operated control valve for controlling the supply of pressure fluid to each actuator, and means for individually operating each tubular deflector by the corresponding electrically controlled valve to govern direction and to compensate for pitch, yaw and roll of the missile.

**3,410,506**  
**EXTENSIBLE ROTOR AIRPLANE**  
Thomas Hayes, 166 W. 27th St.,  
New York, N.Y. 10001  
Filed Feb. 6, 1967, Ser. No. 614,232  
9 Claims. (Cl. 244-7)

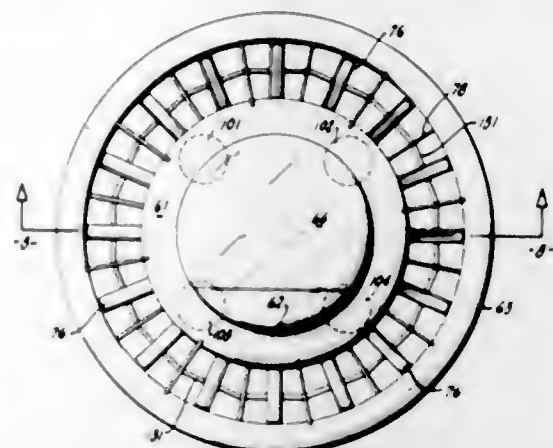


An airplane including a fuselage body having a longitudinal axis and having a slot opening into the sides thereof forming a rotor receiving chamber. The airplane includes a pair of wings pivotally mounted in the chamber and movable from a folded position with said wings to an extended position with the wings extending divergently outwardly and rearwardly. Means are provided for pivoting said wings and rotors on said wings are synchronized with drive means for driving the rotors. The rotors partially are received in the chamber when the wings are in a folded position and are disposed at an attitude to provide lift at high speeds for the airplane in the folded position.

**3,410,507**  
**AIRCRAFT**  
Paul S. Moller, 1308 B St.,  
Davis, Calif. 95616  
Filed May 6, 1966, Ser. No. 548,256  
7 Claims. (Cl. 244-23)

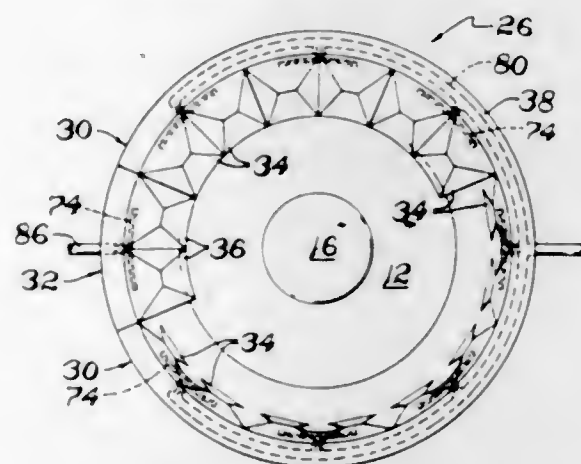
An aircraft has a central, passenger carrying nacelle with an outer surface defining a figure of revolution about

a central vertical axis. A shell surrounding and spaced from the nacelle defines a passageway open at the top



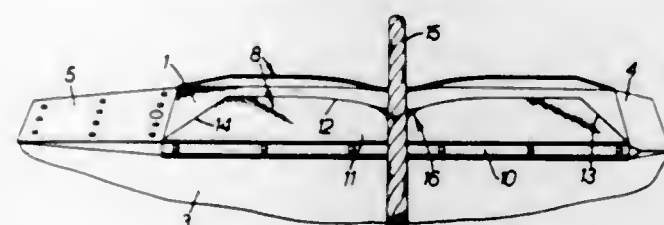
and bottom. An engine in the nacelle drives a fan in the passageway forcing air downwardly in the passageway to support the aircraft.

**3,410,508**  
**INFLATABLE SEAL**  
John M. Fisher, Cuyahoga Falls, Ohio, assignor to The  
B. F. Goodrich Company, New York, N.Y., a corporation  
of New York  
Filed Oct. 21, 1966, Ser. No. 588,598  
13 Claims. (Cl. 244-102)



This disclosure relates to inflatable seals or closures having inflatable segmented elements which inflate to cooperatively close an opening, and which are especially useful for closing the gap between a retracted aircraft tire and the periphery of its corresponding wheel well opening.

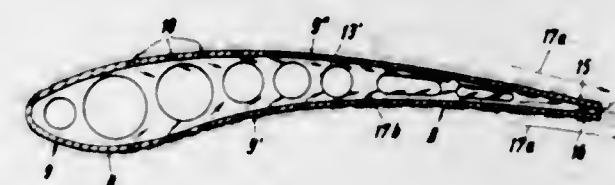
**3,410,509**  
**AIRCRAFT ARRESTER GEAR**  
Vivian Charles Carr, Oadby, England, assignor to John  
Bull Rubber Company Limited, Evington Valley Mills,  
Leicester, England, a British company  
Filed Feb. 27, 1967, Ser. No. 618,700  
Claims priority, application Great Britain, Mar. 12, 1966,  
10,985/66  
11 Claims. (Cl. 244-110)



In an aircraft arrester gear employing a cable supported on supporting devices at a required height above the surface of the landing deck to enable the aircraft arrester

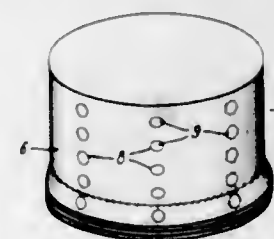
hook to catch the cable, each device comprises a rubber blade extending normal to the cable, the blade being inclined relative to the deck. The blade does not deny the hook access to the cable. It assists damping of ripples in the cable which may otherwise cause the hook to miss the cable. The blade is not a substantial hazard to trucks and personnel moving about the deck because it will deflect.

**3,410,510**  
**BOUNDARY LAYER CONTROL**  
Hermann Papst, 7742 St. Georgen,  
Black Forest, Germany  
Original application Dec. 23, 1963, Ser. No. 332,619.  
Divided and this application Mar. 16, 1966, Ser.  
No. 534,733  
Claims priority, application Germany, Dec. 24, 1962,  
P 30,859  
5 Claims. (Cl. 244-130)



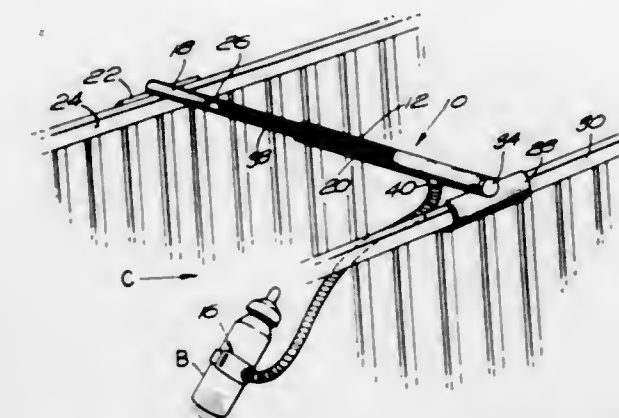
1. A skin construction for profiled bodies which are placed into a fluid stream so that a boundary layer develops during relative movement between such bodies and the fluid, comprising a sheet having an outer side along which the boundary layer develops and an inner side, said sheet further having narrow elongated slots whose width diminishes in a direction from said inner side toward said outer side so that the latter said slots have a constant width not exceeding 1 mm., said slots extending substantially transversely of the direction of movement of the fluid stream and being bounded by mutually inclined smooth planar side walls having sharp edges at said outer side and forming with the general plane of the latter an angle of up to 90 degrees so that the boundary layer may enter said narrow slots by deflection at an angle of substantially less than 90 degrees.

**3,410,511**  
**INFLATABLE BAG FOR DISSIPATING  
IMPACT ENERGY**  
Anthony Patrick Coppa, Merion Station, Pa., assignor to  
General Electric Company, a corporation of New York  
Filed Dec. 12, 1966, Ser. No. 601,141  
5 Claims. (Cl. 244-138)



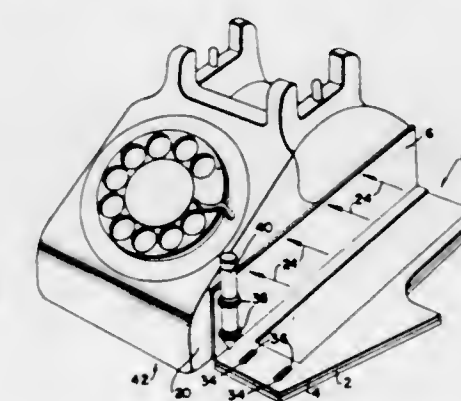
Inflatable bags for energy absorption systems include a plurality of pores or openings, which are distributed over the surfaces of the bags and covered with a non-porous material having a preselected burst pressure. Upon impact, internal pressure exceeds this preselected burst pressure and the pores or openings become discharge ports. Since these ports are distributed over the surface of a bag, partial deflation of the bag will cause the ports located in the deflated portion at the impact surface to cease to be effective as discharge ports. Thus rate of deflation is retarded and the rate of retardation is directly related to the degree of deflation. Variable rate discharge ports may also be used.

**3,410,512**  
**CRIB ATTACHMENT**  
Michael Del Vecchio, 140 Regent Ave., Providence, R.I.  
02908, and Peter Gigliotti, 50 Long Vue Ave., Providence, R.I. 02904  
Filed Oct. 20, 1966, Ser. No. 588,685  
3 Claims. (Cl. 248-104)



A crib attachment for connection to the side rails of a crib and including a cross bar defined by telescoping sections, a semi-flexible arm, one end of which is connectable to said cross bar and the other end of which has a bottle secured thereto, the semi-flexible arm being bendable to a selected position for locating said bottle in supported relation and in close proximity to a child lying in said crib.

**3,410,513**  
**DATA RECORDING ATTACHMENT  
FOR TELEPHONES**  
George H. Wolf, 7 Gleeland St.,  
Deer Park, N.Y. 11729  
Filed July 13, 1966, Ser. No. 565,005  
6 Claims. (Cl. 248-205)



A pad and index holding device for a telephone is provided for adhesive attachment to the planar side of the telephone. The device has three generally planar elements, the support carrying the adhesive for attachment to the telephone, a second planar element for retaining an index, and a planar jotting pad holding element. When not in use, the three elements are superimposed against the side of the phone and take up very little room, being maintained together by a pair of loops connected to the support which pass through apertures in the other two elements and through which a pencil passes in interlocking relationship.

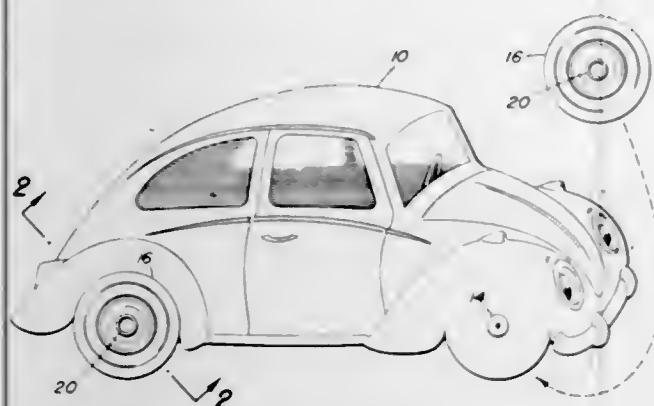
**3,410,514**  
**PLACEMAT WITH DETACHABLE COASTERS**  
Patricia B. Ford, 7331 Rockridge Road,  
Baltimore, Md. 21207  
Filed Oct. 14, 1966, Ser. No. 586,689  
2 Claims. (Cl. 248-346.1)

A placemat-coaster set is provided wherein the placemat is in the form of a design, e.g., that of an automobile,



and the coaster is in the design form complementary to that of the placemat, e.g., that of a wheel of the automo-

tions of flat stiff sheet material hinged by tapes and can be laid flat for shipping or the like and readily folded



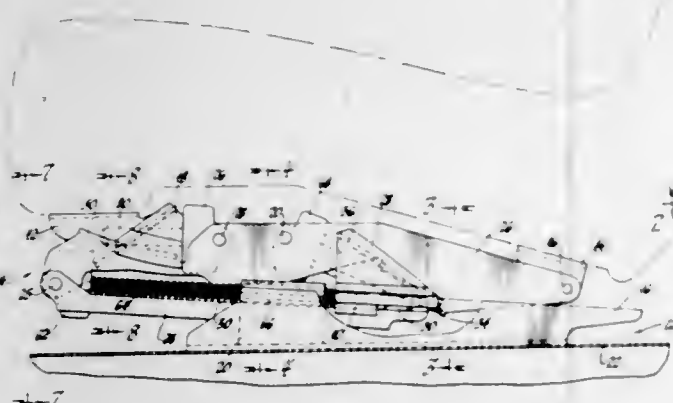
providing an upright support for a book at a proper angle for reading.

bile design, and a fastener is provided to position the coaster in the complementary position onto the placemat.

3,410,515

**WEDGE BLOCK SEAT ADJUSTER**

Raymond C. Posb, Livonia, Mich., assignor, by mesne assignments, to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware  
Filed Feb. 23, 1966, Ser. No. 529,314  
26 Claims. (Cl. 248—394)



A seat including a seat adjusting assembly for selectively raising and lowering the front and rear portions of the seat independently of one another and for adjusting the fore and aft position of the seat. More specifically, the invention relates to a seat adjusting assembly including a plurality of pairs of members, each pair of which are pivotally connected together and moved apart by a block forced therebetween in a wedge-like action. A pair of coating surfaces are disposed between each member and the block and at least one pair of the coating surfaces are arcuate to the degree necessary to maintain total sliding contact between the surfaces along the entire overlapping length thereof as the block moves relative to the members.

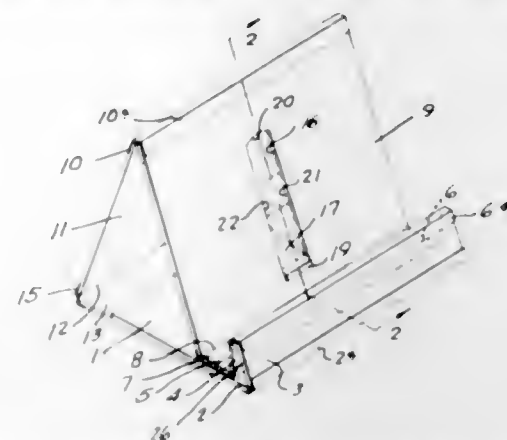
3,410,516

**BOOKREST**

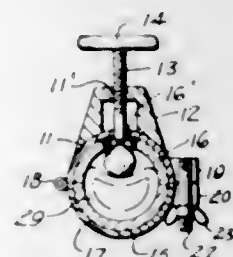
Mildred L. Criswell, 1735 33rd Place SE., Washington, D.C. 20020  
Filed July 29, 1966, Ser. No. 568,810  
5 Claims. (Cl. 248—459)

The bookrest is provided by a single elongated piece of pliable sheet material with lateral crease lines or por-

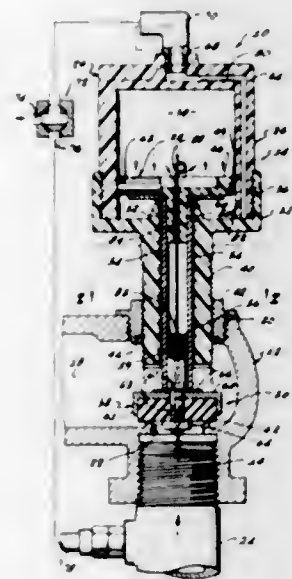
A manually adjustable valve assembly including a hollow cylinder for hand-screwing through a valve body to-



3,410,517  
**HOSE WATER REGULATOR**  
Thomas E. Wall, 55 Castle Drive, Stratford, Conn. 06497  
Filed Mar. 15, 1966, Ser. No. 534,386  
5 Claims. (Cl. 251—6)



3,410,518  
**FLUID MOTOR OPERATED VALVE WITH MANUALLY ADJUSTABLE CYLINDER**  
Paul W. Carsten, Malibu, Calif., assignor to Aquamation Inc., Glendora, Calif., a corporation of California  
Filed May 11, 1966, Ser. No. 549,270  
11 Claims. (Cl. 251—31)

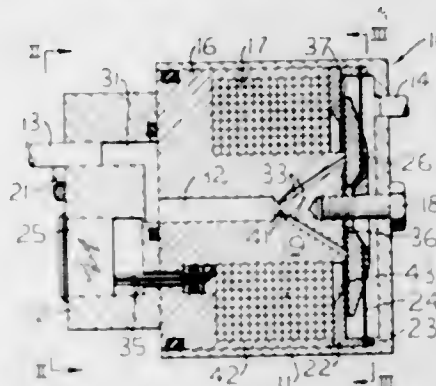


ward and away from the valve seat to selectively limit the travel of a valve off the valve seat and to manually shut off and open the valve.

3,410,519

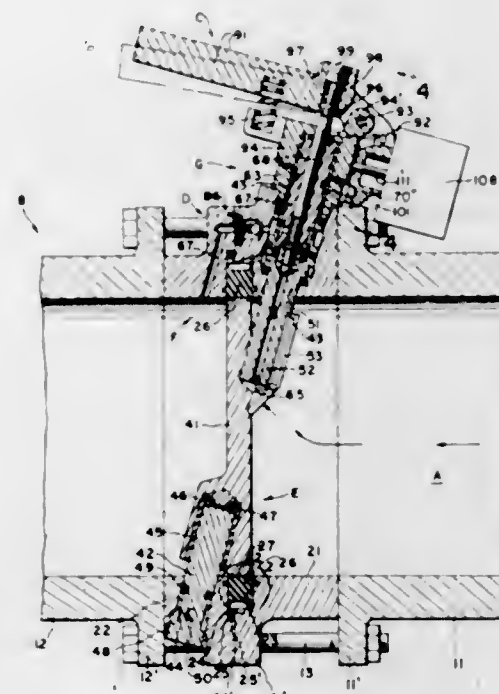
**RELIEF VALVE**

Duane E. Evans, Peoria, Ill., assignor to Caterpillar Tractor, Peoria, Ill., a corporation of California  
Filed Jan. 24, 1966, Ser. No. 522,446  
5 Claims. (Cl. 251—141)



To modulate and control the pressure in a hydraulic system an electrically controlled pressure relief valve is disposed therein. The valve includes an electromagnet having a central core enclosing a fluid passage through which system fluid may pass subject to the flow thereof being selectively impeded by an armature which seats with the electromagnet at the mouth of the fluid passage and which is under the influence of the opposing forces of magnetic attraction and system fluid impingement.

3,410,520  
**BUTTERFLY VALVE WITH FLUID ACTUATED SEAL**  
Frank D. Mahoney, 68 Mulberry Lane, Atherton, Calif. 94025  
Filed Sept. 22, 1965, Ser. No. 489,160  
4 Claims. (Cl. 251—173)

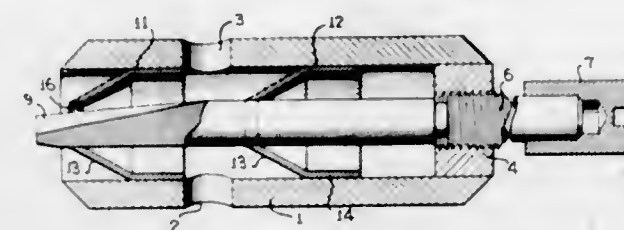


A butterfly valve is disclosed wherein an annular sealing member is mounted in the fluid passage and sealing engagement between the seating member and valve member is accomplished using fluid from the stream being controlled and applied against the outside surface of the sealing member. The valve member itself is turned by means of fluid from the fluid line being controlled.

3,410,521

**TAPERED GROOVE VALVE**

Edwin U. Sowers III and John R. Colston, Silver Spring, and Gerald R. Schrader, Adelphi, Md., assignors to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland  
Filed Oct. 21, 1965, Ser. No. 500,029  
19 Claims. (Cl. 251—205)

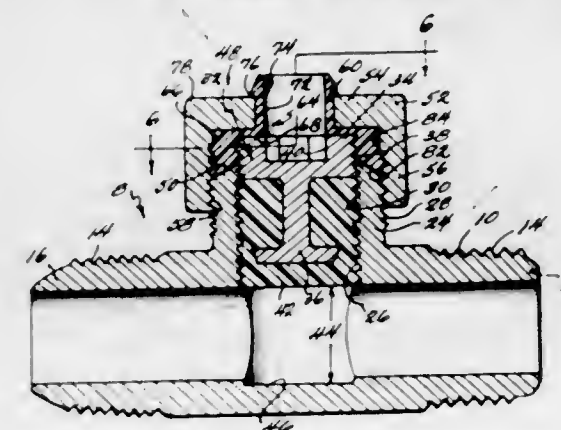


This invention is directed to a V-groove valve with a threaded shaft supported within the valve body by two conical shaped spring metal members.

3,410,522

**CORPORATION STOP**

Joseph L. Daghe, Ben G. Finley, Amos D. Parks, and Wilbur R. Leopold, Jr., Decatur, Ill., assignors to Mueller Co., Decatur, Ill., a corporation of Illinois  
Filed Oct. 21, 1965, Ser. No. 499,487  
13 Claims. (Cl. 251—218)



A corporation stop for use in a tapping and installation machine with means which allow such machines to accommodate stops of greater through-bore diameter. Accordingly, a washer element is arranged to form an axial extension of the boss within which the through-bore stopper is received. The boss, therefore, will be shorter than the stopper and hence will require a shorter turning radius. Present machines designed for a particular through-bore diameter can thus accommodate greater through-bore diameter stops since the turning boss does not have to be extended in axial length.

3,410,523

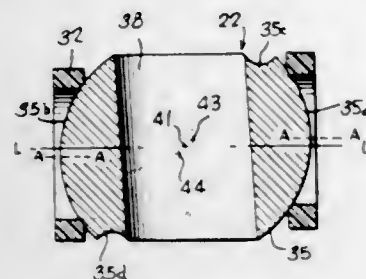
**FLUID VALVE HAVING LOW WEAR AND WEAR-COMPENSATION CHARACTERISTICS**  
William Kelly, 6930 Snake Road, Oakland, Calif. 94611, and Gerard H. Levey, 148 Hodges Drive, Moraga, Calif. 94556  
Filed Oct. 27, 1965, Ser. No. 542,437  
14 Claims. (Cl. 251—315)

1. A fluid valve, comprising:
  - (a) a housing having
    - (i) spaced fluid passageways, and
    - (ii) a cavity communicating with said passageways;
  - (b) a valve member disposed for rotation about a valve member axis of rotation within said cavity, having
    - (i) opposed outwardly curved lateral portions thereof eccentrically positioned outwardly relative to said axis of rotation, and
    - (ii) a passage therethrough for selective connection and disconnection of said passageways in



first and second rotational positions thereof, respectively; and

- (c) a pair of valve seat faces, each associated with a respective one of said passageways at said cavity, each having



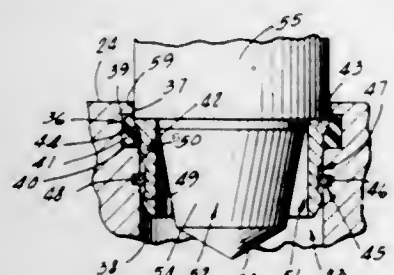
- (i) an outline normally shaped as a closed curve normally contactable about its entire periphery by a surface having the curvature of one of said face portions, and
- (ii) an offset position so that the axis through the center of area thereof is laterally spaced from intersection with said valve member axis of rotation, the offset of each being in the opposite direction to the other, the degree of offset being sufficient to cause one of said face portions to be received flushly in fluid-tight communication when said valve member is disposed in said second position.

#### 3,410,524 CONTROL VALVE

Richard E. Self, 3221 Brimhall Drive,  
Los Alamitos, Calif. 90720

Continuation-in-part of application Ser. No. 324,646,  
Nov. 19, 1963. This application Aug. 1, 1966, Ser.  
No. 569,133

6 Claims. (Cl. 251—332)



2. A sealing joint having a surface intersected by a passage,

said passage having a continuous annular recess formed therein and spaced axially inwardly of said surface, a ring-shaped volume of highly viscous, flowable, compressible material filling all of said recess and in sufficient excess to project outwardly of the recess and radially inwardly of said passage, a sleeve positioned concentrically in said passage and having an outwardly projecting lip thereof for abutting said ring-shaped volume,

said lip thereby restricting the movement of said sleeve in an axial direction away from said surface,

said sleeve having an end face adjacent to said lip and facing outwardly of said passage,

a spindle member having a head portion and being movable axially into and out of said passage,

said head portion having a shoulder forming a piston head movable into said passage and being of a diameter substantially equal to the diameter of said lip,

said piston head engaging said end face of said sleeve after being moved into said passage and progressively forcibly causing said lip to com-

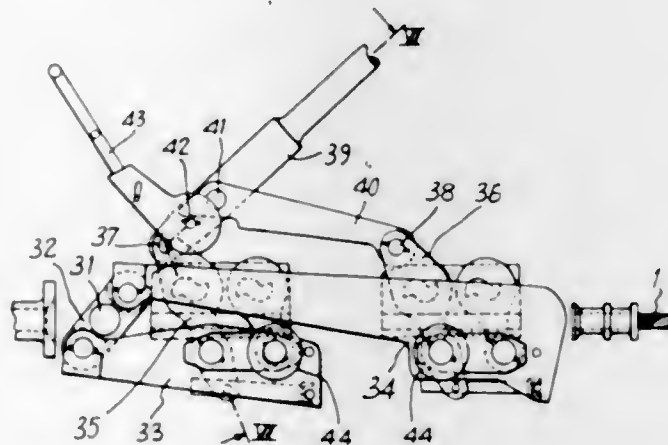
press said ring-shaped volume within said recess, said piston head being movable into said passage after said shoulder engages said end face to compress said ring-shaped volume.

#### 3,410,525 SELF-GRIPPING CABLE CLAMPS

Rodolphe Tanson, Luxembourg, Luxembourg, assignor, by mesne assignments, to Societe d'Etude et de Construction d'Appareils de Levage et de Traction (Secalt S.A.), a corporation of Grand-Duchy of Luxembourg

Filed Dec. 30, 1966, Ser. No. 606,194  
Claims priority, application France, Jan. 18, 1966,  
46,293

7 Claims. (Cl. 254—105)



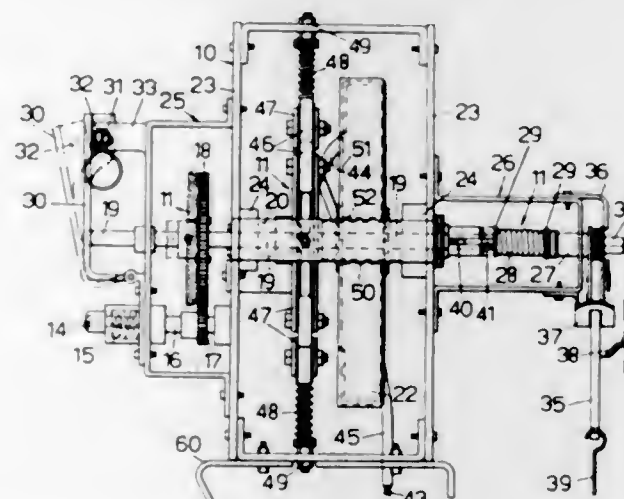
The present self-gripping clamp is for gripping a cable between a U-shaped jaw and a flat jaw located between the sides of the U-shaped jaw, in which the jaws are forced one towards the other by pairs of lateral levers pivoting on the clamp body, the levers of each pair being secured to a transverse cam shaped as a rod having a constant contour and passing through suitably shaped apertures in both jaws and said clamp is also adapted for use in a traction device having a working cable disposed therethrough.

#### 3,410,526 APPARATUS FOR MANIPULATING A SOURCE OF RADIOACTIVE MATERIAL

Leo Gallagher, 45 Broughton St., Concord,  
New South Wales, Australia

Filed Oct. 6, 1966, Ser. No. 584,898  
Claims priority, application Australia, Oct. 11, 1965,  
65,115/65

2 Claims. (Cl. 254—150)



Apparatus for manipulating a source of radioactive material on the end of a flexible cable in which means are

provided to advance and retract the cable and in which additional means are provided to retract the cable and source should the first mentioned means be rendered inoperative. The cable is driven by cooperative engagement with a grooved wheel which acts as a clutch due to the cable being resiliently urged against said wheel by spring biased rollers.

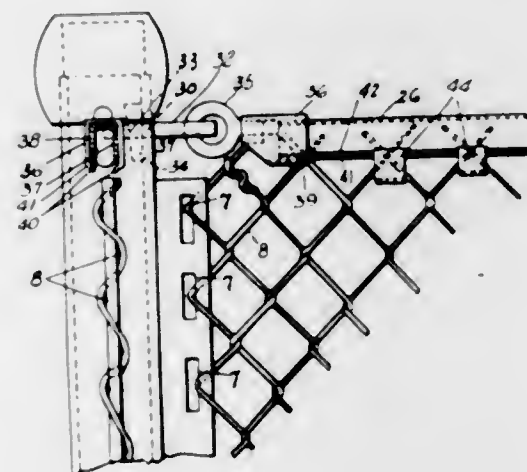
#### 3,410,527

#### FENCE ROW CONSTRUCTION DEVICES

Miroslav Uroshevich, 2230 Kroger Bldg., 1014 Vine St.,  
Cincinnati, Ohio 45202

Filed Oct. 13, 1966, Ser. No. 586,454

8 Claims. (Cl. 256—32)



The disclosure relates to a wire mesh fence comprising vertical end and intermediate posts, horizontal rails extending between the posts and a wire fabric having its upper edge connected to the horizontal rails and its opposite ends connected to the end posts. The intermediate posts are of sectional construction consisting of two halves split longitudinally and located on opposite sides of the wire mesh fabric and in clamping engagement with the fabric for supporting it, with caps inserted on the upper ends of the half posts to secure the two sections together.

The upper edge of the wire mesh is supported by means of spring clamps which are interwoven with the wire mesh, the spring clamps being generally U-shaped in cross section, with the upper ends slidably joined to the rails at spaced points between the intermediate and end posts. The opposite ends of the rails, which join the vertical posts, are provided with universal joints at opposite ends connected with mating universal joints secured to the posts. The universal joints permit the rails to be swung at various angles within a spherical sector in relating to the posts. In addition the ends of the posts include a slidable connector joined to the universal joint permitting the rails to be adjusted longitudinally with respect to the posts during erection.

#### 3,410,528

#### CONCRETE VIBRATOR

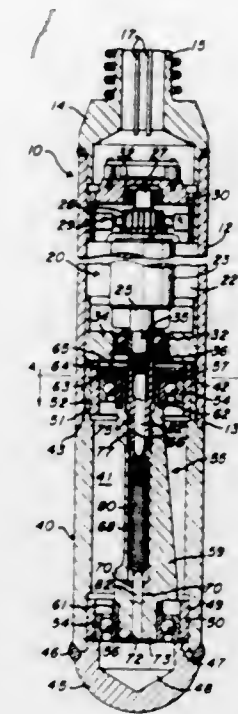
Loris D. Clark and William H. Helzroth, Dayton, Ohio, assignors, by mesne assignments, to Koehring Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Oct. 17, 1966, Ser. No. 587,163

5 Claims. (Cl. 259—1)

A concrete vibrator has a self-contained motor including a rigid shaft member with one end positioned adjacent an end of a rotatable weight member. An axially ex-

tending cavity is formed within one of the members and receives a shaft which is adapted to flex within the cavity



and has one end connected to the weight member and its other end connected to the shaft member of the motor.

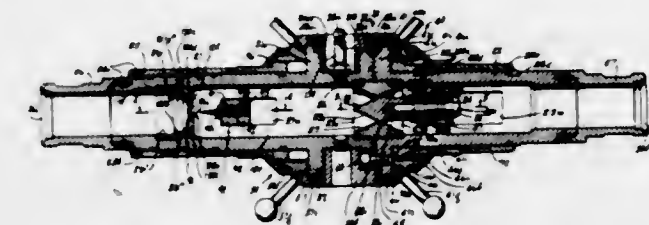
#### 3,410,529

#### TUNABLE ACOUSTIC FLUID MIXER HAVING EASY ACCESS TO INTERNAL WORKING PARTS

Sergio G. Simonetti, Norwalk, Conn., assignor to Sonic Engineering Corporation, Norwalk, Conn., a corporation of Connecticut

Filed June 12, 1967, Ser. No. 645,285

13 Claims. (Cl. 259—4)



A fluid mixer of the type including a fluid orifice for forming a jet which impinges upon a blade to cause oscillation of the blade and thorough mixing of the fluid and any substances carried thereby as a result of cavitation and other effects produced by the vibrating blade, and an adjustable valve downstream of the blade for varying the back pressure upstream thereof; wherein one or more of the blade assembly, the valve assembly, and the jet-forming orifice assembly, may be removed from the fluid mixer through respective slots therein, which slots are exposable by the retraction of exterior sleeves so that the fluid mixer need not be removed from the line to gain such access; also wherein the valve assembly comprises a conical seat member and a conical valve member, with the valve member spring loaded for slight unseating movement under upstream overpressures; also wherein the axial positions of the blade assembly and of the valve member are individually adjustable by individual micrometer movements operable to move the aforesaid sleeves which are connected respectively to said blade assembly and said valve member but which are disconnectable therefrom for the aforesaid axial retraction to expose said individual slots for removal of said blade assembly and valve member; and wherein the two micrometer move-



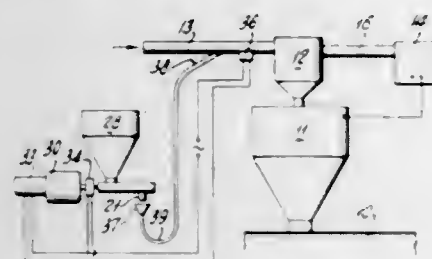
ments respectively controlling the axial position of the blade assembly and of the valve member are supplied with indicia and locking so that any axial setting of the blade assembly and/or the valve member is precisely repeatable and one set is maintainable.

3,410,530

### DRY SOLIDS CONTINUOUS BLENDING AND CONVEYING APPARATUS

Charles M. Gilman, Gilman, Conn., assignor to The Gilman Brothers Company, Gilman, Conn., a corporation of Connecticut

Filed Dec. 26, 1967, Ser. No. 693,472  
10 Claims. (Cl. 259-4)



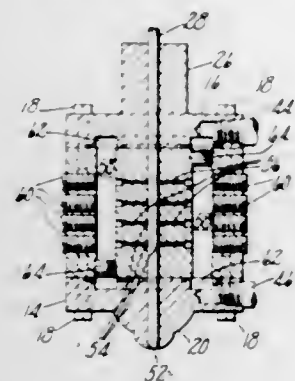
A continuous color blender for particulate plastic material associated with an extruder includes a vacuum-fed unloader hopper connected by a vacuum feed conduit to a silo containing the particulate plastic. A color concentrate feed pipe is connected to the vacuum feed conduit and terminates at its outer end in a feed hopper. A motor-driven screw feed device is actuated only during the delivery of plastic material to the unloader hopper and meters color concentrate to the feed hopper, the color concentrate being thoroughly mixed with the particulate plastic as it is transported to the unloading hopper.

3,410,531

### MIXING APPARATUS

Willard L. Baker, Ipswich, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

Filed May 19, 1967, Ser. No. 639,726  
3 Claims. (Cl. 259-4)



Apparatus for admixing interactive compositions constituting a casing having a mixing bore with a piston located within the same and a plurality of composition charging passages communicating with the bore.

3,410,532

### LIQUID TREATMENT APPARATUS WITH SONIC WAVE ACTION

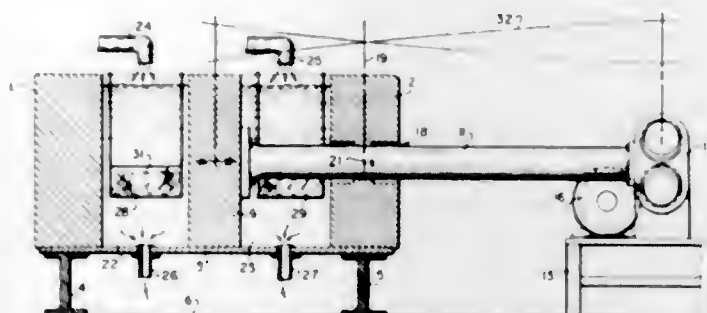
Albert G. Bodine, 7877 Woodley Ave.,  
Van Nuys, Calif. 91406

Continuation-in-part of application Ser. No. 341,608,  
Jan. 31, 1964. This application Oct. 24, 1965, Ser.  
No. 504,447

11 Claims. (Cl. 259-4)

Apparatus includes an enclosure containing a large stationary inertial mass. The inertial mass is opposed by a

vibratory mass spaced therefrom. Liquid to be treated is disposed between the two masses. The vibratory mass is secured to one region of an elastic member, which may



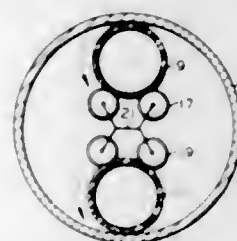
extend through one end of the enclosure and is driven at another region by a sonic wave generator. The generator operates at the resonant frequency of the system.

3,410,533

### MIXING EQUIPMENT

William R. Penney, Stillwater, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed May 31, 1966, Ser. No. 553,812  
6 Claims. (Cl. 259-9)



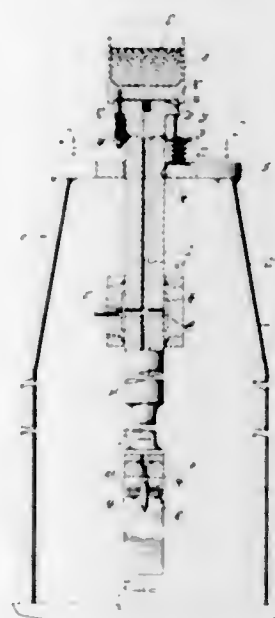
An improved agitator for a heat exchange vessel includes a rotating pair of cylindrical agitators provided with means for maintaining them in rolling contact with the inner wall of the vessel.

3,410,534

### SONIC APPARATUS FOR WETTING METALS

Floyd A. Wyczalek, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 30, 1964, Ser. No. 355,569  
11 Claims. (Cl. 259-72)



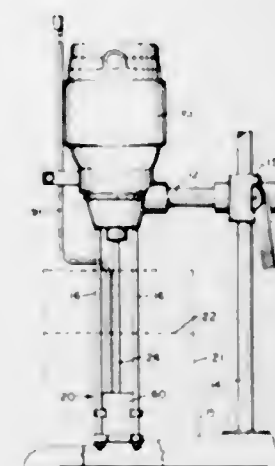
A vibratory apparatus for wetting an oxidized surface of a solid metal with a molten metal. The apparatus includes a sonic wave generator connected through an elastic coupling means to a vessel that holds the molten metal.

3,410,535

### MIXING DEVICE

Leslie L. Balassa, Creighton Lane,  
Scarborough, N.Y. 10582

Filed Jan. 23, 1967, Ser. No. 611,034  
18 Claims. (Cl. 259-95)



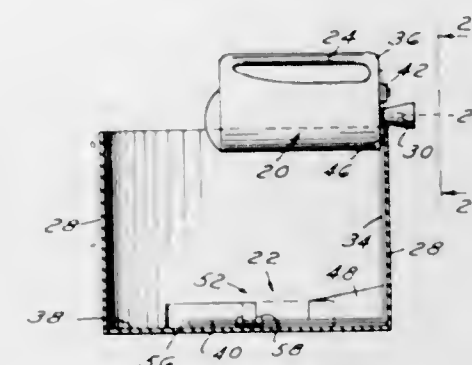
This disclosure describes a reversible mixing device of the turbine type in which the mixing action is produced by the coaction of a revolving rotor element and a fixed stator element mounted below and in hydraulic shear relation with the rotor element, and in which the flow of the material to be mixed is normally in downward direction. This mixing device is suitable for many purposes such as mixing, blending, homogenizing, dispersing and pumping.

3,410,536

### STIRRING MECHANISM

Warren T. Sommer, 601 Orleans, Apt. 13,  
Detroit, Mich. 48207

Filed July 7, 1967, Ser. No. 651,758  
9 Claims. (Cl. 259-111)



This disclosure relates to mechanical stirring device having a drive mechanism which traverses the rim of the container, which drives a stirring means which extends from the drive mechanism into the container or vessel.

3,410,537

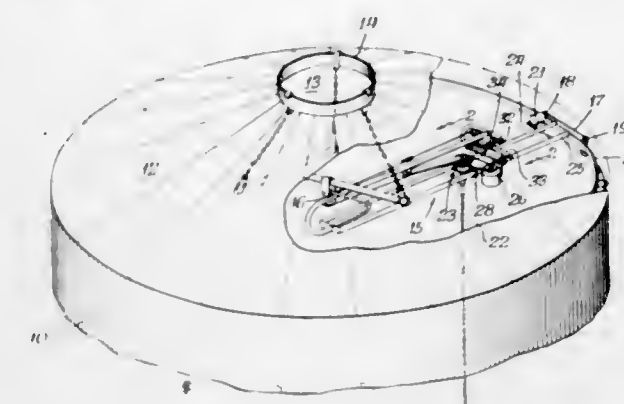
### GRAIN STIRRING APPARATUS

Harry Richard Fienhold, R.R. 1, Pontiac, Ill. 61764

Filed May 17, 1967, Ser. No. 639,108  
7 Claims. (Cl. 259-111)

An improved control system for a grain stirrer having a rotating vertical auger orbiting about a storage bin containing grain includes a level-sensing device for chang-

ing states when the auger has reached a predetermined tilt or drag. The device has an inherent delay so that



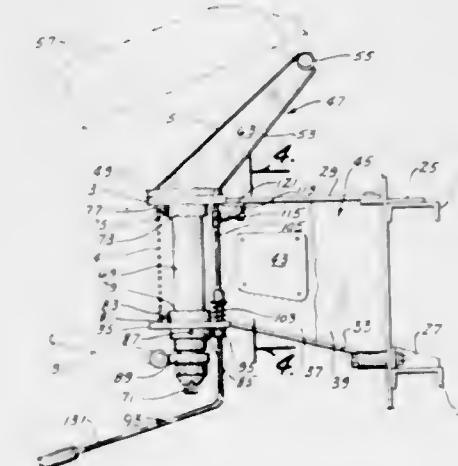
prior to stopping the orbiting motion of the auger, the tilt must have been sensed for a predetermined time.

3,410,538

### SUPPORT ASSEMBLY FOR A CONCRETE MIXER CHUTE

Melvin L. Potter, Cedar Falls, Iowa, assignor to Construction Machinery Company, Waterloo, Iowa, a corporation of Iowa

Filed Apr. 20, 1967, Ser. No. 632,378  
8 Claims. (Cl. 259-172)



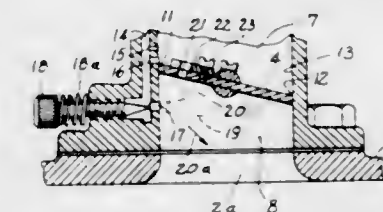
The support assembly for a concrete mixer chute comprising, a support means rotatably secured to the concrete mixer below the mixing drum discharge opening, the upper end of the mixer discharge chute being pivotally connected to the support means at the upper end thereof, the chute being pivotally connected intermediate its length to said support means at the lower end thereof and means for selectively locking the support means in various positions of its rotatable movement to permit the locking of the discharge chute in various unloading positions.

3,410,539

### CARBURETOR

Brooks Walker, 1280 Columbus Ave.,  
San Francisco, Calif. 94133

Filed Apr. 21, 1966, Ser. No. 544,246  
10 Claims. (Cl. 261-41)



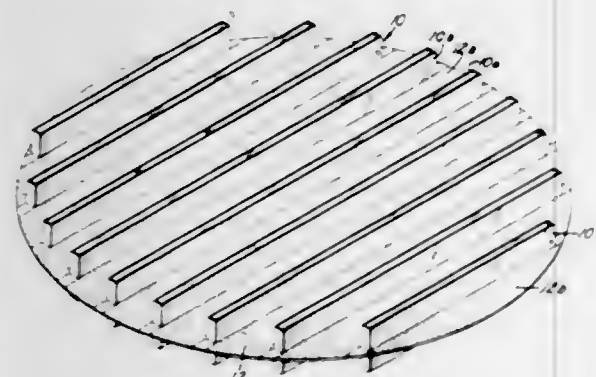
A carburetor for improving combustion of an internal combustion engine during closed throttle operation. An orifice is formed in the throttle valve for passing idling



air when the throttle valve is closed. In one form of the invention the orifice for passing the idling air and the orifice for admitting rich fuel mixture are oriented such that the envelopes of idling air and rich fuel mixture are collided in a zone removed from the wall of the carburetor to produce proper atomizing of the fuel. In other forms of the invention the envelopes are collided in a mixing conduit and the mixture is guided to a zone adjacent the center of the flow passage through the carburetor. Adjusting means is usually provided for adjusting the orifices to regulate the flow of air and rich fuel to adjust the idling speed of the engine. The adjustment for the orifice through the valve is arranged to be made by the use of a tool inserted through the carburetor throat.

3,410,540

**VAPOR-LIQUID CONTACT SYSTEM AND METHOD**  
Walter Bruckert, Williamsville, N.Y., assignor to Union Carbide Corporation, a corporation of New York  
Filed Nov. 9, 1964, Ser. No. 409,841  
19 Claims. (Cl. 261-113)



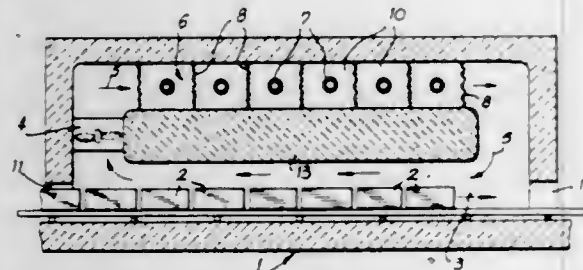
A vapor-liquid contacting tray comprising perforated fluid contact means as the active portion of the tray surface area, and narrow trough-like downcomers spaced across the tray separating perforated sections and serving to transfer liquid to the next lower tray.

3,410,541

**HEATER FOR GASEOUS FLUIDS**

Theodor Schmidt, Essen Germany, assignor to Firma Indugas Gesellschaft für Industrielle Gasverwendung m.b.H., Westendhof, Essen, Germany, a corporation of Germany

Filed July 11, 1967, Ser. No. 652,545  
Claims priority, application Germany, July 13, 1966,  
J 31,310  
10 Claims. (Cl. 263-6)

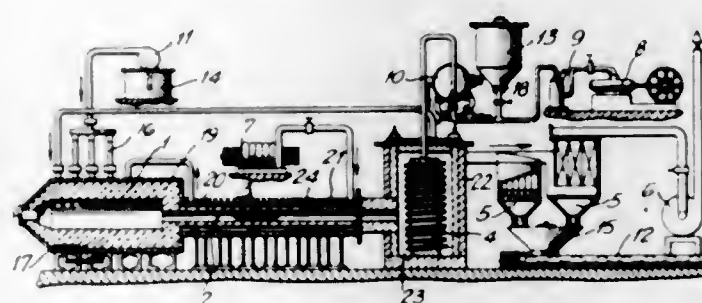


Heating chamber wherein a gas stream is circulated past a series of heating elements, such as radiator tubes, each disposed between apertured partitions of high thermal conductivity, such as a grid of metal bars or a wire screen, which are heated by direct radiation from the element and communicate part of their heat to the passing gases.

3,410,542  
**PLANT FOR CALCINING BINDING AND REFRACTORY MATERIALS**

Dmitry Jakovlevich Mazurov, Gennady Vladimirovich Zakharov, Jury Efimovich Malkin, Ivan Petrovich Chernyshov, Boris Gavrilovich Lexin, Viktor Terentjevich Seliverstov, and Alexandr Alexandrovich Nikitin, Kraskovo, and Dmitry Nikolaevich Potanin, Moscow, U.S.S.R., assignors to Gosudarstvenny Vsesojuzny Nauchno-Issledovatel'sky Institut Stroitel'nykh Materialov i Konstruktsy, Moscow, U.S.S.R.

Filed June 15, 1965, Ser. No. 464,128  
3 Claims. (Cl. 263-21)



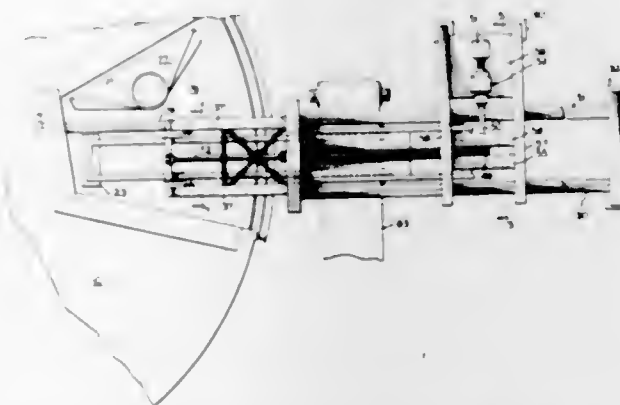
The present plant for calcining binding and refractory materials in a suspended condition and more particularly lime, chamotte and magnesite includes a whirler-type furnace, a source of a mixture of raw materials, heater means for the preliminary heat treatment of the mixture. The mixture following the preliminary heat treatment is transmitted from the heater into the furnace. A crystallizer-cooler is located between the furnace and the heater and such crystallizer-cooler is defined by a jacket, a channel of heat resisting material mounted within and spaced from the inner periphery of the jacket communicating with the furnace and heater respectively. Air is supplied to the space between the jacket and the channel for cooling the channel. Means are further provided for supplying pre-heated air and fuel to the furnace for providing the high temperature stage of calcining, after which the dust-laden gaseous stream enters the channel wherein the cooling effect of the air in the space between the jacket and the channel effects the desired crystalline structure of the calcine product.

3,410,543

**MEANS FOR DISCHARGING MATERIAL FROM A ROTARY HEARTH FURNACE**

James A. Scharbrough, Pittsburgh, Pa., assignor to Salem Brosius, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 22, 1965, Ser. No. 509,104  
2 Claims. (Cl. 263-28)



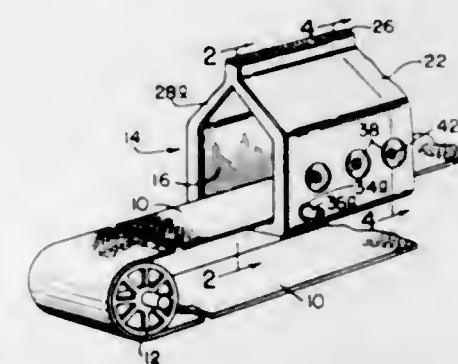
The present specification and drawings disclose a continuously rotating coking and/or calcining oven which is provided with an automatic means operating in timed sequence to effect the removal of materials from onto the moving surface of the oven and to direct such materials either outwardly of the oven and onto a suitable

receiver means located outside of the oven structure or to cause such materials to be deposited into a soaking pit or area conveniently located centrally of the oven structure.

3,410,544  
**FURNACE MUFFLE**

Jacob Howard Beck, Waban, Mass., assignor to BTU Engineering Corporation, Waltham, Mass., a corporation of Massachusetts

Filed Oct. 3, 1966, Ser. No. 583,842  
4 Claims. (Cl. 263-41)



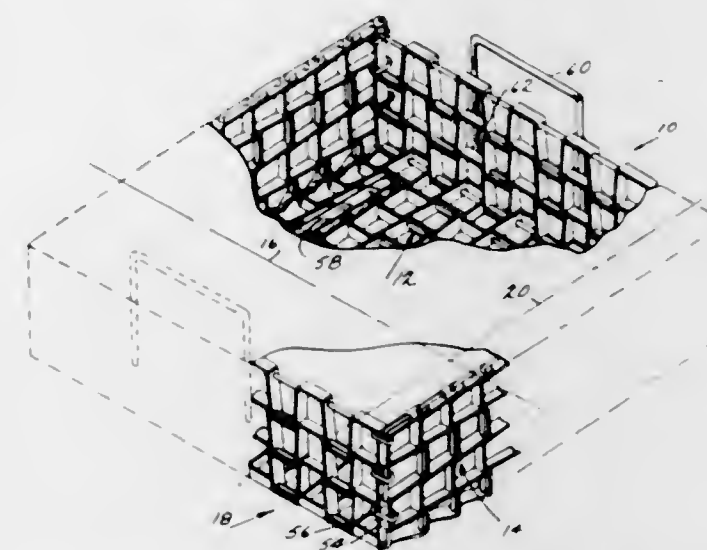
A fluid cooled furnace muffle having a cooling chamber formed with spaced inner and outer metallic jacket sections, each jacket section having a pair of adjacent longitudinal edges. Adjacent edges of both pairs are arranged to be in contact and are secured by means of a single longitudinal weld which also seals the cooling chamber. The muffle may be strengthened and the jacket sections rigidly spaced by means of indentations in the outer section welded to the inner section.

3,410,545

**FLAT WIRE BASKET AND METHOD OF MAKING THE SAME**

Joseph E. McKnett, Jr., Cambridge, Md., assignor to Cambridge Wire Cloth Company, Cambridge, Md., a corporation of Maryland

Filed June 16, 1967, Ser. No. 646,509  
15 Claims. (Cl. 263-47)



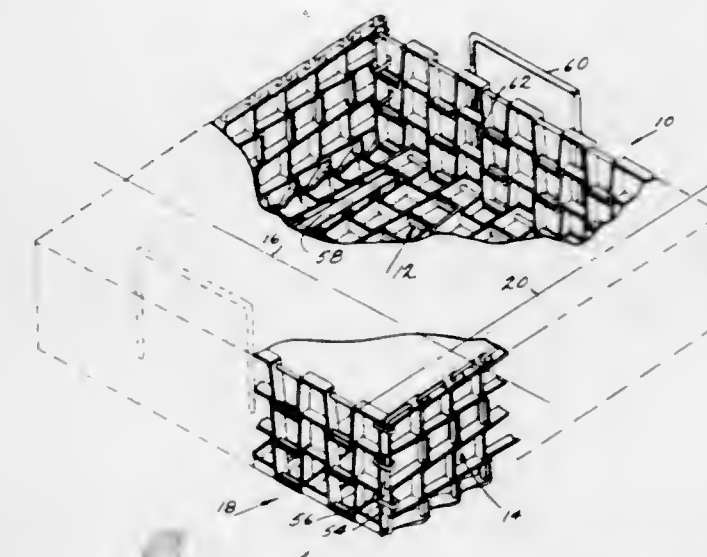
A basket or tray made from a plurality of wickets or crimped flat wires intermeshed and coupled together by means of rods, the side walls of the basket being bent upwardly from the base wall and being integrally connected thereto and the end walls being pivotally connected to the base wall and being pivoted into an upwardly extending position whereby the upwardly extending edges of the side walls and end walls are joined together so as to form the preferable embodiments of the basket or tray, and a method of forming a basket of this description.

3,410,546

**FLAT WIRE BASKET AND METHOD OF MAKING THE SAME**

Ronald G. Daringer and Jack S. Willey, Cambridge, Md., assignors to Cambridge Wire Cloth Company, Cambridge, Md., a corporation of Maryland

Filed June 16, 1967, Ser. No. 648,532  
17 Claims. (Cl. 263-47)



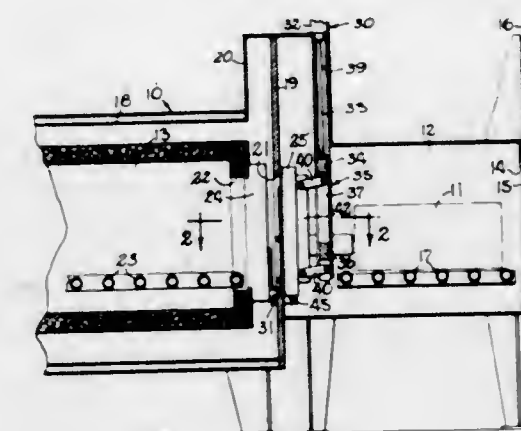
In a basket or tray preferably having side walls and ends made from a plurality of wickets or flat wires having crimps which are intermeshed in overlapping relation with the crimps of adjacent flat wires, the flat wires being interconnected by means of rods extending through the crimps thereof, the improvement wherein the side walls, formed transversely of the rods and wickets, are bent into an upwardly extending position about a fold line passing approximately through the point where adjacent intermeshed crimps overlap each other and a method of forming a basket by effecting the upward bend of the side wall along the fold line described above.

3,410,547

**DOOR ASSEMBLY FOR HEAT TREATING FURNACES**

Irvin P. Bielefeldt, Loves Park, Ill., assignor, by mesne assignments, to Alco Standard Corporation, Philadelphia, Pa., a corporation of Ohio

Filed Sept. 22, 1966, Ser. No. 581,357  
10 Claims. (Cl. 266-5)



8. In a heat treating furnace, the combination of, a walled structure enclosing a heating chamber and including a passageway for admitting workpieces into said chamber, first and second doors disposed on opposite sides of said passageway and movable back and forth across the passageway between positions opening and closing the passageway, mechanism connected to said first door for moving the latter toward its open position, and means con-

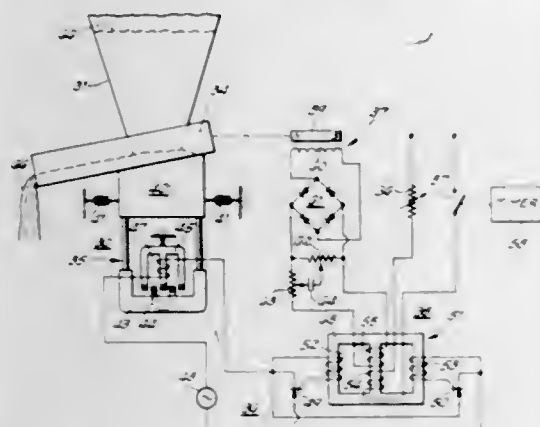


necting to said second door and responsive to movement of said first door through a predetermined distance toward its open position for moving the second door toward its open position.

3,410,548

# **APPARATUS HAVING A MATERIAL FEED MEANS FOR THE VACUUM TREATMENT OF MOLTEN METAL**

Walter Steckman, Canonsburg, Robert J. Taylor, McKees Rocks, and Eberhard G. Schempp, Glenshaw, Pa., assignors, by mesne assignments, to Lectromelt Corporation, Pittsburgh, Pa., a corporation of Delaware  
Filed Sept. 8, 1965, Ser. No. 485,798  
12 Claims. (Cl. 266—34)

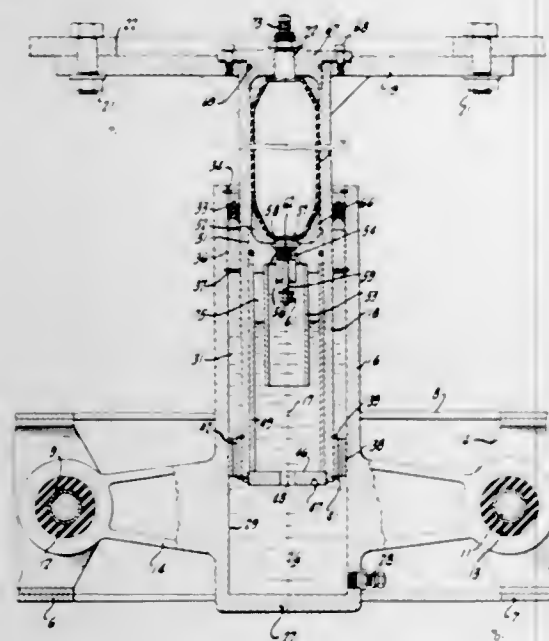


Mechanism including a vibratory feeder having an output the function of which depends on either amplitude or frequency of vibration, means to sense this amplitude or frequency of vibration to produce a signal, and means to compare this signal against a standard so that the amplitude or frequency of vibration can be varied responsive thereto for maintaining the output of material at some rate predetermined by the standard. The mechanism is connected to a vacuum chamber and operates to feed additives to molten metal therein as required.

3,410,549

# **VEHICLE SUSPENSION**

Edward G. Cheak, 36 Dean Way, Chico, Calif. 95926  
Filed July 5, 1966, Ser. No. 562,551  
5 Claims. (Cl. 267—64)



A strut connecting the main frame of a motor vehicle with the running gear thereof includes a pair of vertical, telescoping, tubular members arranged for relative rotation and translation. The members are constructed so as

to form a primary chamber containing a body of oil and air and a secondary chamber containing at least a body of air. Under conditions of light load the suspension provided by the hydro-pneumatic fluids in the primary chamber afford a good ride; under heavy loads the secondary chamber structure becomes operative, thereby also giving a satisfactory performance under conditions of heavy load.

3,410,550

# **SHEET FEEDING APPARATUS**

William H. Weidman, Maple Heights, and Frank L. Kastelic, Cleveland, Ohio, assignors to Harris-Inter-type Corporation, Cleveland, Ohio, a corporation of Delaware  
Filed Mar. 21, 1966, Ser. No. 535,877  
10 Claims. (Cl. 271—12)

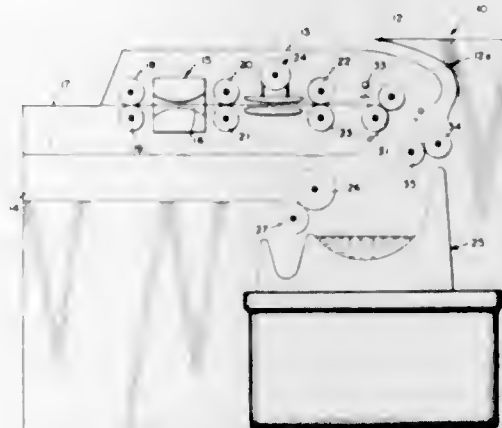


A sheet feeding apparatus includes a plurality of elongated members supported above a pile of sheets. Each of the elongated members has a sheet-engaging portion which is engageable with a sheet to limit the vertical movement thereof and to guide the sheet as the sheet is moved laterally of the pile. The individual elongated members are supported for adjustment in a direction transverse to the lateral movement of the sheet as well as in a vertical plane. The elongated members additionally are supported for bodily vertical movement and a safety switch is tripped to stop operation of an elevator which supports the pile in response to bodily vertical movement of the elongated members which would occur when the pile is excessively raised.

3,410,551

# **SHEET SEPARATOR**

Emil Tiger, Highland Park, Erskine G. Corman, Forest Park, and Kenneth R. Reick, Downers Grove, Ill., assignors to Formfoto Manufacturing Company, Addison, Ill., a corporation of Illinois  
Filed Mar. 7, 1966, Ser. No. 532,396  
6 Claims. (Cl. 271—64)



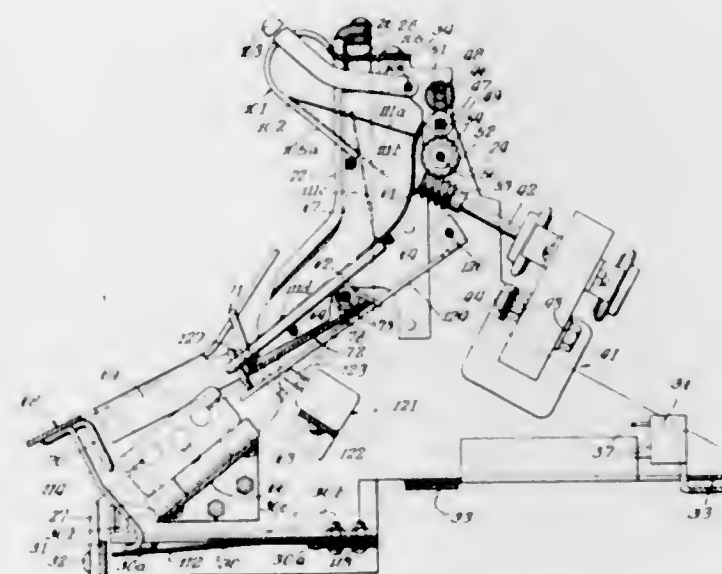
A sheet separator for an electrostatic copying machine or the like wherein the original and copy are fed together into the machine in generally aligned fashion—partic-

ularly as to the leading edges. The separator includes an electromechanical arrangement in which two rollers coact to develop a shingling of the sheets by temporarily retarding one sheet through braking one of the rollers. This causes the retarded sheet to "hump" and the humping is utilized to release the braked roller. The shingled sheets thereafter pass through the nip between the rollers and are separated by a second roller set.

3,410,552

# **LABEL HANDLING DEVICE**

James R. Collier, Chattanooga, Tenn., and Gerald W. Ruchty, Sidney, Ohio, assignors to Franklin Electric Co., Inc., Bluffton, Ind., a corporation of Indiana  
Filed May 23, 1966, Ser. No. 552,186  
10 Claims. (Cl. 271—65)

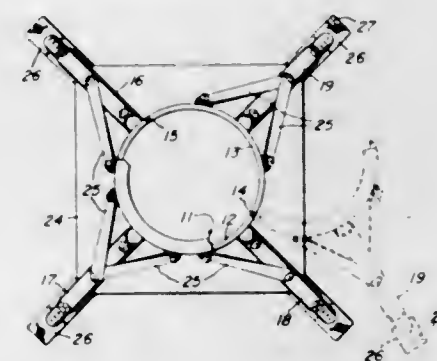


This disclosure deals with a label handling device for use with a label printing mechanism of a scale, for example. The label handling device includes a downwardly inclined chute which receives printed labels at its upper end. Two retractable label stops are located along the length of the chute, thus forming two possible label holding positions, and a heater may be provided at one of the two positions. The device further includes an adjustable mechanism at the upper end of the chute, which is adjustable between one position where it inverts labels entering the chute and a second position where it directs labels into the chute without inverting them.

3,410,553

# **ORTHOPEDIC SUPPORTIVE FRAME**

Moyer M. Safford, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York  
Filed Apr. 29, 1966, Ser. No. 546,299  
2 Claims. (Cl. 272—57)



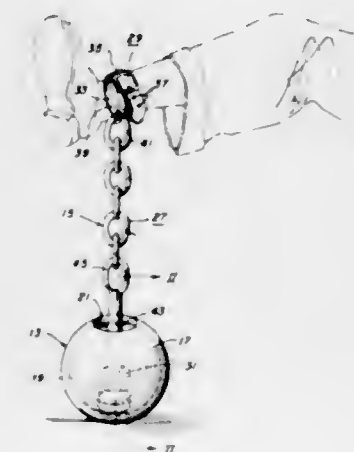
An exercising device is described for use by paraplegic patients, who require buildup of trunk and hip muscles. A single enclosing girding member, at least three extensible

support members depending therefrom and a stabilizer base connected to the lower ends of these support members cooperate to maintain a paraplegic patient (with lower extremities supported by separate artificial support means) in the erect position during the performance of physical exercise. The girding member is composed of at least two arcuate pieces. One of the arcuate pieces is hinged to the balance of the girding member has a given single support member attached thereto. By detaching the given single support member from the stabilizer base, separating one end of the one arcuate piece from the balance of the girding member and rotating the one arcuate piece together with the given single support member attached thereto about the hinged connection, access for the patient into the girding member is readily provided.

3,410,554

# **MAGNETIC BALL AND CHAIN GAME**

Billy Jack Harrison, Keiser, Ark.  
(Rte. 2, Batesville, Ark. 72501)  
Filed June 23, 1965, Ser. No. 466,396  
6 Claims. (Cl. 273—1)

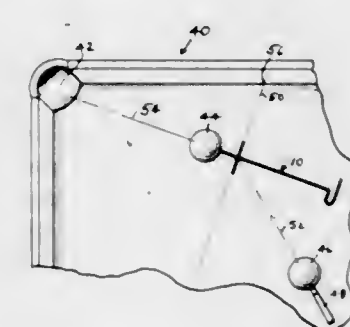


A ball and chain game having a length of chain with attachment means at one end thereof for attaching the chain to the ankle of the player and said chain being provided with magnetic means at the opposite end thereof to engage a ball portion of the game which has a block of magnetically attractable material secured to the ball in the interior thereof. A modified game has an additional chain portion and attachment means so that the additional chain portion can be attached to a second player's leg for the game to be played by two players.

3,410,555

# **CUE BALL AIMING DEVICE**

Ted E. Murch, Schenectady, N.Y., assignor to Joseph C. Sullivan, Garden City, N.Y.  
Filed Oct. 21, 1965, Ser. No. 499,794  
5 Claims. (Cl. 273—2)



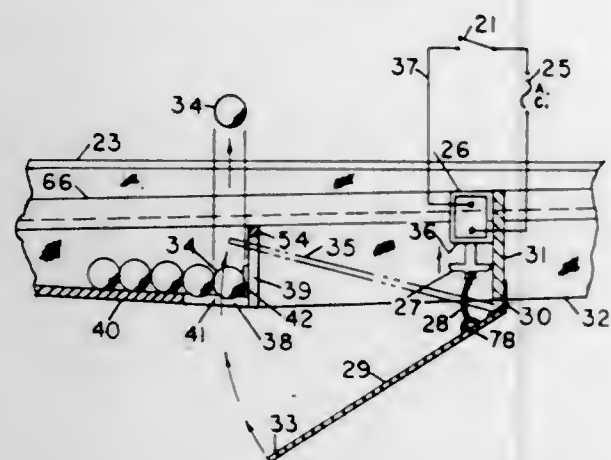
A cue ball aiming device for determining the direction in which a cue ball must be projected in order to strike and propel an object ball in a predetermined direction.



3,410,556

**POWER ACTUATED BALL EJECTING AND RETURN APPARATUS FOR TABLE TENNIS**

Karl N. Kaiser and Abraham Angelo Anapol, both of 8214 Sunset Blvd., Los Angeles, Calif. 90046  
Filed Sept. 3, 1965, Ser. No. 484,797  
2 Claims. (Cl. 273—30)

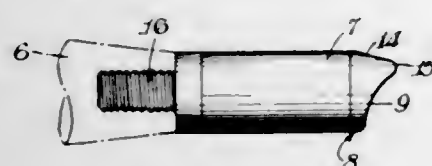


The invention provides a unique ball delivery and ball return system for table tennis enabling a single player to play the game. An attachment is provided at the far end of a table tennis table, which comprises net collecting means, ball storage and delivery means, and power actuated ball delivery means comprising means to impel a ball sharply vertically upward, and an obliquely inclined deflector plate which changes the course of the ball's trajectory from purely vertical to approximately horizontal. In a further embodiment of the invention, the glance or deflecting plate is a mirror, enabling the ball to be seen while still at rest and before vertical actuation.

3,410,557

**BILLIARD CUE TIP WITH A PLURALITY OF STRIKING SURFACES**

Leonard B. Stanley, 103½ Western Ave., Wilmington, Del. 19805  
Filed Aug. 23, 1965, Ser. No. 481,500  
5 Claims. (Cl. 273—70)



A cue tip is provided which has at least three surfaces for striking a cue ball. The surfaces comprise an arc which conforms to the outer surface of the cue ball, being thus a concave surface and a second surface being a substantially flat inclined plane and between these two surfaces, a third surface which is substantially flat and perpendicular. Striking the cue ball with the latter surface is similar to striking the ball with the conventional, convex cue tip. Striking the ball with the concave surface affords greater contact with the ball and greater control than obtainable with the conventional tip and the greater the contact with the arcuate surface with a downward force the greater the back-spin of the ball. The flat inclined surface is an undercutting that allows one to make a lower contact with the ball.

Provided also is a ferrule or cue tip holder, which bears indicia in the form of arrows indicating whether normal or back-spin will be imparted when the cue is held in a given position.

3,410,558

**GOLF CLUB HEAD ATTACHING MEANS**

John Reuter, Jr., 615 E. Broadway, Phoenix, Ariz. 85040  
Filed Dec. 1, 1965, Ser. No. 510,802  
3 Claims. (Cl. 273—80.2)

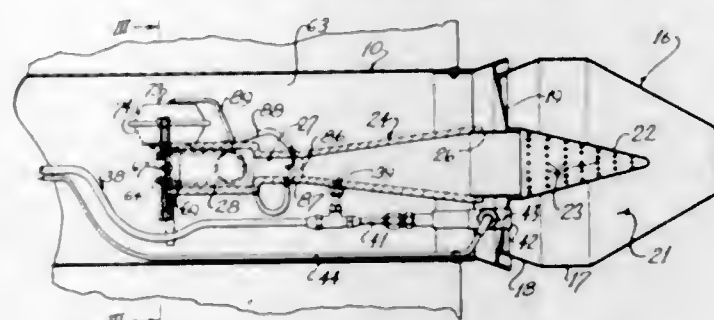


A golf club construction particularly adapted for woods with steel shafts wherein the head and hosel are provided with a bore which is of greater diameter near the sole of the head than at the top of the hosel, and a rigid pin is inserted into the bore in a manner to extend upward beyond the hosel so that the hollow bottom of the steel shaft can be secured to the protruding end of the pin. The bottom of the bore is closed with a plug and the wedging action produced by centrifugal force as the club is swung serves to hold the head tighter on the shaft without splitting the upper end of the hosel.

3,410,559

**AIRBORNE TARGET WITH INFRARED SOURCE**

Felder A. Miller, Jr., and Charles L. Ray, Birmingham, Ala., assignors to Hayes International Corporation, a corporation of Delaware  
Filed Apr. 26, 1966, Ser. No. 545,309  
3 Claims. (Cl. 273—105.3)



An airborne target carrying a hydrocarbon fueled infrared source, the apparatus being equipped with pressure sensitive controls for the burner which assure the burning of precise quantities of fuel at different density altitudes and at different air speeds, whereby a substantially predetermined amount of infrared radiation is emitted at all times.

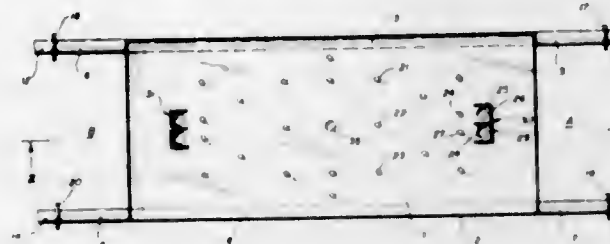
3,410,560

**MOVABLE SURFACE MARBLE GAME WITH GOAL POCKETS**

Sandy F. Kraemer, 520 Laurel, Colorado Springs, Colo. 80904  
Filed Apr. 29, 1965, Ser. No. 451,921  
4 Claims. (Cl. 273—115)

A player movable playing board accommodating a ball and the like to be moved about the surface, which sur-

face is provided with suitable obstacles and keepers adapted to receive the ball at the urging of a player. The board being provided with handles having a hand grip-

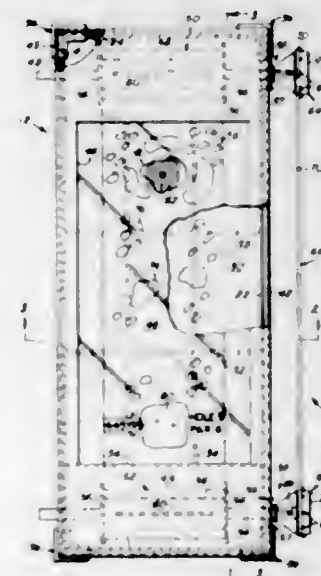


ping area with guards thereon adapted to support the hand gripping area above a support surface.

3,410,561

**SIMULATED GOLF GAME**

James Ekstrand, 4301 45th Ave., Sacramento, Calif. 95824  
Filed Aug. 26, 1965, Ser. No. 482,721  
5 Claims. (Cl. 273—134)



A simulated golf game apparatus including a playing box provided with a transparent playing surface and carrying a roll of web material marked with indicia representing the several holes of a golf course, including traps and obstructions thereon, to simulate the appearance of a golf course, said web material being mounted on spaced reels and disposed to be transferred from one of the reels to the other under the transparent playing surface, the transparent playing surface being provided with a plurality of concentric circles, the reels being shiftable along the axes thereof to position the green of a particular golf course portion under the concentric circles on the transparent playing surface, disc-like members being secured to the ends of the shafts upon which the reels are mounted and an elongate tension strip secured around said disc-like members to prevent inadvertent rotation of the shafts during play, said apparatus further including an accessory golf cart-like device having a plurality of slots for accommodating a plurality of fan shaped simulated clubs positioned on the golf cart, a spinner for controlling the order of play, and tables and height and distance indicia charts for determining the distance and path of flight of a simulated golf ball.

3,410,562

**GOLF CLUB WITH INTERCHANGEABLE REMINDER BUTTONS**

Alvin Lefleur, Miramar, Fla., assignor to Golf Dial-A-Tip, Inc., Whitestone, N.Y.  
Filed Aug. 2, 1965, Ser. No. 476,441  
3 Claims. (Cl. 273—162)

A plurality of interchangeable reminder buttons are

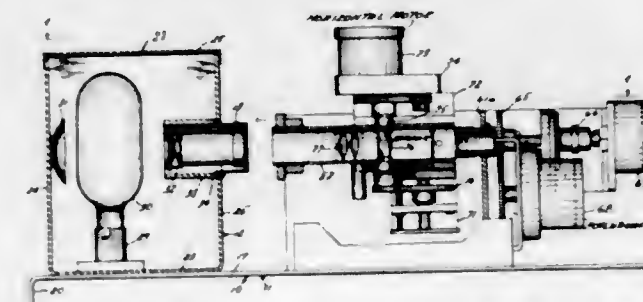


provided for attachment one at a time to the shaft of a golf club. Each button carries different indicia on its face which will act as a reminder to the golfer of a particular deficiency of his golf swing.

3,410,563

**GOLF BALL IMAGE PROJECTOR INCLUDING DIAPHRAGM CLOSABLE AT DIFFERENT SPEEDS**

Maximilian Richard Speiser, 17 W. 60th St., New York, N.Y. 10023  
Filed May 25, 1964, Ser. No. 369,850  
3 Claims. (Cl. 273—185)

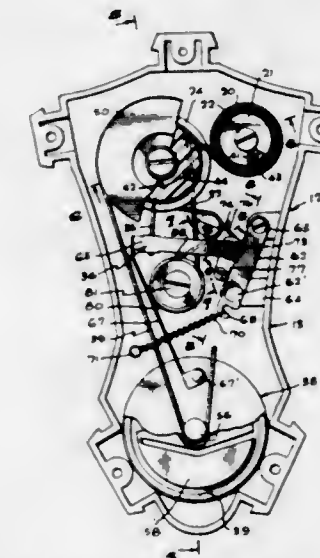


A computer-actuated golf ball image projector including a diaphragm which may be closed at different speeds representative of different attained distances of a driven golf ball. Means are provided for causing the projected ball image to look like an actual golf ball in flight.

3,410,564

**MINIATURE PHONOGRAPH**

Theodore R. Duncan, North Hollywood, and Robert N. Aleson, Sylmar, Calif., said Duncan assignor of one-quarter to T. Roger Duncan and one-quarter to Alan C. Duncan, both of Los Angeles, Calif.  
Filed July 27, 1965, Ser. No. 475,056  
5 Claims. (Cl. 274—1)



A miniature phonograph employing a self-coiling record spring of constant torque with sound grooves in one



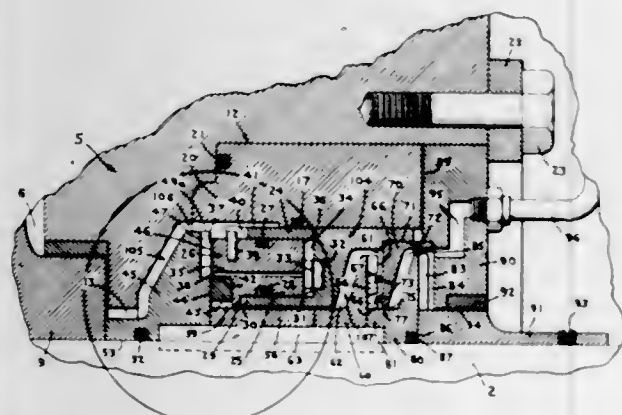
side thereof, a sound pickup needle carried by a pivoted tone arm and engageable with the record, a string for winding the record spring by uncoiling it from one drum onto another, the string being connected to the tone arm so that responsive to pulling of the string the tone arm is withdrawn from the record spring into engagement with a cam wheel which is also actuated by the winding string. The cam wheel moves the tone arm laterally of the record, and upon releasing the winding string, the tone arm is spring biased back into engagement with the record spring at a random lateral position thereon.

#### ERRATUM

For Class 274—47 see:  
Patent No. 3,410,464

3,410,565

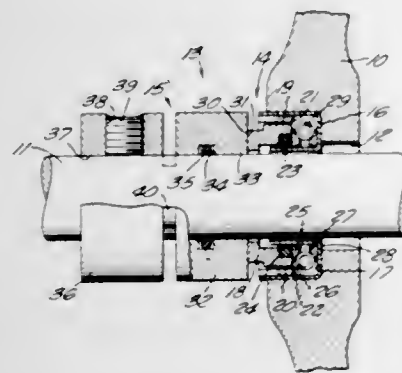
**CENTRIFUGAL AND FACE CONTACT SEAL**  
John G. Williams, Warren Township, Somerset County, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware  
Filed July 27, 1966, Ser. No. 568,267  
7 Claims. (Cl. 277—3)



In a rotary device for handling fluid under pressure, including a shaft rotatably mounted therein, a mechanical seal is provided to prevent leakage across said shaft including a rotatable element and a stationary element, wherein the stationary element is adjustable for axial movement relative to the rotatable element and is responsive to changing differential pressure forces established axially across it.

3,410,566

**SEALING MEMBER FOR MECHANICAL SEALS**  
Winfred J. Wiese, Whittier, Calif., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois  
Filed Mar. 28, 1966, Ser. No. 537,779  
9 Claims. (Cl. 277—81)

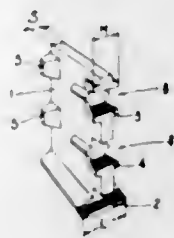


A mechanical seal in which either the rotary sealing member or the stationary sealing member is a monolithic

structure having a sealing ring portion, a spaced mounting ring portion in the form of a closed ring, and a radial set screw for clamping the mounting ring portion to its support. The sealing ring portion is joined to and driven by the mounting ring portion through a pair of oppositely disposed, axially extending webs located 90° on either side of the set screw. Stresses set up in the mounting ring portion when the set screw is tightened are not substantially transferred through the webs to the sealing ring portion which, with its sealing surface, remains substantially undistorted.

3,410,567

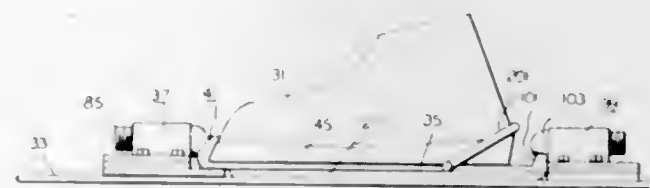
**LIGHT-ALLOY PISTON WITH STEEL-ARMORED GROOVES**  
Mario Agostinone, Via Boifava 25, Brescia, Italy  
Filed Mar. 31, 1966, Ser. No. 539,138  
Claims priority, application Italy, Apr. 10, 1965, 757,363  
2 Claims. (Cl. 277—189.5)



A light-weight alloyed piston with cast plurality of steel plates radially located along the periphery of the piston. The plate has a base with a width greater than the average thickness of the plate so as to absorb part of the forces exerted on the rings.

3,410,568

**TENSION ADJUSTABLE RELEASABLE SKI BINDING**  
Philip K. Wiley, 326 W. 7th St., Traverse City, Mich. 49684  
Filed June 6, 1966, Ser. No. 555,294  
9 Claims. (Cl. 280—11.35)



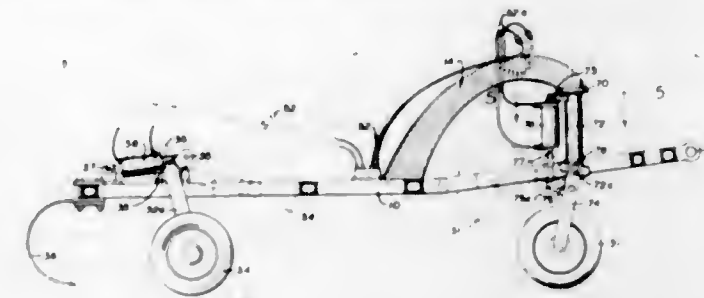
A releasable ski binding having plate means adapted to be affixed to various sizes of boots and to be received between forward and rear convex surfaced means affixed to the ski and adjustably biased into engagement with the plate means. The forward end of the plate means is shaped to permit easier release of the boot in one direction than in another and the convex surfaced means may be adjustably mounted on the ski by separate mounting means.

3,410,569

**CASTER-WHEELED FARM CART**  
Francis W. Blake, Hereford, Colo. 80732  
Filed Nov. 7, 1966, Ser. No. 598,137  
3 Claims. (Cl. 280—43.23)

A plural-wheeled farm cart, with the wheels pivotally mounted for unison vertical arc movement with relation to the frame, for raising and lowering of the frame, and

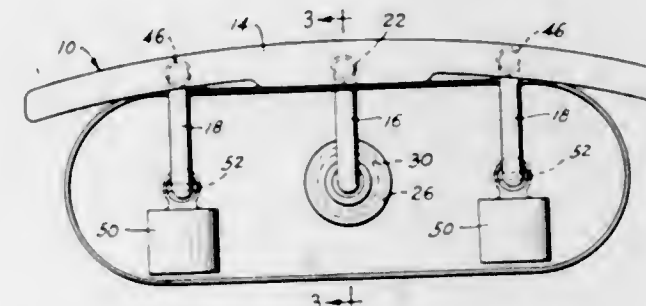
with one of said wheels being the only front wheel thereof and that front wheel being also caster mounted and



being also adapted for 360 degree horizontal rotational movement in a well of the frame.

3,410,570

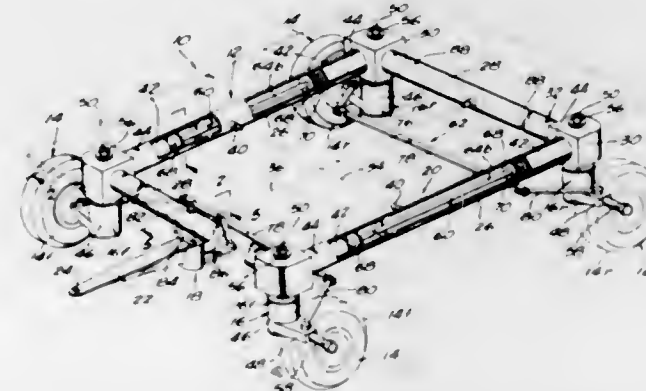
**STEERING CONTROL MECHANISM**  
Arthur K. Brown, Jr., South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware  
Filed Jan. 12, 1967, Ser. No. 608,924  
11 Claims. (Cl. 280—94)



The following relates to a parallel motion steering device which can be utilized as a replacement for the conventional steering wheel of an automotive ground vehicle. The device utilizes a four bar linkage arrangement wherein the parallel reciprocating motion of a manually operated steering bar is transformed into rotary motion of the vehicle steering shaft.

3,410,571

**FOUR-WHEEL STEERING TORSION-BAR**  
Charles Richard Bishop, deceased, late of Garden Grove, Calif., by Muriel Janet Bishop, executrix, 10342 Hill Road, Garden Grove, Calif. 92640  
Filed July 11, 1966, Ser. No. 565,056  
10 Claims. (Cl. 280—99)

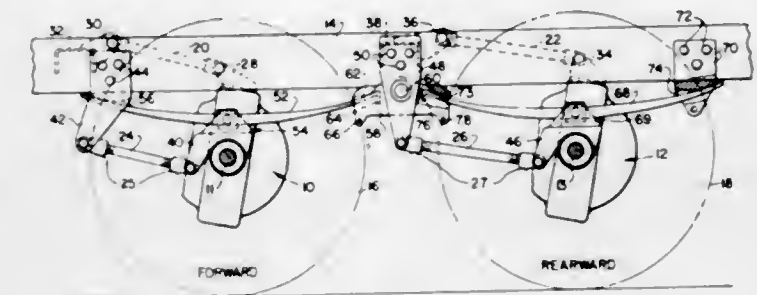


A wheeled vehicle is provided having a closed torque loop steering system connecting the vehicle wheels for unified steering movement of the wheels. The steering system embodies elastic means which are pre-stressed to maintain in the steering system a torsional stress or load for eliminating backlash. The vehicle is disclosed in connection with an articulated vehicle frame having tubular

frame members which contain torque shafts of the steering system and are pivotally interconnected by corner members in such a way that the frame may twist freely without torsional stressing of the frame to permit the wheels to follow the ground contour.

3,410,572

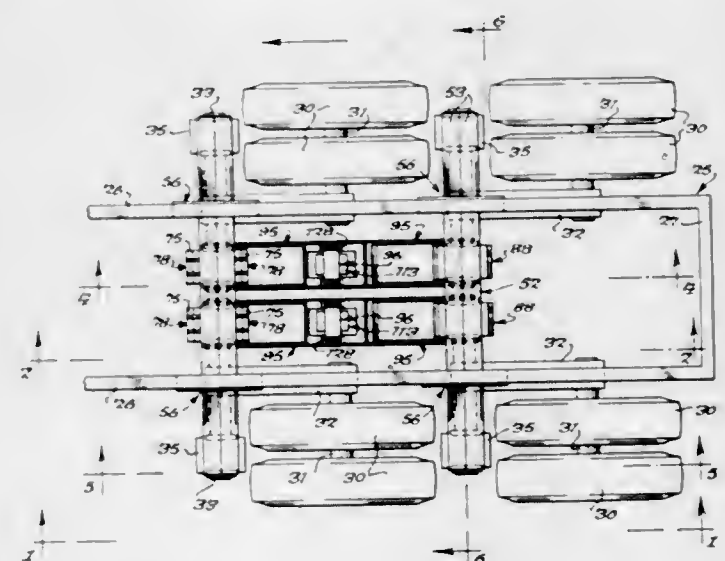
**TANDEM DRIVE AXLE SUSPENSION**  
Gus L. Poulos, Rochester, Mich., assignor, by mesne assignments, to Rockwell-Standard Company, Pittsburgh, Pa., a corporation of Delaware  
Filed Mar. 18, 1966, Ser. No. 535,392  
12 Claims. (Cl. 280—104.5)



A tandem drive axle spring suspension comprises at each side of the vehicle a pair of leaf spring units, each unit being pivoted intermediate its ends upon an axle housing on an axis that is substantially parallel to the axle, equalizers pivoted intermediate their ends on the vehicle frame on a transverse axis and connected between adjacent ends of the spring units at each side, connections between each of the other ends of the spring units and the vehicle frame and a series of torque rods pivotally connected at opposite ends on parallel transverse axes to extend between the axle housings and the frame and define at each axle a flexible parallelogram linkage connecting the axle to the frame.

3,410,573

**SPRING SUSPENSION**  
Albert F. Hickman, Eden, N.Y. 14057  
Continuation-in-part of application Ser. No. 484,849, Sept. 3, 1965. This application Nov. 3, 1966, Ser. No. 591,899  
16 Claims. (Cl. 280—104.5)



While not limited to any particular service, the suspension is shown as being a so-called independent wheel suspension between a frame and one of its supporting wheels, the wheel rotatably supporting an axle and the axle supporting the free end of a first arm which is in

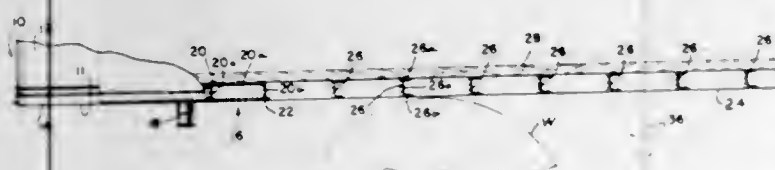


turn fixed to a hub member or cross shaft journaled on the frame. A second arm is fixed to and projects radially from the hub member and compressively bears against the end of a resilient rubber body connected to the frame, the second arm acting upon the rubber body in direct compression to expand and contract the rubber body laterally of the force of such compression to provide substantially the entire resiliency in supporting the frame upon the wheel.

3,410,574

## VEHICLE FLOOR SUPPORT

Harry G. Cohen and Donald M. Turnbull, Cincinnati, Ohio, assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware  
Filed Sept. 19, 1966, Ser. No. 580,243  
14 Claims. (Cl. 280-106)

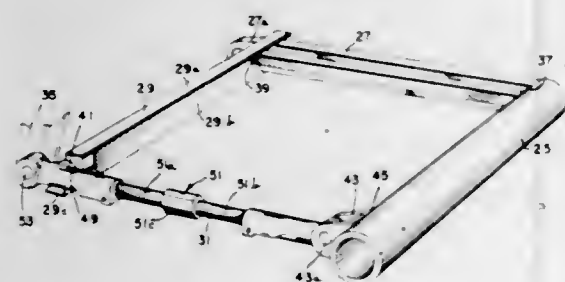


A trailer vehicle underframe construction comprising an upper fifth wheel assembly portion, an intermediate underframe portion, and side body rail portions, and a floor support comprising a horizontal plate member having integral attachment with the side body rail portions, with the fifth wheel assembly and the intermediate underframe portion, the plate member being above the bottom of the fifth wheel assembly and below the floor of the vehicle.

3,410,575

## STABILIZING STRUCTURE FOR A VEHICLE SUSPENSION SYSTEM

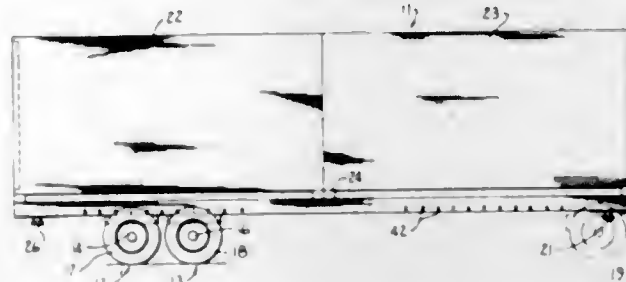
Donald M. Turnbull, Cincinnati, and Joshua J. A. Hall, Vandalia, Ohio, assignors to Pullman, Incorporated, Chicago, Ill., a corporation of Delaware  
Filed July 18, 1966, Ser. No. 566,010  
12 Claims. (Cl. 280-124)



1. A combination torque arm and radius rod mechanism for a resilient cushion vehicle suspension system for a vehicle body and axle means comprising a stabilizing beam structure having a first end portion for fixed connection with the axle means and a second end portion, a roll arresting lever means having a first end fixedly connected with the second end portion of said beam structure and having another end, a radius rod having one end connected with said other end of the roll arresting lever means for axle alignment and having another end portion for pivotal connection with the vehicle axle means, the beam structure and the radius rod being adapted for pivotal connection with the vehicle body, the beam structure, the roll arresting member, and radius rod, and the axle means defining generally a rectilinear structure resiliently suspended from said trailer body to function as a radius and torque rod and track and sway bar mechanism.

3,410,576

REVERSIBLE TANDEM-AXLE SEMITRAILER  
Russell L. Turpen, North Richmond, Calif., assignor to Compass Container Company, Inc., Richmond, Calif., a corporation of California  
Filed June 21, 1966, Ser. No. 559,317  
5 Claims. (Cl. 280-423)

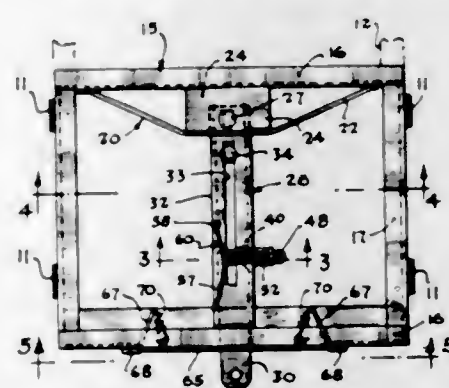


A semitrailer is described having tandem-axle and wheel assemblies which are movable separately longitudinally of the trailer to facilitate reversal of the trailer without requiring the use of auxiliary retractable landing gear. The trailer includes a bed having longitudinally extending rails to which a pair of axle and wheel assemblies are slidably secured. Each of the axle and wheel assemblies has a separate brake system for its wheels which permit individual braking of each assembly. A locking pin arrangement is associated with each axle and wheel assembly to permit selective locking of the same at different longitudinal positions along the rails, and hitches are provided at each end of the bed for coupling the trailer to a tractor.

3,410,577

## COUPLING DEVICE

Wilbert L. Lulstra, May City, Iowa 51349  
Filed Sept. 15, 1966, Ser. No. 579,612  
8 Claims. (Cl. 280-478)



A coupling device for hitching a motor vehicle to machinery to be towed. The device is a manufactured unit comprising a rectangular shaped angle iron frame and a tongue assembly pivoted to the front of the frame and confined to swing in a slot in the rear of the frame. The tongue assembly comprises a casing, a tongue extendable and retractable in the casing and latches for holding the tongue in towing position and at predetermined lengths. The frame is also provided with special supports associated with the pivoting device and with the slot in which the tongue swings laterally.

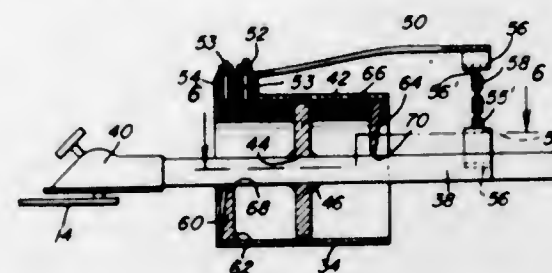
3,410,578

## TRAILER HITCH

Henry S. Boone, 2342 Midfield Drive, Montgomery, Ala. 36111  
Filed Nov. 4, 1966, Ser. No. 592,199  
7 Claims. (Cl. 280-484)

A hitch construction for a trailer frame including a generally longitudinally extending horizontally disposed cylindrical member rigidly supported from the trailer frame and a tongue portion extending through the cylin-

dral member having an enlarged ball element defining portion thereon supported from the cylindrical member for limited reciprocation therein and limited universal

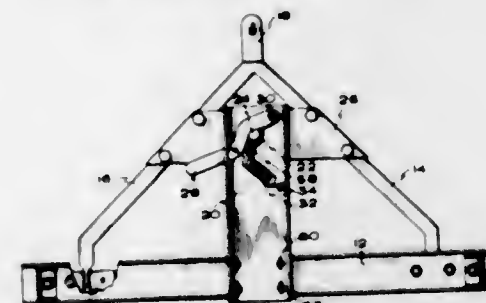


oscillation relative thereto, and spring means connected between the tongue portion and the cylindrical member yieldingly urging the former to a generally centered position relative to the latter.

3,410,579

## TOWBAR QUICK-LATCH

Renold O. Jensen, 621 Kensington Ave., Salt Lake City, Utah 84105  
Filed July 13, 1966, Ser. No. 564,896  
10 Claims. (Cl. 280-491)

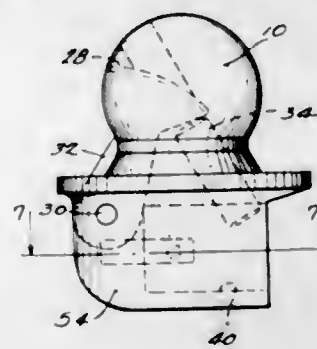


A quick-latch for towbars having a pair of convergently arranged struts connected together at their point of convergence and journaled at their opposite ends to the bumper of a traction vehicle, which includes a towbar support member attached to the bumper of the vehicle for supporting the towbar in a guard position, attaching means affixed to the support member for attaching the towbar to the support member, locking means attached to the towbar in coacting relationship with said attaching means for quick-locking the towbar to the attaching means, and bumper means attached to the converging struts for holding the struts at a position spaced apart from the support member when the struts are in their guard position.

3,410,580

## HITCH LOCK

Ernst A. Longenecker, 17820 Robinwood St., Brookfield, Wis. 53005  
Filed Sept. 20, 1966, Ser. No. 580,444  
19 Claims. (Cl. 280-507)



Generically, it is contemplated that a part manipulated to release one member from another shall be accessible only in a recess in which a lock body is housed and in which it can be locked. In other words, the entire lock

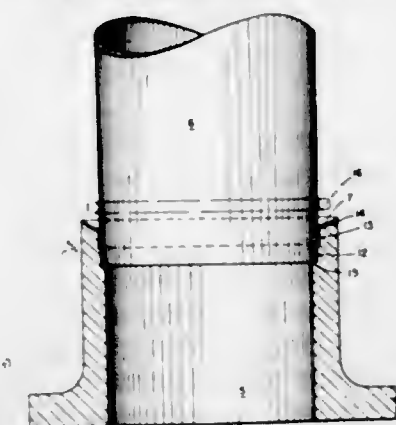
body is rendered substantially inaccessible by housing it in the said recess where only the key slot is exposed. In most embodiments, the lock body is removed in its entirety to give access to the member that secures the parts in connection. However, in one embodiment, the lock body is not completely withdrawn from the recess, but is only partially withdrawn, and the movement of the lock body itself to and from its fully housed position manipulates the mechanism.

Another generic concept involves an arrangement whereby a screw of some sort releasably secures the detachable parts in connection and is accessible for manipulation only by removal of the lock body from the recess.

3,410,581

## SHELL-AND-TUBE TYPE HEAT-EXCHANGER

Donald W. Christensen, Racine, Wis., assignor to Young Radiator Company, Racine, Wis., a corporation of Wisconsin  
Continuation of application Ser. No. 457,459, May 20, 1965, which is a continuation-in-part of application Ser. No. 161,896, Dec. 26, 1961. This application Jan. 26, 1967, Ser. No. 621,090  
1 Claim. (Cl. 285-21)

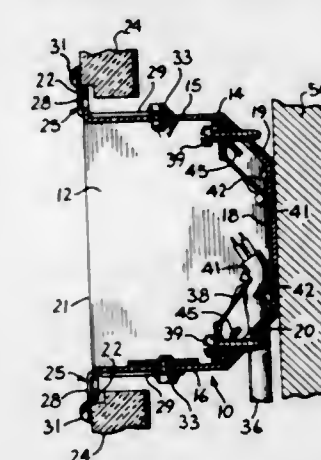


The essential concept of this invention involves forming a shell-and-tube heat exchanger wherein hard-metal hubs are machined to form a pair of concentric counter-bores the inner of which bores is dimensioned to effect perfect circularity of the shell end when inserted into the inner counter-bore and provide for so spacing of the adjacent peripheral area of the shell end and the outer counter-bore as will ensure a firm bonding of the shell and the end hubs.

3,410,582

## BOX CLAMP AND SCREW ASSEMBLY

Norton A. Appleton, Northfield, Ill., assignor to Appleton Electric Company, Chicago, Ill., a corporation of Illinois  
Filed Oct. 5, 1966, Ser. No. 584,578  
3 Claims. (Cl. 285-128)

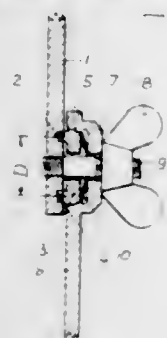


A switch box having end panels each formed with a transverse tab which receive a screw for adjustably secur-



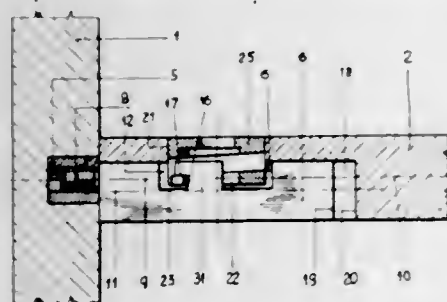
ing a cable clamp member. The transverse tab is formed generally parallel to and spaced a distance from the back panel of the switch box so that the screw is disposed perpendicularly to the back panel and is permitted a full range of adjustment while maintaining clearance with the plane of said back panel.

**3,410,583**  
**INFINITELY VARIABLE ADJUSTING AND LOCKING DEVICE**  
Werner E. Altmann, Knoedelstrasse 4,  
Stuttgart 13, Germany  
Filed Apr. 6, 1966, Ser. No. 540,547  
Claims priority, application Germany, Apr. 6, 1965,  
A 48,849  
12 Claims. (Cl. 287—14)



A device for adjusting two or more arms or other elements pivotable about a common axis to any desired relative angular positions and for locking the elements in the adjusted position, including opposed cam surfaces, one of which is formed on a first surface of one of the arms or elements with the mating surface being formed on one end of a locking member disposed between the arms or other elements and mounted rotatably upon the common axis. The present invention further contemplates at least one pair of opposed friction surfaces, one of which is formed by the exterior surface of the locking member, while its mating surface is formed by the interior surface of a bore in a second arm or element. Additionally, the device according to the present invention further includes a biasing spring interposed between the locking member and the second arm or other element and a tightening means for overcoming the force of the biasing spring to cause engagement of the opposed cam surfaces and opposed friction surfaces, thereby locking the arms or other elements in the predetermined relative angular position thereof.

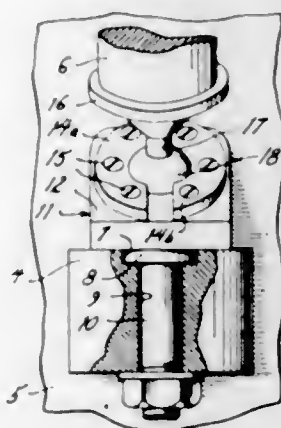
**3,410,584**  
**CABINET ATTACHING DEVICE**  
Johannes Antonius Bus, Rothrist, Aargau, Switzerland,  
assignor to Bus-Wand A.G., Glarus, Switzerland  
Filed June 14, 1966, Ser. No. 557,438  
Claims priority, application Switzerland, June 16, 1965,  
8,470/65  
5 Claims. (Cl. 287—20.925)



A detachable fastening device for intermediate shelves, wall dividers and the like in furniture cabinets comprising a panel with a slotted recess at an end, a bore at the top

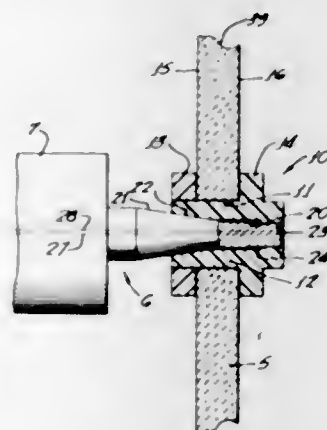
into the recess, a fitting within the slot, the fitting having a tap which extends into the wall socket of the cabinet, the tap extending from a supporting part of the fitting along an axis which is asymmetrical to the axis of the support and coincides with the axis of the panel being inserted, the support being formed with cutouts having surfaces in hook-shape and U-shape, respectively, and a cylindrical clamp having an eccentric bore on its underside, the bore having walls shaped as cams bearing against the hook cutout of the supporting members so that twisting of the clamping member about its central axis pulls the support in both radial and axial directions to thereby press the panel against the walls of the cabinet.

**3,410,585**  
**BOOM MOUNTING**  
Virgil H. Trevisan, 825 Lincoln Ave.,  
Pltman, N.J. 08071  
Continuation-in-part of application Ser. No. 545,177,  
Oct. 21, 1965. This application Jan. 16, 1967, Ser.  
No. 609,419  
5 Claims. (Cl. 287—21)



A universal mounting is provided for a swinging boom with a generally spherical foot. The mounting is rotatable azimuthally on a supporting boom step and includes a socket member having a sloping upper surface hollowed to receive the boom foot, which is retained therein by split-ring means on the sloping surface.

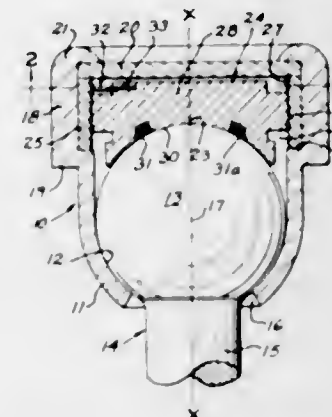
**3,410,586**  
**ABRASIVE WHEEL SUPPORT**  
Roland S. Gervais, 630 Anna Drive,  
Anaheim, Calif. 92805  
Filed Oct. 18, 1965, Ser. No. 496,848  
3 Claims. (Cl. 287—53)



A bushing having internal threads on one end and an outwardly tapered conical surface on the opposite inner end of the bushing bore is bonded in the center of a grinding wheel. The bushing carrying the grinding wheel is threaded onto the end of a spindle having a tapered surface which mates with the tapered surface on the bushing to assure that the grinding wheel is always mounted

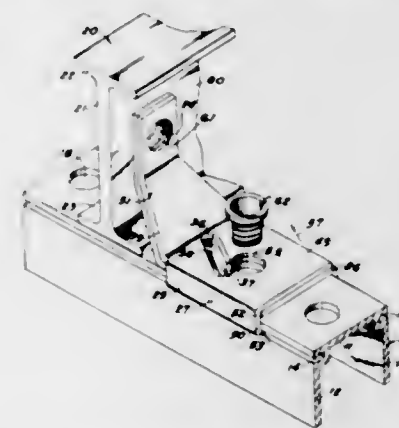
with the same angular orientation relative to the spindle.

**3,410,587**  
**SELF-ADJUSTING MOVABLE JOINT DEVICE**  
William A. Scheublein, Jr., Ballwin, and Louis P. Fister,  
St. Louis, Mo., assignors to Moog Industries, Inc., St.  
Louis, Mo., a corporation of Missouri  
Filed Oct. 17, 1966, Ser. No. 587,165  
7 Claims. (Cl. 287—87)



1. A self adjusting movable joint device comprising: a housing member having a socket therein; a stud having an enlarged head at least rotatably bearing in said housing socket and said stud having a shank projecting from said housing, said housing member providing a space therein at one end of said housing and adjacent said stud head; and self adjusting means including a wear take-up member in said space engaged with said enlarged head, said housing member and wear take-up member having inter-engaging thrust surfaces normally effective to permit movement of said wear take-up toward and away from said stud head upon rotation of said stud head relative to said housing socket, a control element carried by one of said members and operably engaged with said interengaging thrust surface of the other said members to limit said movement of said wear take-up member to the direction toward said stud head to take-up wear, and means between said stud head and wear take-up member operable to generate additional friction therebetween for causing said wear take-up member to move substantially only in the limited wear take-up direction, said means being free to slip relative to said stud head upon friction in said inter-engaging thrust surface exceeding the generated friction.

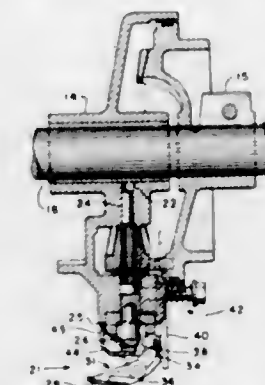
**3,410,588**  
**STRUCTURAL SHAPE CONNECTOR**  
John S. Frye, 3098 Trafalgar, Chamblee, Ga. 30005,  
and James B. Fuss, 3245 Enon Road, College Park,  
Ga. 30022  
Filed Dec. 22, 1966, Ser. No. 605,144  
4 Claims. (Cl. 287—189.35)



A structural shape connector of the type utilized to connect the joist of a floor to the sill. The connector is formed of two parts that are placed in side by side relationship,

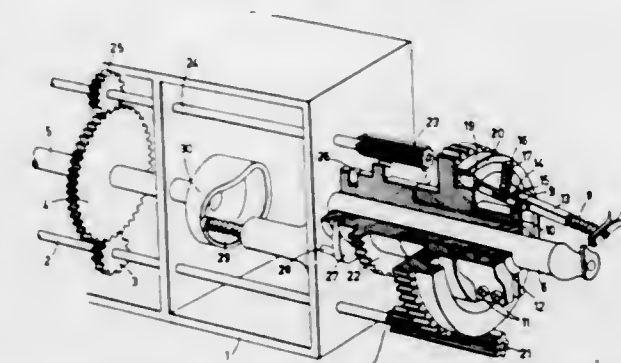
includes flanges that grip a corresponding groove in the sill structure, and a sloped, upwardly extending stem which is connectable to the web of an I-beam joist. A resilient fastener attaches the connector to the sill and floor joist. The fastener is constructed of spring steel and defines a hexagonal through bore and external threads so that it can be threaded into an aperture defined in a structural shape from the remote side of the shape.

**3,410,589**  
**KNOTTER BILL HOOK**  
Edwin B. Nolt, New Holland, Pa., assignor to Sperry  
Rand Corporation, New Holland, Pa., a corporation  
of Delaware  
Filed Apr. 25, 1967, Ser. No. 633,496  
5 Claims. (Cl. 289—8)



A knotter bill hook having a cup thereon surrounding the shank of the bill hook and enclosing the actuating end of the bill hook tongue and the tongue actuating cam to prevent the snagging of twine behind the actuating end of the tongue and to protect the tongue actuating cam.

**3,410,590**  
**DEVICE FOR TYING THE ENDS OF YARNS**  
Alois Altenweger, Uster, Switzerland, assignor to  
Zellweger Ltd., Uster, Switzerland  
Filed Apr. 10, 1967, Ser. No. 629,775  
Claims priority, application Switzerland, Apr. 15, 1966,  
5,573/66  
7 Claims. (Cl. 289—12)



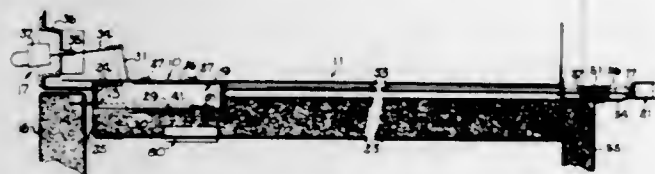
A device for tying the ends of yarns having a stationary mandrel and a yarn gripper positioned adjacent the end of said mandrel and mounted for rotation thereabout wherein a cam wheel rotated relative to the gripper provides a cam track within which a follower connected to said gripper rides for effecting movement of said gripper toward said mandrel.

**3,410,591**  
**LATCHING DEVICE**  
Roland V. Fowler, Rockford, Ill., assignor to  
Amerock Corporation, Rockford, Ill., a cor-  
poration of Connecticut  
Filed Nov. 4, 1966, Ser. No. 592,137  
18 Claims. (Cl. 292—113)

A latch for a self-cleaning oven and comprising a handle operable to move a bolt along a first path into



engagement with a strike on the oven door and then inwardly along a second path to a latched position to draw the door in tightly against the oven cabinet. A spring acting on the bolt normally holds the bolt for movement in



its first path and prevents the bolt from moving inwardly to its latched position unless the door is closed and the bolt actually engages the strike to create a force overcoming the spring force.

3,410,592

**GRIPPER FOR PHONOGRAPH RECORD DISKS**

Eduard Hansjörg Schweizer, 4171 Kapellen,

Geldern, an der Muhle, Germany

Filed Sept. 15, 1966, Ser. No. 579,727

Claims priority, application Germany, Sept. 16, 1965,

Sch 37,740

2 Claims. (Cl. 294—16)



A gripper for phonograph record disks wherein a pair of circular resiliently deflectable coextensive synthetic-resin plates are held in spaced-apart relationship by a tongue and grooved arc-segmental connecting bridge extending over a limited portion of the circumference of the plates, the inner faces of the plates being lined with a velvet-like material.

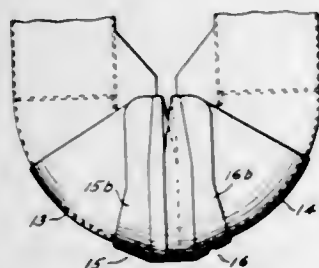
3,410,593

**CLAMSHELL BUCKET LIPS**

Edward J. Goodman, Jr., Baltimore, Md., assignor to Bethlehem Steel Corporation, a corporation of Delaware

Filed June 13, 1966, Ser. No. 557,032

2 Claims. (Cl. 294—70)



Pair of overlapping lips for the scoops of a cleanup type of clamshell grab bucket. The lips prevent spillage of material from the bucket. Each lip is formed of two halves welded together.

3,410,594

**WORKPIECE LOADING FIXTURE**

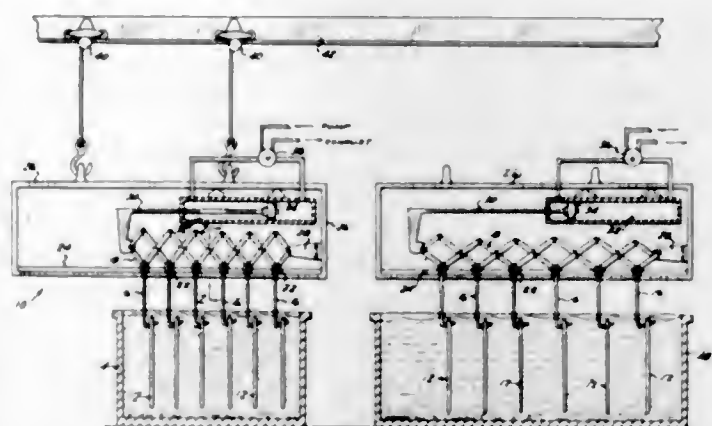
Carl J. Albrecht, Kronberg, Taunus, Germany, assignor to Kolene Corporation, Detroit, Mich.

Filed Mar. 28, 1967, Ser. No. 626,628

1 Claim. (Cl. 294—81)

A power cylinder-operated lazy tong linkage supports a plurality of evenly spaced workpiece carrying hooks, and

is selectively operable to uniformly increase or decrease the horizontal spacing between such hooks as required by



the characteristics of the particular heat treating bath into which the load of workpieces is to be immersed.

3,410,595

**TIME-DELAY MECHANISM**

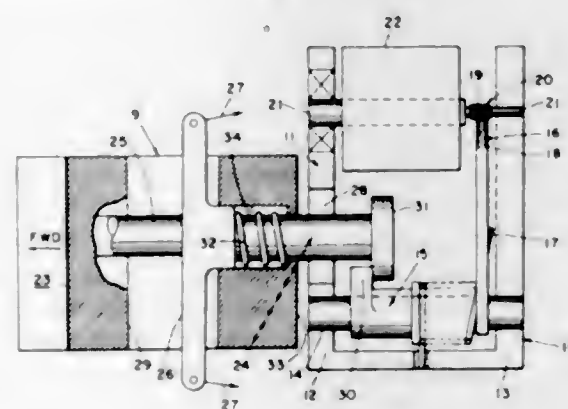
Irvin O. Wolf, Jr., Lutherville, and Walter L. Black, Upper Falls, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Continuation-in-part of application Ser. No. 476,219,

July 30, 1965. This application Apr. 28, 1967, Ser.

No. 635,956

6 Claims. (Cl. 294—83)



This time-delay mechanism for releasing a torpedo includes a locking stud which normally is held against a locking cam by spring pressure to prevent rotation of a sector gear and related inertia wheel. The occurrence of drogue and main parachute loads is required to move the locking stud aft thereby freeing the cam only during such periods of selected peak loads, permitting selected rotation of the inertia wheel and sector gear. Torpedo release occurs only after the locking cam and the functionally connected sector gear and inertia wheel have rotated sufficiently to move the locking cam out of the path of the locking stud.

3,410,596

**BOTTLE CARRIER**

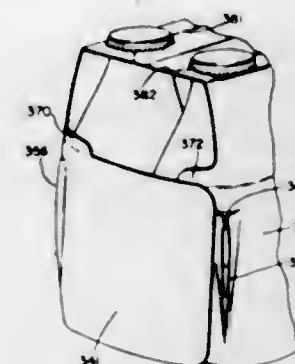
Jullan B. Slevin, Jr., 3004 Hermosa Drive, Havertown, Pa. 19083

Filed May 16, 1967, Ser. No. 638,845

5 Claims. (Cl. 294—87.2)

A paperboard carrier for a pack of "no return" bottles. The carrier has no bottom. It grips and supports the bottles under the flared skirts of the bottle caps, and includes an integral wrap-around band portion which encircles the sides of the bottles, at least at the shoulder area, to prevent swinging and banging of the bottles. The wrap-around band portion is connected to the top cap-gripping finger-hole portion by a sloping inclined portion which (when

the bottle pack is lifted by grasping the wrap-around band portion with both hands instead of by the finger holes in the top portion) functions to direct the lifting force to the bottle caps. Provision is also made for the variations which occur, within manufacturing tolerances, in bottle diam-



eters of nominally the same size bottles, by making the wrap-around band portion slightly conical, with the larger dimension at the bottom, and by providing pre-cut break-outs at the four corners of the wrap-around at the shoulder height of the bottles.

3,410,597

**TONGS**

Kenneth George Skelding, Birmingham, England, assignor to Pilkington Brothers Limited, Liverpool, Lancashire, England, a corporation of Great Britain

Filed June 1, 1967, Ser. No. 642,885

Claims priority, application Great Britain, June 6, 1966,

25,045/66

8 Claims. (Cl. 294—118)



Tongs of the kind having a pair of tong arms pivoted together at their lower ends and extending beyond the pivot to form jaws, and links connecting the arms to an upper pivot from which the tongs are suspended, the lower pivot being connected to a lifting member which runs on an extension of the suspending member in which the upper pivot is located.

3,410,598

**CAR CAMPER**

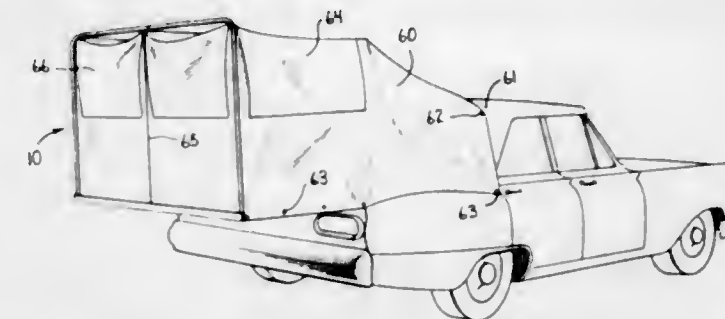
Donovan M. Davis and Ruth K. Davis, both of 423 N. DeQuincy St., Indianapolis, Ind. 46201

Filed Nov. 21, 1966, Ser. No. 595,798

6 Claims. (Cl. 296—23)

A vehicle mounted foldable camper having a floor in two sections, one coupled to the floor of the vehicle trunk,

the other pivoted to the first, for storage within the trunk, frame members and a cover supported by the frame mem-



bers and the lid of the open trunk when the camper is extended for use.

3,410,599

**TRACTOR CABINS**

Paul Erich Kettler, Ockstadt, Kreis Friedberg,

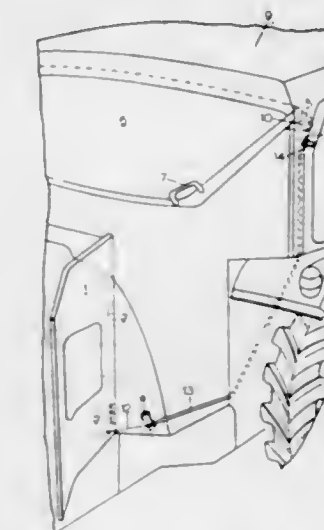
Hesse, Germany

Filed May 23, 1966, Ser. No. 552,221

Claims priority, application Germany, June 10, 1965,

K 56,346

6 Claims. (Cl. 296—28)



The invention is for a tractor cabin which has a front protection panel member and a leg guard member each of said members being supported for movement between an open and a closed position. A force applying means such as a spring or weight acts on at least one of said members to urge it into its open position. A force transmitting means operatively connects the front panel member and the leg guard member together so that a closing force applied to one of said members is transmitted to the other member to effect closing thereof. Conveniently the force transmitting means is a Bowden wire mechanism or a hydraulic force transmitting device. The force transmitting means may include a compensating device which is operative to permit differential movement between the front protection panel member and the leg guard member, said compensating device including a resilient longitudinally adjustable element.

3,410,600

**LOCKS**

Reginald P. Thorpe, Rainham, Essex, England, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Sept. 29, 1966, Ser. No. 583,035

Claims priority, application Great Britain, Feb. 1, 1966,

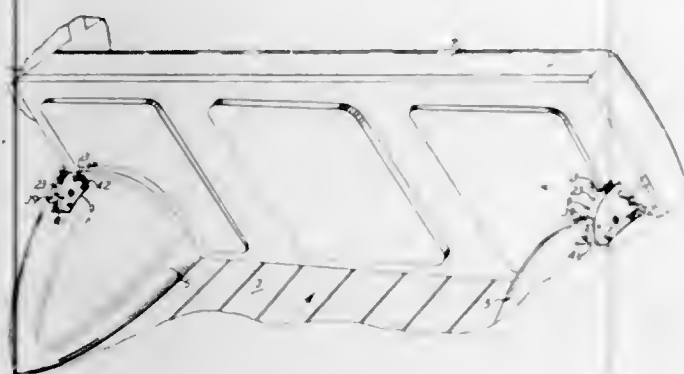
4,351/66

3 Claims. (Cl. 296—66)

A latch mechanism for the backrest of a station wagon utility seat comprising a latch device and a manually movable detent member for holding the latch device in

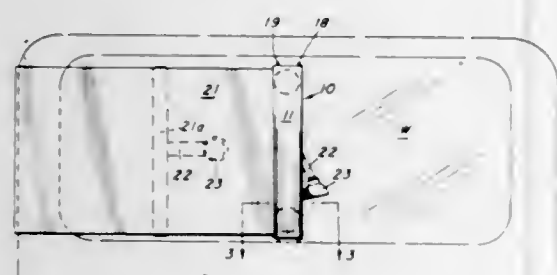


latched position. The detent member upon being moved to a disengaged position is held by a resilient catch until such time as the latch device is disengaged from a striker holding the backrest in locked upright position. Upon



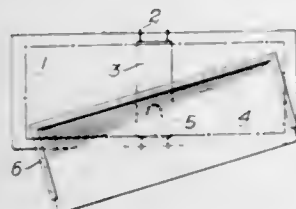
disengagement of the latch device from the striker, the latch mechanism resets itself to again become functional to hold the latch device in latched position relative to the striker.

**3,410,601**  
**WINDSHIELD PROTECTIVE DEVICE**  
Court Thompson, 4203 Dodge St.,  
Omaha, Nebr. 68131  
Filed Apr. 26, 1967, Ser. No. 633,787  
4 Claims. (Cl. 296—95)



A removable windshield protective device for application midway of the width of a windshield for automotive vehicles, having roller curtains capable of being drawn over the windshield from the center to each side edge thereof, the device being attached by means of vacuum cups.

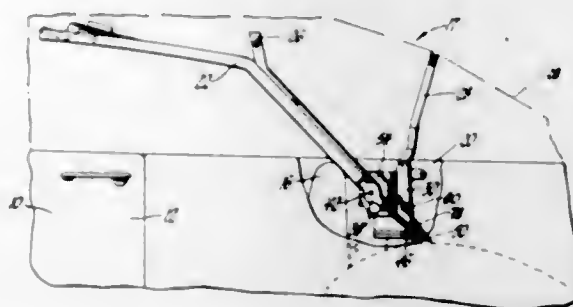
**3,410,602**  
**ANTI GLARE DEVICE**  
Werner Schüler, Turkenstr. 29,  
Munich, Germany  
Filed Sept. 30, 1965, Ser. No. 491,623  
Claims priority, application Austria, Oct. 8, 1964,  
A 8,567/64  
11 Claims. (Cl. 296—97)



A light-shield assembly attached to a sun visor for an automotive vehicle wherein the sun visor is provided with a narrow removable vertically extending laterally shiftable ferromagnetic strip, the tinted transparent light shield carrying a cylindrical permanently magnetic stud adapted magnetically to adhere to the strip and constituting with

the strip and sole means for attaching the shield to the visor. A hinge with frictionally articulated arms is included between the strip and the visor or between the stud and the shield for selectively retaining the shield in various positions about the hinge axis.

**3,410,603**  
**CONVERTIBLE TOP REAR RAIL SYNCHRONIZING MEANS**  
Robert M. Fox, Warren, and George R. Lyon, Birmingham, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Aug. 26, 1966, Ser. No. 575,367  
7 Claims. (Cl. 296—117)



A convertible vehicle body is provided with a folding top structure in which the rear rails have angled pivotal axes to effect inward folding of the convertible top. Each of the rear rails is provided with a gear wheel having a plurality of peripheral teeth. A flexible cable having an outer helical wire engages each of the gear wheels and is confined therebetween in a sheath. Movement of either rear rail effects translation of the cable and subsequent synchronized pivotal movement of both rear rails. In an alternative embodiment, a power actuator drives a jack-screw that engages the cable intermediate its ends so that, upon actuation, the cable is translated to pivot both rear rails in synchronization.

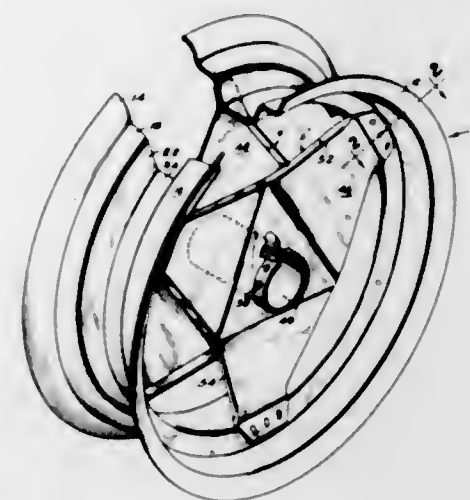
**3,410,604**  
**IN-SITU OXIDATION REACTION WITHIN A SUB-SURFACE FORMATION CONTAINING SULFUR**  
Philip D. White and Jon T. Moss, Dallas, Tex., assignors to Tor Developments, Inc., Dallas, Tex., a corporation of Texas  
No Drawing. Filed Dec. 1, 1966, Ser. No. 598,213  
8 Claims. (Cl. 299—4)

1. A method of producing sulfur from a sub-surface formation where at least two spaced apart wells penetrate a sulfur bearing formation which comprises:
  - (a) establishing in the region of at least a first of said wells a high temperature zone of the order of 1,000° F.,
  - (b) introducing a flow of combustion supporting agent into one of said wells to sustain combustion reactions of said sulfur to form gaseous sulfur compounds, and
  - (c) producing said compounds through a second of said wells in gaseous form.

**3,410,605**  
**WELDED SHEET METAL WHEEL CONSTRUCTION**  
Martin Mayrath, Dallas, Tex., and Wayne E. Sinclair, Compton, Ill., assignors to Mayrath Company, a corporation of Illinois  
Original application Oct. 4, 1960, Ser. No. 62,758, now Patent No. 3,261,083, dated July 19, 1966. Divided and this application July 18, 1966, Ser. No. 590,120  
4 Claims. (Cl. 301—64)

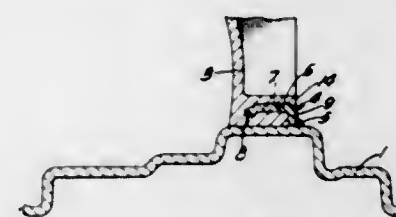
A vehicle wheel or the like, formed substantially entirely of shaped sheet-metal parts, comprises a circular rim including a pair of radial annular flanges spaced apart

in the axial direction, a central cylindrical hub element, and a duplicate pair of truncated three-cornered spider plates bowed concavely toward one another, with the truncated corners of each spider plate welded to a respective annular flange at positions offset 60 degrees from the



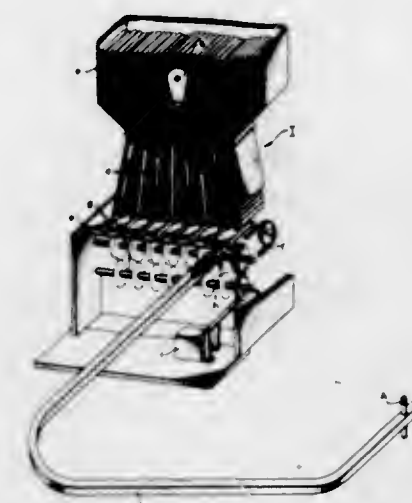
positions of the corners of the other spider plate. A colored central opening in each spider plate receives one end of the cylindrical hub element, and the collar thereof is welded to said hub. The welding operations are carried out under conditions which provide truing and strengthening stresses in the finished wheel.

**3,410,606**  
**COMPOSITE VEHICLE WHEEL AND METHOD OF MAKING THE SAME**  
Virgil K. Benton, Ontario, and James C. Bennett, Los Angeles, Calif., assignors to Electro Chemical Industries, Inc., Pomona, Calif., a corporation of California  
Continuation of application Ser. No. 386,674, July 31, 1964. This application Oct. 13, 1966, Ser. No. 586,567  
2 Claims. (Cl. 301—65)



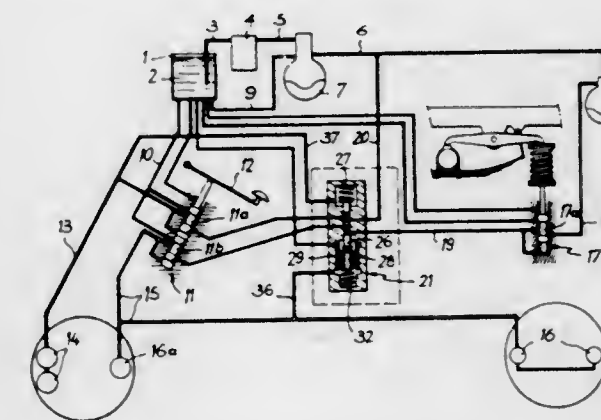
A vehicle wheel assembly and hub structure in which a hub of a metal other than steel, such as aluminum, is constructed with spaced rim mounting portions carrying steel elements, each of which elements includes an elongate plate with a flange at one edge, the plate being embedded as by casting in the rim mounting portion of the hub so that the flange is countersunk therein and extends radially outwardly with the outer edge of the flange being curved and engaging the inner periphery of the rim, and with a side surface extending outwardly to the rim and connected by a bead weld to the rim. The plate has openings for interlocking receiving material of the hub during casting and at the opposite edge is provided with an angularly deflected rectilinear reinforcing and stiffening flange which is also embedded. Prior to affixing the hub to the rim, the flange at said one edge projects radially beyond the periphery of the rim mounting portions, and such projection portion is cut off to conform to the peripheral surface of the mounting portion and to provide a curved edge corresponding to the rim curvature.

**3,410,607**  
**APPARATUS FOR FEEDING ROD-LIKE ARTICLES**  
Karl Tempel, Berlin, Germany, assignor to Molins Machine Company Limited, London, England, a corporation of Great Britain  
Filed June 22, 1967, Ser. No. 648,142  
Claims priority, application Germany, June 24, 1966, R 43,540  
7 Claims. (Cl. 302—2)



In a pneumatic filter rod supply apparatus in which rods are supplied from a central station via pneumatic tubes to several cigarette-making machines, the machine hopper has a receiving chamber within it, into which rods are fed lengthwise from the tube, and from which the rods are pushed sideways into the mass of rods already in the hopper, in alternating directions, by an oscillating pusher.

**3,410,608**  
**HYDRAULIC BRAKING SYSTEM INCORPORATING TWO HYDRAULIC FLUID CIRCUITS WITH A PRESSURE LIMITER**  
Jean G. Cadion, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a French society  
Filed Dec. 27, 1966, Ser. No. 605,073  
Claims priority, application France, Jan. 3, 1966, 44,663  
3 Claims. (Cl. 303—6)



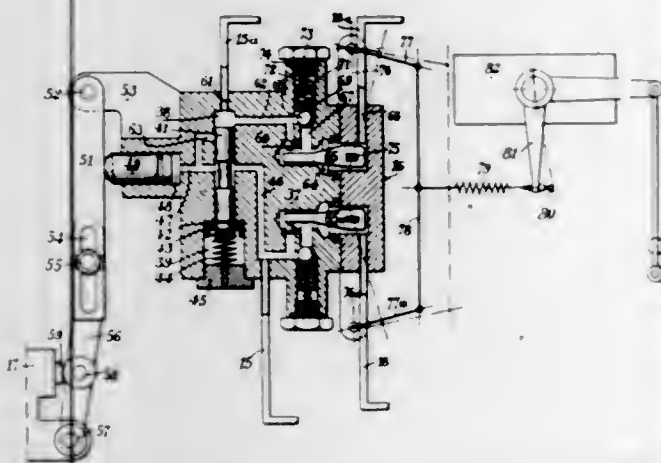
A hydraulic braking system for an automobile comprising front and rear hydraulic fluid circuits and a brake control valve for regulating the fluid to said circuits, pressure supply and limiting means operable in dependence upon rear axle load and regulating the pressure supply to the rear brake and an additional brake applying means in the front brake and means for supplying fluid to the additional brake from the pressure limiter, the additional brake means and rear brake circuit being connected through the pressure limiter and a safety device provided with a distributor slide valve operable in one of its end positions to isolate the limiter valve from the additional brake applying means and the rear brake surface.



### 3,410,609 BRAKING-SYSTEM SAFETY HYDRAULIC VALVES OF ARTICULATED VEHICLES

Edmond Henry-Blabaud, Paris, France, assignor to  
Societe Anonyme Andre Citroen, Paris, France,  
a body corporate of France

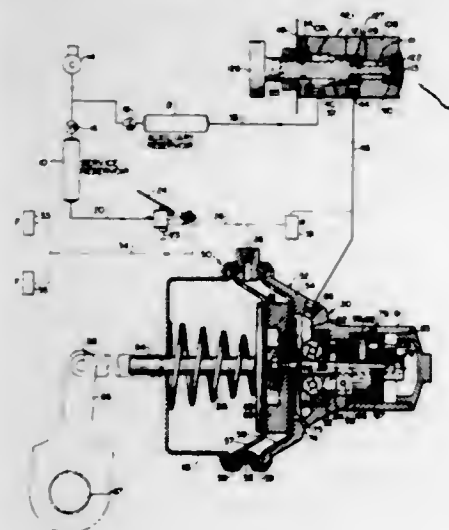
Filed Apr. 28, 1967, Ser. No. 634,515  
Claims priority, application France, May 4, 1966,  
60,216  
5 Claims. (Cl. 303—7)



Safety hydraulic valve for the braking system of an articulated vehicle, this system comprising on the one hand a hydraulic braking circuit for the tractor and on the other hand a braking circuit for the semitrailer, which is of the pneumatic or vacuum type and adapted to be put into service by means of a pneumatic valve, characterized in that it comprises a chamber in which a piston adapted to actuate said pneumatic valve controlling the semitrailer braking circuit is slidably fitted, a slide-valve distributor connected to said chamber and to the two supply pipe lines so as to put said chamber under pressure when at least one of said two pipe lines is under pressure, and thus cause the instantaneous operation of said valve while separating the independent hydraulic braking circuits of the front and rear brakes, and a throttling device adjustable as a function of the load carried by the rear axle of the tractor.

### 3,410,610 PARKING AND EMERGENCY BRAKE SYSTEM FOR VEHICLE

James C. Cumming, Pleasant Ridge, Mich., assignor, by  
mesne assignments, to Rockwell-Standard Company,  
Pittsburgh, Pa., a corporation of Delaware  
Filed July 8, 1966, Ser. No. 563,806  
15 Claims. (Cl. 303—9)



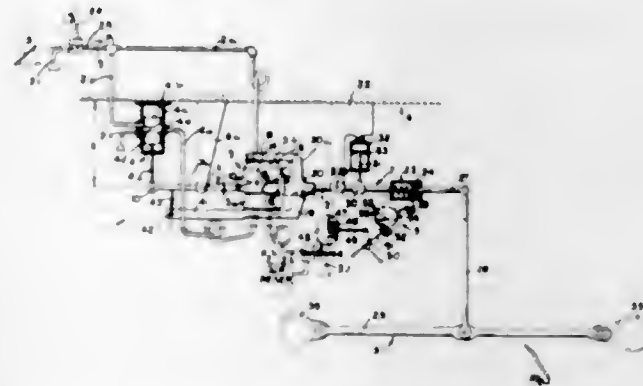
An air brake system for an automotive vehicle comprises two independent systems, a service system for operating front and rear wheel brakes and a parking and

emergency system for operating the rear wheel brakes, there being double diaphragm brake actuators at the rear wheels each having a service chamber between the diaphragms and an auxiliary chamber between the auxiliary diaphragm and the housing, the service brake system having a manual control for connecting the service chambers to a source of air pressure, and the parking and emergency system containing a manual control valve for selectively connecting the auxiliary chamber to an independent source of air pressure to displace the auxiliary diaphragms in brake applying direction, a unidirectional mechanical locking device for each auxiliary diaphragm permitting movement of the auxiliary diaphragm in the brake applying direction but preventing return movement and being connected to a spring biased piston directly exposed on one side to the pressure in the auxiliary chamber and having a bleed passage therethrough to a release chamber on its other side, the locking device being released by moving said control valve to a third position wherein the auxiliary chamber is vented quickly and the temporary higher pressure in the release chamber displaces the piston and locking device to release the auxiliary diaphragm for return movement under the usual brake return springs.

### 3,410,611 LOAD-RESPONSIVE FLUID-PRESSURE CONTROL MEANS

Donald M. Turnbull, Cincinnati, Ohio, assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Filed Dec. 29, 1966, Ser. No. 605,885  
29 Claims. (Cl. 303—22)



A vehicle braking system comprising a leveling valve having access for a source of fluid pressure and fluid bleed means and adapted for connection with the vehicle body, a pair of interconnected flexible air bags, a first lever adapted to be fulcrumed on the vehicle and connecting with the leveling valve and with each air bag and intermediate each air bag, a second lever adapted to be fulcrumed on the vehicle and operatively connecting with the outer portion of each air bag and adapted to connect with the vehicle load supporting means, said leveling valve means having communication with one air bag having a fluid pressure exit and the other air bag having an access to the source of fluid pressure.

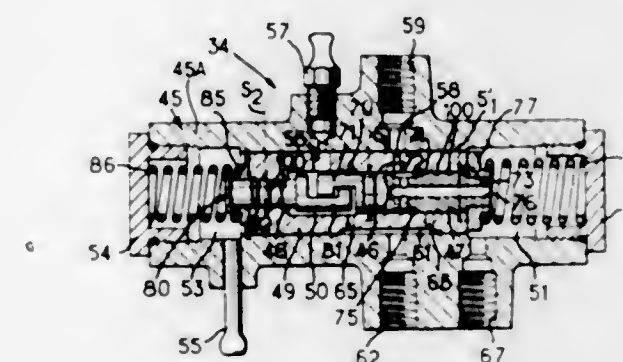
### 3,410,612 DYNAMIC PRESSURE MODULATOR

Pierre André Georges Lepelletier, Chatou, France, assignor to Societe Anonyme Francaise du Ferodo, a corporation of France

Filed Nov. 13, 1967, Ser. No. 682,071  
Claims priority, application France, Dec. 22, 1966,  
88,448

6 Claims. (Cl. 303—22)  
A dynamic pressure regulator, especially applicable to braking devices for automobile vehicles, and comprising a hollow body in which a first chamber or inlet chamber

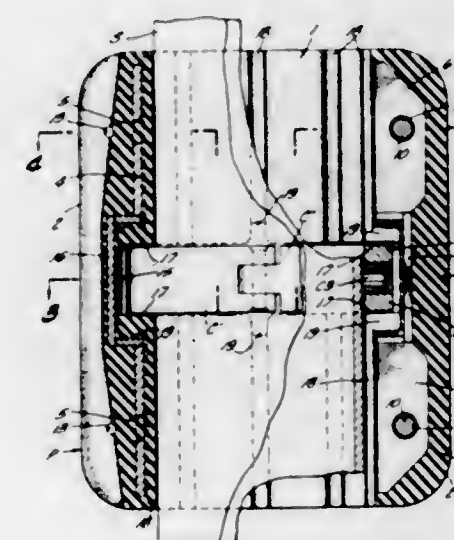
communicates with a control circuit and a second chamber or outlet chamber with a utilization circuit; in the hollow body slide two pistons adapted to be coupled to each other by hooks. When the pressure in the inlet chamber increases, the corresponding piston is first separately and then conjointly with the other piston, the source of oscilla-



tions during which ports are alternately covered and uncovered in turn, the ports forming communications between the outlet chamber either with the inlet chamber or with a return conduit. The pressure in the outlet chamber then develops like the pressure in the inlet chamber but at a smaller rate of variation.

### 3,410,613 NON-ROTATING SINGLE-COLLAR DRILL PIPE PROTECTOR

Felix Kuus, Maywood, Calif., assignor to Byron Jackson Inc., Long Beach, Calif., a corporation of Delaware  
Filed May 25, 1966, Ser. No. 552,746  
7 Claims. (Cl. 308—4)

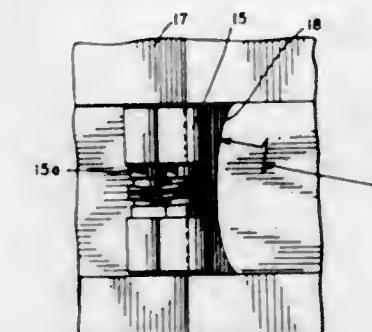


A tubular protector of elastomeric material for a well drilling string or pipe, the protector being formed of reinforced arcuate, complementary segments with means for assembling the segments about the pipe to form the tubular protector, the latter providing a reinforced annular groove intermediate its ends with annular shoulder faces at either end of the groove. To limit longitudinal movement of the protector along the drilling string, it is assembled about the pipe with the annular groove encompassing an annular stop ring secured to the pipe. To allow for relative rotation between the protector and the pipe and stop, clearance is provided therebetween; and also to enhance lubrication therebetween fluid flow grooves are provided along the inner periphery of the protector for the passage of lubricating fluid.

### 3,410,614 ANTIFRICTION WAY BEARING

Howard C. Shaw, Jr., 103 Gale Ave.,  
River Forest, Ill. 60305

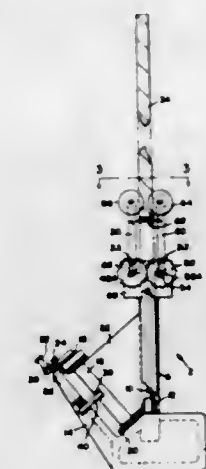
Continuation of application Ser. No. 494,821, Oct. 11, 1965. This application Dec. 29, 1967, Ser. No. 694,751  
5 Claims. (Cl. 308—6)



Antifriction way bearing having cylindrical, centrally annularly recessed bearing elements interconnected by a wire member having a figure-8 configuration, a rolling surface provided by the raceway equipped with transversely arcuate entries, the raceway further having an adapter arcuately contoured both transversely and longitudinally.

### 3,410,615 SUPPORT BEARING FOR AXIALLY MOVABLE ELONGATED MEMBER HAVING A VARYING DIAMETER

William J. Bleber, Doylestown, Pa., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware  
Filed Mar. 31, 1967, Ser. No. 627,553  
11 Claims. (Cl. 308—6)



A support bearing for an axially movable member having a varying diameter including spaced rollers adapted to engage the outer periphery of the movable member. Spring means biases the rollers toward the movable member. Also the rollers are mechanically interconnected by levers and gears.

### 3,410,616 GAS BEARING

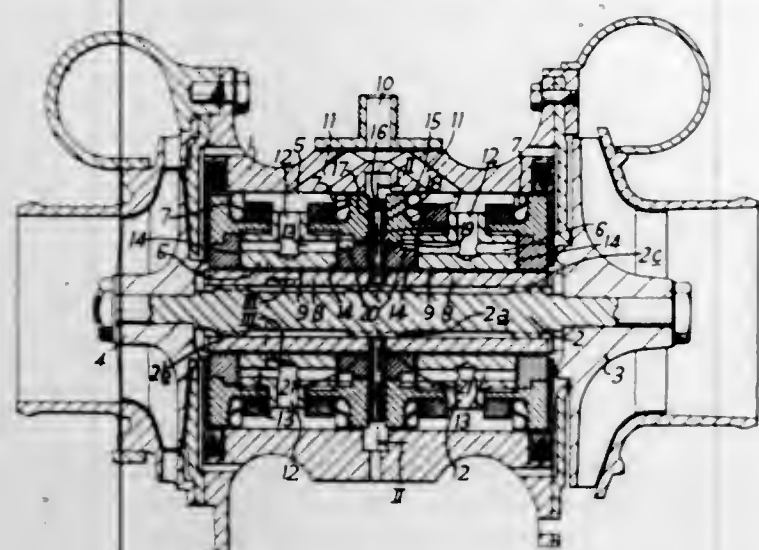
William Colin Dee, Bournemouth, England, assignor to Gilbert C. Davis, Johannesburg, Transvaal, Republic of South Africa

Filed June 17, 1966, Ser. No. 560,374  
Claims priority, application Great Britain, June 25, 1965,  
26,988/65  
5 Claims. (Cl. 308—9)

There is disclosed a rotary device comprising a stator structure, stator bearing means disposed within said stator structure, means resiliently mounting said stator bearing means within said stator structure such that said stator bearing means are radially movable within limits



with respect to said stator structure, and a rotor disposed within said stator bearing means and defining therewith two axially spaced journal gas bearing gaps and two axially spaced axial thrust gas bearing gaps, said rotor including a thrust member having two axially opposed



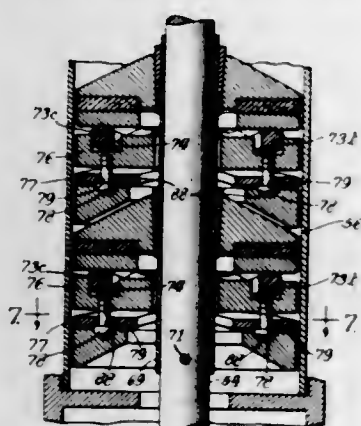
faces each of which defines a respective axial thrust bearing gap with a respective stator bearing means, said two axial thrust bearing gaps being disposed axially between said two axially spaced journal bearing gaps, said thrust member including an exhaust path for bearing gas from each journal bearing gap.

3,410,617

## THRUST BEARING

Edward J. Schaefer, Bluffton, Ind., assignor to Franklin Electric Co., Inc., Bluffton, Ind., a corporation of Indiana

Filed June 3, 1966, Ser. No. 555,037  
10 Claims. (Cl. 308-160)



This disclosure deals with means for supporting the stationary element of a thrust bearing which also includes a rotatable element adapted to be connected to, for example, a rotatable shaft. The stationary element is mounted on a preloaded spring which deflects only when the preload is exceeded, such deflection absorbing shock overloads on the thrust bearing or stopping rotation of the shaft if the overload is prolonged. Pins may also be provided for pivotally connecting the spring and the stationary element to a bearing support.

3,410,618

## ANTI-SKID BEARING

Tedric A. Harris, Warminster, and Stephen F. Aaronson, Philadelphia, Pa., assignors to SKF Industries, Inc., King of Prussia, Pa., a corporation of Delaware  
Filed Mar. 23, 1967, Ser. No. 625,481  
8 Claims. (Cl. 308-212)

An anti-skid roller bearing assembly having inner and outer rings spaced apart to define an annular space between the inner and outer raceways, a plurality of rollers

in the annular space between the rings, the rollers being hollow and there being an interference fit between the raceways and rollers to minimize skidding and thereby increase endurance of the assembly particularly in high speed, light load applications. Preferably, the percent hollowness of the rollers for a bearing assembly wherein



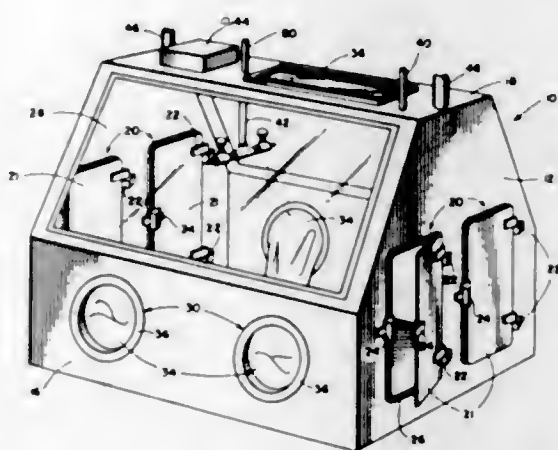
the inner and outer raceways are concentric is between 60% and 70% and the ratio of the total operating interference between the rollers and the raceways defined as I to the outside diameter  $D_o$  of the rollers is between 0.001 and 0.0015, this latter ratio being referred to herein as preload factor P.

3,410,619

## FLUOROCARBON-LINED GLOVEBOX

Robert L. Delnay, Arvada, and Leo F. Grill and John L. Holst, Boulder, Colo., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed May 2, 1967, Ser. No. 635,983  
2 Claims. (Cl. 312-1)



A glovebox having various glove ports, access ports, service ports, windows and doors, for handling and treating hazardous materials contained within the glovebox with linings or coatings at all interior surfaces of an easily cleanable, corrosion and fire resistant fluorocarbon material, and with various fittings and structural parts of a corrosion resistant fluorocarbon material.

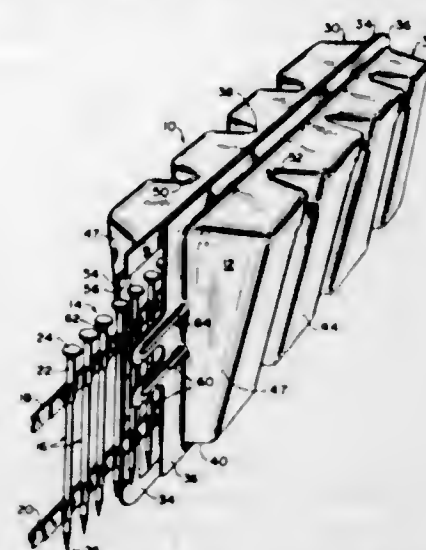
3,410,620

## NAIL CARTRIDGE FOR DRIVING TOOL MAGAZINES

Frank C. Howard, Wheeling, Ill., assignor to Signode Corporation, Chicago, Ill., a corporation of Delaware  
Filed Aug. 9, 1967, Ser. No. 659,383  
9 Claims. (Cl. 312-73)

A disposable nail cartridge for driving tool magazines and comprising a shell containing a flexible strip of ribbon-connected nails. A series of inwardly extending longitudinally staggered ribs on the shell side walls defines a

serpentine path for movement of the nails when the strip is pulled endwise from the shell, and additionally defines



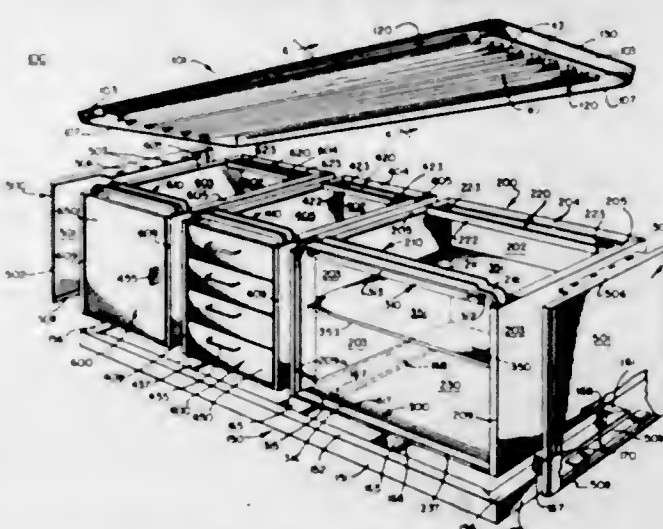
a series of internal pockets within which the nails are grouped and from which they are pulled serially.

3,410,621

## STORAGE CONSTRUCTION

Kenneth D. Schreyer, Doylestown, Pa., assignor to Lyon Metal Products, Incorporated, Aurora, Ill., a corporation of Illinois

Filed Mar. 29, 1966, Ser. No. 538,423  
23 Claims. (Cl. 312-257)



The storage construction comprises a top plate, a reinforcement sheet having attachment portions secured to the underside of the top plate and reinforcement ribs between adjacent attachment portions, a pair of spaced apart mounting channels on the underside of the top plate, an edging on the periphery of the top plate, a plurality of storage units arranged beneath the top plate, each including a front frame and a rear top support respectively aligned with the associated mounting channels and secured thereto, a pair of finishing panels secured to the outsides of the end storage units, at least one of the storage units including a door having a front panel and a reinforcement sheet with spaced apart attachment portions secured to the rear side of the front panel and reinforcement ribs between adjacent attachment portions.

3,410,622

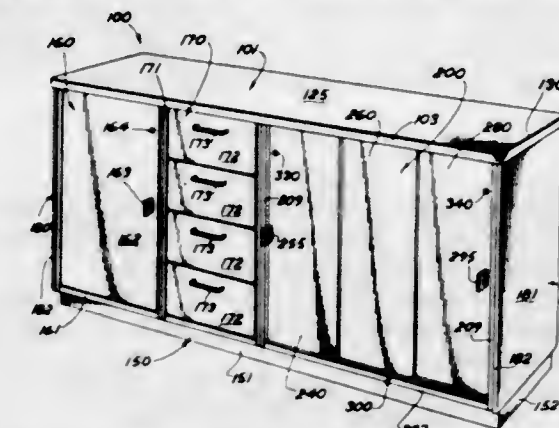
## CABINET CONSTRUCTION

Edward C. Stewart, Aurora, Ill., assignor to Lyon Metal Products Incorporated, Aurora, Ill., a corporation of Illinois

Filed June 14, 1966, Ser. No. 557,527  
24 Claims. (Cl. 312-295)

The cabinet construction comprises a pair of forwardly extending side walls defining at the forward ends thereof

a front opening, a front frame positioned at the forward ends of the side walls, a track structure extending substantially the width of the front opening and providing inner and outer and center tracks, first and second and third sliding doors respectively slidably mounted on the associated tracks, first lock structure for securing the first door to one side of the front frame, second lock structure for securing the third door to the other side of the front



frame, pick-up structure interconnecting the second door and the first and third doors to cause co-ordinated movement thereof, first baffle structure mounted in the inner track to prevent upward movement of the first door when the first door is in the locked position thereof, and second baffle structure mounted in the outer track to prevent upward movement of the third door when the third door is in the locked position thereof.

3,410,623

## TRANSITION SECTION FOR BEAM WAVEGUIDES USING APERTURE-LIMITED LENSES

Herwig W. Kogelnik, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 9, 1965, Ser. No. 438,297  
4 Claims. (Cl. 350-96)



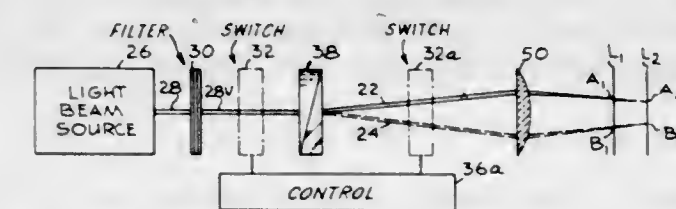
This application describes a transition section, comprising two aperture-limited lenses, for coupling optical wave energy between two dissimilar beam waveguides which have similar mode patterns. By suitably spacing the lenses and selecting their focal lengths, the mode pattern of one guide can be scaled to match the mode pattern of the other guide. Under these conditions, no mode conversion takes place at the transition, and the iterative loss is the same for each lens in the structure.

3,410,624

## THREE DIMENSIONAL LIGHT BEAM SCANNER

Uwe J. Schmidt, Tannenweg, Germany, assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Continuation of application Ser. No. 316,943, Oct. 17, 1963. This application Sept. 22, 1967, Ser. No. 671,923  
5 Claims. (Cl. 350-150)



Apparatus responsive to applied electrical control signals for selectively deflecting a light beam toward any



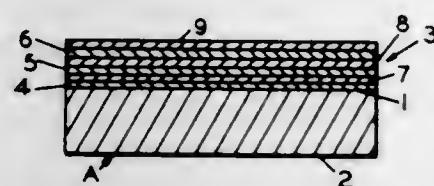
point in a three dimensional target. The apparatus includes cascaded deflecting stages of first and second types. The first stage type includes a switching means for orienting the plane of polarization of an incident beam into either of first and second mutually orthogonal planes and a birefringent means for respectively refracting beams polarized in said first and second planes along different first and second paths. The second stage type includes a similar switching means and a birefringent means exhibiting different first and second focal lengths to an incident beam depending upon its plane of polarization.

3,410,625

### MULTI-LAYER INTERFERENCE FILM WITH OUTERMOST LAYER FOR SUPPRESSION OF PASS-BAND REFLECTANCE

James W. Edwards, Creve Coeur, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Aug. 5, 1963, Ser. No. 299,851  
3 Claims. (Cl. 350—166)



1. An optical device comprising a substrate which is transparent in the visible wave length range of solar radiation where it is desired to transmit radiation, an optically thin multilayer film applied to at least one surface of said substrate, said film comprising at least two layers of dielectric material having a high index of refraction on  $n_h$  and one of said last-named layers being facewise disposed on said substrate, and at least one layer of dielectric material having a low index of refraction of  $n_L$ , where  $n_L$  is less than  $n_h$ , said layers in combination being designed to reflect radiation in the infrared radiation wave length range and transmit radiation in the visible wave length range of radiation based on a design wave length of 0.9 micron, each of the layers with an index of refraction of  $n_h$  being formed of a material having a thickness determined according to the following relation:

$$t_h = \frac{0.9}{4n_h}$$

each of the layers with an index of refraction of  $n_L$  being formed of a material having a thickness determined according to the following relation:

$$t_L = \frac{0.9}{4n_L}$$

where  $t_h$  is the thickness of the layer with index of refraction on  $n_h$ ,  $t_L$  is the thickness of the layer having an index of refraction of  $n_L$  and 0.9 micron represents the principal wave length range of radiation to be reflected, and an outermost subsidiary suppression layer of dielectric material having a thickness of such size to suppress a selected subsidiary reflectance of 0.6 micron in the visible wave length range, said outermost layer being facewise disposed on a layer of material having a high index of refraction, the thickness of said outermost layer being determined according to the following relationship:

$$t' = \frac{X \cdot 0.6}{4n}$$

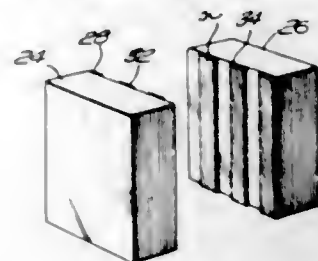
where  $t'$  is the thickness of the outermost layer,  $n$  is the index of refraction of the outermost layer, and  $X$  is any odd numbered positive integer less than fifteen, the index of refraction of said outermost layer  $n$  being effectively less than  $n_h$ .

3,410,626

### INTERFERENCE FILTER

Richard A. Magrath, Boston, Mass., assignor to Baird-Atomic, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Apr. 28, 1964, Ser. No. 363,114  
1 Claim. (Cl. 350—166)



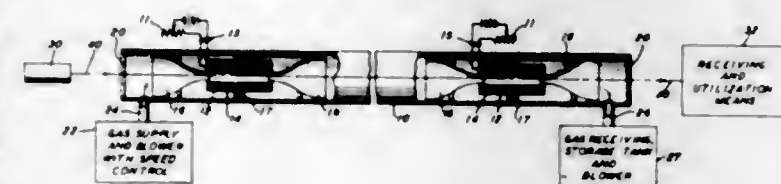
An optical filter is provided for transmitting two or more narrow passbands simultaneously. The filter is fabricated with a plurality of interference filter sections of different passband characteristics with the sections being arranged in side-by-side relation whereby one portion of the filter will transmit a particular wavelength while an adjacent portion will transmit a different wavelength. Compatible absorption filter material is superimposed over the interference filter sections to absorb undesirable wavelengths.

3,410,627

### LIGHT GUIDES EMPLOYING GASEOUS LENSES

Dwight W. Berreman, Westfield, and Stewart E. Miller, Middletown, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed June 30, 1964, Ser. No. 379,175  
12 Claims. (Cl. 350—179)



This application describes a gas lens system formed by a continuous flow of a gas, or a specific mixture of gases, through a conduit along which means are periodically located for establishing, over limited intervals, moderate radially directed temperature gradients transverse to the direction of gas flow and to the direction of beam propagation. The gradients are distributed along the wavepath in a regular manner such that the outer portion of the gas column traversing the conduit is alternately heated at said regular intervals and then cooled as it passes between successive heating intervals.

In an alternative arrangement, cooling intervals are introduced between successive heating intervals, producing an "alternating gradient focusing effect."

3,410,628

### GAS LENS USING TWO GASES HAVING UNEQUAL REFRACTIVE INDICES

Glenn E. Conklin, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 21, 1964, Ser. No. 397,678  
7 Claims. (Cl. 350—179)



In a two-gas gaseous lens, the two gases become mixed after traveling a relatively short distance along the

wavepath. Once mixed, they no longer produce the desired focusing effect upon the wave energy being guided. In accordance with the invention, an arrangement of porous and impervious means are longitudinally distributed along the wavepath for continuously separating the mixed gases and then recombining them in a manner to produce focusing. In one embodiment, two coaxial conduits are employed in which the inner conduit is porous to gases of small refractive indices, but impervious to gases of high refractive indices. As a result, the mixed gases flowing within the inner conduit tend to separate, with the large refractive index gas remaining within the inner conduit and the small refractive index gas diffuses into the region between conduits. The latter gas is then forced back into the outer lamina of the large refractive index gas by means of impervious barriers placed between the two conduits. In a second embodiment, a single conduit is used along with pairs of porous and impervious barriers to achieve the same result.

3,410,629

### ZOOM TYPE ANAMORPHIC EYEPiece

Vance J. Carpenter, Irondequoit, John M. Simpson, Jr., Chilli, and George F. Ziegler, Gates, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Mar. 26, 1965, Ser. No. 442,928  
7 Claims. (Cl. 350—181)



A zoom type of anamorphic eyepiece having a variable power cylindrical lens system for variably anamorphosing the image in one lateral direction, the system being an afocal type and being located between fixed front and rear relay lens systems.

3,410,630

### MECHANICAL MOUNTING FOR LENS SYSTEM OF VARIABLE ANAMORPHIC EYEPiece

Robert D. Jacobs, Livonia, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

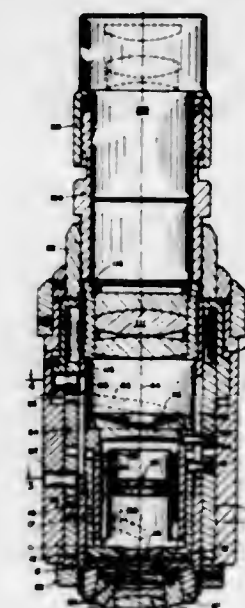
Filed Oct. 15, 1965, Ser. No. 496,507  
8 Claims. (Cl. 350—181)

1. A mechanical mounting for the lens systems of an anamorphic zoom type of variable magnification eyepiece used on a visual instrument, said mounting having in combination

- an elongated body tube,
- a lens cell fixed in one end of said tube wherein a stationary anamorphosing lens is held,
- a movable intermediate sleeve fitted slidably for axial motion within said body tube, said sleeve carrying a first movable anamorphic lens in optical alignment with said stationary lens,

a movable inner sleeve fitted for slidable axial motion along the inner surface of the first movable sleeve, said inner sleeve having a second movable anamorphic lens mounted therein in optical alignment with the aforesaid lenses,

a pair of mutually spaced longitudinal walls formed through one side of both of said movable sleeves and a second pair of mutually spaced longitudinal walls formed through the opposite side of both movable sleeves so as to provide two wide longitudinal open spaces which are transversely aligned with each other,



means including a cross member fixed laterally within said body tube and extending freely through said openings for supporting a second stationary anamorphic lens, and

means operatively formed on the exterior of said tube and connected therethrough to both of the interior movable sleeves for moving the sleeves to anamorphose and vary the magnification of an image along one transverse axis formed by said lens system.

3,410,631

### ZOOM TYPE OPTICAL SYSTEM FOR MAGNIFIER

John M. Schwartz, Irondequoit, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Apr. 19, 1965, Ser. No. 449,101  
1 Claim. (Cl. 350—184)



A lens system for a magnifier, the system being of the variable magnification type and including a pair of Hask-



ings type magnifying lenses in optical alignment with an afocal variable magnification three member lens system, two members of which are movable relative to a fixed axial point in a prescribed manner to vary the magnification of the image.

3,410,632

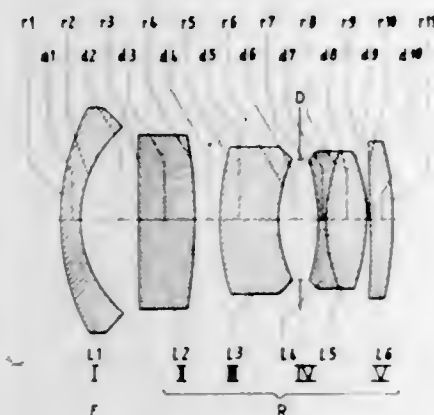
# WIDE-ANGLE OBJECTIVE WITH NEGATIVE FRONT COMPONENT AND MULTILENS POSITIVE COMPONENT

Walter Wolte, Bad Kreuznach, Germany, assignor to Jos. Schneider & Co. Optische Werke, Kreuznach, Germany, a corporation of Germany

Filed May 24, 1965, Ser. No. 458,189

Claims priority, application Germany, May 30, 1964, Sch 35,253

3 Claims. (Cl. 350-214)



Wide-angle objective with negative front component of 1 to 3 lens members and positive rear component of four lens members, the second or third lens member of the latter component being a doublet.

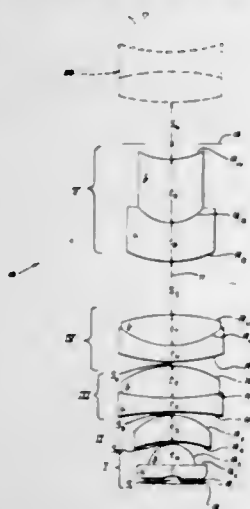
3,410,633

# METALLURGICAL MICROSCOPE OBJECTIVE

Ralph B. Young, Henrietta, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Sept. 13, 1965, Ser. No. 486,898

2 Claims. (Cl. 350-215)



1. A microscope semi-objective having a magnification per se of 16.0X and having together with an adjacent optically aligned negative corrector lens a rated magnification of 80.0X and a numerical aperture of substantially 0.85, the semi-objective and corrector lens together producing an image of excellent flatness which is well corrected for distortion and astigmatism as well as all other chromatic and monochromatic aberrations, the semi-objective being free of ghost reflections produced by the air glass lens surfaces when a vertical illuminator is used, said semi-objective comprising:

a front compound lens member designated I which is spaced at an axial distance  $S_1$  rearwardly from an object surface and which includes a front concave-

plano lens element designated Ia which lies in contact with a plano-convex lens rear element designated Ib along the plano surfaces, the axial thicknesses of said elements being designated  $t_1$  and  $t_2$  respectively,

a singlet positive meniscus lens member designated II having a concave surface facing said object surface, said singlet being spaced at an axial distance designated  $S_2$  rearwardly from member I and having an axial thickness denoted by  $t_3$ ,

a second doublet lens member designated III spaced at an axial distance  $S_3$  rearwardly of member II and including a front double concave lens elements IIIa which lies in entire contact with a rear double convex lens elements IIIb, the respective axial thicknesses of said front and rear elements being  $t_4$  and  $t_5$  respectively,

a third doublet lens member designated IV which is spaced at an axial distance designated  $S_4$  rearwardly of member III, member IV including a front convex-concave lens member designated IVa which lies in contact along an interface with a rear double convex lens element designated IVb, the axial thicknesses of elements IVa and IVb being designated  $t_6$  and  $t_7$  respectively, and

a rearmost doublet lens member designated V which is spaced at an axial distance denoted  $S_5$  rearwardly from member IV and includes a front negative meniscus lens element designated Va which lies in contact along an interface with a rear positive meniscus lens element designated Vb which has a concave surface facing rearwardly, the axial thicknesses of elements Va and Vb being designated  $t_8$  and  $t_9$  respectively and the axial space between member V and the aforesaid rearward corrector lens being designated  $S_6$ .

the specific values for the lens parameters which relate to the semi-objective per se being substantially given in the table herebelow wherein  $-F_1$  to  $-F_V$  and  $-F_{Ia}$  to  $F_{Vb}$  represent respectively the equivalent focal lengths of the aforementioned lens members and lens elements respectively, the minus (-) sign signifying negative focal lengths, said table including the aforesaid lens thicknesses  $t_1$  to  $t_9$  and air spaces  $S_1$  to  $S_6$ , the aforesaid values being given in terms of  $F$  which represents the equivalent focal length of the semi-objective combined with said corrector lens, said table further including the specific absolute values substantially for the refractive indices designated  $n_D(Ia)$  to  $n_D(Vb)$  and Abbe numbers designated  $\nu(Ia)$  to  $\nu(Vb)$  of the glasses used in the aforesaid successive lens members and elements,

$$\begin{aligned} -F_1 &= 593.42F \\ F_{II} &= 6.689F \\ F_{III} &= 10.955F \\ F_{IV} &= 15.000F \\ -F_V &= 19.377F \\ -F_{Ia} &= 1.520F \\ F_{Ib} &= 2.458F \end{aligned}$$

$$\begin{aligned} n_D(Ia) &= 1.588 \\ n_D(Ib) &= 1.514 \\ n_D(II) &= 1.514 \\ n_D(IIIa) &= 1.720 \\ n_D(IIIb) &= 1.514 \\ t_1 &= .538F \\ t_2 &= .898F \\ t_3 &= 1.286F \\ t_4 &= .6067F \\ t_5 &= 1.513F \\ t_6 &= .809F \\ t_7 &= 1.400F \\ t_8 &= 1.788F \end{aligned}$$

$$\begin{aligned} -F_{IIIa} &= 10.950F \\ F_{IIIb} &= 5.889F \\ -F_{IVa} &= 8.123F \\ F_{IVb} &= 5.327F \\ -F_{Va} &= 6.624F \\ F_{Vb} &= 5.672F \end{aligned}$$

$$\begin{aligned} n_D(IVa) &= 1.720 \\ n_D(IVb) &= 1.514 \\ n_D(Va) &= 1.651 \\ n_D(Vb) &= 1.514 \end{aligned}$$

$$\begin{aligned} t_9 &= 2.953F \\ S_1 &= .2410F \\ S_2 &= .0101F \\ S_3 &= .1715F \\ S_4 &= .2022F \\ S_5 &= 2.4191F \\ S_6 &= 2.6294F \end{aligned}$$

$$\begin{aligned} \nu(Ia) &= 61.2 \\ \nu(Ib) &= 70.0 \\ \nu(II) &= 70.0 \\ \nu(IIIa) &= 29.3 \\ \nu(IIIb) &= 70.0 \end{aligned}$$

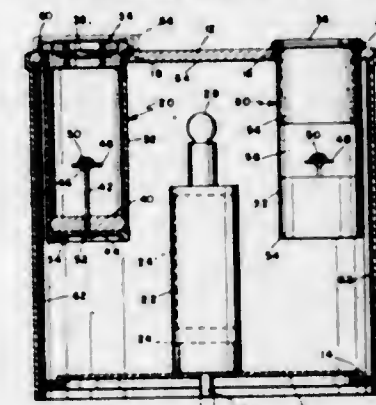
$$\begin{aligned} \nu(IVa) &= 29.3 \\ \nu(IVb) &= 70.0 \\ \nu(Va) &= 58.4 \\ \nu(Vb) &= 70.0 \end{aligned}$$

# ILLUMINATED VIEWER WITH INTERCHANGEABLE MOUNTED SPECIMEN UNITS

Robert J. Buckner, 1496 Skyline Drive, Lemon Grove, Calif. 92045

Filed Oct. 4, 1965, Ser. No. 492,829

4 Claims. (Cl. 350-239)



An illuminated viewer for small specimens with the specimen holder units arranged within a casing and supported by their upper ends in the top end panel of the casing. Each specimen holder unit is a barrel with a magnifying eyepiece, and transparent central portion which latter shields the otherwise unshielded light source. The specimen holder units are individually removable from the casing and usable separately.

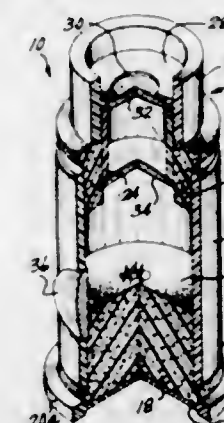
3,410,635

# SPECIMEN EXAMINATION CHAMBER

Clarence James Lockwood, 5265 Forest SE., Mercer Island, Wash. 98040

Continuation-in-part of application Ser. No. 286,807, June 10, 1963. This application May 31, 1967, Ser. No. 642,559

13 Claims. (Cl. 350-239)



A specimen examination chamber having transparent side walls and end closures which comprise a lightweight deformable foam substance frictionally engaging the side walls and adapted for positional adjustment with respect thereto. Magnifying lens are mounted in the side walls or end closures for observation of specimens contained within the chamber. The deformable end closure enables relative positioning of the lens and the specimen contained in the chamber. Different embodiments include one wherein the lens means is mounted in the deformable end closure whereby the field of view of the lens can be adjusted to an infinite number of positions for viewing specimens within the chamber. In another embodiment the lens is mounted in the transparent side wall and specimens supported by the deformable end closure may be

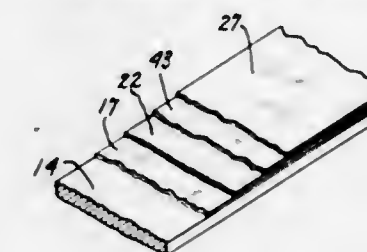
positioned in the view of the lens. The end closure is preferably of the open cellular foam type permitting ventilation and moisturization of the chamber there-through. The flexible wall is shaped in some instances to receive a specimen collection chamber in combination with the observation chamber itself for transfer of specimens, and for other purposes.

# OPTICALLY SMOOTH REFLECTOR CONSTRUCTION

Carlyle S. Herrick, Alplaus, N.Y., assignor to General Electric Company, a corporation of New York

Filed Oct. 1, 1963, Ser. No. 312,947

18 Claims. (Cl. 350-288)



An optically smooth reflecting surface is obtained by polymerizing a solventless polymerizable material over the minute depressions and imperfections of a substrate material. This varnish material fills such imperfections to a common level, providing an optically smooth surface for depositing a reflective material.

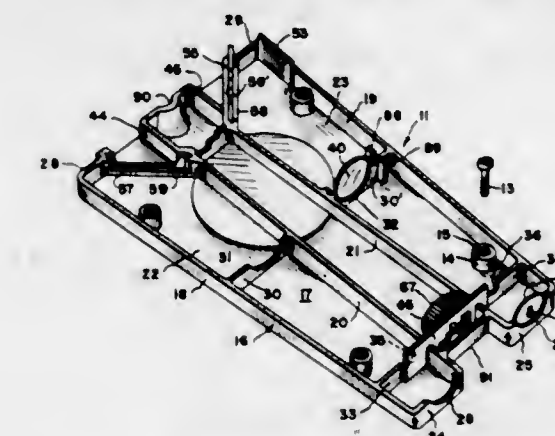
3,410,637

# MECHANICAL MOUNTING FOR INTERPUPILLARY DISTANCE MEASUREMENT INSTRUMENT

Earl V. Jackson, Penfield, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Mar. 31, 1965, Ser. No. 444,267

3 Claims. (Cl. 351-5)



A combined interpupillary distance gage and pupil diameter measuring device having a housing which is composed of duplicate top and bottom interfitting parts which are symmetrically designed about a center longitudinal axis so that these parts are interchangeable with each other.

3,410,638

# SPECTACLE FRAME WITH REAR VIEW TELESCOPES AND TEMPLE MOUNTED OPTICAL FIBER RODS

James Robert Langworthy, Box 5108, Clinton, N.J. 08809

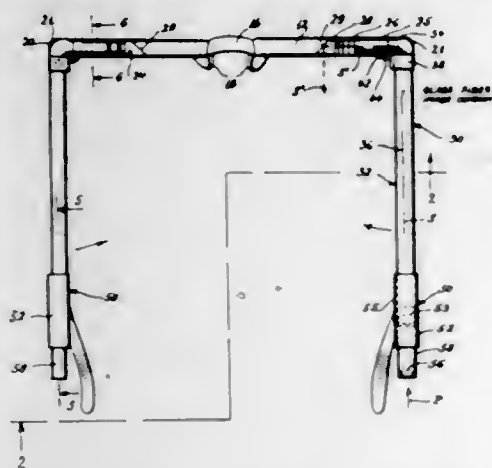
Filed Dec. 9, 1965, Ser. No. 512,659

2 Claims. (Cl. 351-50)

1. An optical assembly to provide a rear view for a pair of eyeglasses having a frame and forward view spectacle lenses, said assembly comprising an elongated fused glass fiber rod which has a major section serving



as a temple piece mounted perpendicularly to the spectacle lens frame, with a minor section being bent at an angle of 90° and extending along an upper cut-out portion of the lens frame, a telescopic lens assembly mounted on the rear end of the temple piece fiber rod section for focusing a rear view image on the rear end of said fiber rod, visual correction lenses mounted on the upper spectacle lens rim frame in axial alignment with the bent inner end of said fiber rod for receiving said rear view image, a prism having an end face disposed 45° to the

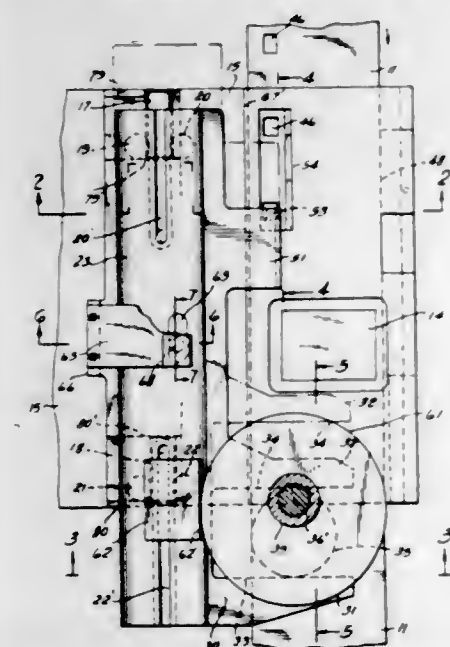


axis of said corrective lenses for optically directing the rear view image to the eye of the eyeglass wearer, said line of sight from said prism being opposite in direction and parallel to the line of sight through said temple piece fiber rod, and mounting means for said fiber rod, comprising a ring around the rod near said bend end, and a hinge member secured to said ring and adapted to interfit with a hinge member carried by said spectacle frame such that the fiber rod is pivotable on the frame to fold against it.

### 3,410,639 PULL-DOWN DEVICE FOR MOTION PICTURE CAMERAS

Jasper S. Chandler, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Mar. 28, 1966, Ser. No. 537,849  
4 Claims. (Cl. 352-194)



1. A pull-down mechanism for intermittently advancing a perforated film strip through a gate located in a selected film path, which comprises:

- (1) a stationary arcuate guide member spaced to one side of said gate member and extending substantially parallel to said film path;
- (2) a reciprocable shuttle having a bearing surface of substantially semi-tubular configuration arranged concentrically of said guide member;

(3) a film claw on said shuttle and spaced laterally of said bearing portion to engage the perforations of film in said path;

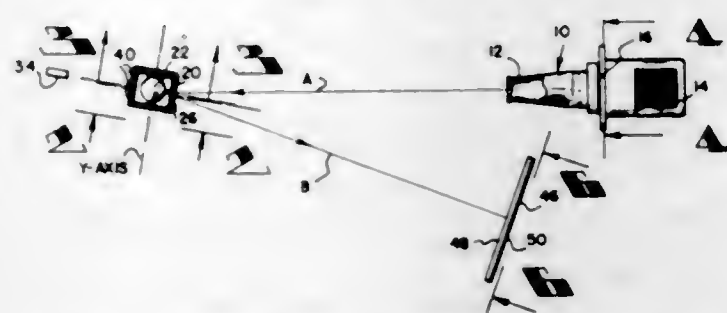
(4) means for mounting said shuttle on said guide member to reciprocate axially thereof to intermittently advance film through said gate and to oscillate coaxially thereof to move said claw to and from engagement with perforations of a film lying in film path, and including:

- (a) at least two pairs of ball members spaced longitudinally of said guide member and in rolling contact with said semi-tubular bearing surface and with said arcuate guide member, and
- (b) resilient means for holding said semi-tubular bearing surface in rolling contact with said ball members and urging it in a direction arcuately of said guide member to move said claw into engagement with said film;

(5) advance cam means for reciprocating said shuttle axially of said guide member over a distance commensurate with the perforation pitch of said film; and

(6) in-and-out cam means connected to rotate said shuttle coaxially of said guide member against the force of said resilient means to remove said claw from engagement with the film and maintain it in said position during the time said shuttle is moving in a direction counter to the direction of film advance.

### 3,410,640 MULTIPLE ORDINATE LOCATING INSTRUMENT William A. Rhodes, Phoenix, Ariz., assignor to Escoa Corp., Phoenix, Ariz., a corporation of Arizona Filed Feb. 21, 1966, Ser. No. 529,132 8 Claims. (Cl. 353-27)



1. In a multiple ordinate locating instrument the combination of: a light source; a reflector in position for receiving and projecting light from said source; universally movable means carrying said reflector; a support for said universally movable means; a permanent magnet carried by said universally movable means; electromagnetic coils having axes disposed approximately 90° from each other and located to influence movement of said permanent magnet and said universally movable means into planes approximately 90° apart and in accordance with the relative magnitude of electrical energy imposed upon said coils; primary force means tending to hold said permanent magnet in an axial reference alignment position and to hold said reflector in said first mentioned position; and an ordinate reference means adapted to receive light projected from said reflector for locating ordinates on said reference means with respect to two axes disposed approximately 90° apart.

### 3,410,641 LASER RANGE FINDER DEVICE Truman G. Bergman, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed June 25, 1965, Ser. No. 467,151  
5 Claims. (Cl. 356-5)

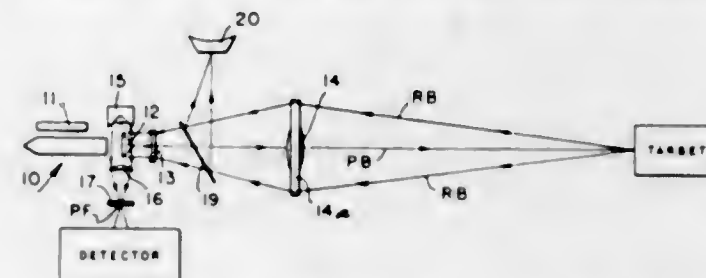
2. In a laser range finder system, means comprising in combination:

an energized regenerative laser rod;

a unidirectionally rotating Q-spoiler having external light reflecting surfaces arranged adjacent one end of said rod in coaxial alignment therewith including means for initiating laser emission during a fractional portion of each revolution thereof and further including external surfaces for reflecting incident emission as it is caused to impinge thereon;

an emission spreader including a negative plano-concave lens for spreading said laser emission;

an objective lens disposed adjacent said negative lens including a central portion for collimating said laser emission and projecting said emission toward a select-



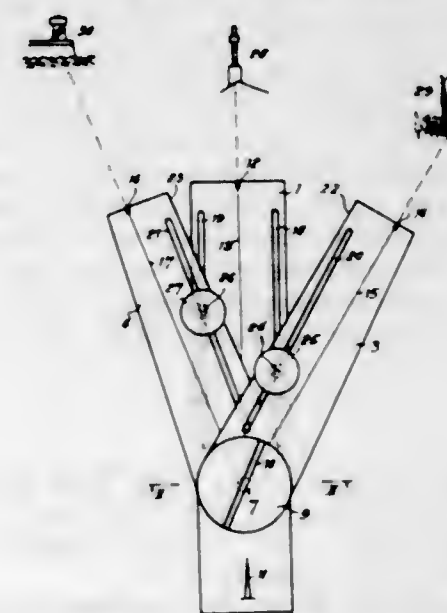
ed target to be reflected therefrom, and further including a peripheral portion for directing the emission as it is reflected from the target in a reverse direction through said emission spreader to impinge on said Q-spoiler, whereby light reflected from the target is caused to impinge upon the external surfaces of said Q-spoiler; and

detecting means for detecting the laser emission as it is caused to be reflected from said external surfaces and for providing an output indicative of the magnitude of rotational displacement imparted to said Q-spoiler.

### 3,410,642 DEVICE FOR DETERMINING THE POSITION OF A SHIP

Jean Bernard Chas, 10 Avenue Foch, Le Havre, France  
Filed Sept. 10, 1965, Ser. No. 486,480

Claims priority, application France, June 15, 1965, 20,838  
2 Claims. (Cl. 356-144)



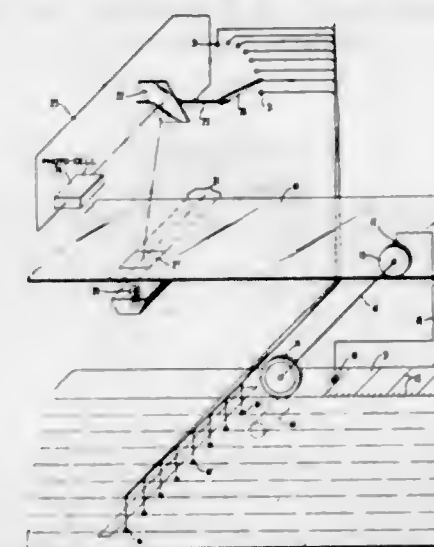
A ship locator including a transparent base rule having a rear sight and a front sighting stud, and two additional transparent rules mounted pivotally on a common bearing on the base rule line of sight, each likewise having at its free end a sighting stud. A detachable mirror is rotatably mounted by a pin frictionally retained coaxially within the pivot bearing. This permits a landmark aligned with either of the additional rules to be superposed on the landmark aligned with the base rule. Clamping screws pass through longitudinal slots in the rules offset from the pivot point.

### 3,410,643 APPARATUS FOR DETECTING AND RECORDING THE LOCATIONS OF DEFECTS IN SHEET MATERIAL IN TWO DIMENSIONS

Pierre Jørgensen, l'Hay les Roses, Val-de-Marne, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France

Filed Apr. 10, 1962, Ser. No. 186,494  
Claims priority, application France, Apr. 14, 1961, 858,779

6 Claims. (Cl. 356-200)

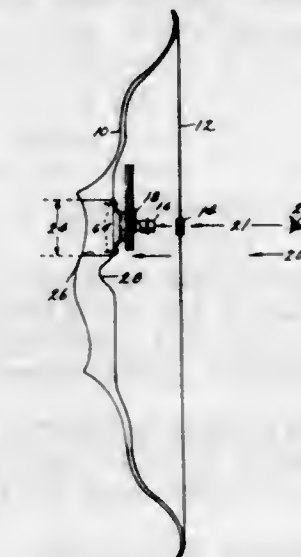


1. Apparatus for detecting and recording in Cartesian coordinates the locations of imperfections in a ribbon of glass moving in the direction of its length, comprising, fixed light-projecting means for illuminating with uniform intensity, an area of one face of the ribbon, of limited and uniform dimension in the direction of length thereof and extending from edge to edge thereof, means for moving a magnetizable tape along a path and in synchronism with movement of the ribbon, a plurality of inscription heads spaced in a row transversely of and adjacent said path, a photoelectric cell, light-reflector means, means mounting said light-reflector means for oscillation to reflect sequentially to said cell, light from said light-projecting means traversing said ribbon at successive increments of area of the illuminated area thereof, and means operated in synchronism with oscillation of said light-reflector means, to electrically connect each said inscription head in succession, with said cell.

### 3,410,644 TELESCOPIC ARCHERY SIGHT WHEREIN THE OCULAR LENS IS MOUNTED ON THE BOWSTRING

Alvin E. McLendon, Rte. 1, Box 446,  
Florence, Ala. 35630

Filed Nov. 21, 1967, Ser. No. 684,726  
5 Claims. (Cl. 356-247)

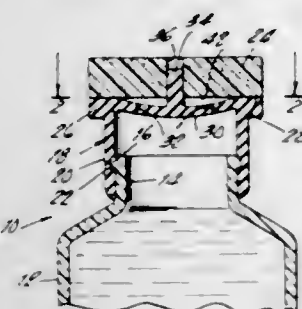


Telescopic sight means for a bow is disclosed having



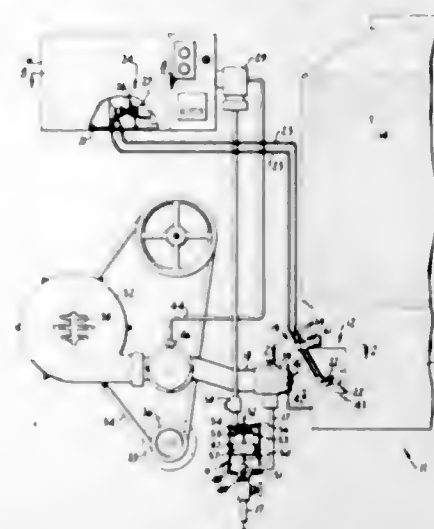
an optical system comprising at least one optical lens sight means affixed integrally between the strands of the bowstring or mounted upon the bowstring, said lens preferably being sightingly aligned with a second optical lens sight affixed to the bow, whereby the target is magnified.

**3,410,645**  
**CONCAVE DIAPHRAGM APPLICATOR**  
Gilbert Schwartzman, 20 Wilmet Circle,  
Scarsdale, N.Y. 10583  
Filed May 8, 1967, Ser. No. 636,800  
7 Claims. (Cl. 401-135)



An applicator for applying shoe polish, medications, cosmetics, and the like comprising a body having a projecting portion attached to a container. A relatively thick flange at the top of the projecting portion has a substantially flat surface to which a sponge-like pad is bonded. Integral with the flange and the projecting portion is a diaphragm having normally closed slits therein. A stud is integral with the diaphragm and extends into the pad and upon depression of the pad and the stud the diaphragm will flex inwardly to open the diaphragm for permitting and directing fluid flow against the pad for optimum application of the fluid on the surface to be covered.

**3,410,646**  
**FUEL IGNITION SYSTEM**  
Carlyle O. Telford, Hayward, Calif., assignor to Malsbary Manufacturing Company, Oakland, Calif., a corporation of California  
Filed June 16, 1966, Ser. No. 558,135  
19 Claims. (Cl. 431-66)



A fuel ignition system utilizing a spark igniter and spark detector for shutting off fuel except when operating under safe conditions and specifically adapted to provide automatic shut-off of fuel in the absence of either the spark or a forced draft of air; the system comprising a discriminating spark detector constructed with a neon glow light in sufficient proximity to the spark or high voltage circuit therefore to be excited when a spark is present and provide a significant difference in light intensity as between the blown spark and unblown spark, together with means for detecting the difference in light intensity and utilizing same to control the fuel feed to the burner.

## CHEMICAL

**3,410,647**  
**TREATMENT OF GELLED, SWOLLEN POLYACRYLONITRILE TYPE FIBERS WITH ZINC SULFOXYLATE FORMALDEHYDE, ZINC HYDROSULFOXYLATE FORMALDEHYDE OR ZINC HYDROSULFITE**  
Julian J. Hirshfeld, Decatur, Ala., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 134,817, Aug. 30, 1961. This application May 10, 1965, Ser. No. 454,699

4 Claims. (Cl. 8-97)  
The invention involves treatment of freshly spun swollen and gelled polyacrylonitrile or polyacrylonitrile fibers with any number of conventional textile reducing agents, e.g. sodium hydrosulfite, formaldehyde sulfoxylate, thio-urea dioxide, sodium theosulfate and sodium bisulfite. Specific copolymeric fibers modified by this process are ones made up of a blend of 88% of 94% acrylonitrile and 6% vinylacetate and 12% of another copolymer of 50% acrylonitrile and 50% methyl vinyl pyridine.

**3,410,648**  
**PROCESS FOR DYEING OF NYLON FIBERS WITH PREMETALLIZED AND ACID DYE STUFFS**  
Henry R. Mautner, Leonia, N.J., and William L. Fickert, Lansdale, Pa., assignors to GAF Corporation, a corporation of Delaware  
No Drawing. Original application June 22, 1962, Ser. No. 204,616, now Patent No. 3,281,201, dated Oct. 25, 1966. Divided and this application May 10, 1965, Ser. No. 464,887

5 Claims. (Cl. 8-55)  
The invention is stripping and redepositing dye from a dyed nylon fabric to level the dyeing thereof by apply-

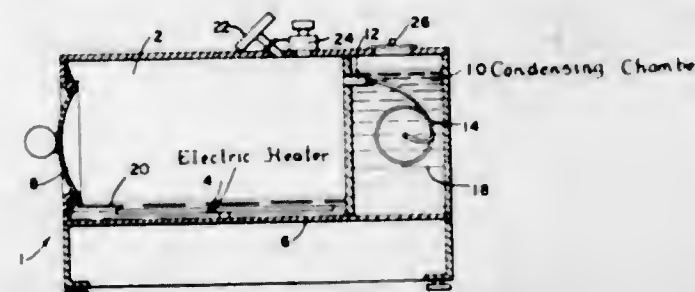
ing a solution of a nonylphenol ethylene oxide condensate having 84-86% ethylene oxide group, i.e. about 21-29.5 ethylene oxide groups per molecule, and water soluble amine, amide or ammonia. The nylon in the solution is maintained at 160° F., then heated at 205° to 210° F. cooled to 190°, acidified with an acid generator such as ammonium acetate or ammonium sulfate and then reheated. Short chain alkylamines, alkenylamines, alkanolamines, alkanolic acid amide, piperazine, morpholine, pyrrolidene, N-methyl derivatives of pyrrolidone and morpholine, and ethylene oxide condensates of these amides with up to 3 moles of ethylene oxide per amide group are some of the amines and amides used.

**3,410,649**  
**CATIONIC RESINS WHICH ARE THE REACTION PRODUCT OF FORMALDEHYDE AND THE REACTION PRODUCT OF AMINO BASES WITH A METHYLOLATED AMINE SALT**  
Lucien Sellet, Saddle River, N.J., assignor to Diamond Shamrock Corporation, a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 281,050, May 16, 1963. This application Mar. 1, 1967, Ser. No. 619,573

16 Claims. (Cl. 8-94.33)  
Stable cationic resins which are condensation products of (a) formaldehyde with (b) reaction products of (1) amino bases and (2) methylolated amine salts have been prepared and used in retanning leather and in coagulating polymeric materials. These resins can be dried from aqueous solutions without materially affecting their water solubility and molecular structure. A typical resin is the condensation product of formaldehyde with the reaction

product of dicyandiamide and methylolated ammonium sulfate.

**3,410,650**  
**APPARATUS FOR STERILIZING ARTICLES AND PRODUCING DISTILLED WATER**  
Maurice Bramson, 16 Woodcrest Road,  
Kings Point, N.Y. 11024  
Filed Aug. 25, 1966, Ser. No. 575,135  
3 Claims. (Cl. 21-98)



A device is provided for simultaneously sterilizing surgical articles and the like and manufacturing sterilized distilled water. An autoclave is provided having a heating element therein into which autoclave the items to be sterilized are to be placed. At the upper portion of the autoclave is an exit hole to which is attached a coiled capillary tube. The capacity of the heater as compared to the diameter of the capillary tube is such that steam pressure is maintained, the constantly generated steam leaving through the capillary tube and being condensed therein, the so-condensed water being collected at the bottom of the capillary tube.

**3,410,651**  
**METHOD OF TREATING EXHAUST GASES OF INTERNAL COMBUSTION ENGINE AND CATALYST THEREFOR**  
John T. Brandenburg and Robert J. Leak, Wappingers Falls, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware  
No Drawing. Continuation of application Ser. No. 251,067, Jan. 14, 1963. This application Jan. 2, 1968, Ser. No. 695,285

15 Claims. (Cl. 23-2)  
A method of treating exhaust gases of internal combustion engines and a catalyst structure therefor comprising an alumina coated metal filament substrate having deposited on the first portion thereof an alkali metal or alkaline earth metal chromate and having deposited on the second portion thereof an oxidation catalyst. The chromate portion of the catalyst structure removes lead compounds from the exhaust gases while the oxidation catalyst portion effects the oxidation of the impurities.

**3,410,652**  
**PRODUCTION OF VANADIUM TRIOXIDE**  
Donald M. Hausen, Danbury, Conn., and Harold L. Piper and Joseph Ruzycski, Grand Junction, Colo., assignors to Union Carbide Corporation, a corporation of New York  
Continuation-in-part of application Ser. No. 344,860, Feb. 14, 1964. This application Jan. 24, 1968, Ser. No. 700,274

2 Claims. (Cl. 23-21)  
Continuous process for producing a vanadium oxide product from ammonium metavanadate without the use of other reactants, which product contains V<sub>2</sub>O<sub>5</sub> as the only oxide material detectable by X-ray diffraction analysis.

**3,410,653**  
**ALKALI METAL SALT SEPARATION**  
Frank W. Theodore, Horseheads, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York  
No Drawing. Filed Feb. 7, 1966, Ser. No. 525,383  
7 Claims. (Cl. 23-63)

This invention relates to a method for separating a lithium salt from a fused mixture of alkali metal salts. The method comprises two principal steps: first, the fused salt mixture is recrystallized by precipitation thereof from a solution; and, second, the lithium salt is extracted from the recrystallized salt mixture by employing an organic liquid exhibiting a high differential solvent action for lithium salt.

**3,410,654**  
**PRODUCTION OF LIBERATED POLYPHOSPHORIC ACID AND CALCIUM SULFATE**  
Robert A. Wiesboeck and John D. Nickerson, Atlanta, Ga., assignors, by mesne assignments, to Armour Agricultural Chemical Company, a corporation of Delaware  
No Drawing. Filed Sept. 9, 1965, Ser. No. 486,195  
19 Claims. (Cl. 23-122)

Anhydrous monocalcium orthophosphate or anhydrous dicalcium orthophosphate is heated in the presence of SO<sub>2</sub> to a reaction temperature whereby the limited amount of chemically-bound water in the phosphate on reaction with SO<sub>2</sub> produces a free or liberated polyphosphoric acid and calcium sulfate and the phosphorus value is separated from the calcium sulfate preferably by ammoniation of the reaction product and by leaching the product with water.

**3,410,655**  
**PRODUCTION OF ALPHA-CALCIUM SULFATE HEMIHYDRATE**  
Hermann Rüter, Ludwigshafen (Rhine), and Egon Cherdron and Fritz Fässle, Limburgerhof, Palatinate, Germany, assignors to Gebrüder Glunz G.m.b.H., Ludwigshafen (Rhine), Germany  
No Drawing. Filed Feb. 24, 1966, Ser. No. 529,632  
Claims priority, application Germany, Apr. 24, 1965, G 43,435

10 Claims. (Cl. 23-122)  
Alpha-calcium sulfate hemihydrate in the form of compact, non-needle-like crystals is obtained from calcium sulfate dihydrate, particularly by-product gypsum from wet process phosphoric manufacture, or from low-grade natural gypsum, by elutriating the dihydrate with water to remove organic impurities and fine and slimy crystal portions at about 60°-90° C., forming an aqueous suspension of the dihydrate at a pH about 1.5-6, and subsequently heating under closely controlled conditions.

**3,410,656**  
**PHOSPHORIC ACID PURIFICATION**  
Donald S. Bunln, Metuchen, Fred J. Kelso, Clark, and Raymond A. Olson, Westfield, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware  
Continuation-in-part of application Ser. No. 524,272, Feb. 1, 1966. This application June 1, 1966, Ser. No. 554,563

11 Claims. (Cl. 23-165)  
A purified phosphoric acid is obtained by contacting wet acid, obtained by sulfuric acid acidulation of phosphatic ores with an organic extracting solution having limited solubility therein, in amounts sufficient to extract up to 85% of the P<sub>2</sub>O<sub>5</sub> values obtained in the wet acid, the organic extracting solution containing an organic phosphate which may be either an alkyl phosphate, aryl phosphate or alkyl aryl phosphate diluted with an organic solvent, recovering an extract lower in impurities than the wet acid, separating the extract from an aqueous raffinate,



contacting the extract with water in amounts sufficient to strip the  $P_2O_5$  values from the extract and form phosphoric acid and separating a purified aqueous phosphoric acid solution from the remaining organic extracting solution.

3,410,657

# CATALYTIC PROCESS AND COMPOSITION FOR THE PRODUCTION OF AMMONIA AND CHLORINE FROM AMMONIUM CHLORIDE

Roger Botton, Paris, and André Steinmetz, Aubervilliers, France, assignors to Produits Chimiques Pechiney Saint-Gobain, Paris, France

No Drawing. Filed Nov. 13, 1964, Ser. No. 411,096

Claims priority, application France, Nov. 15, 1963,

953,930

14 Claims. (Cl. 23—193)

A catalytic composition and method of use thereof, particularly suitable for the decomposition of  $NH_4Cl$  into  $NH_3$  and  $Cl_2$ , consisting in its essential ingredients, a partly reduced iron oxide, a potassium halide, and copper chloride.

3,410,658

# CYANOGEN AZIDE, COMPOSITIONS CONTAINING THIS COMPOUND, AND THE PREPARATION OF THE SAME FROM CYANOGEN HALIDES AND METAL AZIDES

Frank Dennis Marsh, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 9, 1962, Ser. No. 215,800

24 Claims. (Cl. 23—204)

Cyanogen azide,  $NCN_3$ , liquid solutions of the compound, e.g., in a cyanogen halide, compositions containing the compound adsorbed on adsorption agents, e.g., diatomaceous earth, and the preparation of the compound from reaction between a cyanogen halide, e.g., cyanogen chloride, and a metal azide, e.g., sodium azide, at around room temperature. Cyanogen azide can be used as a blowing agent or to prepare cyanamide.

3,410,659

# PURIFICATION AND STABILIZATION OF HYDROGEN PEROXIDE

Carl K. Muehlhauser, Charleston, W. Va., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 5, 1965, Ser. No. 453,482

7 Claims. (Cl. 23—207.5)

Aqueous hydrogen peroxide having a concentration of about 15–80% is purified by treatment with non-alkaline, activated alumina to render it particularly susceptible to stabilization with added stabilizers.

3,410,660

# CARBON BLACK REACTOR AND METHOD OF MAKING CARBON BLACK

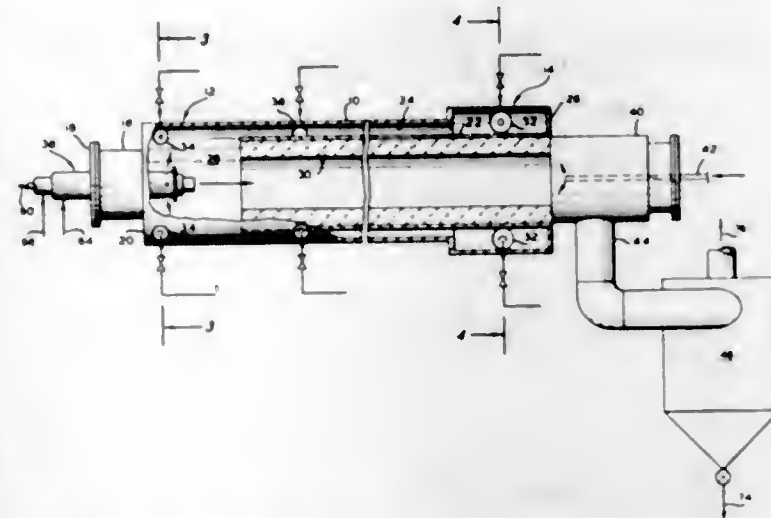
Eulas W. Henderson, Borger, and Joseph C. Krejci, Phillips, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 10, 1965, Ser. No. 486,405

8 Claims. (Cl. 23—209.4)

Production of furnace carbon black having increased structure characteristics by introducing a hydrocarbon feedstock into a body of hot combustion gases in a carbon black furnace, the hot combustion gases being formed in a combustion zone of the furnace by burning a fuel gas with a first stream of air preheated by passing through an annular space between the outer wall of the reaction tube and the inner wall of the housing and a second stream of air introduced directly into the combustion zone. The feedstock is partially burned under carbon black producing conditions in the combustion gases

tion zone. The feedstock is partially burned under carbon black producing conditions in the combustion gases



and the carbon black product is recovered from the effluent from the furnace.

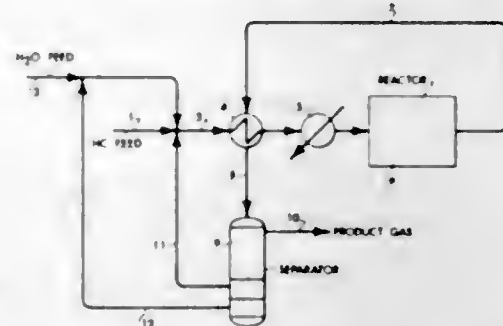
3,410,661

# LIQUID PHASE REFORMING PROCESS

William F. Taylor, Scotch Plains, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Continuation-in-part of application Ser. No. 385,931, July 29, 1964. This application Mar. 2, 1967, Ser. No. 620,044

4 Claims. (Cl. 23—213)



A hydrogen gas product is produced by reaction of liquid hydrocarbons with water in the presence of a nickel reforming catalyst at low reaction temperatures, e.g., 110° to 500° F., and at atmospheric pressure and above.

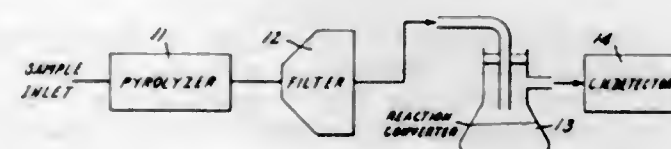
3,410,662

# THERMOPARTICULATE ANALYSIS OF NITROGENOUS MATERIALS

Cornelius Bernard Murphy, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed Mar. 29, 1965, Ser. No. 443,377

8 Claims. (Cl. 23—230)



A process and apparatus for the detection and measurement of trace amounts of complex nitrogenous organic compounds in an oxygen containing gas such as air. The gas stream is passed through a pyrolyzer where the nitrogenous organic compound is oxidized to produce nitrogen dioxide, water vapor and carbon dioxide and the nitrogen dioxide hydrolyzed to produce nitric acid which is then reacted with ammonia to produce ammonium nitrate

particles, or nuclei, which are then measured in a condensation nuclei detector. Filters are provided to remove background particles which may be present in the original gas sample or unoxidized carbon particles resulting from the pyrolysis. Amounts of organic compounds as low as 0.000001 gram per liter of air have been readily detected and measured by this method.

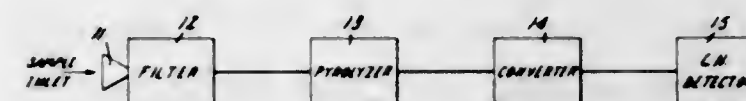
3,410,663

# THERMOPARTICULATE DETECTION OF EXPLOSIVES

Hugh T. Reilly, Elkton, Md., and Frank W. Van Luik, Jr., Schenectady, N.Y.; said Van Luik assignor to General Electric Company, a corporation of New York

Filed Mar. 29, 1965, Ser. No. 443,527

2 Claims. (Cl. 23—230)



High explosives such as dynamite or nitroglycerine are significantly volatile at room temperatures and so produce vapor comprising organic nitrate compounds. These air borne vapors may be pyrolyzed to form nitrogen dioxide which is then reacted in the presence of oxygen, ammonia and water to form ammonium nitrate particles which may be detected and measured in a condensation nuclei detector.

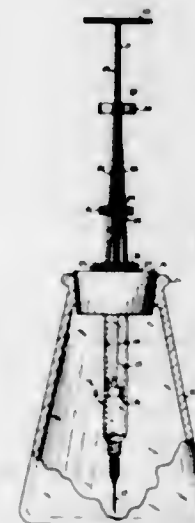
3,410,664

# TITRATION APPARATUS

George H. Fielding, Wellington Heights, Va., assignor to the United States of America as represented by the Secretary of the Navy

Filed Oct. 29, 1965, Ser. No. 505,767

3 Claims. (Cl. 23—253)



1. An apparatus for titration which comprises: a flat wide bottom glass flask, resilient means closing the mouth of said flask, a syringe suspended in said flask by extending through said resilient closure means in friction fit therewith, said syringe having an axially movable rod therein, a plunger attached to said rod at one end and arranged on axially downward movement to cause liquid to be delivered from said syringe, means for moving said plunger downwardly in said syringe at a slow, measured rate and including a spring clamp having resilient arms for releasable attachment to said syringe.

3,410,665

# APPARATUS FOR PRODUCING STRIATIONLESS BODIES OF METAL AND SEMICONDUCTOR SUBSTANCES CONTAINING IMPURITIES

Alfred Müller and Manfred Wilhelm, Nuremberg, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany

Filed Aug. 14, 1964, Ser. No. 389,537

Claims priority, application Germany, Aug. 17, 1963,

S 86,783

2 Claims. (Cl. 23—273)



Apparatus for producing solid bodies by normal freezing of impurity-containing crystalline substance, comprising an elongated crucible for containing the substance, heating means for melting the substance in said crucible, a heat-sink structure disposed predominantly outside said crucible and having a portion extending into said crucible near one end thereof to be immersed in the substance when the latter is molten, said extended portion having a planar front perpendicularly to the longitudinal axis of said crucible and facing the other end of said crucible, said crucible and heat-sink structure being jointly displaceable in the direction of said axis away from said heating means to cause normal freezing of the melt with a temperature gradient below the minimum at which temperature fluctuations occur at the liquid-solid phase boundary of the melt, the commencing phase boundary being planar and having, due to said planar front, a zero temperature gradient perpendicularly to the freezing direction. A method for producing striation free solid bodies is also described.

3,410,666

# ELECTRIC FUSION CRYSTALLIZATION OF MAGNESIUM, ZIRCONIUM AND CALCIUM OXIDES

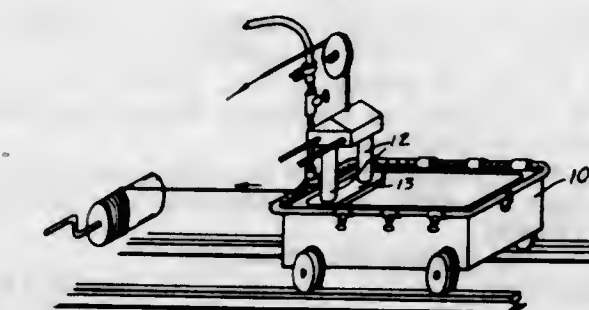
John J. Scott and Neil C. Turnbull, Chippawa, Ontario, Canada, assignors to Norton Company, Worcester, Mass., a corporation of Massachusetts

Original application Oct. 11, 1962, Ser. No. 229,851.

Divided and this application Aug. 6, 1965, Ser. No.

485,969

6 Claims. (Cl. 23—304)



Process for producing large crystals of refractory material by providing an elongated bed of fusible magnesium oxide, zirconium oxide or lime, progressively melting or fusing the refractory material by shifting a pair of graphite electrodes from one end of the bed to the other and permitting that increment of the molten refractory material, immediately at one side of the electrodes, to solidify while in a substantially quiescent condition.



3,410,667

## SEPARATION PROCESS OF URANIUM FROM IRON, THORIUM AND RARE EARTHS BY ION EXCHANGE RESIN

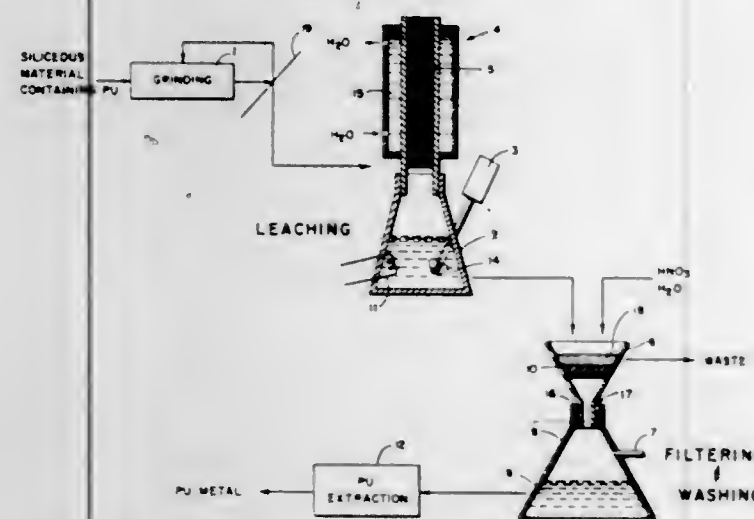
Mohamed K. Saad El-Din Sherief, Assiut University, Cairo, Egypt, and Andor Almásy, Veszprem, Hungary  
No Drawing. Filed Oct. 29, 1965, Ser. No. 505,754  
4 Claims. (Cl. 23—322)

A process for recovering uranium in pure form from a contaminated uranium containing a high ferric ion content relative to the uranyl ion content by treating the contaminated uranium with a hydrochloric acid solution and thereafter saturating the acidified solution with  $\text{SO}_2$  to reduce the ferric ion content and finally effecting the separation of uranyl ions by means of an anion exchange resin.

3,410,668

## RECOVERY OF PLUTONIUM FROM REFRACTORY SILICEOUS MATERIALS

William Vaughan Conner, Nederland, Colo., assignor to the United States of America as represented by the United States Atomic Energy Commission  
Filed Nov. 22, 1967, Ser. No. 685,177  
3 Claims. (Cl. 23—342)



A method recovering plutonium from siliceous materials containing plutonium and coincidentally at least partially decontaminating such materials, comprising grinding the material to a fine powder, leaching the plutonium from the powder with a solution of nitric acid ( $\text{HNO}_3$ ) containing fluoride ions, filtering the residual powder from the solution for repetition of the leaching step if the filtered powder contains substantial plutonium, and discarding the filtered powder while retaining the  $\text{HNO}_3$  solution for Pu extraction.

3,410,669

## IMINOSULFUR OXYDIFLUORIDES AND THE PROCESS FOR THEIR PREPARATION

Richard D. Cramer, Landenberg, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 820,115, June 15, 1959. This application May 8, 1963, Ser. No. 278,998  
15 Claims. (Cl. 23—357)

1. A compound of the formula  $\text{X}-\text{N}=\text{S}(\text{O})\text{F}_2$ , wherein X contains up to 18 carbons and is a member of the group consisting of hydrogen, hydrocarbon, halo-hydrocarbon in which all halogens are of atomic number 9–35, and substituted hydrocarbon having as its sole substituents 1–2 members of the class consisting of  $-\text{N}=\text{S}(\text{O})\text{F}_2$ , carboxyl, nitro, amino,  $-\text{NH}(\text{loweralkyl})$ ,  $-\text{N}(\text{loweralkyl})_2$ , and hydroxyl, each amino,  $-\text{NH}(\text{loweralkyl})$ ,  $-\text{N}(\text{loweralkyl})_2$  and hydroxyl group being bonded to a nuclear carbon of an aromatic ring.

3,410,670

## FUEL COMPOSITIONS

William M. Le Suer, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 357,787, Apr. 6, 1964. This application Jan. 30, 1968, Ser. No. 701,566  
17 Claims. (Cl. 44—57)

A basic metal composition prepared by carbonating a mixture comprising a phenolic composition and a metal base is useful as an additive in fuels to improve the combustion characteristics of the fuel. The performance of diesel and jet engines is improved by operating the engine on such fuel.

3,410,671

## FUEL CONTAINING A BASIC METAL COMPOSITION DERIVED FROM A NITRATED HYDROCARBON

William M. Le Suer, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed June 8, 1965, Ser. No. 462,444  
19 Claims. (Cl. 44—51)

A fuel having improved combustion characteristics in which there is present a metal complex of a nitrated hydrocarbon.

3,410,672

## GLASS WORKING APPARATUS WITH LIQUID SEAL

Stephane Dufau de Lajarte, Paris, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France  
Filed Jan. 10, 1964, Ser. No. 337,066  
Claims priority, application France, Jan. 12, 1963, 921,231

12 Claims. (Cl. 65—3)



1. Apparatus for the progressive treatment of a length of material which comprises a chamber, means to introduce the material to the chamber and means to withdraw the material from the chamber comprising an aperture in the chamber which is larger than the material by a capillary amount and which is filled with a non-adherent liquid, means to flow a treating fluid through the chamber in contact with the material, and pressure controlling means for the chamber.

3,410,673

## DOUBLE ION EXCHANGE METHOD FOR MAKING GLASS ARTICLE

Francis J. Marusak, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 341,602, Jan. 31, 1964. This application Nov. 16, 1964, Ser. No. 412,592  
1 Claim. (Cl. 65—30)

This invention relates to the strengthening of glass articles through the development of a surface compress-

sion layer thereon by means of ion exchange. More particularly, this invention is concerned with producing lithium silicate glasses, containing substantial amounts of  $\text{Al}_2\text{O}_3$  and/or  $\text{ZrO}_2$ , exhibiting very high flexural and impact strengths by first exchanging lithium ions in the glass surface with sodium ions and thereafter exchanging lithium and/or sodium ions from the exchanged surface layer with potassium ions.

3,410,674

## PROCESS FOR PRODUCING SEALS

Francis W. Martin, Painted Post, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Oct. 27, 1964, Ser. No. 406,683  
6 Claims. (Cl. 65—33)

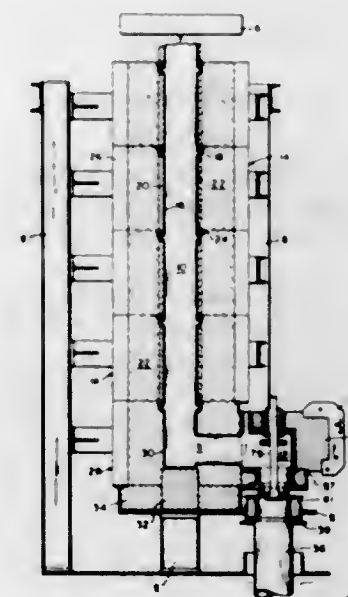
A method of forming a seal by placing a devitrified glass having up to 40% by volume in the crystalline phase in contact with a body to form an assembly and heating said assembly to a temperature below the devitrification temperature of the glass for a time and under sufficient pressure to bond said devitrified layer to the body.

3,410,675

## GLASS ROD AND TUBE FORMING WITH CONTROLLED DIMENSIONAL UNIFORMITY

Stuart M. Dockerty, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Apr. 15, 1965, Ser. No. 448,403  
2 Claims. (Cl. 65—129)



Glass cane and tubing are formed with improved dimensional uniformity by providing a relatively high head of thermally conditioned glass which extrudes the glass through a sized orifice with a reduced attenuation ratio.

3,410,676

## PLANT GROWTH REGULATOR

Kenneth L. Hill, Middleport, N.Y., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 8, 1965, Ser. No. 431,163  
10 Claims. (Cl. 71—77)

Plant growth is regulated by compositions comprising phenylfuroxan as an essential ingredient. Examples of plant growth regulant activity include early plant maturation, breaking of bud dormancy, increased fruit size, and promotion of emergence of new axillary shoots.

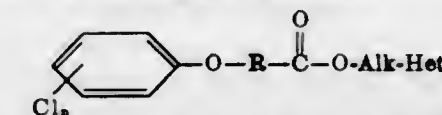
3,410,677

## HERBICIDAL AND DEFOLIATING COMPOSITION AND METHOD

Stanley D. Koch, Dayton, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application Oct. 1, 1964, Ser. No. 400,876, now Patent No. 3,312,711, dated Apr. 4, 1967. Divided and this application May 25, 1966, Ser. No. 552,708  
9 Claims. (Cl. 71—74)

Compositions useful as defoliant and herbicides. The compositions contain an inert carrier and a toxic amount of a compound of the following formula:



where  $n$  is an integer of from 2 to 3, R and "Alk" are each saturated aliphatic hydrocarbon chains of from 1 to 6 carbon atoms and "Het" is pyridine, furan or a lower alkyl substituted pyridine or furan.

3,410,678

## WAX-OIL EMULSION FOR REGULATING PLANT TRANSPIRATION

Edward L. Rattledge, Claymont Heights, Del., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed July 6, 1965, Ser. No. 469,870  
3 Claims. (Cl. 71—127)

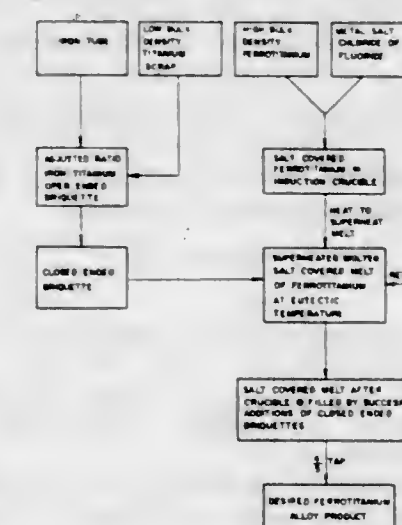
An antitranspirant composition and method of application to foliar parts of growing plants comprising a wax-oil in water emulsion containing 0.125 to 4.875 parts per hundred parts of water of petroleum wax having a melting point in the range of 122°–160° F. and 0.125 to 4.875 parts per hundred parts of water of a petroleum hydrocarbon oil having a maximum of 8.0 wt. percent gel aromatics and a distillation range at 10 mm. Hg abs. of 300°–500° F.

3,410,679

## METHOD OF MAKING METAL ALLOYS, PARTICULARLY FERROTITANIUM ALLOY

Carlos Pardo, Mexico City, Mexico, assignor, by mesne assignments, to TamMet International, Chicago, Ill., a partnership

Filed July 26, 1965, Ser. No. 474,625  
12 Claims. (Cl. 75—129)



A process for producing ferrotitanium alloy utilizing titanium scrap in the form of low-bulk density shovelable turnings, borings and chips, and including the steps of loading the titanium scrap into an iron or steel tube, adjusting the ratio of titanium scrap weight



to the tube weight by comparing the bulk densities of the scrap material and the tube dimension and the wall thickness of the tube to produce the desired iron-titanium ratio, sealing off the tube and charging the scrap-loaded tubes successively into a superheated molten-salt covered melt of high bulk density ferrotitanium within an induction furnace, said melt being maintained at or near the eutectic temperature of the ferrotitanium, thereafter tapping the desired ferrotitanium alloy product from the furnace; the melting process being one described as "induction melting in air" distinguishing from "vacuum melting" or the melting of metals in the presence of inert gases.

3,410,680

**METHOD OF PRODUCING ALUMINUM**

Volker Sparwald, Stuttgart-Neuss, Germany, assignor to Vereinigte Aluminium-Werke Aktiengesellschaft, Bonn, Germany

No Drawing. Filed Feb. 10, 1966, Ser. No. 526,969  
Claims priority, application Germany, Feb. 11, 1965,  
V 23,611

10 Claims. (Cl. 75-68)

1. In a method of recovering aluminum from the reaction product obtained by melting alumina-containing material with carbonaceous material, said reaction product consisting essentially of a mixture of metallic aluminum, aluminum carbide and alumina, the steps of grinding said mixture at a temperature above the melting point of aluminum and below about 1800° C., at which temperature said aluminum will be liquid and said aluminum carbide and alumina will be in solid form, so as to comminute said aluminum carbide and said alumina; and blowing through the thus formed mixture of comminuted aluminum carbide, comminuted alumina and liquid aluminum at a temperature above the melting point of aluminum a stream of gas which is inert with respect to said aluminum, in such a manner as to substantially carry along in said gas stream said solid comminuted alumina and aluminum carbide and thereby to separate the molten aluminum from the solid constituents of said mixture.

3,410,681

**COMPOSITION FOR THE TREATMENT OF STEEL**

Nicholas Orban, Paris, France, assignor to Anstalt für Technische Entwicklung und Verwertung, Vaduz, Liechtenstein, an establishment of Liechtenstein

No Drawing. Filed Sept. 28, 1965, Ser. No. 491,040  
7 Claims. (Cl. 75-94)

I disclose, a composition for the treatment of steel to eliminate flaws and defects in the steel comprising a mixture of sodium carbonate, calcium fluoride and a saponifiable fatty acid capable of reacting with the sodium carbonate and calcium fluoride to produce a foamy slag capable of uniformly covering liquid steel.

3,410,682

**ABRASION RESISTANT CHROMIUM-MOLYBDENUM CAST IRONS**

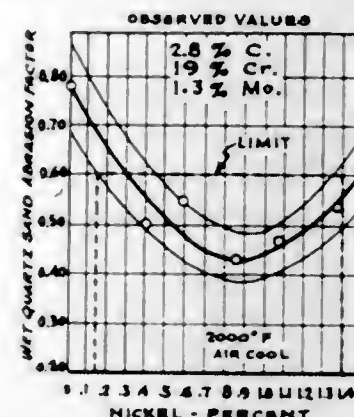
Howard S. Avery and Henry J. Chapin, Mahwah, N.J., assignors to Abex Corporation, New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 403,314,  
Oct. 12, 1964. This application Sept. 11, 1967, Ser.  
No. 667,628

12 Claims. (Cl. 75-128)

Abrasion resistant cast iron alloys consisting essentially of 2.5 to 3.4% carbon, 0.15 to 1.6% nickel, 12.5-25.6% chromium, 0.38 to 2.90% molybdenum, and the balance iron. A second species contains 2.5 to 3.2% carbon, 0.4 to 2.1% manganese, 0.1 to 1.9% nickel, 15 to 23% chromium, 0.4 to 2.4% molybdenum and the bal-

ance iron. Superior abrasion resistance is achieved by restricting carbon, nickel, chromium, manganese and



3,410,683

**PROCESS FOR THE PRODUCTION OF SINTERED ARTICLES**

Gerhard Zapf, Krebsoge, Rhineland, Germany, assignor to Sintermetallwerk Krebsoge G.m.b.H., Krebsoge, Rhineland, Germany

No Drawing. Filed Jan. 29, 1968, Ser. No. 701,081  
4 Claims. (Cl. 75-214)

A process for the production of sintered articles of high density by pre-pressing metal powder to form a moulding and subsequently re-pressing the moulding in a pre-warmed press tool is characterised in that, in order to keep the recrystallisation conditions of the article during re-pressing constant, the moulding is heated to a temperature of from about 750° C. to about 1100° C. before it is re-pressed and the press tool is pre-warmed to a temperature of from about 150° C. to about 350° C. and is maintained at its pre-warming temperature throughout the re-pressing operation.

3,410,684

**POWDER METALLURGY**

Leon J. Printz, Detroit, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

No Drawing. Filed June 7, 1967, Ser. No. 644,088  
10 Claims. (Cl. 75-214)

A process for producing sintered porous metal objects through the compacting of powder metals at low pressure. A fatty acid and a wax are blended with the powdered metal prior to compacting so as to form a green briquette of sufficient firmness and cohesiveness to withstand normal handling without fracture or crumpling. Prior to sintering, the green briquette is placed under reduced pressure and heated to remove the fatty acid and wax components, thereby avoiding dissociation of these materials at sintering temperatures into substances which react with the powder metal to adversely affect the chemical and physical properties of the desired product. The green briquette is then sintered after removal of the fatty acid and wax.

3,410,685

**DIRECT-POSITIVE IMAGES BY THE SILVER SALT DIFFUSION PROCESS**

Gustav Schaum, Werner Liebe, and Raymond Pfeiffenschneider, Leverkusen, Harald von Rintelen, Cologne-Rodenkirchen, and Edith Weyde, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Apr. 22, 1963, Ser. No. 274,835  
Claims priority, application Germany, May 9, 1962,  
A 40,167

6 Claims. (Cl. 96-29)

1. In the process of preparing a photocopy by the silver salt diffusion process using a supported light-sensi-

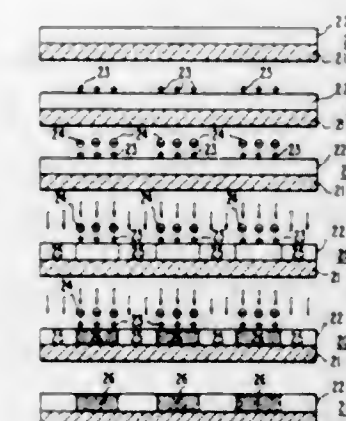
tive silver halide emulsion which in turn supports a transfer layer that is originally held only on the emulsion but as part of the processing is transferred to a separate support on which the desired positive image is finally carried, the improvement according to which the transfer layer is essentially an alkali metal alginate transfer layer, and the emulsion is in hardened gelatin that has a softening point at least as high as 100° C.

3,410,686

**DEVELOPMENT OF IMAGES**

Merle P. Prater, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 30, 1964, Ser. No. 379,164  
2 Claims. (Cl. 96-49)



A method for the selective development of images in light-sensitive, thermally developable diazotype compositions of either the vesicular or color-forming type by placing an electric charge corresponding to the desired image on the surface of the diazotype element, adhering oppositely charged, infra-red absorbing toner particles to the electric charge pattern and exposing the element to infra-red radiation to selectively heat the toner particles thereby developing the image.

3,410,687

**PHOTOSENSITIVE MEDIUM COMPRISING AN AROMATIC PROTECTED ALDEHYDE, A PRIMARY AROMATIC AMINE AND A LOWER HALOALKANE**

John Alan Mattor, Hollis, and Lawrence Price, Old Orchard Beach, Maine, assignors to Scott Paper Company, Delaware County, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 626,881, Mar. 29, 1967, which is a continuation-in-part of application Ser. No. 351,316, Mar. 12, 1964. This application Oct. 19, 1967, Ser. No. 676,637

6 Claims. (Cl. 96-90)

A photographic medium or film comprises a light-passing resinous binder containing as active ingredients (1) an aromatic protected aldehyde such as an aromatic cyclic acetal substituted on the benzene ring with at least

one chromophoric group, (2) a primary aromatic amine and (3) a photosensitive lower haloalkane such as iodoform.

The medium, after being exposed to light, is developed or fixed simply by heating it which heating drives off enough of the chemicals in the background areas so that the background areas are no longer light sensitive.

3,410,688

**BLACK-LINE DIAZOTYPE MATERIALS CONTAINING PLURAL COUPLING COMPONENTS FOR THERMAL DEVELOPMENT**

Walter J. Welch, Port Dickinson, N.Y., assignor to GAF Corporation, a corporation of Delaware

No Drawing. Filed Dec. 9, 1964, Ser. No. 417,241

18 Claims. (Cl. 96-91)

Blackline diazotype material susceptible to thermal development, containing on a base a light-sensitive diazotype composition containing a compound which produces an alkaline environment at elevated temperatures, a light-sensitive diazo component, a coupler yielding therewith a blue dye, and a 2-alkylresorcinol in which the alkyl group contains 1 to 10 carbon atoms as a yellow brown coupler.

3,410,689

**FISH OR CRUSTACEAN BAIT**

Gerd Nathan, Springfield, Va., assignor to Nathan Industries, Inc., Springfield, Va., a corporation of Virginia

Filed Oct. 22, 1965, Ser. No. 501,697

5 Claims. (Cl. 99-3)

Production of fish or crustacean bait by admixing a foamed plastic with a fish attractant under conditions whereby said attractant is suspended within the structural portion of said plastic, said bait disjoining when submerged in water.

3,410,690

**LIQUID FEED SUPPLEMENT FOR POULTRY**

Robert K. Lindburg, deceased, late of Arcadia, Wis., by Justine Lindburg Swope, administratrix, Rte. 1, Cochran, Wis. 54622

No Drawing. Continuation-in-part of application Ser. No. 229,501, Oct. 9, 1962. This application June 18, 1965, Ser. No. 465,212

3 Claims. (Cl. 99-4)

A liquid feed supplement for addition to the drinking water of poultry comprising an emulsion of a syrup, water and fat, with the syrup being a mixture of emulsifiers, water and an edible alcohol.

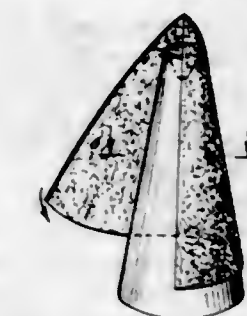
3,410,691

**EDIBLE FOOD ARTICLE AND PROCESS OF PREPARING**

Mary E. Stanley, 424 Bryan St., Rockingham, N.C. 28379

Continuation-in-part of application Ser. No. 324,755, Nov. 19, 1963. This application July 26, 1966, Ser. No. 568,020

5 Claims. (Cl. 99-88)



Preparation of a yeast-raised bakery product by applying a sheet of dough to a conical mold, sealing the tapered



end portion of the dough, applying a browning glaze thereto and baking the product.

3,410,692

**CONTINUOUS MANUFACTURE OF PRE-DOUGH**  
Herbert Wutzel, Vienna, Austria, assignor to Patentausschaltung Vogelbusch Gesellschaft m.b.H., Vienna, Austria, a company of Austria

Continuation-in-part of application Ser. No. 236,735, Nov. 9, 1965. This application Sept. 29, 1967, Ser. No. 671,816

Claims priority, application Austria, Nov. 14, 1961, A 8,583/61; Oct. 1, 1962, A 7,778/62  
25 Claims. (Cl. 99—90)

A process for making a pre-dough or starting dough ferment for making dough in which, while pre-dough components are being fermented, there are added repeatedly microorganisms free of culture medium selected from the group comprising lactic acid-forming bacteria and yeasts, throughout the entire course of the fermentation of the pre-dough components. The pre-dough ferments such as leaven are suitable for being mixed with flour for making them into a dough, and then baking this dough to excellent bread and baker's wares of optimal properties.

3,410,693

#### ACTIVE DRY YEAST CONTAINING A SUCROSE DIESTER

Seymour Pomper, Stamford, Conn., and Emanuel Akerman, Bronx, N.Y., assignors to Standard Brands Incorporated, New York, N.Y., a corporation of Delaware  
No Drawing. Filed Oct. 20, 1965, Ser. No. 499,023  
10 Claims. (Cl. 99—96)

An active dry yeast comprising yeast having a moisture content below about 7.5 percent by weight and a small amount of sucrose diester derived from a saturated fatty acid having a carbon chain length greater than 12. The sucrose diester imparts to the yeast superior leavening activity. Examples of suitable sucrose diesters are sucrose distearate and sucrose dipalmitate.

3,410,694

#### ICE CREAM TYPE PRODUCT

Paul M. La Flamme, New Britain, Conn., assignor of one-half interest to Harry G. Moss, Hamden, Conn.  
No Drawing. Filed Nov. 2, 1965, Ser. No. 506,113  
8 Claims. (Cl. 99—136)

An ice cream type product made from sugar, water, milk products, and flavoring and containing 0.5%—2% by weight of marine vegetable colloid selected from the group consisting of Nouralgine GA/2 and Super-Nouralgine TBV/5.

3,410,695

#### PRODUCTS AND PROCESS FOR IMPROVING THE QUALITY OF SEASONINGS, FOODS AND BEVERAGES

Akio Shiga, Hideyuki Furukawa, and Akio Kanemitsu, Machida-shi, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan  
No Drawing. Filed Oct. 26, 1964, Ser. No. 406,602  
Claims priority, application Japan, Oct. 31, 1963, 38/57,662  
20 Claims. (Cl. 99—140)

A flavor and taste enhancing agent for food and beverages comprising L-glutamic acid-L-lysine copolypeptide, L-glutamic acid-L-ornithine copolypeptide, or L-aspartic acid-L-lysine copolypeptide with the possible addition of flavourous 5'-nucleotide and sodium monoglutamate.

#### 3,410,696 PROCESS FOR LENGTHENING THE POST-HARVEST LIFE OF CERTAIN PERISHABLE FRUITS AND VEGETABLES

Daniel Rosenfield, Yonkers, N.Y., assignor to Union Carbide Corporation, a corporation of New York  
No Drawing. Filed Aug. 19, 1964, Ser. No. 390,731  
7 Claims. (Cl. 99—168)

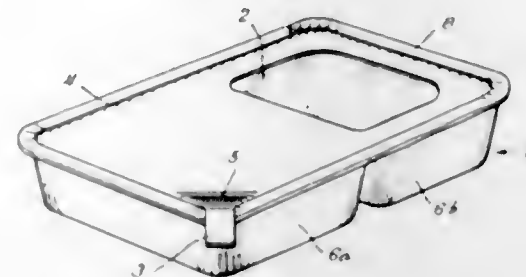
Prolonging the postharvest life of fruits and vegetables by coating the surface with a flexible polymeric vinyl acetate coating which contains at least 50% by weight of vinyl acetate.

3,410,697

#### LAMINATED CLOSURE FOR FOOD TRAYS HAVING HEAT-RETRACTABLE WINDOW

Edward E. Stephenson, Richland, Mich., assignor, by mesne assignments, to Brown Company, a corporation of Delaware

Filed Feb. 12, 1965, Ser. No. 432,084  
18 Claims. (Cl. 99—171)

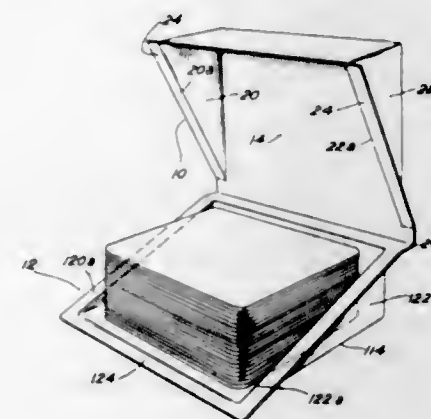


A food container having a complementary closure member comprising a sheet-form member having an opening therein and an exposed transparent film secured to the sheet-form member and covering the opening, the film being formed of a synthetic plastic material which fractures and retracts at oven temperatures, thereby enabling the container to be placed in an oven in sealed condition, the transparent film subsequently fracturing and retracting at the oven temperature, thus permitting the food positioned under the film to be heated to a crisp state.

3,410,698

#### PRODUCT CONTAINER

Marvin P. Sosin, Wilmette, Ill., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware  
Filed Feb. 7, 1967, Ser. No. 614,493  
1 Claim. (Cl. 99—174)



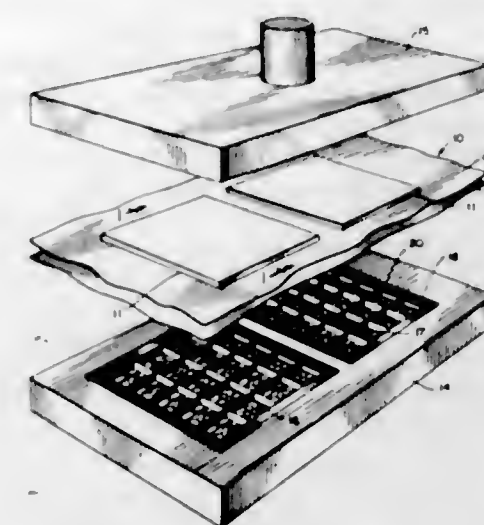
This invention relates to a new container that will provide immediate access to substantially all of the product held therein such as sliced luncheon meat and the like. The container is generally comprised of a closure section and a product section. The closure section comprises a top, front and rear ends, and side walls that have their

bottom edges disposed downwardly from the rear end of the closure section to the front end thereof. The product section comprises a bottom for holding the product, front and rear ends, and side walls that have their top edges disposed downwardly from the rear end of the product section to the front end thereof and in the same disposition as the bottom edges of the side walls of the closure section.

3,410,699

#### METHOD OF AND MEANS FOR EMBOSSEMENT AND PACKAGING OF COLD BUTTER

Leo Peters, 750 Plymouth Road SE., Grand Rapids, Mich. 49506  
Filed Oct. 21, 1964, Ser. No. 405,514  
11 Claims. (Cl. 99—179)

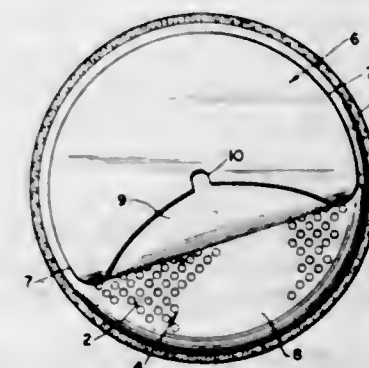


Use of a flexible film such as polypropylene between a blank of cold butter and a female die to form an upstanding embossment on the blank.

3,410,700

#### PACKAGE FOR FROZEN PIZZA AND THE LIKE

Donavon A. Gstohl, Sioux Falls, S. Dak., assignor, by mesne assignments, to Marigold Foods, Inc., Minneapolis, Minn., a corporation of Minnesota  
Continuation-in-part of application Ser. No. 363,667, Apr. 22, 1964, which is a continuation of abandoned application Ser. No. 159,069, Dec. 13, 1961. This application Oct. 25, 1965, Ser. No. 505,162  
7 Claims. (Cl. 99—192)



7. A merchandising and heatable precooked generally flat frozen food product package for upright disposition in an electric toaster, said food product being a unitary mass such as pizza having a substantially uniform thickness and flat parallel opposite sides, comprising:

(a) two generally parallel laterally spaced sheets of thin flexible sheet material capable of withstanding the rapid heat of reheating in an electric toaster, one

completely covering one side of the product and its other completely covering the other side of the product,

(b) said sheets being connected to each other along the greater portion of their bottom and side marginal edges by a joint conforming generally to and located adjacent to the marginal edge of the product to hold said sheets in firm engagement with said opposite sides of the product throughout the entire area of said sides and to support the product in erect position, and

(c) said sheets being highly perforated in the areas between said marginal edges and covering substantially the entire area of said product for maximum exposure of the product sides to the radiant heat within a toaster.

3,410,701

#### PROCESS FOR THE PRODUCTION OF MILK-PRODUCT POWDERS

Jacques Jean Cibolt, Paris, France, assignor to Societe Anonyme dite: Etablissements Laguilharre, Courbevoie, Hauts-de-Seine, France, a company of France  
No Drawing. Filed Feb. 23, 1965, Ser. No. 434,617  
Claims priority, application France, Feb. 21, 1964, 964,641

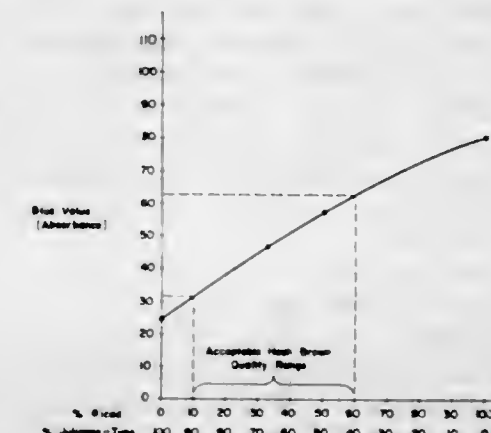
3 Claims. (Cl. 99—203)

Production of a milk-product concentrate containing more than 45% dry solids, at a temperature greater than 45° C., by spray-drying said product to obtain a powder having a water content within the range of 4.5 to 7%, an followed by subjecting the resulting powder to a different secondary drying treatment so as to reduce its water content to approximately 3.5%.

3,410,702

#### PREPARATION OF A DEHYDRATED POTATO PRODUCT WHICH CAN BE RECONSTITUTED INTO HASH BROWN POTATOES

Louis James Frank, 101 Reservoir Road, Hillsborough, Calif. 94010  
Filed Nov. 22, 1965, Ser. No. 508,906  
10 Claims. (Cl. 99—207)



1. A process for preparing a dehydrated potato product of improved natural flavor, suitable for instant reconstitution and subsequent conversion to hash brown potatoes, comprising: cutting a first quantity of said potatoes into strips; blanching said strips; removing free starch from said strips; dehydrating said strips; cutting a second quantity of said potatoes in pieces; heating said cut second quantity until substantially cooked; ricing the substantially cooked quantity while retaining the released starch; dehydrating the free starch rich riced quantity; and thereafter combining the first and second dehydrated quantities uniformly in such proportions that the result-



ing composition when subjected to reconstitution and frying will be converted to hash brown potatoes.

### 3,410,703 SILVER AND COPPER TARNISH PREVENTATIVES

Harry Kroll, Warwick, Camille Sahely, Pawtucket, and Melvin A. Lipson, Providence, R.I., assignors to Philip A. Hunt Chemical Corporation, Palisades Park, N.J., a corporation of Delaware  
No Drawing. Filed May 18, 1965, Ser. No. 456,863  
12 Claims. (Cl. 106—3)

Copper, and silver, and alloy polish formulated with high molecular weight alkane mercaptides of heavy metals in solid and liquid carriers.

### 3,410,704 DENTURE ADHESIVE CONSISTING OF PECTIN AND AGAR

Charles E. Beachner, Santa Barbara, Calif.  
(1451 Funston Ave., San Francisco, Calif. 94122)  
No Drawing. Filed Apr. 20, 1966, Ser. No. 543,803  
2 Claims. (Cl. 106—35)

This invention is directed to a denture adhesive which is compatible with conditions in the human mouth such as taste and odor with physiological benefits and with it the necessary mechanical benefits of cushioning and adhesion, at all times during use. The powder is a finely comminuted mixture of agar and pure pectin in the range of and between 1 part by weight of agar to 2 parts by weight of pectin and 1 part by weight of agar and 10 parts by weight of pectin. In the tube dispensing form gelatin and agar is mixed with powdered pectin in substantially the proportions given above.

### 3,410,705 CERAMIC DIELECTRICS

Kunio Honma, Honjyo-shi, Akita-ken, Japan, assignor to TDK Electronics Co., Ltd., Tokyo, Japan  
Filed May 12, 1964, Ser. No. 366,733  
Claims priority, application Japan, May 22, 1963, 38/25,524; Oct. 30, 1963, 38/57,494, 38/57,495, 38/57,496, 38/57,497  
6 Claims. (Cl. 106—39)

Ceramic dielectric materials are provided which consist essentially of a sintered mixture of  $\text{BaTiO}_3$ ,  $\text{PbTiO}_3$  and  $\text{Bi}_2(\text{SnO}_3)_3$ . The materials are prepared by preparing a mixture of the following composition:

- barium titanate preparing by mixing barium carbonate and titanium oxide in equimolar amounts followed by calcining at a temperature of about  $1280^\circ\text{C}$ ;
- lead oxide;
- titanium oxide;
- bismuth oxide, and
- tin oxide.

This mixture is sintered in air at a temperature in the range of  $1100^\circ\text{C}$ . to  $1400^\circ\text{C}$ . In one aspect of the invention the ceramic dielectric materials contain, in addition, a mineralizer selected from the group consisting of vanadium oxide, lanthanum oxide, niobium oxide and tungsten oxide.

### 3,410,706 INHIBITING THERMAL DECOMPOSITION OF ALKALI METAL SILICATES

Cletus E. Peeler, Jr., Painesville, Ohio, assignor to Diamond Shamrock Corporation, a corporation of Delaware  
No Drawing. Filed Oct. 8, 1964, Ser. No. 402,607  
2 Claims. (Cl. 106—74)

The thermal degradation of aqueous alkali metal silicate solutions is inhibited by the addition of small amounts, generally, 0.01 to 2.0%, of zinc oxide.

### 3,410,707 PROTECTIVE COATINGS FOR ALUMINUM AND ALUMINUM ALLOYS

Walter E. Pocock and Stanley R. Brown, Baltimore, Md., assignors, by mesne assignments, to Allied Research Products, Inc. (formerly Allied Richardson, Inc.), Baltimore, Md., a corporation of Delaware  
No Drawing. Filed Dec. 29, 1964, Ser. No. 422,041  
14 Claims. (Cl. 106—14)

A chromate conversion bath composition which when applied to aluminum or an alloy thereof imparts a corrosion resistant coating. The bath is an aqueous solution of hexavalent chromium, a water soluble fluorine containing compound yielding free fluorine ions in solution, a water soluble tungstate as well as a water soluble phosphate or arsenate.

### 3,410,708 POROUS SILICA COATED TITANIUM DIOXIDE PIGMENT

William J. McGinnis, Waverly, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Filed Aug. 5, 1964, Ser. No. 387,790  
8 Claims. (Cl. 106—300)

A chalk resistant, highly weatherable co-oxidized  $\text{TiO}_2\text{-Al}_2\text{O}_3$  pigment bearing 2–5% by weight (based on  $\text{TiO}_2$ ) of a porous  $\text{SiO}_2$  coating formed by adding a water soluble silicate to a warm ( $40\text{--}70^\circ\text{C}$ ), mildly acidic, co-oxidized  $\text{TiO}_2\text{-Al}_2\text{O}_3$ , aging the resulting hot alkaline product, adjusting the pH to not exceed 6.5 and aging the hot acidified product for 20–60 minutes.

### 3,410,709 METHOD OF PRODUCING A POLYETHYLENE COATING ON A METAL

Franz-Josef Meyer, Gladbeck, Westphalia, Leo Rensmann, Kiebeck, and Werner Dorrscheidt, Westerbolt, Germany, assignors to Scholven-Chemie Aktiengesellschaft, Gelsenkirchen-Buer, Germany, a corporation of Germany  
No Drawing. Filed Sept. 22, 1965, Ser. No. 490,168  
Claims priority, application Germany, Sept. 29, 1964, 35,861  
13 Claims. (Cl. 117—21)

1. Method of applying a plastic protective coating to a metal article which comprises contacting finely divided, polyethylene admixed with an organic peroxide cross-linking agent therefor, with the surface of the article, and heating the polyethylene during said contacting to sinter the polyethylene and form a coating thereof over the article, said heating being at a temperature and for a time such that substantially no cross-linking occurs, and thereafter heating the coating to effect cross-linking and transform the polyethylene into an infusible coating.

2. Method of claim 1, wherein said organic cross-linking agent is  $\alpha,\alpha'$ -bis-*t*-butylperoxy-di-isopropylbenzene, dicumylperoxide, or a mixture thereof.

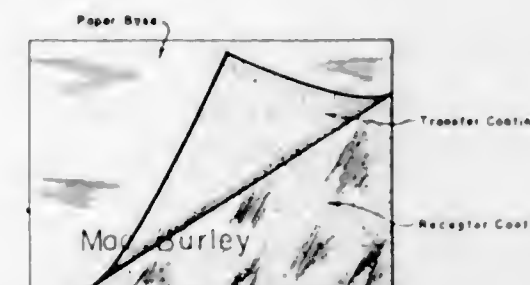
### 3,410,710 RADIATION FILTERS

John M. Mochel, Painted Post, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York  
Original application Oct. 16, 1959, Ser. No. 846,896, now Patent No. 3,202,054, dated Aug. 24, 1965. Divided and this application Dec. 1, 1964, Ser. No. 422,878  
7 Claims. (Cl. 117—33.3)

1. A method of producing a radiation filter which comprises heating a refractory substrate to a temperature of  $500\text{--}800^\circ\text{C}$ ., exposing the heated substrate to an atmosphere containing a 1,3-beta diketone of at least one metal having an atomic number from 22 to 29 whereby said metal diketone is pyrolyzed to form an adherent clear metal oxide film of uniform thickness on the substrate surface.

### 3,410,711 TRANSFER SHEET AND COPY SHEET SYSTEMS AND METHOD OF MAKING

William H. Hoge, Rumford, Maine, assignor to Oxford Paper Company, New York, N.Y., a corporation of Maine  
Filed Nov. 22, 1963, Ser. No. 325,624  
15 Claims. (Cl. 117—36.1)



1. A manifolding system comprising a base sheet having a transfer coating on one side thereof and a base sheet having a receptor coating on one side thereof and in which the receptor coating is in contact with the transfer coating, said transfer coating comprising predominantly finely divided inorganic platelet-type particles bound together and to the base sheet by between about 2 and 15% by weight adhesive based on the weight of the platelet-type particles and in which the adhesive contains at least about 20% by weight an adhesive having a glass transition temperature below about  $40^\circ\text{C}$ . and which is of a nature to yield a lightly bonded flexible transfer coating, said receptor coating comprising a soft resinous plastic film-forming adhesive having a glass transition temperature of less than about  $40^\circ\text{C}$ . and applied to the sheet at a sufficiently low coat weight so that it is not tacky to the normal finger touch and does not exhibit blocking characteristics in roll form.

### 3,410,712 PRESSURE RESPONSIVE TRANSFER SYSTEM AND PROCESS OF MAKING

Hermann Winzer, Duren, Rhineland, Germany, assignor to Renker-Bellpa G.m.b.H., Lendersdorf-Krauthausen, Germany  
Filed Oct. 19, 1965, Ser. No. 497,670  
16 Claims. (Cl. 117—36.3)



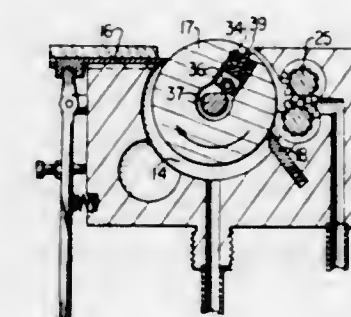
1. A pressure responsive transfer system for the production of copies, comprising:

- a paper carrier having first and second faces and having a thickness of about  $20\text{--}80\mu$  (at least one of said first and second faces defining a plurality of depressions of a depth of about 10–60 percent of the thickness of the paper carrier, said depressions being spaced from each other by distances of about  $1\text{--}50\mu$  and being separated by protruding areas of said one face;
- a plurality of pigment particles lodged within said depressions, said pigment particles being of a smaller size than the size of the depressions, each of said pigment particles being enveloped by a coat of a binding agent comprising an elastic vinyl polymer, said coat constituting about 15–25 percent of the weight of the pigment particles; and
- a transfer inducing layer interposed between said one face and a receiving material, said transfer inducing layer having a weight of about 1–5 grams per square meter of layer, said transfer inducing layer

comprising an immobilized gel consisting of at least one polyethylene of an average molecular weight of about 1500–2000, a melting point of about  $80\text{--}110^\circ\text{C}$ ., a viscosity at  $140^\circ\text{C}$ . of about 100–250 cps., a specific weight of about 0.92 and a penetration hardness of about 0.2–4.0 as determined with 100 grams for 5 seconds at a temperature of  $77^\circ\text{F}$ . according to ASTM-D 1321–57 T in form of a solid network including a solution of said polyethylene in a liquid solvent, said solution amounting to less than 10 percent of the weight of the solid polyethylene network and containing dissolved polyethylene in an amount of at least 0.7 and at the most 1.7 percent of the weight of the included solution.

### 3,410,713 PROCESS AND APPARATUS FOR APPLICATION OF ADHESIVE

Ewald Schneiderei, Dusseldorf-Holthausen, Germany, assignor to Henkel & Cie, G.m.b.H., Dusseldorf, Germany, a corporation of Germany  
Filed July 31, 1964, Ser. No. 386,493  
Claims priority, application Germany, Aug. 6, 1963, H 49,915; Nov. 20, 1963, H 50,894; Dec. 6, 1963, H 51,054  
10 Claims. (Cl. 117—37)



Novel process and apparatus for continuous and intermittent application of pumpable, i.e. liquid, pasty and thermoplastic, adhesives to moving paper, cardboard, textile, plastic and similar ribbons or to moving single pieces. The apparatus of the invention comprises an adhesive storage vessel, an adhesive feed line provided with a transport element, a discharge head with an intermediate chamber and an adhesive application roller, where the adhesive discharge is controlled by a slide, and further comprising an adhesive recycling line for the untransferred adhesive, which is provided with another transport element, as well as an auxiliary line which contains a control valve for controlling the pressure of the adhesive in the feed line.

### 3,410,714 METALLIZING AND BONDING NON-METALLIC BODIES

William L. Jones, Owensboro, Ky., assignor to General Electric Company, a corporation of New York  
Filed Oct. 18, 1965, Ser. No. 496,755  
8 Claims. (Cl. 117—46)

1. A method of metallizing non-metallic refractory materials comprising the steps of applying to said non-metallic refractory material composite metal particles consisting essentially of an active metal selected from the group consisting of titanium, hafnium, thorium, zirconium, vanadium, tantalum, tungsten, and mixtures and alloys thereof, coated with a brazing metal selected from the group consisting of silver, copper, gold, nickel, iron, molybdenum, chromium, platinum, cobalt, tin, and mixtures and alloys thereof, and heating said material to a temperature above the lowest eutectic melting temperature of the active alloy in a non-reactive atmosphere to effect bonding of the metal to the refractory.

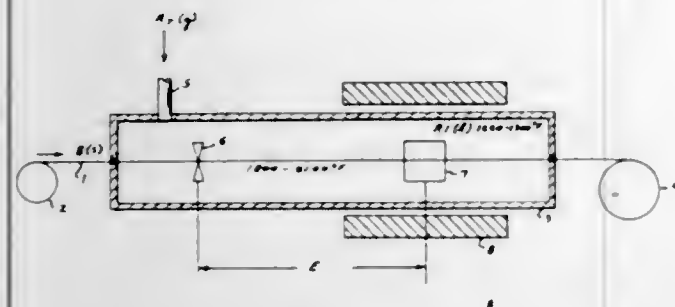


3,410,715

**PROCESS FOR METAL FINISHING BORON AND TUNGSTEN FILAMENTS**

Ralph L. Hough, Springfield, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force

Filed June 28, 1965, Ser. No. 467,792  
5 Claims. (Cl. 117-71)



A process for applying an aluminum finish to boron and boron coated tungsten filaments. The filaments are heated to within the range of 1800° F. to 2100° F. and then passed through molten aluminum in an inert atmosphere whereby an aluminum boride layer is formed between the filament and the aluminum coat.

3,410,716

**COATING OF REFRACTORY METALS WITH METAL MODIFIED OXIDES**

Ralph H. Hiltz, Euclid, Ohio, assignor to TRW Inc., a corporation of Ohio

Continuation-in-part of abandoned application Ser. No. 139,617, Sept. 21, 1961. This application Apr. 1, 1965, Ser. No. 445,870

14 Claims. (Cl. 117-93.1)



13. The method of coating a tungsten base object which comprises plasma spraying thereon a powdered ceramic composition consisting essentially of a refractory oxide powder selected from the group consisting of zirconia, hafnia, and thoria, having dissolved in its crystalline lattice a refractory metal selected from the group consisting of tungsten and molybdenum, the dissolved metal being substantially confined to the crystalline lattice of said oxide and being substantially in a discontinuous phase.

3,410,717

**CORROSION INHIBITING COMPOSITION AND PACKAGING MATERIAL**

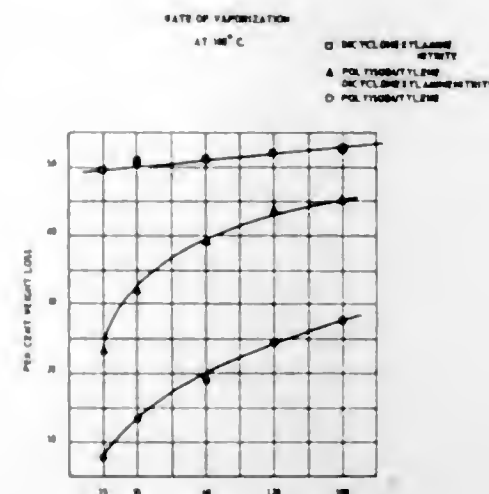
Arthur Hirsch, Montreal, Quebec, Canada, assignor to Canadian Technical Tape Ltd., Montreal, Quebec, Canada, a Canadian corporation

Filed Dec. 7, 1964, Ser. No. 416,256  
Claims priority, application Canada, Dec. 9, 1963, 890,849

7 Claims. (Cl. 117-122)

A dispersion for use in the preparation of a corrosion inhibiting packaging material is shown comprising 20-30

parts of dicyclohexylamine benzoate, 7½ to 12½ parts of an alkyl amine, 50 to 80 parts of polyisobutylene and 300 parts of a dispersing agent such as toluol. Optionally 1 to



5 parts of dicyclohexylamine acetate may also be employed. A corrosion inhibiting packaging material comprising a flexible backing coated with a pressure-sensitive adhesive layer formed from this dispersion.

3,410,718

**PHENOL-FORMALDEHYDE NOVOLAK-PHENOL-FORMALDEHYDE RESOLE MOLDING SURFACE FOR A REINFORCED MATRIX BASE SHEET**

Edwin S. Smith, Hampton, Conn., assignor to Rogers Corporation, Rogers, Conn., a corporation of Massachusetts

No Drawing. Filed Feb. 23, 1965, Ser. No. 434,664

1 Claim. (Cl. 117-138.8)

This specification describes an improved composition for providing a molding surface on a fiber-reinforced thermosetting resin sheet. The composition comprises a suspension of a finely divided phenol-formaldehyde novolak molding compound in an aqueous solution of a volatile organic liquid having dissolved therein a minor amount of a phenol-formaldehyde condensation product of the resole type.

3,410,719

**AIR-CURABLE ACRYLIC-BASED COATING COMPOSITIONS SUBSTRATE COATED THEREWITH, AND PROCESS OF COATING**

Robert Roper, Berkeley Heights, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Aug. 31, 1964, Ser. No. 393,357

11 Claims. (Cl. 117-161)

Acrylic esters containing at least two acrylic groups per molecule are polymerized with a catalyst system composed of an organo hydrazine and either an organic peroxide or a soluble organic salt of a polyvalent metal. The resulting polymer is useful as a coating composition which is air-curable.

3,410,720

**MODIFIED TEXTILE MATERIAL RESISTANT TO PENETRATION BY AQUEOUS MEDIA**

Charles A. Thomas, Ladue, and William Robert Hine, Jr., Kirkwood, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed July 12, 1965, Ser. No. 471,454

7 Claims. (Cl. 117-161)

This invention relates to the use of a composition comprising the reaction product of an epihalohydrin and an alpha-olefin/maleimide polymer in the preparation of

textile materials having increased resistance to the penetration of aqueous media.

3,410,721

**GALVANO-MAGNETIC RESISTOR WITH SEMICONDUCTOR TOP LAYER**

Paul Hini, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany

Filed Sept. 10, 1965, Ser. No. 486,288

Claims priority, application Germany, Sept. 10, 1964, S 93,079

6 Claims. (Cl. 117-218)



Described is a galvano-magnetic resistor comprising a carrier plate comprising a magnetic material, a substantially planar ground insulating buffer layer on a surface of said plate, and a semiconductor layer on said buffer layer. The magnetic material is selected from the group consisting of ferromagnetic and ferritic materials. The buffer layer comprises a synthetic resin bondable to the magnetic material and having a filler therein selected from the group consisting of powdered quartz, aluminum oxide and magnesium oxide. The semiconductor layer comprises an A<sup>III</sup>B<sup>V</sup> material.

3,410,722

**WELDING METHOD, COMPOSITION AND ARTICLE**

Andrew E. Flanders, Pomona, Parley R. Packer, Alta Loma, James A. Patrick, Montclair, and Wilson N. Pratt, Anaheim, Calif., assignors to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware

Filed Mar. 23, 1965, Ser. No. 442,144

18 Claims. (Cl. 117-227)

A material which includes metallic components and which is particularly compatible with surface welding techniques. The metallic components are reduced to powder form, mixed with a binding vehicle, and applied to the base material as a paint or ink, or in a vehicle configured into the form of a grease pencil or crayon. The vehicle for the metal powders is limited only by its ability to provide good adhesion with the base metals and the metallic components without producing a weld contaminating residue, thus organic and certain inorganic vehicles may be utilized.

3,410,723

**PROCESS FOR TREATING GLASS CATHODE-RAY TUBE ENVELOPES**

Samuel N. Cohn, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed Dec. 21, 1962, Ser. No. 247,467

6 Claims. (Cl. 134-22)

1. The method of treating the inner surface of a glass cathode-ray tube envelope to remove adsorbed nitric oxide contaminants therefrom comprising applying a solution of a chemical agent to said inner surface and reacting said chemical agent with said adsorbed nitric oxide contaminants to form a reaction product soluble in said solution, and removing said solution and said reaction product from said inner surface, said chemical agent being selected from the group consisting of sodium sulfate, sodium bisulfite, AlCl<sub>3</sub>, SbCl<sub>3</sub> and SnCl<sub>4</sub>.

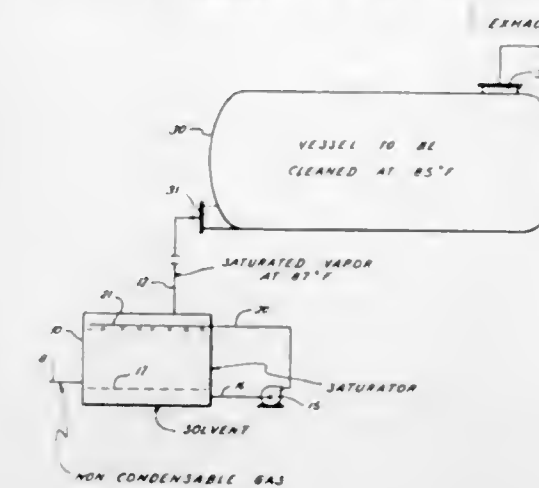
3,410,724

**CLEANING OR TREATING PROCESS**

Bruno J. Kondrot, Bartlesville, Okla., assignor, by mesne assignments, of one-half to Hercules Incorporated, a corporation of Delaware

Filed Dec. 30, 1963, Ser. No. 334,433

2 Claims. (Cl. 134-22)



A cleaning process wherein a cleaning solvent in vapor form is mixed with a non-condensable gas and wherein the dew point of the solvent is at or within a few degrees above the temperature of the article being treated, whereby the solvent may be condensed in a thin film on an article to be cleaned.

3,410,725

**ELECTRIC STORAGE CELLS**

Jean-Pierre Louis Rodolphe Harivel, Paris, France, assignor to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, Seine-St-Denis, France, a company of France

Filed Feb. 4, 1966, Ser. No. 525,193

Claims priority, application France, Feb. 24, 1965, 6,894

13 Claims. (Cl. 136-6)

Electric cell construction using thin electrodes and separators and permitting high intensity charging current to reduce materially the length of charging time without harmful evolution of gases within the cell involving positioning of a porous carrier distinct from the separator bearing a porous deposit of a metal in a divided state which is more electropositive than the metal of the active material of the negative electrode, the carrier being positioned against one face of at least one negative electrode so that the electropositive metal of the carrier is in contact with the metallic active material of the negative electrode, electrolyte being immobilized in pores of the electrodes, separators and carriers.

3,410,726

**ELECTRIC CELL WITH WATER REPELLANT COATED POROUS LAYER AND METHOD OF MAKING SAID LAYER**

Jean-Pierre Louis Rodolphe Harivel, Paris, France, assignor to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, Seine-St-Denis, a company of France

Filed May 17, 1966, Ser. No. 550,728

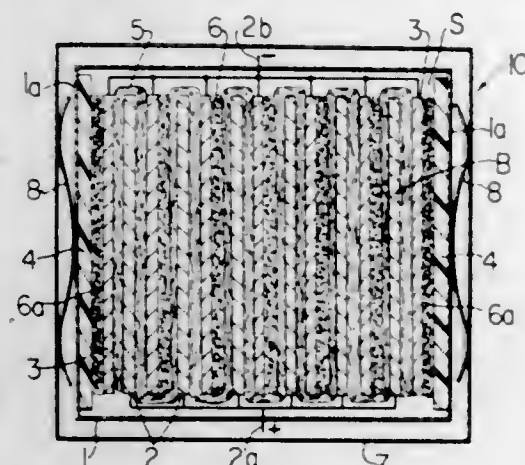
Claims priority, application France, May 25, 1965, 18,404; Feb. 21, 1966, 50,462

29 Claims. (Cl. 136-6)

Electric cell construction using thin electrodes and separators and permitting high intensity charging current to reduce materially the length of charging time without harmful evolution of gases within the cell involving positioning of a porous layer of finely divided material which is more electropositive than the metallic active material of the negative electrode adjacent one face at least of one or more negative electrodes, the layer being impregnated



with a small amount of water repellant in sufficient amount only to prevent complete flooding of the pores with electrolyte so that both gaseous and liquid phases may exist in said layer, thus promoting and accelerating oxygen consumption at the negative electrode while leaving the electrical resistance of the porous layer substantially unchanged. Preparation of the porous layer by deposition on a fibrous support by dissociation of a salt of the selected metal with accompanying precipitation or piston spraying or plating and subsequent impregnation with limited quantities of water repellant are disclosed. The electrode porous layer assemblies are compressed in



a sealable container to which electrolyte is added in quantity only sufficient to fill all pores of the electrodes and separator but care is taken that there is no free electrolyte and the container then sealed. Cells embodying the invention can be charged with a current whose intensity may rise as high as C amperes, where C is the rated capacity expressed in ampere-hours of the cell without harmful evolution of gases in the sealed cell. The cells may be sealed or semi-sealed storage cells utilizing thin sintered electrodes bearing active materials or cells of similar type whose electrodes do not contain active material, viz. electrolytic cells and the electrodes may be flat or spirally wound up together and the cells may be of alkaline nickel-cadmium or silver-cadmium types.

3,410,727

#### FUEL CELL ELECTRODES HAVING A METAL PHTHALOCYANINE CATALYST

Raymond J. Jasinski, Sudbury, Mass., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.  
No Drawing. Filed Jan. 8, 1965, Ser. No. 424,175  
11 Claims. (Cl. 136-86)

1. In a fuel cell having a housing; an anode electrode and a cathode electrode mounted in said housing; in spaced apart relation to each other; an electrolyte containment means disposed between said electrodes; means for supplying a fuel to said anode; means for supplying an oxidant to said cathode; and the improvement in said cell being that said cathode comprises an electrically conductive porous support having randomly dispersed thereover and in the pores thereof a metal chelate selected from the group consisting of the copper, nickel, cobalt, manganese, vanadium and platinum chelates of phthalocyanine and chlorophthalocyanine.

3,410,728

#### ELECTRICAL DEVICE COMPRISING METAL OXIDE-CONTAINING SOLID ELECTROLYTE AND ELECTRODE

Robert L. Fullman, Schenectady, and Stephan P. Mitoff, Elmira, N.Y., assignors to General Electric Company, a corporation of New York  
Filed June 10, 1965, Ser. No. 462,852  
4 Claims. (Cl. 136-86)

Non-porous electrode construction for a high temperature fuel cell is described wherein the electrode displays

mixed conductivity (ionic and electronic) when in use, because of its composition, a solid stabilized oxide ion electrolyte having at least partially dissolved therein a metal oxide from the group consisting of iron oxide, manganese oxide, cobalt oxide, vanadium oxide, titanium oxide, chromium oxide, zinc oxide, titanium oxide-iron oxide and zinc oxide-iron oxide.

3,410,729

#### METHOD OF OPERATING A FUEL CELL ON HYDRAZINE AND HYDROGEN PEROXIDE

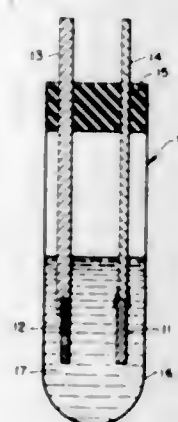
Jean P. Manion, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.  
Filed July 6, 1965, Ser. No. 469,588  
3 Claims. (Cl. 136-86)

A method of operating a fuel cell whereby hydrazine, or an aqueous solution thereof, is supplied as a fuel to an anode of nickel or carbon; and hydrogen peroxide, or an aqueous solution thereof, is supplied as an oxidant to a cathode of nickel or carbon.

3,410,730

#### MOLYBDENUM-CONTAINING COMPOSITE ELECTRODE

Robert A. Rightmire, Twinsburg, and Edward S. Buzzelli, Cleveland, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio  
Filed Jan. 3, 1966, Ser. No. 518,092  
6 Claims. (Cl. 136-100)

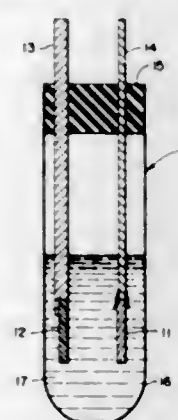


There is provided an improved electrical energy storage device of the fused salt electrolyte type characterized by an electrode comprising metallic molybdenum.

3,410,731

#### TUNGSTEN OXIDE-CONTAINING COMPOSITE ELECTRODE

Robert A. Rightmire, Twinsburg, and Edward S. Buzzelli, Cleveland, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio  
Filed Jan. 3, 1966, Ser. No. 518,112  
6 Claims. (Cl. 136-100)



There is provided an improved electrical energy storage device of the fused salt electrolyte type characterized by an electrode comprising tungsten oxide.

3,410,732

#### COBALT-BASE ALLOYS

Gaylord D. Smith, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Filed Apr. 30, 1965, Ser. No. 452,382  
11 Claims. (Cl. 148-32)

Strong, wear-resistant and corrosion-resistant products are obtainable from alloys composed of 14-30% molybdenum, 6-12% chromium, 0.5-4% silicon and at least 50% cobalt. This alloy contains 30-60 volume percent of a hard Laves phase and, correspondingly, 40-70 volume percent of a solid solution matrix phase containing about 75% by weight of cobalt.

3,410,733

#### METHOD OF TREATING P-6 ALLOYS IN THE FORM OF ARTICLES OF SUBSTANTIAL THICKNESS INCLUDING THE STEP OF WARM WORKING

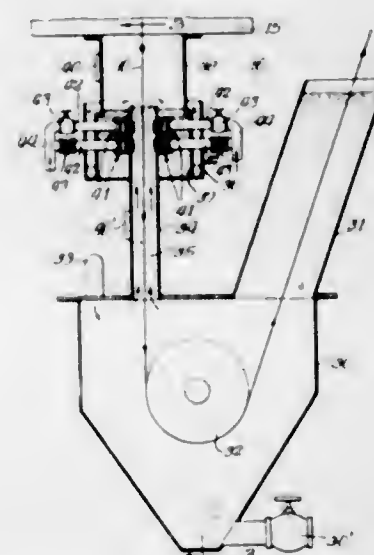
Donald L. Martin, Elmira, N.Y., assignor to General Electric Company, a corporation of New York  
No Drawing. Filed Oct. 1, 1965, Ser. No. 492,314  
4 Claims. (Cl. 148-120)

1. The method of treating articles having a minimum thickness of at least 1/2 inch, of non-sheet form, and whose composition consists essentially of 43-47% cobalt, 5-7% nickel, 4-6% vanadium and the balance iron, which comprises heat treating said articles at a temperature between about 1000° C. and about 1200° C. followed by quenching, warm working said articles at a temperature of 200-600° C. to produce a reduction in area in the range of 70 to 90%, and aging said articles.

3,410,734

#### QUENCH SYSTEM

Harold L. Taylor, Hammond, Ind., assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware  
Continuation-in-part of application Ser. No. 153,834, Nov. 21, 1961. This application Jan. 18, 1965, Ser. No. 426,277  
11 Claims. (Cl. 148-143)



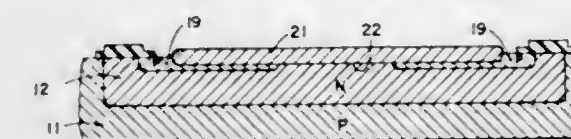
A method and apparatus for drastic quenching of metal strip (e.g. low carbon steel strip to obtain martensite) by passing the heated strip downwardly through a restricted quench channel having high velocity quench liquid flowing through the channel, either countercurrently or concurrently, and with submerged streams of quench liquid, preferably sheet-like sprays, being directed perpendicularly against the opposite surfaces of the strip adjacent to but below the liquid surface at the upper end of the channel. Sufficient turbulence is created at the strip surfaces to

avoid vapor accumulation while the liquid surface at the upper end of the channel remains smooth and non-turbulent at the location where the strip initially contacts the quench liquid. Uniform quenching of the strip is obtained without excessive distortion of the quenched strip. Pressure rolls may be provided in the channel to assist in maintaining strip flatness.

3,410,735

#### METHOD OF FORMING A TEMPERATURE COMPENSATED REFERENCE DIODE

Lloyd W. Hackley, Sunnyvale, Calif., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois  
Filed Oct. 22, 1965, Ser. No. 500,699  
2 Claims. (Cl. 148-180)



A monolithic, oxide-passivated, temperature-compensated, semiconductor reference diode is fabricated by a method which includes the step of forming an epitaxial layer of N-type conductivity on a P-type silicon crystal, followed by the steps of diffusing a P-type impurity into and through the epitaxial layer, thereby extending the epitaxial junction to the surface of the epitaxial layer, then diffusing a second P-type annular region within that portion of the epitaxial region surrounded by the first annular P-type region, then depositing an aluminum film to cover the central portion of the epitaxial layer encompassed by the second annular P-type region, and heating the composite structure above 900° C. to form an aluminum alloy junction, thereby completing the structure.

3,410,736

#### METHOD OF FORMING A GLASS COATING ON SEMICONDUCTORS

Takashi Tokuyama, Kitatama-gun, Tokyo-to, Keiji Uehara, Kita-ku, Tokyo-to, and Yuko Adachi, Hachioji-shi, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan  
Filed Mar. 3, 1965, Ser. No. 436,801  
Claims priority, application Japan, Mar. 7, 1964, 39/12,637; Sept. 1, 1964, 39/49,496  
17 Claims. (Cl. 148-186)

A method of fabricating semiconductor devices protected with an insulating covering, wherein a silicon dioxide layer is formed on the surface of a semiconductor substrate, and a lead oxide layer is deposited on the silicon dioxide layer from the vapor phase; whereafter the whole device is heated at approximately 600° C. in an oxidizing atmosphere to form a passivating film on the substrate surface consisting essentially of silicon dioxide and lead oxide.

3,410,737

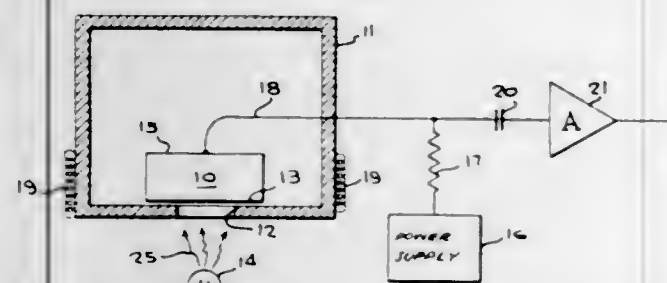
#### METHOD FOR PRODUCING SEMICONDUCTOR NUCLEAR PARTICLE DETECTORS BY DIFFUSING

Werner A. Schuler, Oak Ridge, Tenn., assignor to Oak Ridge Technical Enterprises Corporation, Oak Ridge, Tenn., a corporation of Tennessee  
Filed May 3, 1965, Ser. No. 452,543  
4 Claims. (Cl. 148-186)

1. The method of ion drifting a semiconductor wafer having an n-type region containing diffused ionized donor atoms and a p-type region to drift the ionized donor atoms into the p-type region and thereby form a compensated i-zone between said regions characterized by higher spe-



cific resistivity than said regions for use as a nuclear particle detector, comprising the steps of heating said wafer to maintain the wafer at a temperature of between about 90° C. and 150° C., applying a reverse bias to said wafer to effect drifting of the donor atoms from said n-type region into said p-type region to establish an i-zone therebetween reducing the thickness of said p-type region to a selected minimum thickness, irradiating said wafer during

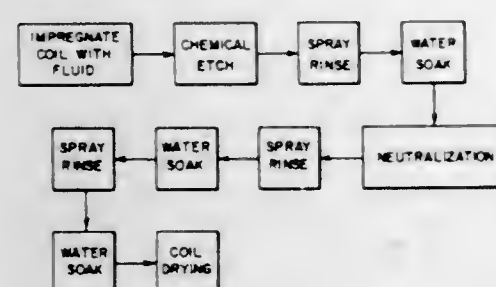


heating and application of reverse bias to said wafer by subjecting the wafer to pulsed radiation energy in frequency bands which produce carriers in the i-zone thereof to produce current pulses of fast rise time denoting creation of carriers in said i-zone, and detecting the number of carriers produced in said i-zone responsive to said radiation energy to provide an indication of the thickness of the p-type region.

### 3,410,738 METHOD OF MAKING COILS OF ELECTRICAL CONDUCTORS

William S. Gorton, Jr., Cheektowaga, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 18, 1965, Ser. No. 426,312  
6 Claims. (Cl. 156—3)



1. A method of etching a coil of slit insulated coated metal strip conductor, the conductor being sandwiched between films of said insulation and having exposed metal edges comprising the steps of impregnating the coil with water to fill the interstices thereof, contacting the exposed metal edges with an aqueous chemical etchant to remove a portion of the metal and provide flaps of film which project beyond the metal edge, terminating the contact between the chemical etchant and the metal edge, removing the chemical etchant from the edge, neutralizing residues of the chemical etchant, washing the exposed edges and drying the coil.

### 3,410,739 METHOD FOR PRODUCING WINDOW PANELS

Dee R. Orcutt, Natrona Heights, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania

Original application Aug. 2, 1963, Ser. No. 299,582, now abandoned. Divided and this application Sept. 8, 1965, Ser. No. 485,891  
4 Claims. (Cl. 156—106)

1. In a method of fabricating laminated window panels comprised of a plurality of rigid, transparent plies bonded together by organic synthetic resinous interlayer material and including an electrical circuit located within the panel

and at least one terminal block mounted on an exterior surface thereof and with an electrical lead wire connection extending from said terminal block to said electrical circuit comprising the steps of

attaching said electrical lead wire connection to said circuit, and arranging said rigid, transparent plies, said organic synthetic resinous interlayer material, and said electrical circuit to form a panel assembly, mounting said terminal block adjacent an exterior surface of said assembly, and

laminating said assembly by subjecting the assembly to sufficient heat and pressure to bond the assembly into a composite window panel,

the improvement comprising the steps of

encompassing woven fiber glass tape impregnated with a substantially uncured thermosetting resin in intimate contact surrounding said electrical lead wire connection during assembly of the panel components, and

curing said resin impregnated fiber glass tape into a relatively rigid member simultaneously with said lamination of said assembly, said cured, relatively rigid member maintaining substantially the same intimate contact as when applied in said uncured state.

### 3,410,740 METHOD OF MAKING FLUORINATED POLYOLEFIN LAMINATES

Walter H. Smarook, Somerville, N.J., assignor to Union Carbide Corporation, a corporation of New York  
No Drawing. Continuation-in-part of application Ser. No. 458,775, May 25, 1965. This application Oct. 23, 1965, Ser. No. 504,241

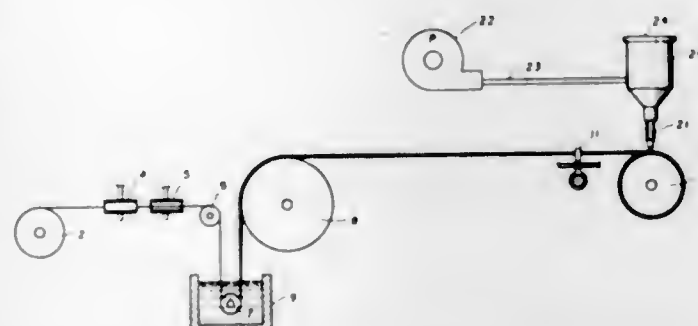
16 Claims. (Cl. 156—151)

Polyvinyl fluoride, polyvinylidene fluoride, polychlorotrifluoroethylene and polytetrafluoroethylene can be bonded to electroconductive anodic substrate onto which a carboxyl containing  $\alpha$ -olefin polymer has been electrodeposited from an aqueous bath containing an admixture of water and a salt of a carboxyl containing  $\alpha$ -olefin polymer having monovalent cations, at temperatures of about 180° C. to 260° C.

### 3,410,741 METHOD AND APPARATUS FOR 3-DIMENSIONAL REINFORCEMENT OF PLASTIC LAMINATES

Fredrick R. Barnet, Kensington, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Apr. 29, 1964, Ser. No. 363,651  
4 Claims. (Cl. 156—173)



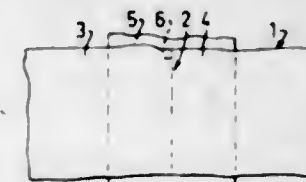
The method and apparatus for three-dimensional reinforcement of plastic laminated structures under compressive and flexural loadings wherein a continuous glass roving is coated with a plastic resin and is wound in multiple layers on a form. As each layer is wound upon the form, short reinforcing fibers are injected into the resinous coating of the roving in a direction generally perpendicular

ular to the winding direction of the form, and as additional layers are wound over the initially wound roving the previously injected fibers imbed themselves into the resinous coating of the roving being wound such that the reinforcing fibers create an interlaminar reinforcement to prevent shearing between the multiple layers of wound roving. The laminated wound structure of layers of resin coated strands with reinforcing fibers imbedded therein is subsequently cured.

### 3,410,742 METHOD OF SIMULATING A SEAM IN FOLDABLE SHEET MATERIAL

Berndt Anderberg, Järnvägsgratan 19, Malmö SV, Sweden

Filed Nov. 15, 1963, Ser. No. 324,074  
Claims priority, application Sweden, Nov. 17, 1962, 12,348/62  
5 Claims. (Cl. 156—196)

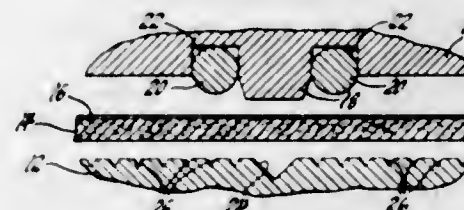


1. A method of forming a fold in an undivided plain main piece of foldable material consisting in applying an auxiliary piece of foldable material behind said undivided plain main piece on one side of the fold to be formed, uniting said undivided plain main piece and said auxiliary piece by a first seam, folding said undivided main piece double along said first seam, uniting the superimposed portions of said undivided main piece resulting from said double folding of said undivided main piece by a second seam in the immediate vicinity of the fold of said undivided main piece, and then straightening the undivided main piece.

### 3,410,743 METHOD OF MAKING PRINTED CIRCUITS

James Smith, Jr., Melvin J. Racine, and Norman D. Lawless, Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 28, 1964, Ser. No. 399,669  
6 Claims. (Cl. 156—233)



A method of making printed circuits including the steps of cutting the desired conductor path pattern from a metallic foil and embedding the pattern in one surface of a sheet of paper while forming supporting ridges in the opposite surface of the paper to facilitate the transfer and subsequent application of the pattern to an insulator.

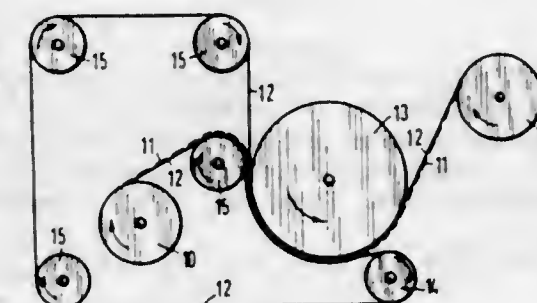
### 3,410,744 PROCESS FOR THE PRODUCTION OF THIN CAPACITOR BANDS

Walter Böld, Munich, Manfred Baumann, Munich-Solln, Hermann Schill, Munich, and Walter Volki, Grundwald, near Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany

Filed Dec. 21, 1964, Ser. No. 420,490  
Claims priority, application Germany, Dec. 23, 1963, S 88,861  
5 Claims. (Cl. 156—233)

This invention is directed to a method of manufacturing

capacitor strips for regenerative capacitors wherein vaporized metal layers are applied to both sides of a

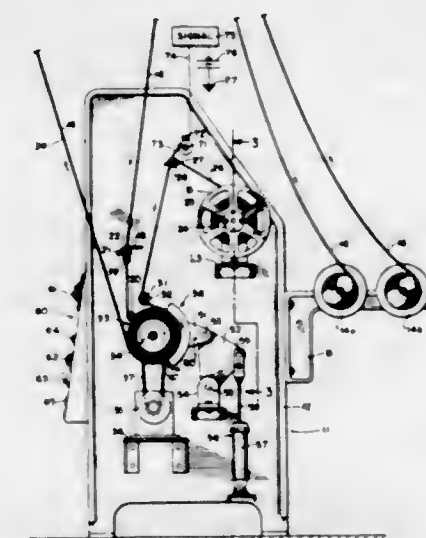


lacquer layer, and which lacquer layer has good regenerative properties.

### 3,410,745 APPARATUS FOR ADAPTING SLIDE FASTENERS TO BE HEAT SEALED IN PLACE

William P. Canepa, 236 W. 27th St., New York, N.Y. 10001

Continuation of application Ser. No. 441,142, Mar. 19, 1965. This application Dec. 15, 1967, Ser. No. 691,065  
9 Claims. (Cl. 156—554)



1. Slide fastener strip processing apparatus comprising a padded roller, means for feeding a substantial length of slide fastener strip, means for guiding said strip over said padded roller, pressure means associated with said roller for subjecting said slide fastener strip to pressure, said pressure means having an indentation adapted to accommodate the scoops of said slide fastener strip to avoid interference with the passage of said strip and a flat portion adjacent said indentation adapted to contact a substantial width of the stringer portion of said strip for the application of pressure thereto, heating means for heating said flat portion of said pressure means thus applying heat to said slide fastener strip simultaneously with the application of pressure thereto by said pressure means, means for controlling the temperature of said heating means, means for applying and removing the pressure of said pressure means, means for driving said padded roller at a controlled speed, supply and feed means for supplying and feeding coating tape to be juxtaposed with said slide fastener strip and simultaneously fed over said roller with the coating tape in contact with said heating and pressure means, means for guiding said slide fastener tape and said coating tape to cause said coating tape to be applied to said slide fastener tape along a predetermined area of the stringer portion of said slide fastener



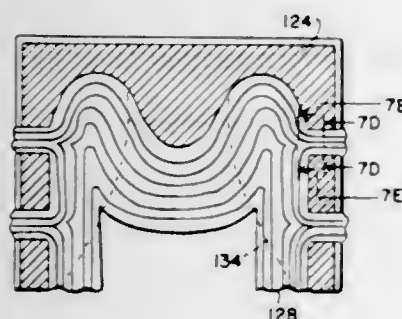
strip, means for withdrawing the slide fastener strip and coating tape from said padded roller and maintaining a substantially uniform tension thereon, and means for signaling the interruption of said coating tape.

3,410,746

# GRAIN-ORIENTED PYROLYTIC GRAPHITE FORMS AND METHOD OF MAKING SAME

Michael Turkat, Bayside, and William A. Robba, Shoreham, N.Y., assignors, by mesne assignments, to Space Age Materials Corp., Woodside, N.Y., a corporation of Delaware

Filed Mar. 12, 1964, Ser. No. 351,470  
6 Claims. (Cl. 161-7)



5. A vapor-deposited pyrolytic graphite article of predetermined proportions, having a desired functional external surface contour and a desired functional internal grain structure, said external surface contour and the contour of the various laminae of said grain structure having different configurations.

3,410,747

# WATER RESISTANT FLOOR COVERING

Marcus O. Orr, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

Filed June 28, 1965, Ser. No. 467,398  
11 Claims. (Cl. 161-64)



8. An integrated floor covering comprising a fabric of open weave construction, said fabric being impregnated with a waterproofing substance and having flock cemented to the upper surface portions of said impregnated fabric presenting a plush carpet surface while retaining such open mesh weave construction.

3,410,748

# METHOD OF BONDING POROUS POLYURETHANE TO LOOSELY WOVEN FABRIC AND RESULTANT ARTICLE

Sidney D. Blue, New York, N.Y., assignor to Reeves Brothers, Inc., New York, N.Y., a corporation of New York

Filed Mar. 4, 1964, Ser. No. 349,362  
3 Claims. (Cl. 161-76)

The disclosure is directed to a method for producing a stabilized fabric where the fabric is composed of a fabric web to which there is adhered a layer of polyurethane foam of the polyester type, and in which the polyurethane foam has been elastically and permanently compressed over the yarn of the fabric at a multiplicity of spaced positions to provide a composite fabric of low bulk.

The process for producing such a fabric is done by causing the fabric web to be laminated by any of the usual methods to the polyurethane foam, and the composite



fabric and foam is then compressed with a heated element against the surface of the foam at a temperature in the range of 300° F. to 400° F.

3,410,749

# ADHESION OF POLYESTER CORDS TO ELASTOMERS

Chester T. Chmiel, Newfoundland, N.J., assignor to Uniroyal, Inc., a corporation of New Jersey  
No Drawing. Filed Nov. 12, 1964, Ser. No. 410,795  
14 Claims. (Cl. 161-92)

Adhesion of polyester fiber to rubber is improved by (a) blending the polyester with poly(vinylpyridine), (b) spinning the blend, (c) infusing the fiber with formaldehyde-hydroxybenzoic acid resin or formaldehyde-resorcinol resin, (d) thereafter adhering the fiber to rubber with a conventional adhesive.

In some cases further improvement is obtainable by infusing the fiber with an acid (e.g., acetic acid) prior to infusing with resin.

3,410,750

# CLEAR PROTECTIVE RESIN OVERLAYS ON PLASTIC SUBSTRATA FROM PHOSPHORUS CONTAINING AMINO TRIAZINES

Henry P. Wohnsiedler, Noroton, Conn., assignor to Formica Corporation, Cincinnati, Ohio, a corporation of Delaware

No Drawing. Filed July 1, 1965, Ser. No. 468,968  
8 Claims. (Cl. 161-191)

Clear protective resin overlays for laminates are described. The resin is a reaction product of tris[2-(4,6-diamino-5-triazinyl)ethyl]phosphine oxide and formaldehyde.

3,410,751

# OPENING UP ASBESTOS WITH DIMETHYLSULFOXIDE

Orlando A. Battista, Yardley, Pa., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 13, 1965, Ser. No. 479,620  
6 Claims. (Cl. 162-3)

6. The method of opening up asbestos which comprises submitting said asbestos soaked in dimethylsulfoxide in an amount sufficient to aid in the opening of said asbestos to mechanical action, continuing the mechanical action to obtain asbestos particles and fibrils ranging from less than a micron to a few hundred angstrom units in their largest dimension, and then washing the asbestos free of dimethylsulfoxide.

3,410,752

# GAS COOLED NUCLEAR REACTOR

John D. Dell, Henley-on-Thames, Oxfordshire, England, assignor to Babcock & Wilcox Limited, London, England, a corporation of Great Britain

Filed June 22, 1966, Ser. No. 559,457  
Claims priority, application Great Britain, June 22, 1965, 26,263/65

8 Claims. (Cl. 176-60)

A gas cooled nuclear reactor having a concrete wall and a plurality of heat exchangers fitted in penetrations

formed in the wall from the outer surface thereof so as to be individually removable therefrom for servicing. The penetrations form mouths in the outer surface of the wall through which the exchangers are passed for fitting within the penetration. Each penetration mouth is closed by a closure mounted on the exchanger that also acts as a head for the exchanger. An added feature of the invention is to provide a circulating fan mounted in a wall cavity for circulating primary coolant through each heat exchanger while secondary coolant is circulated once through the exchanger. Other added features are to provide a layer of spent primary coolant intermediate the exchanger and penetration wall for insulating purposes,



providing a centrifugal circulating fan, and providing helically coiled reheater coils carried by the closure for first heating incoming primary coolant.

3,410,753

# PROCESS FOR PRODUCING GUANYLIC ACID

Arnold L. Demain, Westfield, and Marion Jackson, Cranford, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 12, 1965, Ser. No. 479,287  
9 Claims. (Cl. 195-28)

Guanylic acid is produced by growing an adenine-requiring mutant of a glutamic acid producing strain of *Micrococcus glutamicus* which is characterized by the property of producing low levels of nucleotidase and phosphatase and by resisting the feedback and repressive action of guanine-containing material.

3,410,754

# PRODUCTION OF 5'-NUCLEOTIDES

Einosuke Omura, Nishinomiya, Koichi Ogata, Minoo, Yukio Sugino, Kyoto, Setzi Igarasi, Ashiya, Masahiko Yoneda, Kobe, Yoshio Nakao, Ibaraki, and Ikuo Suhara, Takatsuki, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Continuation-in-part of application Ser. No. 40,521, July 5, 1960. This application Sept. 17, 1965, Ser. No. 488,257

12 Claims. (Cl. 195-28)

5' - ribonucleotides and 5' - deoxyribonucleotides are prepared by the hydrolysis of ribonucleic acid or deoxyribonucleic acid, respectively, by means of phosphodiesterase, with the aid of a phosphodiesterase-producing enzyme system which is a metabolite of a microorganism of the order Sphaeriales.

3,410,755

# PROCESS AND MEDIA FOR PRODUCING CELLS OF LACTIC ACID BACTERIA

John L. Etchells, Raleigh, N.C., and Ralph N. Costilow, Okemos, Mich., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Oct. 7, 1965, Ser. No. 493,937

5 Claims. (Cl. 195-96)

This invention relates to some highly selective culture media for micro-organisms which permit the isolation and production on a commercial scale, of particular strains of lactic acid producing bacteria. Control of pH, surprisingly different in the case of agar and of broth media, is critical for the preparation of the media.

3,410,756

# NAPHTHYL ESTERS AS FLUOROGENIC SUBSTRATES FOR ENZYMES

George G. Guilbault, Edgewood, and David N. Kramer, Stevenson, Md., assignors to the United States of America as represented by the Secretary of the Army

No Drawing. Filed May 27, 1966, Ser. No. 554,645

5 Claims. (Cl. 195-103.5)

1. A process of measuring enzyme activity at a low range of substrate concentrations which consists of the steps of:

- hydrolyzing in the presence of MacIlvaine buffer, pH 7.40, a fluorogenic substrate taken from the group consisting of acetyl and butyryl esters of  $\alpha$  and  $\beta$ -naphthol and  $\beta$ -naphthyl phosphate with an enzyme taken from the group consisting of cholinesterase, acylase, and acid phosphatase to produce highly fluorescent materials;
- registering the rate of change in fluorescence with time,  $\Delta F/\Delta t$ ;
- determining the slope of the curve  $\Delta F/\Delta t$ ;
- recording the calibration plots of  $\Delta F/\Delta t$  versus enzyme concentration whereby the unknown concentration of enzyme may be determined.

3,410,757

# GALACTOSE TEST COMPOSITION AND METHOD

Joseph W. Fraser, Dunlap, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed June 30, 1966, Ser. No. 561,694  
14 Claims. (Cl. 195-103.5)

1. A test composition for the detection of galactose in fluids comprising:

- galactose oxidase;
- a substance having peroxidative activity;
- an indicator material which is responsive to hydrogen peroxide in the presence of the substance having peroxidative activity;
- a buffer effective to maintain the above ingredients in a pH range of from about 5.5 to 8.0 when contacted with the fluid being tested; and
- as a stabilizer for the test composition, an effective amount of a member selected from the group consisting of ascorbic acid, glucose and mixtures thereof.

3,410,758

# WATER PURIFYING APPARATUS

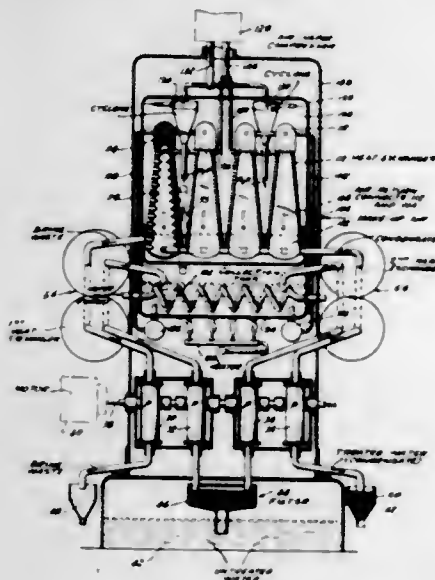
Henri Coanda, Paris, France, assignor to Coanda Water Purifier Corporation, New York, N.Y., a corporation of Delaware

Filed June 8, 1966, Ser. No. 556,110  
14 Claims. (Cl. 202-177)

An apparatus for transforming non-potable water to a potable state including structure whereby non-potable water at a temperature approaching the boiling point evaporates, due to an incremental increase in tempera-



ture, while flowing as a film on a surface heated by the heat of condensation to saturate a moving, film contacting dry air mass at subatmospheric pressure and which sub-



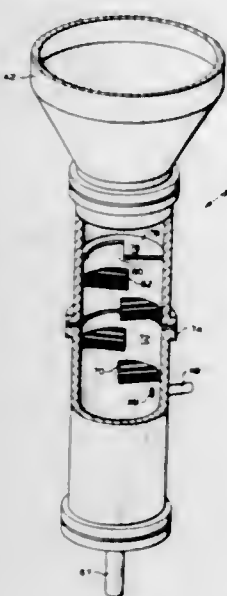
sequent air-vapor mixture is compressed then passed to a condensing surface contiguous with said evaporation surface to condense potable water for collection, with said condensing surface passing to the evaporating surface enough heat to cause the incremental increase in temperature of the non-potable water.

3,410,759

## HF ALKYLATION ACID RERUN TOWER

Delouis J. Fontenot and Frank W. Skraba, Sweeny, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 21, 1966, Ser. No. 595,901  
1 Claim. (Cl. 202-158)



In an HF rerun column having a top portion and a leg, the baffles in the leg are intimately attached to the inner wall of the leg and slope slightly downward. Interposed between the top portion of the column and the leg of the column is a plate having a closed section and an opening, the opening substantially corresponding in size and shape to the size and shape of the top baffle, this opening being disposed just over the top baffle, so as to direct the flow of HF-rich oil directly onto the top baffle. A means for introducing stripping vapor is positioned just below the bottom baffle. In a preferred embodiment the baffles have rods running in the direction of liquid flow in order to facilitate the even distribution of the material being stripped.

## ERRATUM

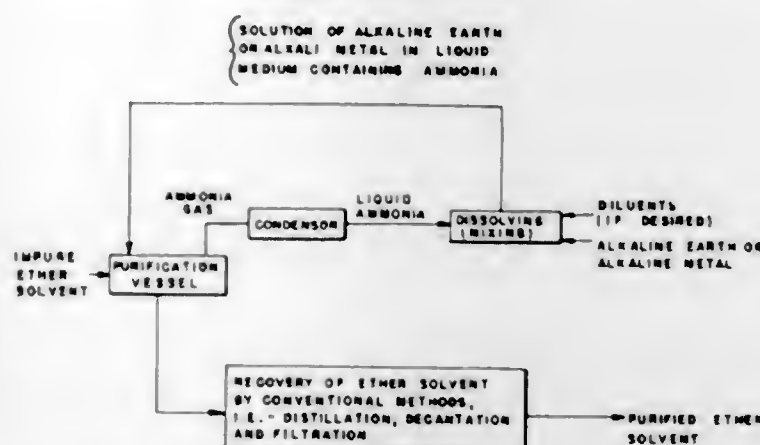
For Class 203-10 see:  
Patent No. 3,410,765

3,410,760

## RECOVERY OF ETHERS BY CONTACT WITH AMMONIA AND AN ALKALINE METAL IN A LIQUID MEDIUM

Stephen James Craig and John Trevor de Souza, Run-corn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed July 29, 1966, Ser. No. 568,765  
Claims priority, application Great Britain, Aug. 6, 1965, 33,731/65  
15 Claims. (Cl. 203-29)



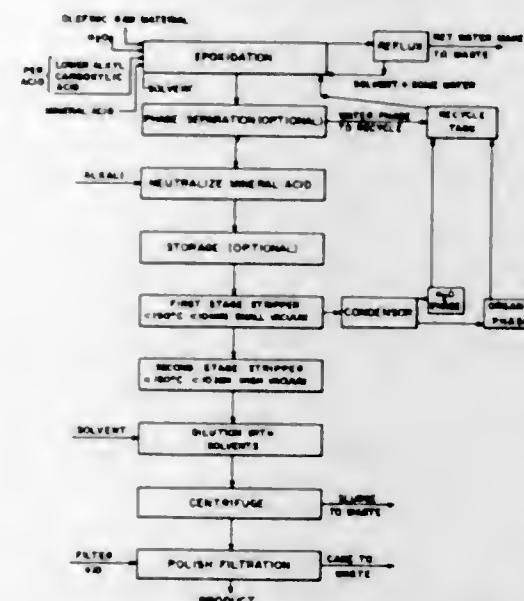
There is provided a process for the purification of an ether solvent wherein the solvent is contacted with a solution of an alkaline earth or alkali metal in a liquid medium containing ammonia. Thereafter, the purified solvent is recovered from the mixture by conventional methods such as distillation, decantation and filtration.

3,410,761

## RECOVERY OF EPOXY POLYBUTADIENE BY PLURAL STAGE FLASH DISTILLATION

Gerald H. Slattery, Pasadena, Md., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 28, 1966, Ser. No. 546,100  
3 Claims. (Cl. 203-37)



A process for recovering epoxy polybutadiene from a heterogeneous reaction mixture containing epoxy polybutadiene, an aqueous acid solution and residual peroxide compound by separating epoxy polybutadiene from volatile impurities in two stages, the first being a continuous flash distillation at less than 150° C. for less than 10 minutes, the overhead being condensed and re-

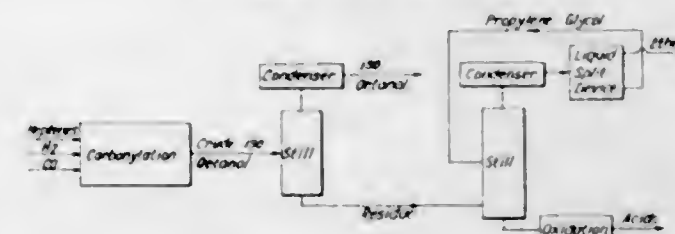
cycled to the epoxidizing step, followed by a second flash distillation at less than 150° C. and for less than 10 minutes and thereafter separating the epoxy polybutadiene product from nonvolatile impurities which are insoluble therein by conventional solid-liquid separation means without washing the product.

3,410,762

## SEPARATION OF ETHERS

Fred Dean, Norton-on-Tees, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Continuation-in-part of application Ser. No. 296,442, July 22, 1963. This application Apr. 14, 1967, Ser. No. 630,816  
Claims priority, application Great Britain, Jan. 27, 1962, 28,940/62  
5 Claims. (Cl. 203-54)

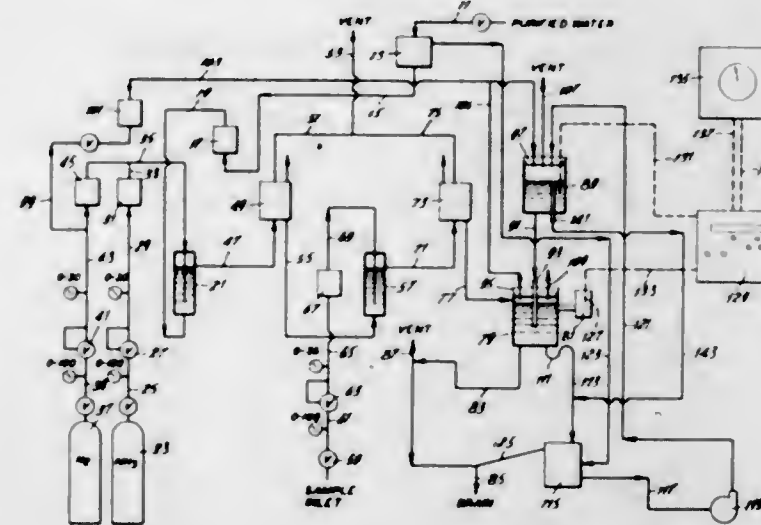


High boiling residues produced in the distillation of crude alcohols produced by the carbonylation of olefines, are freed from ethers by azeotropic distillation with a lower diol.

3,410,763

## CONTINUOUS POLAROGRAPHIC METHOD

Italo A. Capuano, Orange, Conn., assignor to Union Carbide Corporation, a corporation of New York  
Filed Aug. 8, 1963, Ser. No. 300,853  
2 Claims. (Cl. 204-1)



1. A method for continuous qualitative and quantitative determination of concentration of a preselected component of interest occurring in a multicomponent mixture which method comprises the concurrently performed steps of forming an electrolytic solution containing ions of said component of interest; continuously passing said electrolytic solution containing said ions of said component of interest through a measuring cell portion of a polarographic analyzer; continually dropping liquid mercury drops from a dropping mercury electrode disposed in the electrolytic solution passing through said measuring cell portion of said polarographic analyzer at a frequency of from about 0.1 to about 0.4 second; continuously removing mercury aggregating from said drops from said measuring cell portion; continuously removing impurities from the mercury thus removed; continuously recirculating mercury removed from said measuring cell

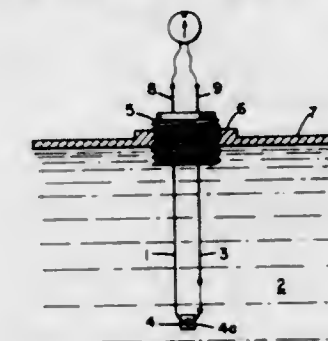
portion and cleansed to a mercury reservoir disposed above and connecting to said dropping mercury electrode; maintaining applied electric voltage between said dropping mercury electrode and a reference electrode disposed in a reference cell portion of said polarographic analyzer; developing a continuous signal representative of voltage-diffusion current relationship obtaining between the dropping mercury and the reference electrodes; and translating said signal into a continuous sensible indication proportional to and representative of the ionic concentration of the component of interest in the electrolytic solution passing through the measuring cell portion of said polarographic analyzer.

3,410,764

## CORROSION DETECTING AND ANALYZING DEVICES

Irvin D. Johnson and Denny L. Graham, Littleton, Colo., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

Filed Dec. 9, 1964, Ser. No. 417,072  
9 Claims. (Cl. 204-1)

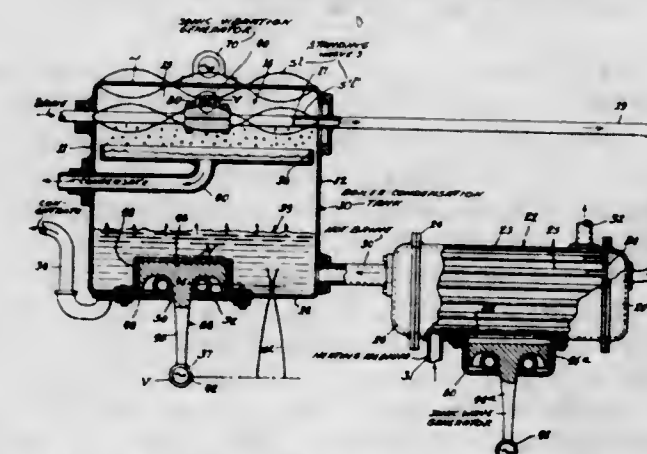


The present invention comprises a device of the class described consisting essentially of electrically insulating mounting means, at least two dissimilar metallic elements held in spaced electrically insulated relationship by said mounting means, each of said metallic elements having a contact point for contacting one of the poles of an electrical potential detecting means, said metallic elements being electrically joined together by a corrodible metallic linking means, whereby when said metallic elements are partially immersed in an electrolyte with said contact points outside said electrolyte and said juncture means within said electrolyte, a corrosive within said electrolyte will gradually corrode said linking means until it is severed, and the action of the electrolyte on the metallic elements will set up an electrical potential between said contact points.

3,410,765

## SONIC DISTILLATION PROCESS AND APPARATUS

Albert G. Bodine, Los Angeles, Calif.  
(7877 Woodley Ave., Van Nuys, Calif. 91406)  
Filed Aug. 29, 1966, Ser. No. 575,680  
10 Claims. (Cl. 203-10)



Liquid to be boiled is preheated and simultaneously exposed to sonic vibrations. The liquid is fed from the



preheater to a cooler tank. Sonic vibratory energy is generated by means of a sonic oscillator and vibratory resonator which is sonically coupled to the liquid in the boiler tank to create sonic vibrations therein.

3,410,766

# PRODUCTION OF THICK ANODIC OXIDE FILMS ON TITANIUM AND PRODUCTS THEREOF

Paul F. Schmidt, Allentown, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 8, 1965, Ser. No. 446,717  
5 Claims. (Cl. 204—14)

Titanium and titanium base alloys are anodized at voltages of up to 150 volts in a non-aqueous electrolyte having as an essential component anhydrous phosphoric acid containing at least 80% by weight of  $P_2O_5$ ; an anhydrous organic liquid may be used as a diluent for the phosphoric acid.

3,410,767

# ELECTROGRAPHIC REPRODUCTION PROCESS

Joseph W. Shepard, St. Paul, and Benjamin L. Shely, White Bear Lake, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Original application May 29, 1961, Ser. No. 113,480, now Patent No. 3,172,828, dated Mar. 9, 1965. Divided and this application Jan. 15, 1965, Ser. No. 425,830

10 Claims. (Cl. 204—18)

A process for making an electrographic reproduction using a radiation-sensitive sheet containing a P-N junction in which process the radiation-sensitive sheet is exposed to a light image while maintaining a reverse bias direct current field on said sheet with respect to said junction.

3,410,768

# METHOD OF PRODUCING CORROSION RESISTANT BERYLLIUM BODIES

Louis J. Csontos, Parma, and Albert James Stonehouse, Lynchburg, Ohio, assignors to The Brush Beryllium Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 8, 1964, Ser. No. 395,012  
14 Claims. (Cl. 204—37)

A process for providing a corrosion resistant beryllium body by anodizing said body in an electrolytic bath containing sodium chromate and chromic acid at predetermined temperature and hydrogen ion concentration parameters, subsequently heat treating said body, and beryllium bodies and bodies having beryllium surfaces provided by said process having corrosion resistance under specified environments.

3,410,769

# ELECTROLYTIC REDUCTIVE COUPLING OF AZOMETHINES

Mannet M. Balzer, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

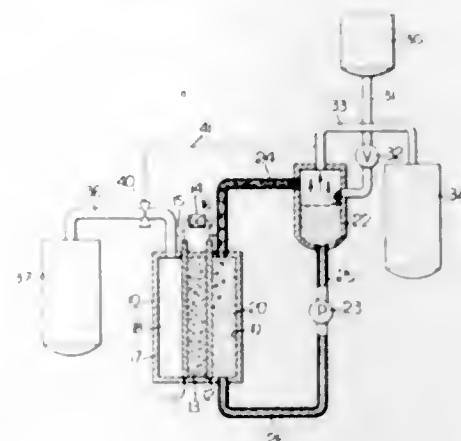
No Drawing. Filed Jan. 4, 1965, Ser. No. 423,342  
9 Claims. (Cl. 204—74)

1. The method of obtaining reductively coupled compounds from azomethines which comprises subjecting a solution containing an azomethine and supporting electrolyte salt to electrolysis in contact with a cathode, causing development of the cathode potential necessary to effect reductive coupling, and causing coupling of the azomethine at the carbon atom of the double bond with attachment of hydrogen to the nitrogen atom of the double bond to thereby saturate the double bond and recovering the reductively coupled compound.

# 3,410,770 ELECTROLYTIC METHOD FOR PRODUCING OXYGEN AND HYDROGEN

Lester W. Buechler, Elm Grove, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Feb. 18, 1966, Ser. No. 528,652  
3 Claims. (Cl. 204—129)



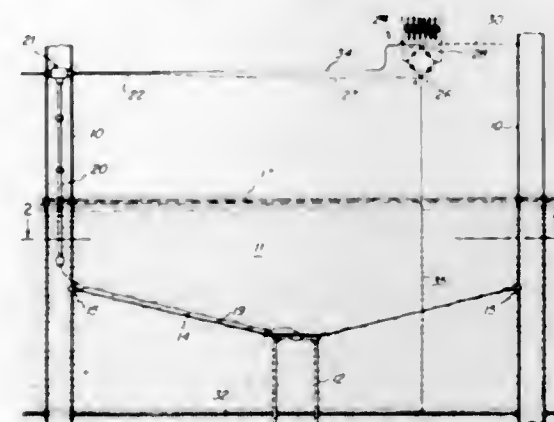
A system for producing hydrogen and oxygen by the electrolysis of water in a bipolar cell, wherein oxygen is produced at one porous electrode and is collected in a gas chamber adjacent thereto and hydrogen is produced at the other porous electrode and is collected in the electrolyte chamber adjacent thereto. The electrolyte consumed from the electrolyte matrix between the electrodes is replaced by circulating fresh electrolyte through the electrolyte chamber causing it to diffuse through the hydrogen producing electrode. The hydrogen gas must be separated from the circulating electrolyte. Oxygen pressure is controlled within the gas chamber to maintain a pressure differential across the cell to prevent electrolyte from diffusing into the gas chamber.

3,410,771

# TREATMENT OF LEAD ALLOY ANODES

Leon P. Sudrabin, Berkeley Heights, and Lubomyr Liszczynsky, Bloomfield, N.J., assignors, by mesne assignments, to Wallace & Tiernan Inc., East Orange, N.J., a corporation of Delaware

Filed May 3, 1965, Ser. No. 452,567  
10 Claims. (Cl. 204—147)



1. A method of treating a lead alloy electrode immersed in chloride brine and positioned to serve as an anode in a cathodic protection system for protection of metallic structure exposed to said brine, said method comprising connecting said electrode as cathode of an impressed current system while maintaining said electrode in position immersed in said brine, and passing direct electric current through said brine between an anode immersed in said brine and said electrode, to effect cleaning of the surface of said electrode.

# 3,410,772 METHOD FOR ATTACHING IMPRESSED CURRENT ANODES FOR CATHODIC PROTECTION

Isidore Geld, Flushing, and Walter L. Miller, Lynbrook, N.Y., assignors to the United States of America as represented by the Secretary of the Navy

Filed May 28, 1965, Ser. No. 459,956  
5 Claims. (Cl. 204—147)



Method of protecting a metal against electrolytic corrosion by bonding an anode to the metal with a curable electrically nonconducting adhesive in uncured state and then passing a direct current between the anode and the metal.

3,410,773

# ELECTROCOATING WITH UNSATURATED POLYHYDROXYETHER ESTERS

Joseph W. Hagan, Scotch Plains, and William I. Wertz, East Brunswick, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 8, 1965, Ser. No. 462,395  
15 Claims. (Cl. 204—181)

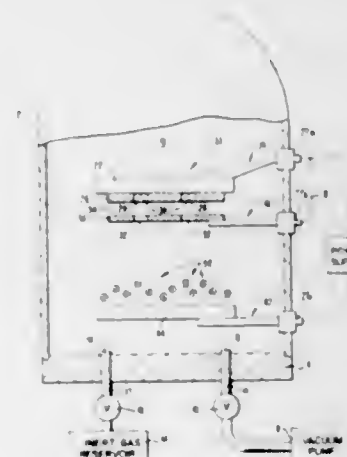
1. Method of coating a substrate with a polyhydroxy-ether ester containing up to 50% by weight of a fatty acid of a drying oil, which comprises electrocoating, at a potential of at least 5 volts D.C., said ester onto a conductive substrate from an aqueous emulsion of said ester.

3,410,774

# METHOD AND APPARATUS FOR REVERSE SPUTTERING SELECTED ELECTRICALLY EXPOSED AREAS OF A CATHODICALLY BIASED WORKPIECE

Fred Barson, Wappingers Falls, and Johann Sturm, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 23, 1965, Ser. No. 502,986  
4 Claims. (Cl. 204—192)



A reverse sputtering method and apparatus for removing surface contaminants from selected areas of a work-

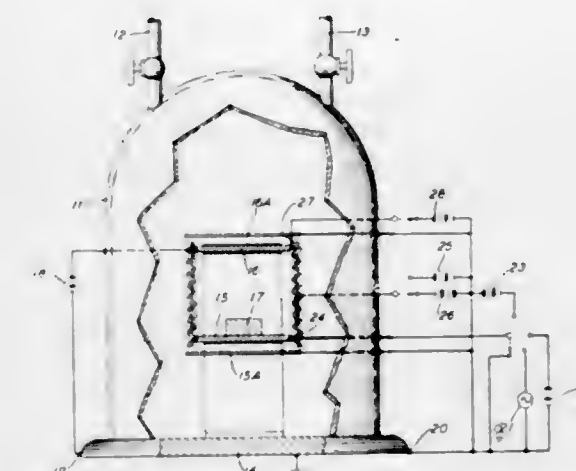
piece where the selected areas are exposed through an insulating layer. The workpiece is biased to function as the cathode and a cathodically biased mask, having apertures conforming to the shape of each selected area but larger in size, is axially aligned and positioned from the workpiece a distance which will not permit a DC ionic charge to occur.

3,410,775

# ELECTROSTATIC CONTROL OF ELECTRON MOVEMENT IN CATHODE SPUTTERING

Frederick Vratny, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 14, 1966, Ser. No. 542,595  
6 Claims. (Cl. 204—192)



1. A method for the deposition of thin films upon a substrate by cathodic sputtering in a vacuum chamber in which are disposed a first electrode, and a second electrode for supporting an electrical discharge and a sputtering screen coaxially surrounding said discharge which comprises the steps of evacuating the said vacuum chamber, admitting a sputtering gas into the said vacuum chamber, biasing the said second electrode negative with respect to said first electrode by means of a D-C potential to effect said electrical discharge and biasing the said screen at a fixed potential with respect to said first electrode.

6. A method for the deposition of thin films upon a substrate by cathodic sputtering in a vacuum chamber in which are disposed a first electrode, and a second electrode for supporting an electrical discharge, a third electrode and a sputtering screen coaxially surrounding said discharge which comprises the steps of evacuating the said vacuum chamber admitting a sputtering gas into the said vacuum chamber, biasing the said second electrode at a fixed potential with respect to said first electrode to effect said electrical discharge and simultaneously biasing the said third electrode negative with respect to said first and second electrodes at a potential distinct from that of the said second electrode, and biasing the said screen at a fixed potential with respect to said first electrode.

3,410,776

# GAS REACTION APPARATUS

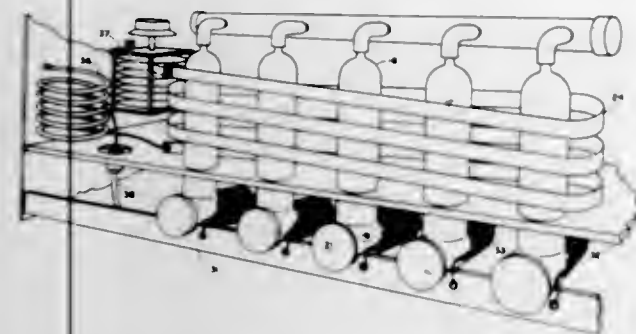
Richard Bersin, Berkeley, Calif., assignor to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed Feb. 1, 1966, Ser. No. 524,103  
3 Claims. (Cl. 204—193)

1. Apparatus for reacting a gas with a non-gaseous substance comprising: a reaction cell having a first chamber portion for activation of the gas and a second chamber portion to contain the substance which is to be exposed to



the activated gas, means to introduce the gas into said cell by way of said first chamber portion, means to create an RF field which ionizes the gas in said first chamber portion to activate it, means to withdraw gas from said cell



by way of said second chamber portion, and an RF shield surrounding said second chamber portion to prevent said field from acting directly upon the contents of said second chamber portion.

3,410,777

## GLASS ELECTRODE COMPOSITION

James W. Ross, Newton, Mass., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

No Drawing. Original application May 18, 1964, Ser. No. 368,322. Divided and this application Aug. 19, 1964, Ser. No. 394,098

3 Claims. (Cl. 204-195)

1. A glass electrode including a pH responsive membrane of glass having a composition consisting essentially of about 27 to 29 mol percent  $\text{Li}_2\text{O}$ ; about 2 to 4 mol percent of at least one material selected from the group consisting of  $\text{Cs}_2\text{O}$  and  $\text{Rb}_2\text{O}$ ; about 4 to 7 mol percent of at least one rare earth metal oxide; about 1 to 3 mol percent of  $\text{UO}_2$ ; and the balance being  $\text{SiO}_2$ .

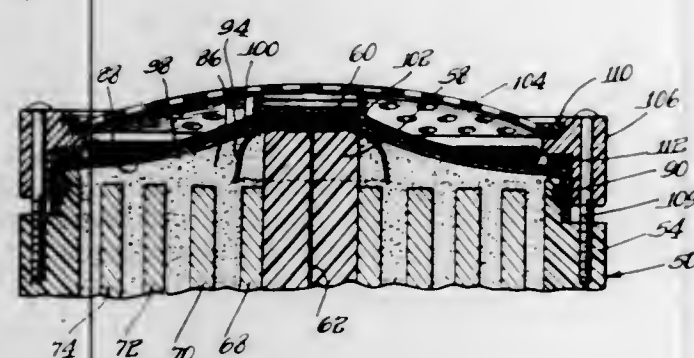
3,410,778

## ELECTROCHEMICAL SENSING DEVICE AND METHOD OF MAKING SAME

Alan R. Krasberg, Glenview, Ill.  
(% J. H. Emerson Company, Cambridge, Mass. 02138)

Filed Feb. 16, 1965, Ser. No. 432,967

11 Claims. (Cl. 204-195)



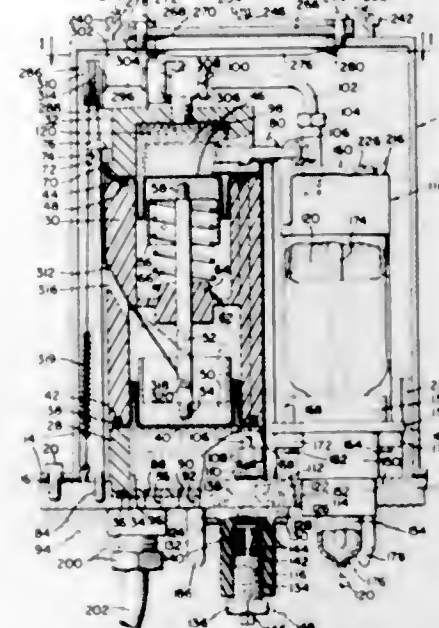
There is disclosed an electrochemical cell having electrodes immersed in an electrolyte material and covered by an oxygen permeable membrane and a method of producing the cell by applying pressure to and maintaining pressure on the electrolyte material so as to eliminate gas bubbles and bubble nuclei from the material.

3,410,779  
MEASURING APPARATUS WITH PRESSURE AMPLIFIER

Robert C. Whitehead, Jr., Oreland, and Lewis A. Medlar, Lansdale, Pa., assignors to Honeywell Inc., a corporation of Delaware

Filed Apr. 1, 1965, Ser. No. 444,690

9 Claims. (Cl. 204-195)



1. An apparatus for facilitating the continuous measurement of a quality of a fluid that is present at different depths in a stream of raw water, comprising a first chamber, a first flexible member forming a flexible wall portion of the chamber against which the pressure of the raw water is applied, a second flexible member forming a wall portion of a second chamber, a passageway including a reference electrode unit extending from the second chamber into the raw water, an electrolyte fluid within the second chamber and the passageway, a first piston positioned for movable contact with the inner wall surface of the first flexible wall portion, a second piston, said second piston being operably connected for joint movement with the first piston to provide a means of applying a greater pressure to the electrolyte fluid than the pressure that the stream applies to the first piston by way of the first flexible wall member to thereby force the electrolyte fluid through the reference electrode unit out into the stream.

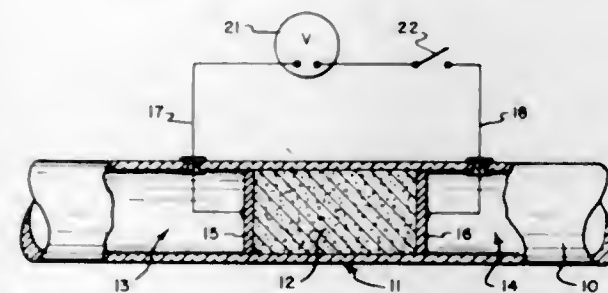
3,410,780

## ELECTROCHEMICAL HYDROGEN METER

Robert B. Holden, Orange, Conn., assignor to United Nuclear Corporation, a corporation of Delaware

Filed Oct. 22, 1965, Ser. No. 501,139

14 Claims. (Cl. 204-195)



1. An electrochemical hydrogen meter for substantially continuously measuring the concentration of hydrogen in hydrogen-containing material which comprises an electrolyte chamber containing a saline hydride electrolyte which conducts electricity by the movement of hydride ions therethrough, a cathode in electrical contact with one surface of said saline hydride electrolyte, said cathode comprising an electrically conductive material which is

permeable with respect to hydrogen and which is inert with respect to the saline hydride electrolyte with which it is in contact, an anode in electrical contact with a second surface of the saline hydride electrolyte, said anode being formed from an electrically conductive material which is permeable with respect to hydrogen and which is inert with respect to the saline hydride electrolyte with which it is in contact, and means for measuring an electrical potential difference electrically connected to said cathode and to said anode.

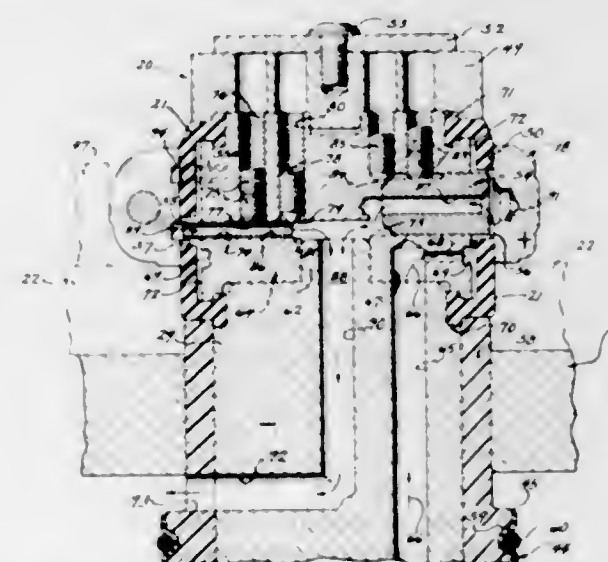
3,410,781

## ELECTROCHEMICAL MACHINING APPARATUS FOR INTERNAL SURFACE DEBURRING

Ernest Carlson, Birmingham, and Kenneth C. Dettmer, Detroit, Mich., assignor to Ex-Cell-O Corporation, Detroit, Mich.

Filed Nov. 27, 1964, Ser. No. 414,311

10 Claims. (Cl. 204-224)



An electrochemical apparatus having a stationary cathode tool means concentric with a stationary anode workpiece in which electrolyte flows through passages in said electrode to deburr portions of the surface of said workpiece.

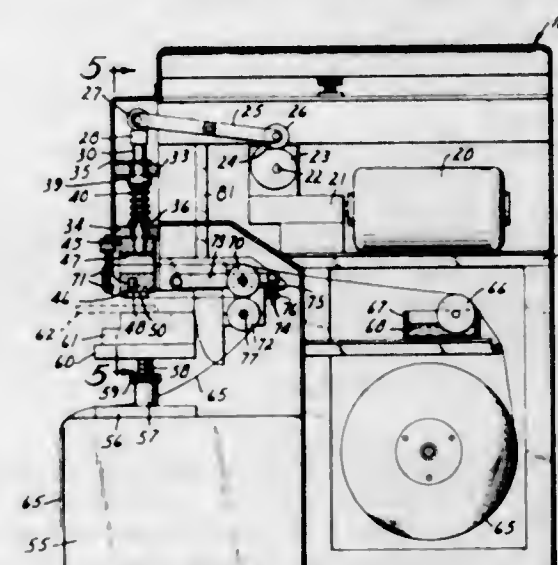
3,410,782

## ELECTROLYTIC ETCHING APPARATUS

Albert E. Godbehere, Sheffield, England, assignor to Edward Pryor & Son Limited, Sheffield, England, a private limited company

Filed Sept. 28, 1965, Ser. No. 490,860

5 Claims. (Cl. 204-224)



1. Electrolytic etching apparatus comprising:  
(a) a frame having a work receiving adjustable platform thereon;

(b) a motor fixedly attached to said frame;  
(c) reciprocatory means mounted on said frame for reciprocatory movements relative to said platform and operatively connected to said motor;  
(d) die means being at least partially composed of electrical conducting material and having desired patterns in relief thereon;  
(e) magnetic means fixedly attached to said first reciprocatory means for holding said die means in an operating position relative to said platform and providing an electrical circuit between said die means and said reciprocatory means;  
(f) ribbon means having means associated therewith for applying an electrolyte thereto movably attached to said frame and having a portion thereof between said die means and said platform;  
(g) means operatively attaching said ribbon to said motor for incrementally moving said ribbon means to periodically change the portion of said ribbon between said die means and said platform; and  
(h) a power supply attached to said platform and said reciprocatory means for providing an electric etching current therebetween during periods of contact between said platform, a piece of work, said ribbon means and said die means simultaneously.

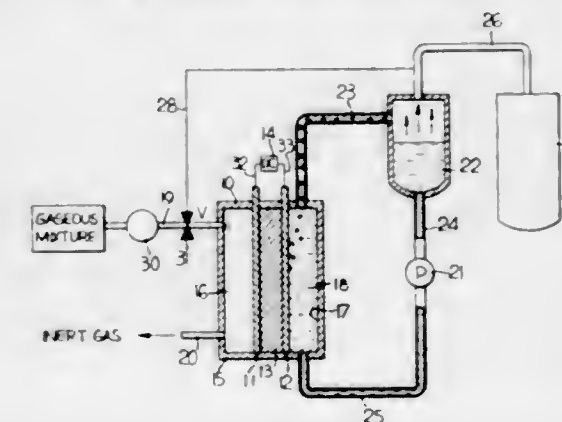
3,410,783

## ELECTROCHEMICAL CELL FOR SEPARATION OF GASEOUS MIXTURES

Scott S. Tomter, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Feb. 2, 1966, Ser. No. 524,642

6 Claims. (Cl. 204-266)



A system for separating an electrochemically activable gas from electrochemically inert gases wherein the activable gas is electrochemically reduced to a solvated species at an activation electrode of a direct current powered cell, and the solvated species is ionically conducted through an electrolyte within the cell to regenerate the activable gas at a cell regeneration electrode. To mitigate the problem of moisture balance control in the cell, fresh electrolyte is circulated in an electrolyte chamber adjacent to the regeneration electrode, and a pressure differential is maintained across the cell.

3,410,784

## APPARATUS FOR PERFORMING ELECTROLYTIC PROCESSES

Richard Mark Orpen Maunsell, Pyrford, and Lloyd Graham Hanlon, Birmingham, England, assignors to Electric Reduction Company of Canada, Ltd., Toronto, Ontario, Canada, a corporation of Canada

Filed June 16, 1965, Ser. No. 464,332

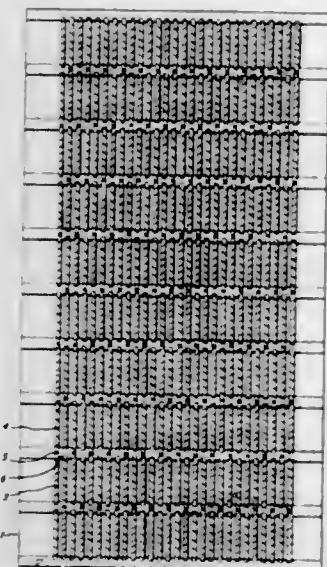
Claims priority, application Great Britain, Oct. 12, 1964, 41,636/64

7 Claims. (Cl. 204-268)

Apparatus for performing electrolytic processes wherein a corrosive oxidizing agent and nascent hydrogen are released at an anode and cathode respectively of the type



which comprises a series of unit cells, terminal electrodes in first and last cells of the series, electrical connection between each unit cell and the next successive unit cell which consists in each case of one or more intermediate electrodes, each of which intermediate electrodes has a pair exposed in each of the two unit cells thereby connected, and means for applying a difference of electrical



potential between the terminal electrodes in the first and last cells respectively; the improvement of so constructing each of the aforesaid intermediate electrodes and terminals electrodes that, when the terminal electrodes in the first cell are made anodic with respect to those in the last cell every anodic face is of platinized titanium and every cathodic face is of a metal which is resistant to corrosion by nascent hydrogen.

3,410,785

**VACUUM METALLIZED ELECTRODE**

Philip J. Clough, Reading, and Robert W. Steeves, Nahant, Mass., assignors to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts  
No Drawing. Filed Aug. 24, 1965, Ser. No. 482,300  
2 Claims. (Cl. 204—290)

Titanium electrode, for electrochemical systems, with vacuum deposited coat of platinum affording high resistance to flaking upon reversal of electric current in the electrochemical system.

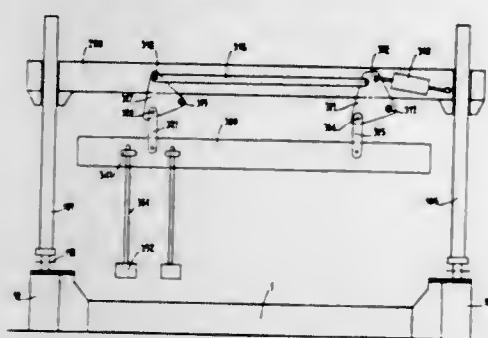
3,410,786

**SUPERSTRUCTURE FOR ELECTROLYTIC CELLS**

Daniel Duclaux, Paris, Jean-Pierre Givry, Saint-Jean-de-Maurienne, and Robert Scalliet, Saint-Cloud, France, assignors to Pechiney-Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France

Filed Apr. 8, 1966, Ser. No. 541,197  
Claims priority, application France, Apr. 9, 1965, 12,612

11 Claims. (Cl. 204—297)



This invention relates to a superstructure intended for use in connection with cells employed for the manufacture of aluminum by electrolysis and it relates more particularly to the method for the construction and operation of same.

3,410,787

**AGRICULTURAL SPRAY OILS**

Nacl Frank Kubicek, Oakland, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 1, 1965, Ser. No. 510,966

3 Claims. (Cl. 208—57)

Agricultural spray oils are produced by hydrocracking aromatic petroleum oils having an end boiling point above 700° F. and recovering a spray oil fraction having a low aromatic content and a 10% point above about 650° F. and a 90% point below about 750° F.

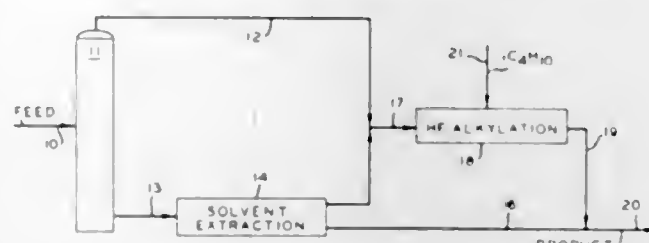
3,410,788

**METHOD FOR MAKING AN OLEFIN-FREE HIGH-OCTANE FUEL**

Lewis E. Drehman, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed May 13, 1966, Ser. No. 549,926

7 Claims. (Cl. 208—87)



An olefin-free, high-octane gasoline or motor fuel of reduced sensitivity is produced by fractionating a substantially full range catalytically cracked gasoline into at least two fractions, in one form of the invention a fraction boiling substantially below about 175° F. and another boiling substantially above 175° F., solvent extracting the higher boiling fraction to obtain a raffinate substantially freed from aromatics and an extract containing aromatics substantially free from olefins, paraffins, and naphthenics. Alkylating in presence of each other, the raffinate and fraction boiling below about 175° F. and combining alkylate thus produced with said extract. In one modification of the invention prior to combining the alkylate and extract fractions, the alkylate is fractionated to produce at least two fractions, a fraction in one embodiment boiling below about 275° F. and one boiling above about 275° F., the latter being subject to aromatizing conditions following which the stream boiling below about 275° F., the aromatized stream and the extract stream are combined.

3,410,789

**REFORMING PROCESS WITH MONOFLUORIDE TREATED NOBLE METAL CATALYST**

Richard E. Rausch, Mundelein, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 19, 1966, Ser. No. 602,517

9 Claims. (Cl. 208—139)

Reforming of gasoline or naphtha fractions in contact with a refractory inorganic oxide containing a Group VIII noble metal which has been chemically combined with a subfluoride vapor and a sulfur-containing reaction stabilizer component.

3,410,790

**REFORMING PROCESS WITH MONOFLUORIDE TREATED NOBLE METAL CATALYST**

Richard E. Rausch, Mundelein, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 19, 1966, Ser. No. 602,516

9 Claims. (Cl. 208—139)

Naphtha reforming by contacting a naphtha feed at reforming conditions with a catalyst comprising a refrac-

tory inorganic oxide containing a Group VIII metal, per level of the catalyst bed, thereby increasing the concentration of catalyst in the liquid stream passing through vapor such as aluminum monofluoride.

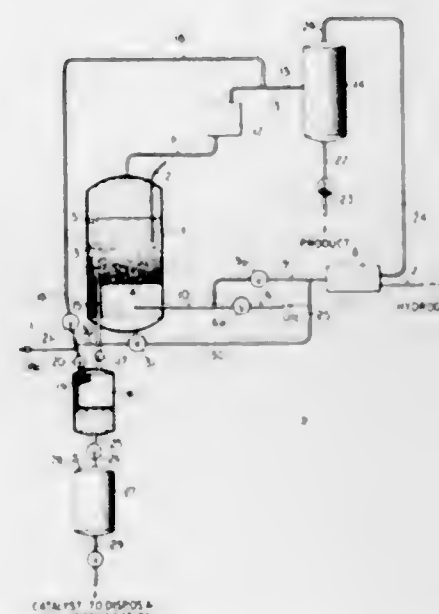
3,410,791

**METHOD FOR DISCHARGING MIXTURE OF PARTICULATE SOLIDS AND FLUIDS FROM HIGH PRESSURE VESSEL**

Lester A. Perry, Lake Charles, La., Roger P. Van Driesen, Hopewell, N.J., and Emory D. Mattix, Lake Charles, La., assignors to Cities Service Research and Development Company, New York, N.Y., a corporation of Delaware

Filed Aug. 25, 1965, Ser. No. 482,536

14 Claims. (Cl. 208—143)



This invention pertains to a method for continually discharging particulate solids in mixture with fluids from a high pressure vessel without disrupting the operation of the high pressure vessel. Thus, a particulate solid catalyst and fluid mixture is discharged from a high pressure hydrogenation vessel to a fluid-solid separation zone or pot where the fluids are continually vented from the pot through a venting conduit to the effluent stream of the hydrogenation vessel until the accumulation of the catalyst particles in the pot builds up across the venting conduit and decreases the flow of fluid to the effluent stream. The discharge of the particulate catalyst and fluid mixture from the hydrogenation vessel is then terminated after which any entrained fluid or gas is flared off to the atmosphere and the solids accumulated in the pot are discharged at relatively low pressures to another pot maintained at flare pressure.

3,410,792

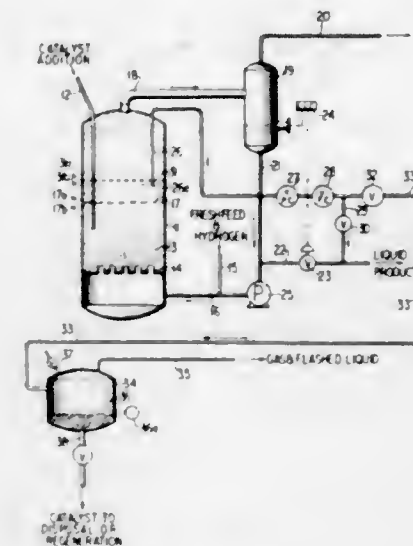
**METHOD FOR REMOVING PARTICULATE CATALYST FROM FLUID-CATALYST CONTACTING ZONE**

Roger P. Van Driesen, Hopewell, and Norman C. Stewart, Kendall Park, N.J., assignors to Cities Service Research and Development Company, New York, N.Y., a corporation of Delaware

Filed Oct. 22, 1965, Ser. No. 501,213

15 Claims. (Cl. 208—143)

A process is disclosed for controlled withdrawal of particulate catalyst from a continually operating fluid-catalyst contacting zone having an expanded catalyst bed, particularly an ebullated bed hydrogenation zone. A conduit is provided for withdrawing liquid product from a point above the normal upper level of the catalyst bed. Catalyst is withdrawn by intermittently elevating the up-



the withdrawal conduit, until a desired amount of catalyst has been removed.

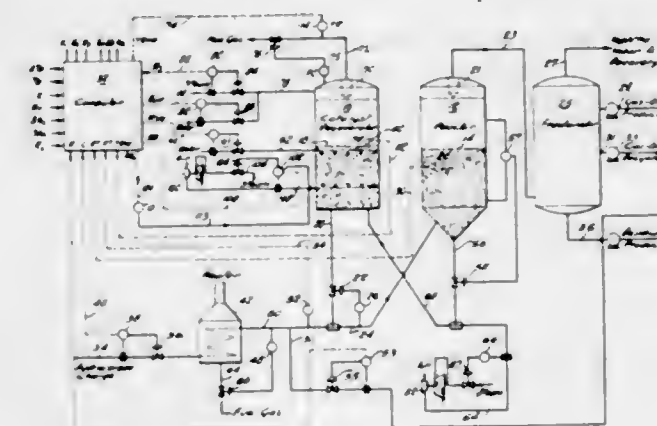
3,410,793

**METHOD AND APPARATUS FOR CONTROLLING THE REGENERATION OF CONTAMINATED SOLIDS IN A FLUIDIZED SYSTEM**

John J. Stranahan and Leland A. Chvatal, Port Arthur, and James C. Kite, Groves, Tex., assignors to Texaco, Inc., New York, N.Y., a corporation of Delaware

Filed June 27, 1966, Ser. No. 560,514

4 Claims. (Cl. 208—159)



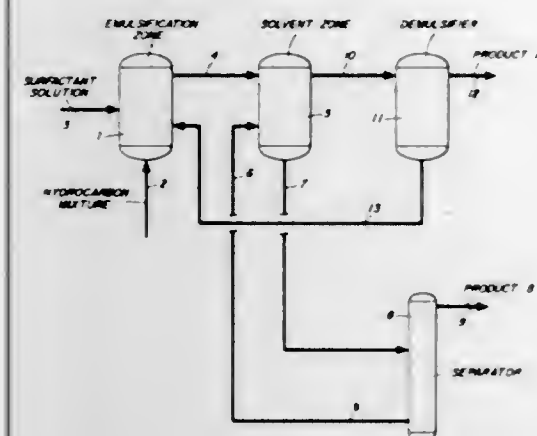
A fluid catalytic cracking process including a catalytic cracking reactor, a catalyst regenerator and a computer for controlling the amount of combustion air fed to the regenerator, in which regenerator carbon is removed from spent catalyst, that is, fed to the regenerator from the reactor. The computer generates a signal which ultimately controls the combustion air delivered to the regenerator. The aforesaid combustion air control signal is generated by the computer in accordance with an empirical mathematical relationship in response to various input signals delivered to the computer. Among the various input signals delivered to the computer are: temperature differential between dilute and dense phases in the regenerator; the cooling which takes place in the dilute phase by the introduction of quench water steam; change in reactor temperature; change in fresh hydrocarbon feed rate; change in hydrocarbon recycle rate; and, change in feed outlet temperature.



3,410,794

**SEPARATING HYDROCARBONS WITH LIQUID MEMBRANES**

Norman N. Li, Somerset, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware  
Filed Mar. 14, 1966, Ser. No. 533,933  
13 Claims. (Cl. 208—308)

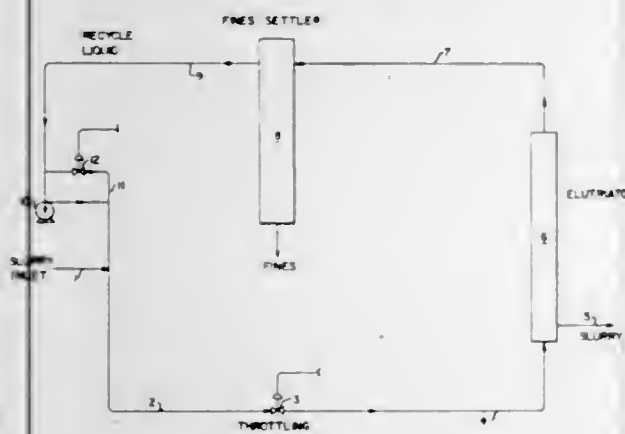


A process for separating mixtures into their component parts by means of selective permeation through liquid (surfactant) membranes. The mixture to be separated is first emulsified in aqueous medium containing a selected surfactant. The emulsified mixture droplets which are coated with surfactant are then contacted with a selected solvent. The more permeable component(s) of the mixture permeate the membrane coating and pass into the solvent phase. The less permeable component(s) remain in the droplets in the emulsion phase. The separated components are then separated from the respective phases by conventional means.

3,410,795

**SLURRY FLOW CONTROL**

George C. Blytas, Albany, and Ernest Robert Freitas, San Leandro, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware  
Continuation-in-part of application Ser. No. 373,451, June 8, 1964. This application Mar. 17, 1967, Ser. No. 638,166  
9 Claims. (Cl. 210—33)

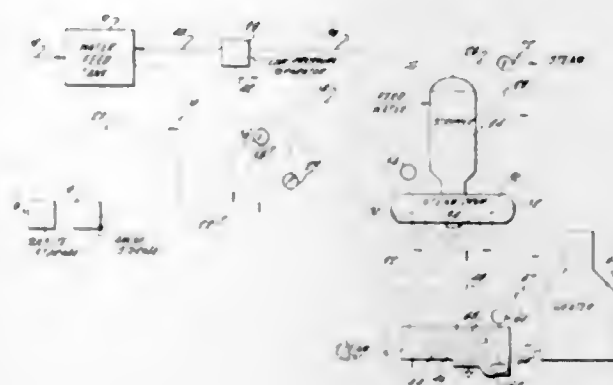


A method for regulating the transfer flow rate of a slurry in which the flow is controlled by introduction of the slurry into a circulating system where it is diluted with a recycle fluid, throttled and passed to a separation zone where the dilute slurry is separated into recycle fluid and reconcentrated slurry which is discharged from the system at the desired flow rate thus allowing flow control without the plugging and attrition associated with conventional throttling means. The separation zone may be used to separate solid fines from the slurry in which case solid fines are removed from the recycle fluid before the latter is recirculated.

3,410,796

**PROCESS FOR TREATMENT OF SALINE WATERS**

Raymond James Hull, Orange, Calif., assignor, by mesne assignments, to Gas Processors, Inc., a corporation of California  
Filed Apr. 4, 1966, Ser. No. 539,704  
10 Claims. (Cl. 210—56)



A process for treatment of raw water in which raw water is treated by passing it in direct countercurrent heat exchange with produced steam. The preheating of the raw water precipitates dissolved ions as insoluble salts. The preheated water is further heated by indirect heat exchange to produce the steam used to preheat the raw water.

3,410,797

**DRILLING MUDS**

Raymond W. Walker, Union, and Hugh E. Ramsden, Scotch Plains, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware  
No Drawing. Filed Nov. 13, 1964, Ser. No. 411,115  
4 Claims. (Cl. 252—8.5)

Certain organotin dithiophosphate compounds, e.g. dibutyl tin didecylthiophosphate and stannous bis (didecylthiophosphate), in water base drilling muds reduce the tendency of the drill pipe to become stuck during drilling.

3,410,798

**BASIC, SULFURIZED PHENATES AND SALICYLATES AND METHOD FOR THEIR PREPARATION**

Jerome M. Cohen, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio  
No Drawing. Continuation-in-part of application Ser. No. 481,930, Aug. 23, 1965. This application May 23, 1967, Ser. No. 640,517  
26 Claims. (Cl. 252—37.2)

Basic metal salts of phenol or salicylic acid sulfides are prepared by reacting a phenol or salicylic acid, or a salt thereof, with sulfur and an alkaline earth base at a temperature of about 150–200° C., in the presence of a carboxylic acid or salt thereof and a polyalkylene glycol or alkylene or polyalkylene glycol alkyl ether. The products are useful as detergent additives for lubricants.

3,410,799

**DYEABLE POLYMERS**

Allen Noshay, East Brunswick, and Gabriel Karoly, Elizabeth, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware  
No Drawing. Filed Jan. 6, 1964, Ser. No. 336,050  
5 Claims. (Cl. 260—45.75)

White dyeable fibers are produced from a polyolefin stabilized with a sulfur-containing stabilizer, by blending the polyolefin prior to spinning with a C<sub>1</sub>–C<sub>4</sub> nickel salt of a monocarboxylic acid.

3,410,800

**LUBRICATING OIL CONTAINING A VISCOSITY INDEX AND EXTREME PRESSURE ADDITIVE COMPRISING A SULPHUR AND HALOGEN CONTAINING OLEFIN POLYMER**

John Frederick Ford and Eric Simon Forbes, Sunbury-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, a corporation of England  
No Drawing. Original application June 3, 1964, Ser. No. 372,365, now Patent No. 3,346,549, dated Oct. 10, 1967. Divided and this application Apr. 3, 1967, Ser. No. 643,767  
Claims priority, application Great Britain, June 14, 1963, 23,782/63  
2 Claims. (Cl. 252—48.8)

Lubricating compositions having improved load carrying and viscosity properties are provided, which compositions consist essentially of a lubricating base oil having incorporated therein an oil soluble sulphur- and halogen-containing olefin polymer prepared by polymerising, sulphurising and halogenating, in a single stage, an alpha-olefin in the presence of a Friedel-Crafts catalyst.

3,410,801

**FRICTION-MODIFIED CLUTCH FLUIDS**

Norman Tunkel, Perth Amboy, Gerald D. Staffin, Westfield, and George A. Mead II, Scotch Plains, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware  
No Drawing. Filed Aug. 31, 1965, Ser. No. 484,113  
7 Claims. (Cl. 252—74)

The product of obtained by reacting an overbased polyvalent metal sulfonate, particularly an alkaline earth metal sulfonate, having a total base number of from about 50 to about 350, with from 10 to 150 weight percent of a C<sub>12</sub> to C<sub>22</sub> fatty acid, such as oleic acid, based on the weight of sulfonate, is an effective additive for modifying the friction characteristics of a hydrocarbon lubricating oil when it is used as a hydraulic fluid, particularly for wet clutch lubrication in the transmissions of automobiles, tractors, etc. The reaction product is added to the lubricating oil in an amount within the range of about 0.2 to 5 weight percent.

3,410,802

**PROCESS AND COMPOSITION FOR ETCHING OF COPPER METAL**

Kenneth J. Radimer, Little Falls, and Frank E. Caropreso, Hamilton Square, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware  
No Drawing. Filed Feb. 21, 1966, Ser. No. 528,818  
18 Claims. (Cl. 252—79.1)

Undercutting of copper during etching with a peroxydisulfate is reduced by providing in the etching solution, a microcrystalline, modified chrysotile in which the ratio of SiO<sub>2</sub> to MgO is between 1.05:1.0 and 1.3:1.0 by weight, and in which at least 10% by weight of the modified chrysotile is of submicron particle size in all dimensions.

3,410,803

**NOVEL PROCESS AND COMPOSITION FOR BRIGHTENING ALUMINUM**

Scott Hoover, Park Forest, Ill., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware  
No Drawing. Filed Nov. 30, 1965, Ser. No. 510,665  
8 Claims. (Cl. 252—79.2)

Process for brightening aluminum and aluminum alloys having less than about 8% zinc, 4% copper and 1% silicon which comprises immersing the said aluminum and aluminum alloys in a bath consisting essentially of

5–50 p.p.m. silver, 1–5% nitric acid, 15–28% water and 60–83% orthophosphoric acid.

3,410,804

**CLEANING COMPOSITIONS AND METHOD OF USING THE SAME**

Edward N. Walsh, Thornwood, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware  
No Drawing. Filed Jan. 3, 1966, Ser. No. 517,896  
14 Claims. (Cl. 252—99)

Cleaning compositions inhibited against attack on glass and glazed ceramic and porcelain surfaces comprising essentially between about 80% and 99% by weight of at least one ingredient selected from the group consisting of caustic alkali, alkali metal carbonate, alkali metal phosphate, alkali metal silicate, alkali metal borate, alkali metal sulfate, alkali metal chlorinated cyanurate, chlorinated cyanuric acid and chlorinated trisodium phosphate, and between about 0.5% and 20% by weight of at least one alkali metal aluminum orthophosphate.

3,410,805

**PAINT STRIPPER COMPOSITION**

Henry A. Goldsmith, Torrance, and Luis Salavarrista, Reseda, Calif., assignors to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California  
No Drawing. Filed Mar. 9, 1964, Ser. No. 350,590  
28 Claims. (Cl. 252—158)

The use of an N-substituted sulfonamide and a glycol additive improves substantially the paint removing efficiency of alkali metal hydroxide solution.

3,410,806

**RESOLVING EMULSIONS**

Marion W. Pickell, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed Jan. 4, 1965, Ser. No. 423,204  
11 Claims. (Cl. 252—329)

Water-in-oil emulsions are resolved by adding thereto an emulsion treating agent comprising an alkali metal tallate soap and an alkali metal hydroxide.

3,410,807

**SOLUTIONS CONTAINING NOBLE METAL COMPOUNDS**

William G. Lloyd, Dover, N.J., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 391,005, Aug. 20, 1964. This application Feb. 9, 1967, Ser. No. 614,788  
10 Claims. (Cl. 252—429)

Stable, homogeneous solutions of compounds of Group VIII noble metals, mono- or poly-hydric alcohols and 0.1–12 percent (volume) of water are suitable for catalytic oxidation of compounds including olefins, aromatic hydrocarbons, carbon monoxide and sulfur dioxide. Processes for so oxidizing CO to organic carbonates and SO<sub>2</sub> to organic sulfates.

3,410,808

**ZEOLITIC MATERIALS**

Warren M. Smith and Elroy M. Gladrow, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 485,095, Sept. 3, 1965. This application June 8, 1967, Ser. No. 644,486  
19 Claims. (Cl. 252—453)

Catalyst compositions comprising crystalline aluminosilicate zeolites distributed throughout a siliceous matrix



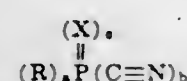
are prepared by combining the zeolite crystals while contained in their mother liquor with alkali metal silicate, gelling the silicate either before or after its admixture with the mother liquor slurry, and reacting with a metal salt, such as aluminum sulfate salt, to incorporate  $Al_2O_3$ . Preferred catalyst comprises faujasite in silica-alumina matrix.

### 3,410,809 CN COMPOUNDS

Iral B. Johns, Marblehead, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 323,110, Nov. 12, 1963. This application May 28, 1965, Ser. No. 459,874

12 Claims. (Cl. 260—2)

1. The method of converting an organophosphorus cyanide to a polymer containing repeating units of the same empirical formula as the initial monomer which comprises contacting anhydrous lithium cyanide in an organic solvent with an organophosphorus cyanide of the formula



in which R is an organic radical consisting of elements selected from the class consisting of C, H and O, said O being ether oxygen, linking adjoining C atoms, free of aliphatic unsaturation and containing up to 12 carbon atoms and up to 1 oxygen atom. X is a chalcogen element with an atomic weight below 35, a and b are the integers 1 or 2 and the sum of a and b is 3, and c is the integer 0 or 1.

7. Tris(diorganophosphinothioyl)triazines in which the organic radicals are aromatic radicals which each consist of elements selected from the class consisting of C, H and O, said O being ether oxygen, linking adjoining C atoms, contain up to 12 aromatic carbon atoms and up to 1 oxygen atom and are free of aliphatic unsaturation.

### 3,410,810 POLYMERS OF CYANOALKYL EPOXY ETHERS

Harold A. Tucker, Shaker Heights, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York  
No Drawing. Filed May 3, 1966, Ser. No. 547,166  
15 Claims. (Cl. 260—2)

Cyanoalkyl epoxy ethers are homopolymerized and interpolymerized with other epoxide comonomers to provide polymers having a polyether backbone and nitrile groups pendant to the polymer chain. The terpolymers produced by the interpolymerization of cyanoalkyl glycidyl ethers with an alkylene oxide and an ethylenically unsaturated epoxy compound are sulfur curable and provide useful rubbers having a good balance of flexibility at low temperatures, aging resistance and resistance to swell in aromatic oils and water.

### 3,410,811 POROUS WEAK BASE ANION EXCHANGE RESINS FROM POLYVINYL CHLORIDE AND AMINES

Richard G. Bufton, Painesville, and Leo L. Benezra, Willoughick, Ohio, assignors to Diamond Shamrock Corporation, a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 338,638, Jan. 20, 1964. This application Nov. 13, 1967, Ser. No. 682,533

8 Claims. (Cl. 260—2.1)

A weak-base anion-exchange resin of improved physical and chemical stability is produced by reacting particulate polyvinyl chloride resin with an aqueous amine

solution at a temperature in excess of 100° C. Following amination the resin is further reacted with a polyfunctional agent having at least two amine-reactive groups.

### 3,410,812 PHOSPHOROUS CONTAINING POLYESTERS

Ulrich Bahr, Leverkusen, Günter Oertel, Cologne-Flittard, and Günter Nischk and Manfred Dahm, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed May 8, 1962, Ser. No. 193,311  
Claims priority, application Germany, May 10, 1961, F 33,896

11 Claims. (Cl. 260—2.5)

Polyesters prepared by reacting a dialkyl phosphite with an unsaturated alkyd resin containing a plurality of hydroxyl groups and polyurethane plastics prepared by reacting these phosphite polyols with organic polyisocyanates.

### 3,410,813 COMPOSITION BOARD MADE FROM MATERIAL PRETREATED WITH A FLUXED WATER REPELLENT

Craig C. Campbell, John W. Schick, and John H. Stockinger, Cherry Hill, N.J., assignors to Mobil Oil Corporation, a corporation of New York  
No Drawing. Continuation-in-part of application Ser. No. 397,267, Sept. 17, 1964, which is a continuation-in-part of application Ser. No. 316,505, Oct. 16, 1963. This application Mar. 30, 1966, Ser. No. 538,612

12 Claims. (Cl. 260—17.2)

Composition boards are formed from fibers, particles, and mixtures of fibers and particles that have been pretreated with a water-repellent material. The fibers and/or particles, generally cellulosic, are coated with water-repellent material such as wax emulsion and then heated to flux the water-repellent material over the particle surface. A catalyst for a thermosetting resin can also be placed on the particle surfaces. Then the pretreated particles and/or fibers are admixed with a thermosetting resin, molded to form composition board, and heated to thermoset the thermosetting resin.

### 3,410,814 METHOD OF PRODUCING MOULDING MATERIALS BY REACTING MELAMINE AND FORMALDEHYDE AND COMPOUNDING THE RESULTANT RESIN WITH CELLULOSE IN THE PRESENCE OF PHTHALIC UREIDE

Vadim Nickolaevich Gorbunov, Modest Sergeevich Akutin, and Grigory Vasiljevich Sagalaev, Moscow, and Isaak Jakovlevich Faidel, Alexandr Dmitrievich Sokolov, Inga Nickolaevna Aleinikova, Boris Alexandrovich Preobrazhensky, and Roman Fedorovich Chernyshev, Orekhovo-Zuevo, U.S.S.R., assignors to Nauchno-Issledovatel'skiy Institut Plasticheskikh Mass., Moscow, U.S.S.R.

No Drawing. Filed Nov. 19, 1964, Ser. No. 412,307  
7 Claims. (Cl. 260—17.3)

A method of producing molding material from a resin produced by condensing melamine and formaldehyde at a temperature of 100 to 160° C. and a pressure of 5 to 20 atm. until the content of the methylol groups in the resin equals 2 to 13% by weight. The resin thus obtained is partially dried, whereupon it is subjected to compounding with cellulose at a temperature of 40 to 90° C. and in the presence of phthalic monoureide as a catalyst. The molding material obtained is thereafter dried and milled.

### 3,410,815 WATER DILUTABLE SALTS OF ADDITION COPOLYMERS OF (1) AN ACID, (2) AN ETHER, (3) A CARBOXYL-FREE MONOMER AND (4) A DRYING OIL ADDUCT

Thomas Leighton Phillips, Dinas Powis, Glamorgan, and Thomas Hunt, Cadoxton, Barry, Glamorgan, Wales, assignors to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Filed Feb. 4, 1965, Ser. No. 430,491  
Claims priority, application Great Britain, Feb. 15, 1964, 6,416/64

7 Claims. (Cl. 260—23.5)

Addition copolymers are formed by the copolymerization of (1) an adduct of a compound which functions as an unsaturated oil with an acyclic  $\alpha$ -unsaturated olefinic carboxylic acid having a straight chain length of up to 5 carbon lengths or simple derivatives thereof; (2) a polyethylenically unsaturated compound having at least one  $\beta$ , $\gamma$ -ethylenically unsaturated ether group and a polymerizable ethylenically unsaturated group; (3) an  $\alpha$ , $\beta$ -ethylenically unsaturated carboxylic acid; and (4) at least one ethylenically unsaturated monomer free from carboxylic acid and carboxylic acid anhydride moieties capable of forming addition polymers with other additions of copolymer, the copolymer having an acid value of at least 25 milligrams of potassium hydroxide per gram. Salts of these addition polymers can be diluted to form a basis for aqueous surface coating compositions which dry in air to form films and coatings which rapidly harden. The resultant films and coatings are water miscible insoluble and exhibit durability and a good appearance.

### 3,410,816 PROCESS FOR THE OXIDATION OF A POLY-ETHYLENE-PARAFFIN BLEND

Frank A. Mirabile, Wayne, and Steven T. Rabel, Boonton, N.J., assignors, by mesne assignments, to Allied Chemical Corporation, New York, N.Y., a corporation of New York  
No Drawing. Filed Feb. 26, 1965, Ser. No. 435,716  
4 Claims. (Cl. 260—28.5)

1. A process for oxidizing polyethylene having a density in the range of 0.935–0.97 and a reduced specific viscosity of 0.8 to 30 deciliters/g. which comprises blending said polyethylene with 5 to 25% by weight of paraffin and thereafter oxidizing said blend by heating said blend in the presence of a free oxygen-containing gas while maintaining the polyethylene in solid form at a temperature ranging from 105° C. up to the crystalline melting point of said polyethylene until the carbonyl content of said polyethylene is in the range 0.2 to 7.5 weight percent.

### 3,410,817 POLYURETHANE LATICES

James M. McClellan, Jr., Detroit, Seymour L. Axelrood, Trenton, and Oscar M. Grace, Madison Heights, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan  
No Drawing. Filed Apr. 29, 1965, Ser. No. 452,003  
19 Claims. (Cl. 260—29.2)

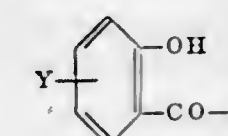
Polyurethane latices are obtained by the chain extension of an NCO-terminated prepolymer prepared from certain polyalkylene ether polyols having a functionality greater than two and a molecular weight of at least 1500. Molded elastomeric products prepared from these latices are extremely solvent resistant and retain their physical properties at high and low temperatures and on aging. Moreover, fabrics coated or impregnated with these

latices display outstanding resistance to solvents and no significant change in physical properties upon exposure to high and low temperatures.

### 3,410,818 MODIFIED RESORCINOL-FORMALDEHYDE ADHESIVE RESIN AND ADHESIVES FORMED THEREWITH

Peter A. Yurcick, South River, and Charles Tyler Bills, Metuchen, N.J., assignors, by mesne assignments, to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky  
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,320  
20 Claims. (Cl. 260—29.3)

1. An adhesive composition particularly adapted for bonding automotive tire cords which comprises a rubber latex and in mixture therewith a reaction product of the relative proportions of one mol of resorcinol, from about 0.05 to about 1.5 mols of formaldehyde and from about 0.01 to about 0.4 mol of modifying agent having the formula:



wherein X is hydroxyl or amino group and Y is hydrogen or hydroxyl group.

### 3,410,819 ADDITION OF INSOLUBLE ADDITIVES TO FIBERS DURING MANUFACTURE

Raymond Erdly Kourtz and Ping Liang Ku, Pensacola, Fla., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine  
No Drawing. Filed June 28, 1963, Ser. No. 291,280  
8 Claims. (Cl. 260—29.6)

1. A process for preparing a uniform dispersion of colloidal particles of a material in a viscous coagulatable polymer solution, said material being insoluble in said polymer solution, said process comprising:  
(a) dissolving said material in a solvent therefor which is miscible with said viscous coagulatable polymer solution; and  
(b) feeding and mixing the solution thus formed into said viscous coagulatable polymer solution causing said solid material to precipitate as a uniform dispersion of colloidal particles without precipitating said polymer.

### 3,410,820 ROOM TEMPERATURE VULCANIZING COMPOSITIONS

John F. Harrod, Saratoga, N.Y., assignor to General Electric Company, a corporation of New York  
No Drawing. Filed Aug. 1, 1966, Ser. No. 569,105  
12 Claims. (Cl. 260—37)

A method of curing organosilicon polymers containing hydroxyphenyl groups by means of an oxidative coupling reaction which is catalyzed by a basic copper salt-pyridine complex and to the compositions produced thereby. The compositions are useful as encapsulating agents, caulking compositions and the like.



3,410,821

**MASS-COLORATION FOR POLYESTER RESINS**  
Albert Charles Cooper, David Frederick White, and Donald Graham Wilkinson, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain  
No Drawing. Filed Mar. 21, 1966, Ser. No. 535,662  
Claims priority, application Great Britain, Mar. 26, 1965, 12,958/65

2 Claims. (Cl. 260—40)

Process for mass-coloring polyesters with phthaloperinone or naphthylene benzimidazoles containing 1 or 2 carboxylic acid groups or esters thereof.

## ERRATUM

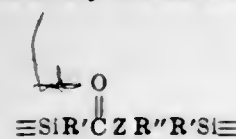
For Class 260—45.75 see:  
Patent No. 3,410,799

3,410,822

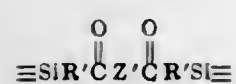
**CARBONYL-CONTAINING ORGANOSILICON MATERIALS**  
Edward V. Wilkus, Albany, and Abe Berger, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York  
No Drawing. Continuation-in-part of application Ser. No. 408,367, Nov. 2, 1964. This application Nov. 1, 1966, Ser. No. 591,117

18 Claims. (Cl. 260—46.5)

Organosilicon materials, such as monomers and polymers containing chemically combined units selected from



and



where Z is selected from divalent aryl ether radicals, divalent bis(aryl)sulfone radicals, divalent aryl carbazone radicals and certain divalent heteroaromatic radicals, Z' is selected from Z radicals, divalent aromatic hydrocarbon radicals, and halogenated divalent aromatic hydrocarbon radicals, R' can be divalent hydrocarbon radical and R'' is an alkylene radical. The subject organosilicon materials are useful for making elastomers having reduced swell in fluid hydrocarbons, primers, etc.

3,410,823

**METHOD OF REMOVING CONTAMINANTS FROM POLYCARBONATES**  
Thomas H. Cleveland, New Martinsville, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware  
No Drawing. Filed Oct. 15, 1964, Ser. No. 404,161  
1 Claim. (Cl. 260—47)

A method for removing contaminants from high molecular weight polycarbonates by mixing the contaminated polycarbonates with a liquid inert non-solvent for the polycarbonate which is a good solvent for the contaminants and removing the contaminants with the solvent.

3,410,824

**LIGHT SENSITIVE RESIN FROM A DIHYDROXY CHALCONE AND AN EPOXY PREPOLYMER**  
Ralph B. Atkinson, Coast Rte., Monterey, Calif. 93940  
No Drawing. Filed Mar. 19, 1965, Ser. No. 441,377  
8 Claims. (Cl. 260—47)

Resins formed from the reaction of epichlorhydrin or an epoxy prepolymer and a dihydroxy chalcone and useful as light sensitive resins.

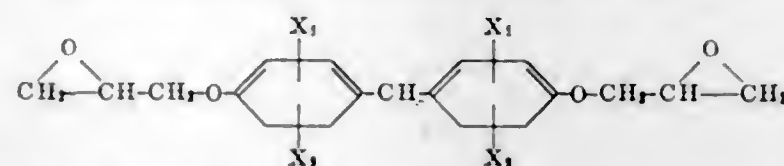
3,410,825

**BIS(p - (2,3 - EPOXYPROPOXY)PHENYL)POLYCYCLIC SATURATED HYDROCARBONS AND SYNTHETIC RESINOUS POLYETHERS THEREOF**

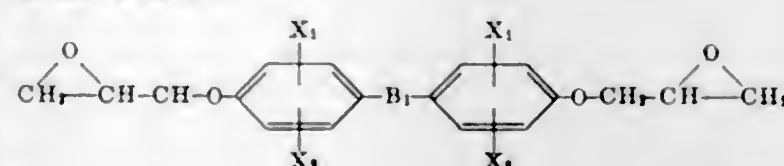
Harry W. Coover, Jr., and Richard L. McConnell, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
No Drawing. Continuation-in-part of application Ser. No. 480,774, Aug. 18, 1965. This application Feb. 27, 1967, Ser. No. 619,035

The portion of the term of the patent subsequent to Jan. 17, 1984, has been disclaimed  
13 Claims. (Cl. 260—47)

New compounds are provided having the formula:



or the formula:



in which A is a nuclearly attached monovalent radical having two, three or four fused rings, each ring consisting of five carbon atoms connected by single bonds and in which B<sub>1</sub> is a nuclearly attached divalent radical having three or four fused rings, each ring consisting of five carbon atoms connected by single bonds and X<sub>1</sub> and X<sub>2</sub> are each hydrogen, methyl or halogen.

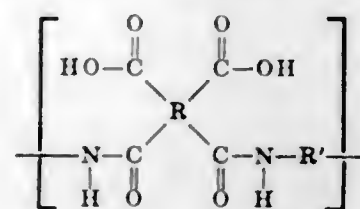
Also, there are provided new synthetic resinous polyethers composed essentially of recurring units derived from at least one of the above compounds and which may include copolymers wherein the comonomer is a known bisphenol or bifunctional glycol. The copolymers can be random or block copolymers.

3,410,826

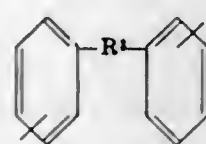
**PROCESS FOR PREPARING SHAPED ARTICLES FROM POLYAMIDE ACIDS BEFORE CONVERTING TO INSOLUBLE POLYIMIDES**  
Andrew L. Endrey, Parma, Ohio, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Continuation of application Ser. No. 331,354, Dec. 18, 1963. This application Apr. 10, 1967, Ser. No. 629,816

13 Claims. (Cl. 260—47)

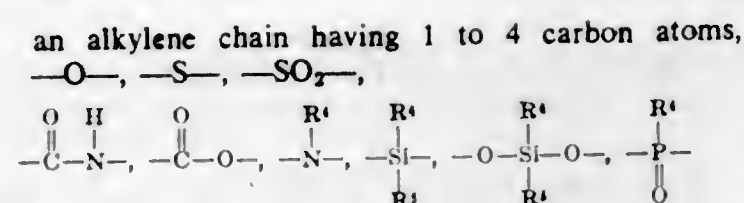
1. In a process in which an organic solvent solution of a polyamide-acid having recurring units of the formula:



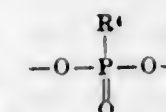
wherein R' is selected from the group consisting of phenylene, naphthylene, biphenylene, anthrylene, furylene, benzofurylene and



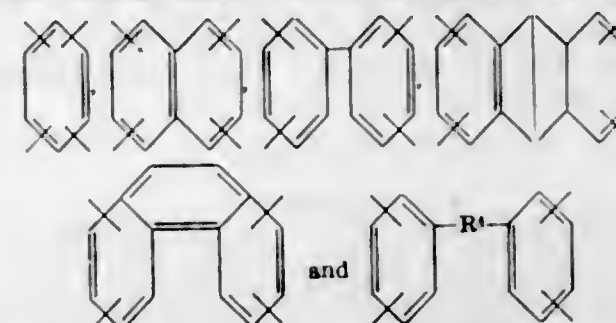
wherein R<sup>3</sup> is selected from the group consisting of



and



wherein R<sup>4</sup> and R<sup>5</sup> are selected from the group consisting of alkyl and aryl, and wherein R is a tetravalent radical selected from the group consisting of



wherein R<sub>6</sub> is selected from the group consisting of R<sup>3</sup> and



is provided and is formed into a shaped article, and thereafter the temperature of said article is raised and said polyamide-acid in said article is converted to polyimide, the improvement comprising adding to said solution of polyamide-acid at a temperature below 15° C. a dehydrating agent capable of converting the polyamide-acid in the solution to the corresponding polyimide at a temperature above 15° C., maintaining the resulting polyamide-acid solution below 15° C. until it has been shaped to said article, and thereafter heating said article to above 15° C., to convert the polyamide-acid therein to polyimide.

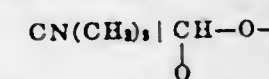
3,410,827

**LINEAR POLYMER OF β-CYANO-PROPIONALDEHYDE**

Hiroshi Sumitomo, Osaka, Japan, assignor to Ajinomoto Co., Inc., Tokyo, Japan  
Filed Apr. 11, 1966, Ser. No. 541,728  
Claims priority, application Japan, Apr. 12, 1965, 40/21,189

3 Claims. (Cl. 260—67)

A linear polymer of β-cyanopropionaldehyde having repeating units of the formula



connected by acetal linkages, and a process for preparing the same by a Lewis acid or organometallic compound of Group I-IV metals initiator. The new polymer is useful as the basic component of molding compositions.

3,410,828

**ACROLEIN-N-VINYL PYRROLIDONE COPOLYMER AND CATIONIC DERIVATIVE PAPER WET-STRENGTH AGENTS**

George T. Kekish, Chicago, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 489,395, Sept. 22, 1965, which is a continuation-in-part of application Ser. No. 281,040, May 16, 1963. This application Nov. 23, 1966, Ser. No. 596,404  
21 Claims. (Cl. 260—67.5)

This invention relates to novel wet strength agents comprising water-soluble copolymers of monomers such

as acrolein and n-vinyl pyrrolidone prepared by carrying out the polymerization as a dilute aqueous reaction mixture containing below about 10% of the monomers during at least one-third the period of polymerization. Also, the invention relates to cationic forms of these copolymers which have been so made cationic by reaction with an amine reactant. A specific method as set out above is also disclosed.

3,410,829

**PREPARATION OF HIGHLY POLYMERIC POLYESTERS IN THE PRESENCE OF TITANIUM IODATES**

Lambert Gaston Jeurissen, Mortsels-Antwerp, and André Jan Conix, Antwerp, Belgium, assignors to Gevaert-Agfa N.V., Mortsels, Belgium, a Belgian company  
No Drawing. Filed Mar. 10, 1966, Ser. No. 533,242  
Claims priority, application Great Britain, Mar. 11, 1965, 10,410/65

6 Claims. (Cl. 260—75)

Highly polymeric polyesters are obtained from an aromatic dicarboxylic acid or an ester-forming derivative thereof and a glycol by (I) forming a glycol di-carboxylate from the above-mentioned starting materials, and (II) polycondensing the glycol di-carboxylate in the presence of a titanium iodate.

3,410,830

**POLYMERS FROM POLYMERIZED UNSATURATED MATERIALS AND POLYISOCYANATOBIURETS**

Isaac Goodman and John Edward Martin, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain  
No Drawing. Filed July 8, 1966, Ser. No. 563,725  
Claims priority, application Great Britain, July 15, 1965, 30,066/65

6 Claims. (Cl. 260—77.5)

Cross-linkable compositions comprising a polymer having active hydrogen atoms and polyisocyanatobiuret of a polymethylene diamine. The polymer is preferably a copolymer of ethylene and acrylamide or methacrylamide. The compositions can be shaped by heating to a temperature at which the polymer is in the fluid state, shaping and subsequently heating the shaped article at 150° to 220° C.

3,410,831

**ANIONIC PROCESS FOR PREPARING REINFORCED POLYLACTAM IN THE PRESENCE OF A COUPLING AGENT AND A TETRAALKYL ORTHOSILICATE**

Ross M. Hedrick and Paul A. Tierney, St. Louis, Mo., assignors to Monsanto Company, a corporation of Delaware  
No Drawing. Filed Feb. 10, 1964, Ser. No. 343,506  
12 Claims. (Cl. 260—78)

1. A process for preparing reinforced polylactam comprising conducting a base-catalyzed, substantially anhydrous polymerization of a lactam in the presence of an inorganic reinforcing agent, a coupling agent containing at least one group capable of reacting with the lactam during polymerization and at least one group capable of reacting with said inorganic reinforcing agent, and a tetraalkyl orthosilicate.

3,410,832

**PROCESS FOR THE COPOLYMERIZATION OF LAURIC LACTAM AND CAPROLACTAM**

Wolfgang Griehl and Siegfried Schaaf, Chur, Switzerland, assignors to Inventa A.G. für Forschung und Patentverwaltung, Zurich, Switzerland  
No Drawing. Filed Jan. 29, 1965, Ser. No. 429,129  
Claims priority, application Switzerland, Jan. 30, 1964, 1,069/64

1 Claim. (Cl. 260—78)

A process for the production of polyauric lactam capa-







3,410,846

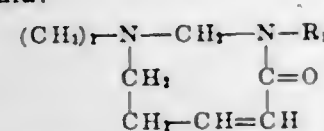
**7-DIMETHYLAMINO-5,6,7,8-TETRAHYDRO-2(1H)-AZOCINONES**

Leo A. Paquette, Columbus, Ohio, assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Application July 16, 1964, Ser. No. 383,238, now Patent No. 3,320,238, dated May 16, 1967, which is a continuation of application Ser. No. 307,370, Sept. 9, 1963. Divided and this application Jan. 20, 1967, Ser. No. 624,108

3 Claims. (Cl. 260—239.3)

This invention relates to certain organic intermediates having the formula:



wherein R<sub>1</sub> is hydrogen or lower alkyl, quaternary ammonium and acid addition salts thereof. These intermediates are useful in preparing compounds which are insecticides, pickling inhibitors, surfactants, catalysts, bacteriostatic and bactericidal agents and form salts with penicillins which are useful for isolation and purification of the penicillins.

3,410,847

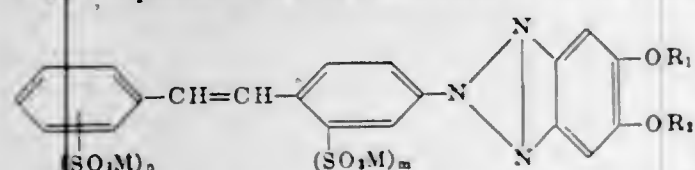
**4-(5,6-DI-SUBSTITUTED OXY BENZOTRIAZOLE-2-YL) STILBENESULFONIC ACID BRIGHTENERS AND METHODS FOR MAKING SAME**

Albert F. Strobel, Delmar, and Sigmund C. Catino, Castleton, N.Y., and Leon Katz, Springfield, N.J., assignors to GAF Corporation, a corporation of Delaware

No Drawing. Filed Feb. 9, 1965, Ser. No. 431,442

6 Claims. (Cl. 260—240)

1. A compound of the free acid form of the formula:



wherein R<sub>1</sub> and R<sub>2</sub> are carboxy lower alkyl; m and n have values from 0 to 1 and the sum of m and n is at least 1; M is a member selected from the group consisting of hydrogen and a salt-forming cation.

3,410,848

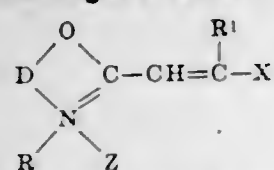
**2-(β-HALO)-VINYL-3-ALKYL AZOLIUM COMPOUNDS**

Emil B. Rauch, Port Dickinson, and John A. Welsh, Binghamton, N.Y., assignors to GAF Corporation, a corporation of Delaware

No Drawing. Filed July 13, 1965, Ser. No. 471,723

9 Claims. (Cl. 260—240)

1. A compound having a structure



wherein D is an ortho divalent arylene group selected from the class consisting of phenylene, naphthylene, mono- and dialkyl-phenylene, of which the alkyl groups contain 1 to 8 carbon atoms, chlorophenylene, phenyl-phenylene and 2<sup>1</sup>-thienyl phenylene, the substituents of mono-substituted phenylene groups occupying the 5-position of the resultant benzoxazole nucleus and the alkyl groups of the dialkyl phenylene group occupying the 5- and 6-positions of the resultant benzoxazole nucleus; X is a halogen selected from the group consisting of chlorine and bromine; R is an alkyl group of 1 to 3 carbon atoms; R<sup>1</sup> is a radical selected from the group consisting of chloromethyl, alkyl of 1 to 17 carbon atoms, phenyl, chlorophenyl, tolyl and naphthyl; and Z is an

anion selected from the group consisting of Cl<sup>-</sup>, Br<sup>-</sup>, I<sup>-</sup>, SO<sub>4</sub>CH<sub>3</sub><sup>-</sup>, SO<sub>4</sub>C<sub>2</sub>H<sub>5</sub><sup>-</sup>, and SO<sub>3</sub>C<sub>6</sub>H<sub>4</sub>CH<sub>3</sub><sup>-</sup>.

3,410,849

**PHENOTHIAZINE DERIVATIVES**

Jany Renz, Basel, Jean-Pierre Bourquin, Magden, and Gustav Schwarb, Allschwil, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Nov. 21, 1966, Ser. No. 595,579

Claims priority, application Switzerland, Nov. 23, 1965, 16,100/65; Aug. 3, 1966, 11,199/66

8 Claims. (Cl. 260—243)

3-(lower)alkylmercapto-10-(dialkylaminopropionyl)phenothiazines and their pharmaceutically acceptable salts are anti-depressants.

3,410,850

**4H-PYRAZINO-[2,3d][1,3]OXAZIN-4-ONES AND THEIR PREPARATION**

Edward J. Cragoe, Jr., and John B. Bicking, Lansdale, Pa., assignors to Merck &amp; Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 357,256, Apr. 3, 1964. This application Nov. 22, 1965, Ser. No. 509,217

10 Claims. (Cl. 260—244)

4H-pyrazino-[2,3d][1,3]oxazin-4-one compounds optionally substituted in positions 2,6 and/or 7, especially useful in the synthesis of pyrazinoylguanidine or pyrazinamidoguanidine compounds, are prepared by reacting a lower alkanolic acid anhydride and a 3-aminopyrazinoic acid.

3,410,851

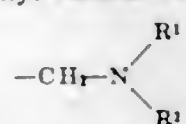
**DERIVATIVES OF FLAVONE**

Dale Adrian Stauffer, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

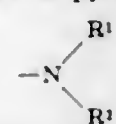
No Drawing. Continuation-in-part of application Ser. No. 306,342, Sept. 3, 1963. This application Sept. 25, 1967, Ser. No. 670,448

17 Claims. (Cl. 260—244)

A series of 3-substituted flavones in which the substituent is an aminomethyl radical of the formula



where R<sup>1</sup> and R<sup>2</sup> may each be hydrogen, lower alkyl, aralkyl, arylhydroxyalkyl or pyridyl and



may be a nitrogen heterocycle are useful as anti-convulsant, analgetic and bronchodilator agents.

3,410,852

**PROCESS FOR PREPARING 3,4-DIHYDRO-2,4-DIOXO-2H-PYRIDO[2,3-e][1,3]OXAZINE**

Niels Clauson-Kaas, Farum, Denmark, and Rolf Denss, Basel, Frank Ostermayer, Riehen, and Ernst F. Renk, Basel, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Application Sept. 18, 1963, Ser. No. 310,191, now Patent No. 3,245,998, dated Apr. 12, 1966, which is a continuation-in-part of application Ser. No. 236,712, Nov. 9, 1962. Divided and this application Feb. 7, 1966, Ser. No. 559,010.

Claims priority, application Switzerland, Nov. 14, 1961, 13,217/61; Sept. 26, 1962, 11,346/62, 11,347/62

7 Claims. (Cl. 260—244)

3,4-dihydro-2,4-dioxo-2H-pyrido[2,3-e][1,3]oxazine (I) is prepared from 5-(2'-furyl)-hydantoin (II) by the action thereon of an oxidizing agent (Cl, Br,

etc.) in an acid, aqueous reaction medium. Compound I is an intermediate for the preparation of 3-hydroxypicolinic acid amide of high purity and, via the latter, for the preparation of 2H-pyrido[2,3-e][1,3]oxazine-2,4-(3H)-dione which is useful as an analgetic, antipyretic and antiphlogistic.

3,410,853

**FLUORINATED OXO-COMPOUNDS**

Robert J. Kosbar, Lincoln Township, Washington County, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Mar. 15, 1963, Ser. No. 267,381

6 Claims. (Cl. 260—248)

2. Perfluoro N-aminomethyl-N'-diaminomethylurea.  
4. Perfluoro 2-oxohexahydro-1,3,5-triazine.

3,410,854

**PRODUCTION OF TRIS(2-HYDROXYALKYL) ISOCYANURATE**

Rob Roy MacGregor and George Robert Muller, Hopewell, and William Percy Moore, Chester, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Dec. 14, 1964, Ser. No. 417,901

3 Claims. (Cl. 260—248)

A continuous process of preparing tris(2-hydroxyethyl) isocyanurate which includes the preparing of a slurry mixture of cyanuric acid and dimethyl formamide having a pH ranging from about 4.75 to 5.6, and adding said slurry with ethylene oxide to a reactor zone. Tris(2-hydroxyethyl) isocyanurate is an intermediate useful in the production of polyester adducts, synthetic resins, foams and the like.

3,410,855

**TRISAMINO-s-TRIAZINES**

Denis Varsanyi, Arlesheim, and Willy Roth, Strengelbach, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Continuation-in-part of applications Ser. No. 421,693, Dec. 28, 1964, and Ser. No. 560,855, June 27, 1966. This application June 12, 1967, Ser. No. 645,467

Claims priority, application Switzerland, Dec. 31, 1963, 16,070/63

18 Claims. (Cl. 260—249.6)

Trisamino-s-triazine derivatives in which one of the three amino groups is substituted by a radical —Q—Y in which Q is an alkylene or alkenylene radical and Y represents a hydrophilic substituent, which derivatives are useful as waxy components in surface treating agents.

3,410,856

**INTERMEDIATES AND PROCESS FOR PREPARING VITAMIN B<sub>6</sub>**

Elbert E. Harris, Westfield, and Peter I. Pollak, Scotch Plains, N.J., assignors to Merck &amp; Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,332

10 Claims. (Cl. 260—270)

4-methyl-5-cyano-(or hydrocarbonoxy)oxazole is reacted with a cyclic ester derivative of 2-butene-1,4-diol to produce novel cyclic pyridoxol intermediates which upon hydrolysis yield pyridoxol (vitamin B<sub>6</sub>).

3,410,857

**2-AMINO ETHYL PYRROL-3-YL KETONES**

Karl Schoen, Kew Gardens, and Irwin J. Pachter, Woodbury, N.Y., assignors to Endo Laboratories Inc., Garden City, N.Y., a corporation of New York

No Drawing. Filed Oct. 12, 1964, Ser. No. 403,387

16 Claims. (Cl. 260—294.7)

Novel 2-amino ethyl pyrrol-3-yl ketones are disclosed which are useful as tranquilizers and anti-depressants.

3,410,858

**ESTERS OF SULFONIC ACIDS CONTAINING QUATERNARY AMMONIUM GROUPS AND PROCESS FOR THE PREPARATION THEREOF**

Calvin L. Stevens, Bloomfield Hills, Mich., Harry O. Michel, Towson, Md., Arthur B. Ash, Detroit, Mich., Joseph Epstein, Baltimore, Md., Peter Blumbergs, Oak Park, Mich., and Brennie E. Hackley, Jr., Joppa, Md.; said Michel, said Epstein, and said Hackley assignors to the United States of America as represented by the Secretary of the Army, said Stevens, said Ash, and said Blumbergs assignors to Ash Stevens, Inc., Detroit, Mich., a corporation of Michigan

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,175

18 Claims. (Cl. 260—294.8)

The preparation of new compounds is described, salts of alkyl esters of organic sulfonic acids containing quaternary amine cationic groups. They are prepared by the reaction of a dialkyl sulfate with an amine-containing or quaternary amine salt-containing sulfonic acid, a sultane. The preparation of the aforementioned sulfonic acids is also described.

3,410,859

**2-ARYL-1,3-DI(4-PYRIDYL)-2-PROPANOLS**

Bernard Brust, Parsippany, Troy Hills, Rodney Ian Fryer, North Caldwell, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 465,764, June 21, 1965. This application June 28, 1967, Ser. No. 649,477

17 Claims. (Cl. 260—294.8)

Novel pharmacologically active 2-aryl-1,3-di(4-pyridyl)-2-propanols are prepared inter alia by the reaction of a picolyl metal compound and a benzoyl halide or a benzoic acid ester.

3,410,860

**ISOXAZOLES**

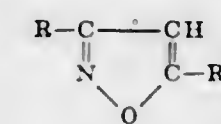
Raphael Ralph G. Haber, Givatayim, and Eva Schoenberger, Bat Yam, Ramat Yosef, Israel, assignors to Abic Limited, a corporation of Israel

No Drawing. Filed Mar. 26, 1965, Ser. No. 443,172

Claims priority, application Israel, Apr. 5, 1964, 21,104

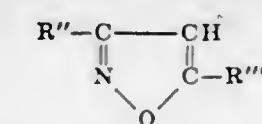
13 Claims. (Cl. 260—296)

New isoxazoles of the formula



wherein R and R' are each a member selected from the group consisting of lower alkyl, lower haloalkyl, phenyl, halophenyl, lower alkyl-substituted phenyl, nitrophenyl, lower alkoxyphenyl, thienyl, pyridyl, furyl, and 5'-nitro-furyl, at least one of these substituents R and R' being a 5'-nitrofuryl radical, are prepared:

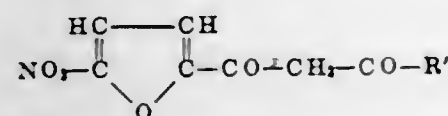
(1) by nitrating a compound of the formula



wherein R'' and R''' are each a member selected from the group consisting of lower alkyl, lower haloalkyl, phenyl, halophenyl, lower alkyl-substituted phenyl, nitrophenyl, lower alkoxyphenyl, thienyl, pyridyl, furyl and 5'-nitrofuryl, at least one of these substituents R'' and R''' being a furyl radical; or



(2) by reacting a 1-(5'-nitrofuryl)-1,3-diketopropane derivative of the formula



in which R' is a member selected from the group consisting of lower alkyl, lower haloalkyl, phenyl, halo-phenyl, lower alkyl-substituted phenyl, nitrophenyl, lower alkoxyphenyl, thienyl, pyridyl, furyl and 5'-nitro-furyl, with hydroxylamine or one of its salts. The compounds show excellent antibacterial and antifungal activity, particularly against *Staph. aureus*.

3,410,861

#### PRODUCTION OF BETA-(2- OR 4-PYRIDYL ALKYL)-AMINES

Chester M. McCloskey, Azusa, Calif., assignor to Unimed, Inc., Morristown, N.J.  
No Drawing. Filed Aug. 17, 1965, Ser. No. 480,489  
4 Claims. (Cl. 260-296)

The present invention relates to a commercially practical method of producing beta-(2- or 4-pyridyl alkyl)-amines in high yield by reaction of a lower alkyl primary amine acid addition salt with vinylpyridine in aqueous medium.

3,410,862

#### PYRIDOXINE SYNTHESIS

Janos Kollonitsch, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey  
No Drawing. Filed Oct. 6, 1965, Ser. No. 493,557  
3 Claims. (Cl. 260-297.5)

Esters or the anhydride of 2-methyl-3-hydroxy-4,5-bis(carboxy)pyridine are reduced to pyridoxine (vitamin B<sub>6</sub>) by reaction with an alkaline earth borohydride in tetrahydrofuran.

3,410,863

#### OXADIAZOLONE COMPOUNDS

Roger Boesch, Vitry-sur-Seine, and Jean Metivier, Paris, France, assignors to Rhone-Poulenc S.A., Paris, France, a corporation of France  
No Drawing. Filed Aug. 19, 1965, Ser. No. 481,149  
Claims priority, application France, Aug. 21, 1964, 985,885  
12 Claims. (Cl. 260-307)

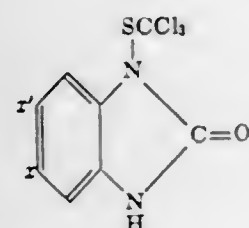
The invention provides new 3-phenylcarbamoyl-1,3,4-oxadiazol-2-ones, optionally substituted in the 5-position, which are useful in agriculture against foliar parasites.

3,410,864

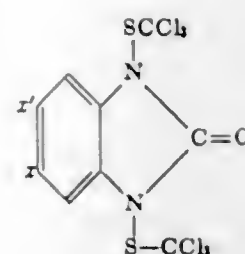
#### BENZIMIDAZOLINONES

Robert W. Radue, Webster Groves, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
No Drawing. Filed May 27, 1965, Ser. No. 459,448  
4 Claims. (Cl. 260-309.2)

This disclosure is new compounds of the formulas



and



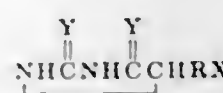
where x and x' are halogen, lower alkyl of from 1 to 5 carbon atoms, NO<sub>2</sub>, and hydrogen. The compounds are useful fungicides, bacteriocides, and insecticides.

3,410,865

#### 5-SUBSTITUTED DERIVATIVES OF DITHIOHYDANTOIN

John H. Cornell, Jr., Arlington, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware  
No Drawing. Filed Feb. 25, 1966, Ser. No. 529,921  
2 Claims. (Cl. 260-309.5)

New compounds of the formula:



where Y is sulfur, R is a bivalent hydroxy phenylene radical attached to the heterocyclic structure by means of a ring carbon atom and X is a halogen element of atomic weight below 130. 5-(5-chloro-2-hydroxyphenyl)-2,4-dithiohydantoin is exemplary of the compounds claimed. The compounds are useful as biological toxicants, bactericides and mammalian toxicants.

3,410,866

#### ISOCYANATES OF SELECTED FLUORO-ALKYLIMIDAZOLINES

William J. Middleton, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 521,317, Feb. 9, 1966, which is a continuation-in-part of application Ser. No. 461,151, June 3, 1965, which is a continuation-in-part of abandoned application Ser. No. 439,476, Mar. 12, 1965. This application Apr. 15, 1966, Ser. No. 542,751  
4 Claims. (Cl. 260-309.6)

Described and claimed are isocyanates of fluoro-alkylimidazolines, e.g., 4-isocyanato-2,2,5,5-tetrakis(trifluoromethyl)-3-imidazoline, useful for modifying polymers and as agents for waterproofing paper. The compounds are prepared from oxalyl chloride and the corresponding 4-amino-3-imidazoline or its tautomer.

3,410,867

#### MITOMYCIN DERIVATIVES

Masano Matsui, Yasuhiro Yamada, and Shigetoshi Wakaki, Tokyo, and Keizo Uzu, Shizuoka-ken, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan  
Filed Nov. 22, 1965, Ser. No. 509,107  
8 Claims. (Cl. 260-326.3)

Phosphorus-containing derivatives of mitomycin C and a process for the preparation thereof which comprises reacting mitomycin C with the reaction product of phosphorus oxychloride and monoethanolamine. The resultant derivatives show anti-tumor properties in animals and also exhibit antibacterial activity.

#### 3,410,868 POLYCARBOXYTHIANTHRENE TETROXIDES

Melvin Harris, Kilchberg, Zurich, Switzerland, assignor, by mesne assignments, to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
No Drawing. Filed Aug. 13, 1965, Ser. No. 479,606  
14 Claims. (Cl. 260-327)

Thianthrene tetracarboxylic acid-5,5,10,10-tetroxides are prepared by the nitric acid oxidation of the corresponding tetraalkylthianthrene-5,5,10,10-tetroxides. The thianthrene tetracarboxylic acid-5,5,10,10-tetroxides are esterifiable to the corresponding esters and can be dehydrated to form the corresponding dianhydrides. The compounds are useful either as chemical intermediates in producing valuable chemical compounds such as polymers, adhesives, plasticizers and dyes or per se in applications such as plasticizers or curing agents.

3,410,869

#### TRIS-MERCAPTO-S-TRIOXANES AND TRITHANES

Elliot Bergman, Modesto, Calif., and William De Acetis, New York, N.Y., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 284,365, May 31, 1963. This application Oct. 17, 1966, Ser. No. 586,960  
10 Claims. (Cl. 260-327)

Disclosed in the application are new polymercaptans comprising heterocyclic compounds substituted in at least three different places on the ring with radicals containing a mercapto group, such as a tris(mercaptoalkyl) trioxane. Also disclosed are methods for making the new compounds by forming a thioester of the corresponding poly(chloroalkyl) compound and reacting it with ammonia, or by reacting the chloroalkyl compound with sodium bisulfide under hydrogen sulfide pressure. Uses of the new polymercaptans, particularly as curing agents for epoxy resins, are also disclosed.

3,410,870

#### DIFLUORAMINO COMPOUNDS AND METHOD OF PREPARING SAME

Robert K. Armstrong, Glassboro, and James A. Patterson, Carney's Point, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Filed Jan. 8, 1962, Ser. No. 165,723  
7 Claims. (Cl. 260-338)

1. A process for the manufacture of 2,3-bis(difluor-amino)-1,4-butanediol dinitrate which comprises  
(a) reacting 4,7-dihydro-1,3-dioxepin with N<sub>2</sub>F<sub>4</sub>,  
(b) distilling the 5,6-bis(difluor-amino)-1,3-dioxepane from the mixture,  
(c) nitrating the 5,6-bis(difluor-amino)-1,3-dioxepane with an acid mixture containing nitric acid,  
(d) extracting 2,3-bis(difluor-amino)-1,4-butanediol dinitrate from the mixture with a solvent therefor,  
(e) distilling to recover 2,3-bis(difluor-amino)-1,4-butanediol dinitrate.  
7. 5,6-bis(difluor-amino)-1,3-dioxepane.

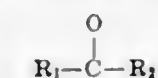
3,410,871

#### PROCESS FOR THE PREPARATION OF 1,3-DIOXEP-5-ONES

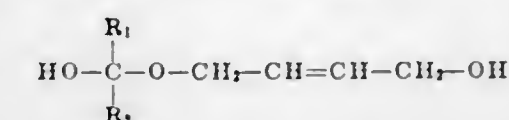
August Sturzenegger and Joseph J. Zelauskas, Cedar Grove, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey  
No Drawing. Filed Apr. 2, 1965, Ser. No. 445,255  
5 Claims. (Cl. 260-338)

A process, including novel intermediates, for the preparation of known 2-R<sub>1</sub>,R<sub>2</sub>-1,3-dioxep-5-ones which com-

prises (1) condensing 2-butene-1,4-diol and a compound of the formula



to form an intermediate of the formula



and (2) subsequently dehydrating the latter compound to form the desired dioxep-5-ones, is described. As used above, R<sub>1</sub> and R<sub>2</sub> are hydrogen, lower alkyl, lower alkenyl or phenyl, or taken together, are lower alkylene.

3,410,872

#### B-HOMO-19-NOR-PREGNENE-3,20-DIONES AND DERIVATIVES THEREOF

John A. Edwards, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama  
No Drawing. Filed July 19, 1965, Ser. No. 473,239  
21 Claims. (Cl. 260-340.5)

Novel B-homo-19-nor-21-unsubstituted-Δ<sup>4</sup> and Δ<sup>5(10)</sup>-pregnene-3,20-diones and B-homo-19-nor-21-unsubstituted-Δ<sup>4,9(10)</sup>-pregnadiene-3,20-diones useful as progestational agents.

3,410,873

#### B-HOMO-19-NOR-PREGNENE, 3,20-DIONES AND DERIVATIVES THEREOF

John A. Edwards, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama  
No Drawing. Filed July 23, 1965, Ser. No. 474,467  
21 Claims. (Cl. 260-340.5)

Novel B-homo-19-nor-Δ<sup>4</sup> and Δ<sup>5(10)</sup>-pregnene-3,20-diones and B-homo-19-nor-Δ<sup>4,9(10)</sup>-pregnadiene-3,20-diones useful as anti-inflammatory agents.

3,410,874

#### A-HOMO-Δ<sup>1,4,5(10)</sup>-ESTRADIEN-3-ONES AND THEIR PREPARATION

Arthur J. Birch, Manchester, England, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama  
No Drawing. Continuation-in-part of application Ser. No. 302,719, Aug. 13, 1963. This application Mar. 7, 1966, Ser. No. 532,089  
Claims priority, application Mexico, Mar. 14, 1963, 71,258  
18 Claims. (Cl. 260-345.9)

A-homo-Δ<sup>1,4,5(10)</sup>-estradien-3-one steroids having a keto group at C-17 or hydroxy, acyloxy, tetrahydrofuran-2-yl, or tetrahydropyranyloxy at C-17β and hydrogen, lower alkyl, lower alkenyl, or lower alkynyl at C-17α which compounds are useful as anabolic agents having anti-gonadotrophic and antibrillatory properties and in fertility control, lowering of blood cholesterol levels, relieving premenstrual tension, and diminishing the output of the pituitary gland and the preparation of such compounds.

3,410,875

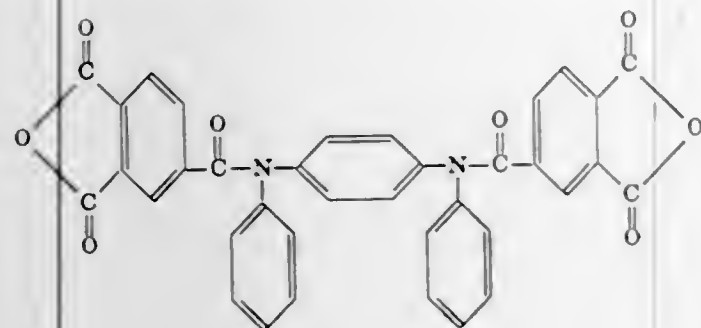
#### N,N'-DIPHENYL-PARA-PHENYLENE-BIS-(TRIMELLITAMIDE)-DIANHYDRIDE

Fred F. Holub, Scotia, N.Y., assignor to General Electric Company, a corporation of New York  
Original application Mar. 17, 1965, Ser. No. 440,387. Divided and this application June 8, 1967, Ser. No. 655,974  
1 Claim. (Cl. 260-346.3)

N,N'-diphenyl-p-phenylenediamine is reacted with 4-



chloro-formyl phthalic anhydride to produce a dianhydride of the formula



These dianhydrides are reacted with aromatic diamines to form completely aromatic polyimide polymers which show good heat stability and are useful as insulation on copper wires, aluminum wires, etc., and as laminating resins for glass cloth and metal, for high temperature coating materials, etc.

3,410,876

**PROCESS FOR THE PREPARATION OF CERTAIN DIANHYDRIDES WHICH COMPRISES BRINGING INTO REACTIVE CONTACT UNDER AN ATMOSPHERE OF NITRIC OXIDE AT ELEVATED TEMPERATURE MALEIC ANHYDRIDE AND A VINYL BENZENE MATERIAL HAVING NOT MORE THAN TWO VINYL GROUPS WHEREBY THE CORRESPONDING DIANHYDRIDE IS OBTAINED**

Roland Ralph Di Leone, Rowayton, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine  
No Drawing. Continuation-in-part of applications Ser. No. 266,081, Mar. 18, 1963; Ser. No. 440,292, Mar. 16, 1965; and Ser. No. 442,209, Mar. 23, 1965. This application Aug. 26, 1966, Ser. No. 575,240  
6 Claims. (Cl. 260-346.6)

A process for the preparation of dianhydrides which comprises bringing into reactive contact under an atmosphere of nitric oxide at a temperature between about 30° C. and 150° C. maleic anhydride and a vinyl benzene material selected from the group consisting of styrene and ring substituted alkyl styrenes having in the alkyl substituent from 1 to 7 carbon atoms and a divinyl benzene whereby the corresponding dianhydride is obtained.

3,410,877

**PROCESS FOR THE PREPARATION OF 2,3-DICHLORO-5,6-DICYANOBENZOQUINONE**  
Derek Walker, Boulder, Colo., assignor, by mesne assignments, to Syntex Corporation, Panama, Panama, a corporation of Panama  
No Drawing. Filed Jan. 8, 1964, Ser. No. 336,598  
18 Claims. (Cl. 260-396)

1. A process for producing 2,3-dichloro-5,6-dicyanobenzquinone which comprises mixing together and intimately contacting 2,3-dicyanohydroquinone and an oxidizing agent in the presence of at least 1.5 times the stoichiometric requirement of chloride ion in an aqueous medium having an acid strength of at least 0.5 normal at temperatures of from about 0° to about 100° C., wherein in the foregoing process, the oxidizing agent employed during the course of the reaction is in an amount sufficient to supply at least the stoichiometric requirement thereof and is selected from the group consisting of nitric acid, dinitrogen tetroxide, nitrogen dioxide, manganese dioxide, lead oxide, nitrates, bromates, permanganates, dichromates, nitric oxide-oxygen and nitric oxide-air.

3,410,878

**PREPARATION OF QUINOL ETHERS**  
Hans-Dieter Becker, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York  
No Drawing. Filed Apr. 1, 1964, Ser. No. 356,653  
16 Claims. (Cl. 260-396)

The free radical, obtained by reacting active manganese dioxide with 2,4,6-trisubstituted hindered phenols, is reacted with a monohydric phenol, in the presence of the active manganese dioxide, to produce quinol ethers in a single step reaction. The quinol ethers so produced are a convenient source of free radicals when heated or they can be used as polymerization inhibitors for ethylenically unsaturated monomers.

3,410,879

**PROCESS FOR PREPARING GONAHEXAENES**  
Herchel Smith, Wayne, Gordon Alan Hughes, Haverford, and Robert Conrad Smith, Jr., King of Prussia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 544,682, Apr. 25, 1966. This application Apr. 12, 1967, Ser. No. 630,212  
5 Claims. (Cl. 260-397.45)

This invention is concerned with a process of preparing gona - 1,3,5(10),6,8,14 - hexaene by contacting a gona - 1,3,5(10),8,14 - pentaene with an oxidizing catalyst in a reaction-inert solvent in the presence of a hydrogen acceptor at a temperature range of about 100° C. to about 180° C. for a period of about a half hour to about twenty hours. The gona - 1,3,5(10),6,8,14 - hexaenes prepared by the process of this invention are useful in the preparation of gona - 1,3,5(10),6,8 - pentaene steroids which are useful as estrogenic agents.

3,410,880

**N-TRIALKYLAMMONIUM IMIDES OF HIGHER FATTY ACIDS**  
Peter Brocklehurst, Harden, near Bingley, England, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio  
No Drawing. Filed Oct. 30, 1963, Ser. No. 319,953  
4 Claims. (Cl. 260-404.5)  
1. N-(trimethylammonium)caprinide.

3,410,881

**PROCESS FOR SYNTHESIZING SPECIFIC COMPLETE MIXED POLYOL ESTERS**  
James B. Martin, Hamilton, and Robert A. Volpenheim, Green Township, Hamilton County, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio  
Continuation-in-part of application Ser. No. 405,408, Oct. 21, 1964. This application Feb. 18, 1965, Ser. No. 438,820  
11 Claims. (Cl. 260-404.8)

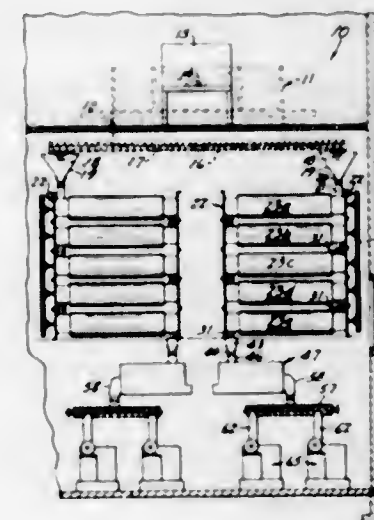
Reacting a partial polyol monocarboxylic acid ester with a molar excess of acidic lipid anhydride in the presence of a perchloric acid catalyst to produce specific complete mixed polyol ester with substantially no ester group rearrangement occurring during reaction. Reacting a molar excess of oleic anhydride with 1,3-diglyceride in the presence of a perchloric acid catalyst to produce synthetic cocoa butter.

3,410,882

**PROCESS AND APPARATUS FOR CONTINUOUS RENDERING OPERATIONS**  
Christian D. Macy, Jean A. Burton, and Robert E. Laugen, Austin, Minn., assignors to Geo. A. Hormel & Company, Austin, Minn., a corporation of Delaware  
Filed Dec. 9, 1963, Ser. No. 328,865  
6 Claims. (Cl. 260-412.6)

Process and apparatus for continuously rendering fat from adipose tissue including a plurality of horizontally

oriented vertically spaced apart inter-connected chambers through which the animal matter to be rendered flows. The chambers being heated to a temperature within a range of 210° F. to 280° F. and each having agitating means therein to cause the animal matter to be impinged



against the inner cylindrical surfaces therein. Gate means within each chamber partially obstructing the interior of each chamber and thereby retaining a predetermined volume of animal matter within each chamber whereby causing liquefaction of the fat and rupturing of the fat tissues and means for separating liquefaction and solid materials.

3,410,883

**TETRAMETALLOCENE METAL COMPOUNDS AND PREPARATION**  
Harold Rosenberg, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force  
No Drawing. Filed Sept. 1, 1966, Ser. No. 577,120  
10 Claims. (Cl. 260-429)

Tetraferrocenyl compounds useful in compounds requiring resistance to oxidation and radiant energy degradation having the formula  $(C_5H_5FeC_5H_5)_4M$  where M is a Group IV metal of the class consisting of Si, Ge, Sn, Sb, Pb, Hf, Zr and Ti. These compounds are made by reacting ferrocenyllithium with a halide from the above Group IV metals in a solvent medium.

3,410,884

**DIHYDROCARBON TIN MERCAPTIDES**  
Gerry P. Mack, Jackson Heights, N.Y., assignor, by mesne assignments, to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware  
No Drawing. Filed Sept. 25, 1962, Ser. No. 226,159  
6 Claims. (Cl. 260-429.7)

1. As a class of compounds, the dihydrocarbontin dialkylbenzene  $\alpha,\alpha'$ -dimercaptides.

3,410,885

**STABILIZED METHYL ARSINE OXIDE COMPOSITION**  
Arthur Schwerdtle, Vineland, N.J., assignor to Vineland Chemical Company, Vineland, N.J., a partnership  
No Drawing. Filed Mar. 3, 1966, Ser. No. 531,347  
8 Claims. (Cl. 260-440)

1. An aqueous composition of methyl arsine oxide stabilized against degradation comprising an aqueous solution of methyl arsine oxide containing dissolved therein a stabilizing amount of an hydroxy aromatic compound selected from the group consisting of benzenes and naphthalenes having at least one hydroxy group attached directly to a ring carbon atom.

3,410,886

**SI-H TO C=C OR C≡C ADDITION IN THE PRESENCE OF A NITRILE-PLATINUM (II) HALIDE COMPLEX**  
John R. Joy, Grand Island, N.Y., assignor to Union Carbide Corporation, a corporation of New York  
No Drawing. Filed Oct. 23, 1965, Ser. No. 504,051  
8 Claims. (Cl. 260-448.2)

1. A process for the production of organosilicon compounds containing silicon-carbon bonds which comprises contacting a silicon compound containing at least one hydrogen atom attached to a silicon atom per molecule, but no more than two hydrogen atoms being attached to any silicon atom in the molecule, with an aliphatic organic compound having carbon-to-carbon unsaturation but free from other functional groups reactive toward  $\equiv SiH$ , in the presence of catalytic amounts of a platinum (II) complex which is a member of the group consisting of an aryl nitrile-platinum (II) halide complex, an alkyl nitrile-platinum (II) halide complex, an alkaryl nitrile-platinum (II) halide complex, an aralkyl nitrile-platinum (II) halide complex, and a haloaryl nitrile-platinum (II) halide complex, for a time period sufficient to form a silicon-carbon bond.

3,410,887

**PROCESS FOR PREPARING ALIPHATIC ISOCYANATES**

Adnan A. R. Sayigh, North Haven, and Henri Ulrich, Northford, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware  
No Drawing. Filed Jan. 29, 1965, Ser. No. 429,144  
10 Claims. (Cl. 260-453)

Aliphatic isocyanates, e.g. alkoxyalkyl and alkylthioalkyl isocyanates, which are difficult to prepare by direct phosgenation of the corresponding amines, are obtained readily in good yield by reacting the appropriate aliphatic amine with a hydrocarbylsulfonylisocyanate and phosgenating the resulting sulfonylurea to obtain the desired aliphatic isocyanate and the hydrocarbylsulfonylisocyanate starting reactant. The aliphatic isocyanates so obtained are known compounds useful as catalysts in the preparation of sulfonylisocyanates and, in the case of the aliphatic polyisocyanates, as intermediates in the synthesis of polyurethanes.

3,410,888

**PROCESS FOR RECOVERING AROMATIC DIISOCYANATES**

Philip D. Hammond, North Haven, Conn., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware  
No Drawing. Filed May 18, 1965, Ser. No. 456,858  
3 Claims. (Cl. 260-453)

1. A process for the recovery of an aromatic diisocyanate from a reaction mass residue wherein said diisocyanate contains two phenyl nuclei and the isocyanate groups are attached to nuclear carbon atoms in different phenyl nuclei, said process comprising the steps of:

- (1) reacting the corresponding aromatic diamine with phosgene and distilling off a portion of the aromatic diisocyanate so produced,
- (2) passing the remaining residue into a second distillation vessel in which
  - (a) the residue is distributed upon the inner surface of said vessel as a thin film, and
  - (b) the film is subjected to a temperature and vacuum sufficient to evaporate the aromatic diisocyanate, and
- (3) removing as vapors from said vessel, a vapor substantially rich in aromatic diisocyanate.



3,410,889

**ALKANOATE ESTERS OF N-MERCAPTOALKYL OXYALKYL AMINES**

John C. James, Potomac, Md., Robert J. Wineman, Concord, Mass., and Morton H. Gollis, deceased, late of Brookline, Mass., by Bernard Gollis, administrator, Brookline, Mass., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware  
No Drawing. Application Nov. 24, 1964, Ser. No. 413,953, now Patent No. 3,356,730, dated Dec. 5, 1967, which is a continuation-in-part of application Ser. No. 176,409, Feb. 28, 1962. Divided and this application Oct. 27, 1967, Ser. No. 679,294

6 Claims. (Cl. 260—455)

1. The alkanate esters of compounds selected from class consisting of N-mercaptoalkyl oxyalkyl amines in which at least one of the oxy O and amino N atoms is exocyclic, containing from 1 to 2 amino N atoms, separated from other hetero atoms by at least two carbon atoms, in which the amino nitrogen substituents are selected from the class consisting of hydrogen, saturated aliphatic hydrocarbon radicals, oxyalkyl radicals, and mercaptoalkyl radicals, where alkyl is saturated aliphatic hydrocarbon, wherein said alkanate esters of said mercaptoalkyl oxyalkyl amines are esters with acids consisting of a saturated aliphatic hydrocarbon radical attached to the carboxylic function of said acids; and the acid addition salts of said alkanate esters of said amines with protonic acids; wherein each of the said saturated aliphatic hydrocarbon radicals of said compounds is hydrocarbon of up to 18 carbon atoms.

3,410,890

**METHOD OF PRODUCING COMPOUNDS OF THE VITAMIN A SERIES AND INTERMEDIATES FOR USE THEREIN**

Hendrick Evert van Geelen and Henri Pieter van Leeuwen, Van Houtenlaan, Weesp, Netherlands, assignors to North American Phillips Company, Inc., New York, N.Y., a corporation of Delaware  
No Drawing. Application May 3, 1965, Ser. No. 452,875, which is a division of application Ser. No. 107,917, May 5, 1961. Divided and this application Aug. 24, 1966, Ser. No. 627,272

Claims priority, application Netherlands, May 6, 1960, 251,315

1 Claim. (Cl. 260—464)

A step in the synthesis of vitamin A compounds wherein an imine of the vitamin A series is condensed with cyanoacetic acid or a derivative thereof to produce a nitrile carboxylic acid or a derivative thereof of the vitamin A series.

3,410,891

**NOVEL THYRONINE DERIVATIVES**

George M. K. Hughes, Waterford, and Gerald D. Laubach, Lyme, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 336,104, Jan. 7, 1964. This application Feb. 10, 1966, Ser. No. 526,340

9 Claims. (Cl. 260—471)

Derivatives of  $\beta$ -[4-(substituted phenoxy)phenyl]- $\alpha$ -(lower)alkyl substituted- $\alpha$ -alanine, and racemic, D-, L-modifications, esters, amides and salts thereof, the preparation thereof and the utility thereof as hypolipemic agents.

3,410,892

**3-ACYLOXYCYCLOBUTANONES**

James C. Martin, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 29, 1964, Ser. No. 422,047

8 Claims. (Cl. 260—476)

Ketenes are reacted with certain carboxylic acid esters of unsaturated alcohols to produce 3-acyloxy cyclobu-

tanone compounds which are useful, for example, as chemical intermediates in producing film-forming polymeric materials as well as plasticizers for vinyl resins.

3,410,893

**SULFUR-CONTAINING CARBAMATES**

Leonard Levine, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 14, 1963, Ser. No. 316,172

13 Claims. (Cl. 260—481)

A composition which is useful as a stabilizer for chlorinated hydrocarbon solvents of the formula



is made by reacting certain alkanethiols with alkyl esters of 1-aziridinyl carboxylic acids in the presence of a Lewis acid.

3,410,894

**PROCESS FOR THE PREPARATION OF AROMATIC POLYCYCLIC DIBASIC THIO-ACID SALTS AND PRODUCTS THEREOF**

William F. Wolff, Park Forest, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana  
No Drawing. Filed Aug. 31, 1965, Ser. No. 484,084

7 Claims. (Cl. 260—502.6)

Thio acid aromatic compounds and the process for their preparation which includes reacting at a temperature of about  $-20^\circ\text{C}$ . to  $-60^\circ\text{C}$ . at least one member of the group consisting of carbonyl sulfide and carbon disulfide with a liquid mixture of (I) naphthalene, anthracene and phenanthrene; (II) an alkali metal wherein the molar ratio of alkali metal to the aromatic hydrocarbons is 2:1, (III) in the presence of a sufficient amount of methyl ether to dissolve the reactants.

3,410,895

**PROCESS FOR THE PRODUCTION OF  $\alpha$ -NAPHTHALENE SULPHONIC ACID**

Ernst Graf, Neuallschwil, Basel-Land, and Alfred Rheiner, Blinningen, Basel-Land Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland  
No Drawing. Filed July 8, 1965, Ser. No. 470,582

Claims priority, application Switzerland, July 16, 1964, 9,334/64

3 Claims. (Cl. 260—505)

1. A process for the production of  $\alpha$ -naphthalene sulphonic acid, which comprises sulphonating with gaseous sulphur trioxide, at a temperature of at most  $30^\circ\text{C}$ ., naphthalene dissolved in an organic solvent selected from tetrachloroethylene and trichloroethylene, the amount of sulphur trioxide being about one mol thereof for every mol of naphthalene, said sulphur trioxide being used in the form of a mixture with a gas which is inert under the reaction conditions and recovering the resulting precipitated  $\alpha$ -naphthalene sulphonic acid before all of the naphthalene starting material has become sulphonated.

3,410,896

**PROCESS FOR THE PREPARATION OF PHENYLALANINE**

Masao Tanaka, Machida-shi, Teruo Kishi, Tokyo, and Yo Kato, Machida-shi, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan  
No Drawing. Filed Apr. 20, 1965, Ser. No. 449,643

Claims priority, application Japan, Apr. 21, 1964, 39/22,148

15 Claims. (Cl. 260—518)

A process for the preparation of phenylalanine and N-acyl and ester derivatives thereof which comprises catalytically hydrogenating an O-arylsulfonic, O-alkylsulfonic or O-sulfuric acid ester of tyrosine. The process is especially useful for preparing optically active phenylalanine

compounds such as L-phenylalanine directly from an optically active tyrosine compound.

3,410,897

**PURIFICATION OF TEREPHTHALIC ACID**

Motoo Shigeyasu, Kaise-gun, Yasuo Shimakawa, Osaka, and Kenzo Kihara, Kaise-gun, Japan, assignors to Maruzen Oil Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Oct. 12, 1964, Ser. No. 403,333

Claims priority, application Japan, Oct. 10, 1963, 38/52,745

6 Claims. (Cl. 260—525)

1. A process for the purification of terephthalic acid which comprises dissolving in an aqueous alkaline solution crude terephthalic acid obtained by the liquid phase air oxidation of a paraxylene, regulating the pH of said solution to a pH in the range of from 6.0 to 8.0 by adding acid to the solution, oxidizing said pH adjusted solution by adding potassium permanganate thereto, treating it with an ion exchange resin, and recovering said acid by adding an acid to said solution.

3,410,898

**2-ARYL-2-(CHLOROACETO) ACETAMIDES**

Angelo John Speziale, Creve Coeur, and Lowell R. Smith, Chesterfield, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed May 14, 1965, Ser. No. 455,996

10 Claims. (Cl. 260—558)

A class of 2-(chloro substituted aceto) acetamides further substituted in the 2-position thereof with phenyl or chloro substituted phenyl and wherein the amido nitrogen of which is tertiary nitrogen by virtue of having two additional substituents both of an aliphatic nature and each having from 1 to 3 carbon atoms, inclusive. These compounds are herbicidally and insecticidally active.

3,410,899

**PROCESS FOR PRODUCTION OF DEMONOMETHYLATED COLCHICINIC DERIVATIVES**

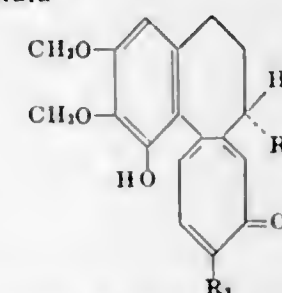
Georges Muller, Nogent-sur-Marne, Arturo Bladé, Paris, and Roland Bardoneschi, Le Vert Galant, France, assignors to Roussel—UCLAF, Paris, France, a corporation of France

No Drawing. Filed Oct. 27, 1964, Ser. No. 406,883

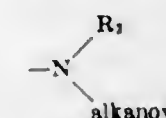
Claims priority, application France, Oct. 31, 1963, 952,436

8 Claims. (Cl. 260—562)

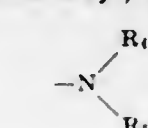
This invention relates to 1-desmethyl colchicinic derivatives of the formula



wherein  $R_1$  represents a member of the group consisting of hydrogen and



where  $R_2$  represents a member selected from the group consisting of hydrogen and lower alkyl, and  $R_3$  represents a member selected from the group consisting of lower alkoxy, thio-lower-alkyl, and



where  $R_4$  and  $R_5$  are selected from the group consisting of lower alkyl and, when taken together with the nitrogen atom, pyrrolidyl and piperidinyl, as well as to the process of preparing the compounds and to the intermediates obtained.

3,410,900

**PRODUCTION OF PHENYLHYDRAZINE**

Hubert Kindler, Ludwigshafen (Rhine), and Dominik Schuler, Mannheim, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Mar. 17, 1966, Ser. No. 535,014

Claims priority, application Germany, Mar. 20, 1965, B 81,091

8 Claims. (Cl. 260—569)

A process for the production of phenylhydrazine or salts thereof in which phenyldiazonium salts are reacted with at least a 30% excess of a sodium hydrogen sulfite reducing agent. The process produces high yields as capable of high space/time yields. Additionally, the reaction product is of high purity.

3,410,901

**1-ARYLOXY-3-[N-( $\alpha$ -METHYL- $\beta$ -HYDROXYPHEN-ETHYL)-N-METHYLAMINO]-2-PROPANOLS**

Wilhelm Kunz and Haireddin Jacobi, Monheim, Rhineland, and Konrad Koch, Dusseldorf-Urdenbach, Germany (all of 1500 Spring Garden St., Philadelphia, Pa. 19101)

No Drawing. Filed May 4, 1966, Ser. No. 547,448

Claims priority, application Germany, June 22, 1965, S 97,718

10 Claims. (Cl. 260—570.6)

1-naphthyloxy- or substituted phenoxy-3-[N-( $\alpha$ -methyl- $\beta$ -hydroxyphenethyl)-N-methylamino]-2-propanols obtained preferably by reaction of a pseudoephedrine with an arylglycide are spasmolytics.

3,410,902

**3-OXO OR OXY-1-PHENYL-1-INDANETHYLAMINES**

Marshall D. Draper, Woodland Hills, Calif., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 432,393, Feb. 12, 1965. This application Aug. 12, 1965, Ser. No. 479,273

9 Claims. (Cl. 260—570.8)

1-phenyl-1-indanethylamines having an oxo or hydroxyl radical at the 3-position and a lower alkyl, lower cycloalkyl or lower alkenyl radical substituted on the nitrogen atom and having pharmacological activity as central nervous system depressants, antipyretic agents and anticholinergic agents.

3,410,903

**PREPARATION OF ALIPHATIC AMINE OXIDES**

Paul W. Solomon, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Jan. 6, 1965, Ser. No. 423,839

8 Claims. (Cl. 260—583)

N-oxide of saturated, tertiary aliphatic amine and alcohol is prepared by reacting a saturated, tertiary aliphatic amine with hydroperoxide at a temperature in the range of from about  $20^\circ\text{C}$ . to about  $100^\circ\text{C}$ . In a now preferred embodiment, water and a primary alcohol are employed as reaction medium. Among amines and hydroperoxides are tri-n-propylamine and tertiary butyl hydroperoxide. The primary alcohol selected from a group of alcohols can be methanol, ethanol, including glycols, diols and glycerols.



3,410,904

## PRODUCTION OF TRIMETHYLAMINE

Kentle Nozaki, El Cerrito, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware  
No Drawing. Filed July 19, 1965, Ser. No. 473,241  
11 Claims. (Cl. 260—583)

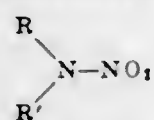
Trimethylamine is produced by reaction of ammonia, carbon monoxide and hydrogen in the presence of Group VIII-C-I-B metal-containing catalysts.

3,410,905

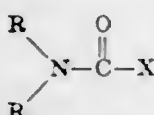
## METHOD OF PREPARING SECONDARY NITRAMINES

Maryin H. Gold, Sacramento, and Milton B. Frankel, Menlo Park, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio  
No Drawing. Original application June 26, 1964, Ser. No. 378,456. Divided and this application Feb. 6, 1967, Ser. No. 630,481  
6 Claims. (Cl. 260—583)

This patent describes a novel method of preparing secondary nitramines of the formula



which comprises reacting a dialkyl carbamyl halide of the formula

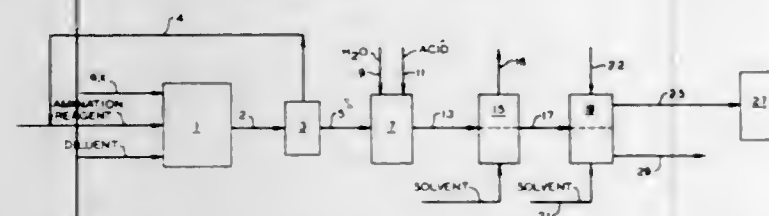


with nitric acid at a temperature from about  $-30^\circ\text{C}$ . to about  $+20^\circ\text{C}$ . wherein in the above formulae, R and R' are lower alkyl and X is halogen.

3,410,906

## PROCESS OF SEPARATING AMINES

Billy D. Simpson and Anton M. Schnitzer, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware  
Filed Oct. 15, 1965, Ser. No. 496,305  
10 Claims. (Cl. 260—585)



Saturated hydrocarbyl amines are separated from a reaction mixture comprising unreacted saturated hydrocarbyl halide, unreacted amination reagent, alcohol solvent, saturated hydrocarbyl amine, olefins, and the acid salt of the saturated hydrocarbyl amine by flashing off unreacted amination reagent, and liberating the free saturated hydrocarbyl amine product from said acid salt by dilution with water or neutralization of the acid salt of the amine product with a compound selected from the group consisting of ammonia, and low molecular weight primary, secondary, and tertiary amines.

3,410,907

## CYCLOPENTANOPHENANTHRENE DERIVATIVES AND PROCESS

John A. Edwards, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama  
No Drawing. Filed Aug. 4, 1965, Ser. No. 477,319  
20 Claims. (Cl. 260—586)

Novel B - homo-19-nor- $\Delta^4$  and  $\Delta^{5(10)}$ -androst-3 $\beta$ -ol steroids which are, inter alia, anabolic and progestational

agents and processes for the preparation of such compounds.

3,410,908

## 4-(1-HYDROXY-4-OXO-2,6,6-TRIMETHYL-2-CYCLOHEXENE-1-YL)-3-BUTENE-2-ONE

Ralph Lawrence Rowland and Donald L. Roberts, Winston-Salem, N.C., assignors to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a corporation of New Jersey  
No Drawing. Filed Mar. 14, 1966, Ser. No. 533,839  
1 Claim. (Cl. 260—587)

The compound, 4-(1-hydroxy-4-oxo-2,6,6-trimethyl-2-cyclohexene-1-yl)-3-butene-2-one is prepared by oxidation of  $\alpha$ -ionone.

3,410,909

## CATALYTIC SYNTHESIS OF KETONES FROM ALDEHYDES

Jean C. Fleischer, Jefferson Wayne Reynolds, and Howard S. Young, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
No Drawing. Filed June 27, 1966, Ser. No. 560,794  
6 Claims. (Cl. 260—593)

Process for preparing unsymmetrical ketones comprising passing at an elevated temperature at least two different aldehydes over a catalyst comprising oxidized lithium supported on activate alumina.

3,410,910

## CATALYTIC PROCESS FOR PREPARING UNSATURATED ALDEHYDES

Nicola Giordano, Giorgio Caporali, Natale Ferlazzo, and Lamberto Roberti, Milan, Italy, assignors, by mesne assignments, to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy  
No Drawing. Filed Oct. 28, 1963, Ser. No. 319,534  
Claims priority, application Italy, Oct. 31, 1962, 21,456/62  
6 Claims. (Cl. 260—604)

A process for producing acrolein or methacrolein from propylene or isobutylene, respectively, wherein a reactant gas mixture containing oxygen and the propylene or isobutylene in an oxygen/olefin molar ratio of 0.5 to 2.5 is passed over a catalyst system consisting of the tellurium salt of at least one heteropolyacid having cerium as the coordinating element and tungsten, molybdenum or vanadium as the coordinated element at a temperature of 400 to 500 $^\circ\text{C}$ . for a catalyst-contact time of 0.1 to 3 seconds.

3,410,911

## MONOETHYLTETRABORANE

Morton J. Klein and Richard G. Maguire, Chicago, Ill., assignors, by mesne assignments, to Mine Safety Appliances Company, a corporation of Pennsylvania  
No Drawing. Filed July 16, 1956, Ser. No. 598,977  
1 Claim. (Cl. 260—606.5)

1. Monoethyltetraborane.

3,410,912

1-( $\alpha$ -HYDROXY- $\beta$ -TRICHLOROETHYL)-DICYCLOPENTADIENE AND DI- AND TETRAHALO DERIVATIVES THEREOF

Herman A. Bruson, Woodbridge, and Howard L. Plant, Milford, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia  
No Drawing. Filed Oct. 4, 1965, Ser. No. 492,882  
5 Claims. (Cl. 260—617)

Derivatives of dicyclopentadiene are prepared by first reacting dicyclopentadiene with chloral in a solvent and in the presence of a Friedel-Craft catalyst to give 1-( $\alpha$ -hydroxy- $\beta$ -trichloroethyl)-dicyclopentadiene which can then be reacted with chlorine and/or bromine to form halogenated derivatives. The compounds are useful in the

preparation of polyurethane plastics and foams which are noncombustible and, in addition, they possess pesticidal and herbicidal properties.

3,410,913

## ALCOHOL MANUFACTURE

Matthew A. McMahon, Jr., Wappingers Falls, and Harry Chafetz, Poughkeepsie, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware  
No Drawing. Filed Nov. 26, 1965, Ser. No. 510,073  
4 Claims. (Cl. 260—632)

Method of producing secondary alkanols from n-paraffins comprising contacting said n-paraffins with an oxygen containing gas in the presence of trialkoxyboroxine, oxybis(dialkoxylborane) and mixtures thereof, subsequently hydrolyzing the resultant mixture, and recovering secondary alkanols therefrom.

3,410,914

## METHOD FOR HYDROLYZING NITRONITRILE-DINITROPARAFFIN MIXTURE

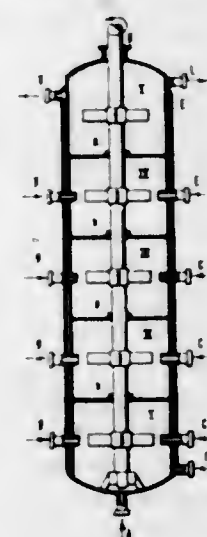
Giovanna Bonetti, Wynnewood, Pa., Chester B. De Savigny, Millington, N.J., and Conrad Michalski, Media, and Rudolph Rosenthal, Broomall, Pa., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania  
No Drawing. Continuation-in-part of application Ser. No. 347,369, Feb. 26, 1964, which is a continuation-in-part of application Ser. No. 224,731, Sept. 19, 1962. This application Jan. 17, 1967, Ser. No. 609,766  
10 Claims. (Cl. 260—632)

A method for hydrolyzing a nitronitrile-dinitroparaffin mixture to the corresponding nitroalcohol and nitroolefin utilizing a catalytic amount of base and a lower aliphatic alcohol.

3,410,915

## PROCESS FOR CONTINUOUS MANUFACTURE OF PENTAERYTHRITOL

Guido Greco, Milan, Angelo De Micheli, Saronno, and Umberto Soldano and Vittorio Bruzzi, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy  
Continuation-in-part of application Ser. No. 88,137, Feb. 9, 1961. This application May 17, 1965, Ser. No. 465,229  
Claims priority, application Italy, Feb. 18, 1960, 2,821/60  
6 Claims. (Cl. 260—635)



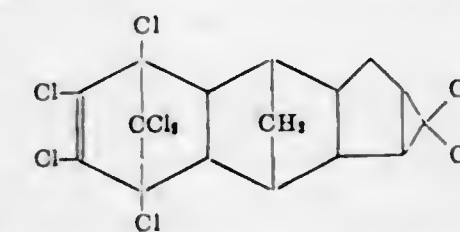
1. A process for continuous production of pentaerythritol, comprising reacting aqueous solutions of formaldehyde, acetaldehyde and sodium hydroxide, said reacting being carried out by moving the aqueous reaction mixture serially through at least two reaction zones, such zones being part of the same reactor, substantially the total formaldehyde employed being added in the first of said reaction zones, fractions of the total acetaldehyde

and the sodium hydroxide being fed with constant molar ratio of sodium hydroxide to acetaldehyde to the first and to all the other reaction zones, the total molar ratio of formaldehyde to acetaldehyde being from 4.5 to 8 of formaldehyde to one of acetaldehyde, the total and partial molar ratio of sodium hydroxide to acetaldehyde being from 1 to 1.3 of sodium hydroxide to one of acetaldehyde, the temperature in the reaction being from 40 $^\circ$  to 70 $^\circ\text{C}$ .

3,410,916

5,6,7,8,11,11,12,12 - OCTACHLORO - 2,3,3a,4,4a,5,8,8a,9,9a - DECAHYDRO - 2,3:4,9:5,8 - TRIMETHANO-1H - CYCLOPENTA(3a:9a) NAPHTHALENE  
Herman A. Bruson, Woodbridge, and Howard L. Plant, Milford, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia  
No Drawing. Filed May 31, 1966, Ser. No. 553,657  
1 Claim. (Cl. 260—648)

Molecular equivalent quantities of hexachlorocyclopentadiene and the dichlorocarbene adduct of dicyclopentadiene are reacted at an elevated temperature to give the compound:



which can be employed in sprays or dusts to eradicate flies and mosquitoes, etc., and it is also useful as an additive for lubricating oils to improve load bearing properties.

3,410,917

## PREPARATION OF PRIMARY CHLORIDES

Robert Louw, Oegstgeest, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware  
No Drawing. Filed July 19, 1965, Ser. No. 473,209  
Claims priority, application Netherlands, Jan. 29, 1965, 6501239  
7 Claims. (Cl. 260—658)

Primary alkyl chlorides are produced by contacting primary alkyl bromides with hydrogen chloride, at 0 to 100 $^\circ\text{C}$ ., in an alkaline, dipolar, aprotic solvent.

3,410,918

## PREPARATION OF PROPYNILSODIUM AND PROPYNILLITHIUM

Oscar F. Beumel, Jr., West Chester, and William Novis Smith, Jr., Exton, Pa., assignors to Foote Mineral Company, Exton, Pa., a corporation of Pennsylvania  
No Drawing. Filed July 11, 1966, Ser. No. 563,970  
8 Claims. (Cl. 260—665)

1. The process of making propynylsodium and propynyllithium which comprises passing a gaseous mixture of propyne and allene in which the weight ratio of propyne to allene is from about 1:1 to about 4:1 into a slurry of dispersed alkali metal selected from the group consisting of sodium and a mixture of lithium and from about 0.3 to about 2%, by weight, of sodium, said slurry being under a substantially oxygen-free atmosphere.

3,410,919

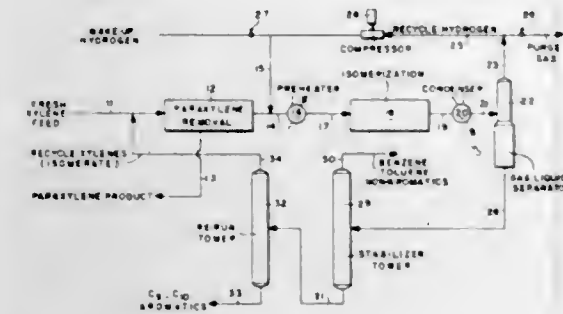
## METHOD OF ISOMERIZING POLYMETHYLBENZENE

Emanuel M. Amir, Edward F. Wadley, and Robert D. Wesselhoff, Baytown, Tex., assignors to Esso Research and Engineering Company  
Filed Dec. 27, 1966, Ser. No. 604,853  
15 Claims. (Cl. 260—668)

Polymethylbenzene is isomerized by contact at isomerization conditions and temperature in the presence of hy-



drogen with a silica-alumina-molybdenum catalyst which has been exposed to hydrogen pressure for at least 100 hours and then heated in the presence of hydrogen to a temperature within the range from 650° to 850° F., the



isomerization temperature being selected to provide the lowest temperature within a selected range of isomerization temperatures consistent with production of a selected level of the selected isomer.

3,410,920

## DEHYDROGENATION PROCESSES

Danford H. Olson, Edwardsville, Ill., and George M. Bailey and Joe T. Kelly, Littleton, Colo., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 3, 1966, Ser. No. 583,999  
14 Claims. (Cl. 260-669)

Hydrocarbons, such as alkylaromatic, alkanes alkenes, are dehydrogenated using a germanium dioxide catalyst with or without the presence of added oxygen.

3,410,921

## TRANSALKYLATION OF POLYALKYLATED AROMATIC COMPOUNDS USING A CRYSTALLINE ALUMINOSILICATE CATALYST

Ernest L. Pollitzer, Hinsdale, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed June 27, 1966, Ser. No. 560,786  
10 Claims. (Cl. 260-672)

Transalkylating a polyalkylated aromatic compound by reacting the compound, in admixture with hydrogen, with an alkylatable aromatic compound in contact with a catalyst comprising an active catalytic component, preferably a Group VIII metal, on an alumina support having suspended therein less than about 20 weight percent of a finely divided crystalline aluminosilicate, under transalkylation conditions including a temperature of 250°-700° C., a pressure of 1-200 atmospheres, and a hydrogen to hydrocarbon mol ratio of from about 2:1 to about 20:1.

3,410,922

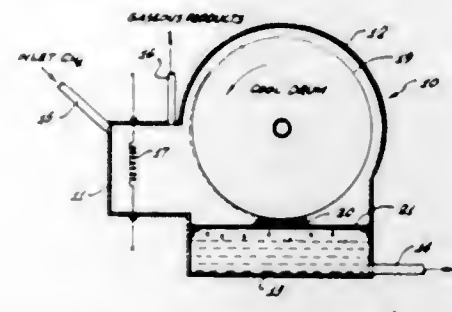
## METHOD FOR THE DIRECT CONVERSION OF METHANE TO AROMATIC HYDROCARBONS

Robert A. Sanchez, Del Mar, Calif., assignor to The Salk Institute for Biological Studies, San Diego, Calif., a corporation of California

Filed Nov. 14, 1966, Ser. No. 594,184  
27 Claims. (Cl. 260-673)

A process for the direct production of an aromatic hydrocarbon and, particularly naphthalene, from methane comprising the steps of (1) cooling the walls of a reaction chamber to a temperature substantially below the melting point of the aromatic hydrocarbon; (2) introducing methane into the reaction chamber; and (3) heating the methane in said reaction chamber to a temperature between about 800° C. and about 2000° C. such that the heating of the methane does not appreciably heat the cooled walls of the reaction chamber to thereby condense

out the aromatic hydrocarbon on the walls of the reaction chamber. Preferably, the heating step is carried out by



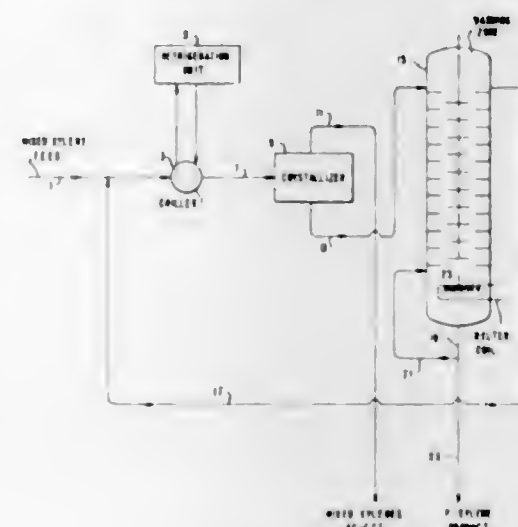
passing a current through a filament positioned a spaced distance from the walls of the reaction chamber.

3,410,923

## SEPARATION PROCESS

Carl P. Strand and Gordon D. Towell, El Cerrito, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Dec. 4, 1963, Ser. No. 327,885  
15 Claims. (Cl. 260-674)



1. A continuous process for the recovery of paraxylene from a multicomponent liquid feed mixture comprising from about 9 to 98% by weight of paraxylene in admixture with compounds having a melting point below that of paraxylene which comprises:

- subjecting said mixture to a temperature sufficient to form a slurry comprising a crystal phase consisting of paraxylene and a liquid phase comprising the remaining liquid components of said feed and some paraxylene;
- separating said slurry into two portions, the liquid portion which comprises a liquid reject and substantially no crystals and a crystal portion which comprises crystals and some residual contaminating liquid from the feed;
- introducing said crystal portion to a washing zone which comprises a cylindrical column containing a series of subzones with means for producing toroidal flow to liquid contents of said subzones;
- introducing a washing liquid into said washing zone countercurrent to the flow of said crystal portion;
- intimately contacting said crystal portion as separate and distinct particles with said washing liquid in a toroidal flow pattern;
- recovering a liquid overhead comprising some washing liquid and residual contaminating liquid from said feed; and
- recovering a paraxylene product.

15. A continuous process for the purification of organic materials of different melting temperatures which comprises:

- subjecting a mixture of said materials to a temperature sufficient to form a slurry comprising a solid phase of substantially pure material and a liquid phase comprising the remaining liquid components of said mixture;
- separating said slurry into two portions, the liquid reject and substantially no crystals and a crystal portion which comprises crystals and some residual contaminating liquid from the feed mixture;
- introducing said crystal portion to a washing zone which comprises a cylindrical column containing a series of subzones with means for producing toroidal flow to liquid contents of said subzones;
- introducing a washing liquid into said column countercurrent to the flow of said crystal portion;
- intimately contacting said crystal portion as separate and distinct particles with said washing liquid in a toroidal flow pattern;
- recovering a liquid comprising some washing liquid and residual contaminating liquid from said feed and;
- recovering a product substantially free of residual contaminating liquid comprising wash liquid and material of the said crystal composition.

3,410,924

## SEPARATION PROCESS EMPLOYING CUPROUS HALIDE SALTS

Egi Victor Fasce, Baton Rouge, La., assignor to Esso Research and Engineering Company

No Drawing. Filed Sept. 19, 1966, Ser. No. 580,173  
33 Claims. (Cl. 260-677)

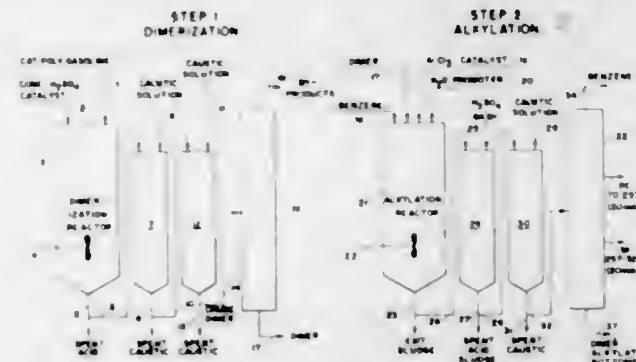
Butenes or C<sub>3</sub>+ monoolefins are employed as activators for cuprous halide sorbents in the recovery of ligands capable of forming 1:1 complexes with the sorbent. The process is conducted with the sorbent in a slurry of an essentially anhydrous organic liquid diluent, e.g., paraffins, aromatics and the monoolefin.

3,410,925

DIMERIZATION OF C<sub>3</sub> TO C<sub>6</sub> OLEFINS

Harold H. Eby and Gerald L. Nield, Ponca City, Okla., Kyle W. Resh, Baltimore, Md., and John H. Smith, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed May 14, 1964, Ser. No. 367,417  
5 Claims. (Cl. 260-683.15)



1. A process for preparing an olefin dimer, said olefin dimer on alkylation with an aromatic hydrocarbon producing a product which is particularly suitable for preparing oil-soluble sulfonates, said process comprising: commingling in a reaction zone an olefinic material, selected from the group consisting of olefins containing from 3 to about 18 carbon atoms and mixtures thereof, and an alkylation sludge, said sludge being the by-product of the alkylation of an olefin with an alkylatable aromatic hydrocarbon in the presence of a Friedel-Crafts catalyst, to produce said olefin dimer.

3,410,926

## EPOXY RESIN COMPOSITIONS COMPRISING AMINOPLAST RESIN AND POLYCARBOXYLIC COMPOUND

Darrell D. Hicks, Louisville, Ky., assignor, by mesne assignments, to Celanese Coatings Company, a corporation of Delaware

No Drawing. Filed Jan. 9, 1964, Ser. No. 336,621  
5 Claims. (Cl. 260-834)

- A heat curable composition comprising a homogeneous mixture of
  - a glycidyl polyether of a dihydric phenol having an epoxide equivalent weight of 120 to 1000,
  - a thermosetting aminoplast resin, and
  - a polycarboxylic compound selected from the group consisting of aliphatic tricarboxylic acids, and reaction products of cyclic carboxylic acid anhydrides and aliphatic polyols reacted in the proportions of 1 mol of cyclic carboxylic acid anhydride for each hydroxyl group of the aliphatic polyol, forming acid terminated esters, said polycarboxylic compound having an acid value of 100 to 770

said ingredients being dissolved in an organic solvent in proportions of 0.5 to 1.5 carboxylic acid groups of (c) to one epoxide group of (a) and 50 weight percent to 90 weight percent of (a) plus (c) with 50 weight percent to 10 weight percent of (b), the total being 100 per cent.

3,410,927

## POLYESTER FILAMENTS CONTAINING POLYETHYLENE GLYCOL ESTERS

Lawrence W. Crovatt, Jr., Raleigh, N.C., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed June 20, 1966, Ser. No. 558,633  
2 Claims. (Cl. 260-860)

Polyester fibers having improved resistance to static electricity build-up are prepared by dispersing in said polyester, prior to spinning, from 1 to 15 percent by weight of a fatty acid ester of poly(ethylene glycol) selected from the group consisting of poly(ethylene glycol) diacetate and poly(ethylene glycol) dibenzoate.

3,410,928

## BLENDS OF AN OLEFIN HIGH POLYMER WITH AN ETHYLENE/ACRYLIC ACID COPOLYMER

Bernard O. Baum, Plainfield, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 19, 1962, Ser. No. 203,475  
11 Claims. (Cl. 260-897)

This invention is directed to polymeric compositions which exhibit improved adhesivity, printability, and stress crack resistance. More specifically, this invention relates to polyolefin blends comprising an ethylene or propylene homopolymer or an ethylene copolymer with an ethylene/ acrylic acid copolymer. The ethylene/ acrylic acid copolymer includes ethylene/ acrylic acid/ vinyl acetate terpolymers and ethylene/ acrylic acid/ acrylate terpolymers.

3,410,929

## RECOVERY OF PHYTATES FROM STEEPWATER

Willard E. Ledding, Clarendon Hills, and Ludwig K. Blatter, Berwyn, Ill., assignors to Corn Products Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 8, 1965, Ser. No. 462,425  
2 Claims. (Cl. 260-987)

1. A process for recovering phytic acid from corn steepwater which comprises passing the steepwater through a column filled with an ion retardation resin made by polymerizing acrylic acid within the pores of a strong based resin, washing the resin with water to displace the steepwater, and eluting the adsorbed phytic acid from the resin with a 5% sodium chloride salt solution, adding calcium hydroxide to precipitate calcium phytate and filtering the solution to recover calcium phytate.



### 3,410,930 METHOD OF IMPROVING THE OPERATION OF A CUPOLA

Thomas E. Barlow, Deerfield, Ill., assignor to International Minerals & Chemical Corporation, a corporation of New York  
No Drawing. Continuation of application Ser. No. 227,699, Oct. 2, 1962. This application June 4, 1965, Ser. No. 461,496  
2 Claims. (Cl. 264—30)

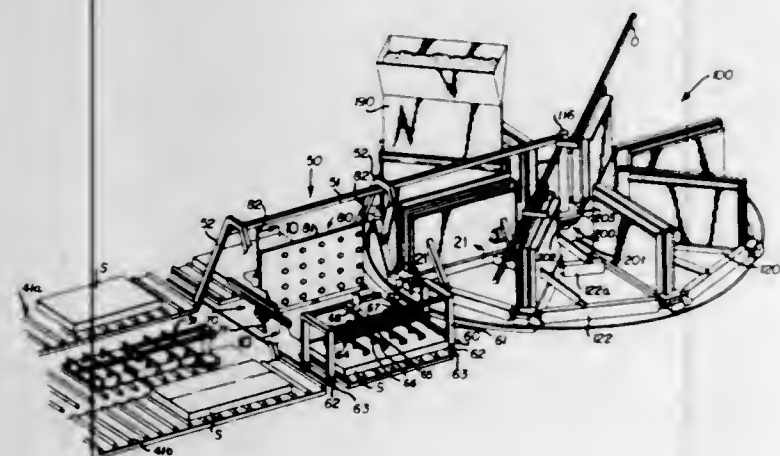
1. A method of improving the operation of a cupola which comprises lining said cupola with a monolithic unfired dense acidic refractory composition containing, in finely divided form, and in substantially homogeneous admixture:

- from about 20 to about 80% by weight of fire clay;
- from about 20 to about 80% by weight of silica sand;
- from about 0 to about 15% by weight of carbon; and
- from about 2½ to about 15% by weight of silicon metal.

### 3,410,931 METHOD AND APPARATUS FOR MAKING LAMINATED PANELS OF POLYSTYRENE FOAM AND ALUMINUM

Wilbert S. Johnson, Cuyahoga Falls, Ohio, assignor, by mesne assignments, to Alside, Inc., a corporation of Ohio

Filed Oct. 11, 1963, Ser. No. 315,511  
4 Claims. (Cl. 264—45)



1. A method of manufacturing a wall panel defined by a block of expanded polystyrene bead material having the adhesive coated faces of opposed thin aluminum sheets attached to opposed faces thereof, comprising the steps of:

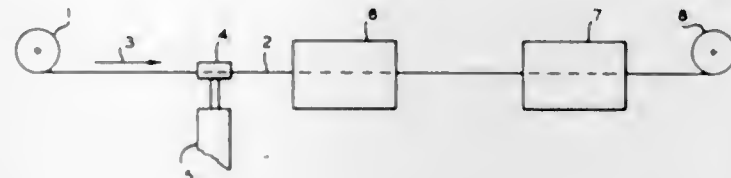
- progressively advancing a series of thin aluminum skin members through surface treating equipment that prepares one surface of each said skin;
- baking a prime paint coat on said prepared surface;
- removing said prime skin members from said first conveyor and flipping the same 180° onto a second aligned conveyor so as to present the untreated surface thereof in accessible position;
- providing an adhesive coating on said now accessible surface and cooling the same to non-tacky condition;
- shifting pairs of identical sized skins into upright parallel relationship with each other with said adhesive coated faces facing each other in spaced relationship;
- surrounding said spaced skins with a mold to define a hollow cavity, the opposed major planar walls of which are defined by said adhesive coated surface of said skin;

- filling at least a portion of said hollow chamber with expandable polystyrene bead material;
- closing said chamber to atmosphere and expanding said enveloped expandable polystyrene into fully expanded condition within said chamber by use of heat sufficient enough to fully expand said polystyrene while simultaneously reactivating said adhesive coat whereby said expanded polystyrene is bonded to said skins at the point of contact therebetween;
- removing said laminated panel from said molding apparatus.

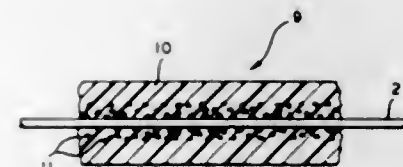
### 3,410,932 POLYMER FOAMING

Charles S. Woodson and Wayne E. Cooper, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Feb. 21, 1966, Ser. No. 528,874  
10 Claims. (Cl. 264—45)



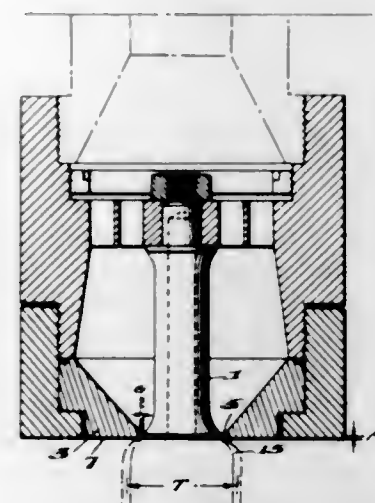
1. A method for making a foamed polymer-coated, metal-containing article having a substantially nonporous outer surface comprising coating a metal containing substrate with a mixture of at least one coating polymer and at least one foaming agent, and selectively heating said substrate to cause activation of said foaming agent by heat emanating from said substrate.



### 3,410,933 PROCESS AND APPARATUS FOR THE PRODUCTION OF UNIFORMLY PLEATED FOAM SHEET MATERIAL

Walter William Moseley, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Jan. 27, 1965, Ser. No. 428,440  
10 Claims. (Cl. 264—51)

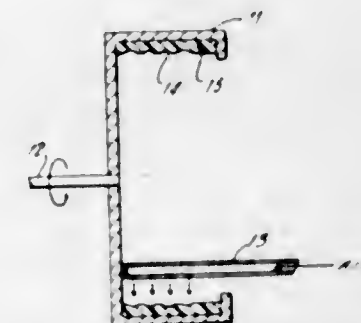


Gear die and extrusion process for the preparation of uniformly pleated foam sheets.

### 3,410,934 METHOD FOR THE PRODUCTION OF PIGMENTED CAST PLASTIC SHEETS

Alexander M. Kuritzkes, Croton-on-Hudson, Donald R. Treadwell, Buchanan, and Charles A. Quinn, Yorktown Heights, N.Y., assignors to The Mearl Corporation, Ossining, N.Y., a corporation of New York

Filed Oct. 11, 1965, Ser. No. 494,616  
7 Claims. (Cl. 264—74)



A method for producing a pigmented cast polyester resin sheet providing a play of color varying with the angle of incident light in which multiple polyester resin layers are rotationally cast so as to form an irregular interface between adjacent layers and nacreous and color effects are provided by the incorporation of plate-like pigment particles in the polyester resin layers.

### 3,410,935 METHOD OF MAKING SINTERED PLATINUM- PLASTIC ELECTRODE

Eugene H. Okrent, Middletown, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

No Drawing. Filed June 8, 1966, Ser. No. 556,831  
12 Claims. (Cl. 264—85)

1. The method of forming a sintered platinum-polytetrafluoroethylene electrode comprising adding water dispersed surfactant free polytetrafluoroethylene emulsion to an aqueous dispersion of platinum black and a small amount of a surfactant selected from the group consisting of perfluoro-n-octyl sulfonic acid and octyl phenol ethylene oxide, stirring the mixture at high speed at a temperature of 150 to 212° F. to coagulate the mixture, decanting the excess water, heating the coagulant to a temperature of 350° F. in a nitrogen atmosphere to reject the surfactant and excess water, molding the resulting coagulate into an electrode by cold pressing at a pressure of about 500 pounds per square inch using a tantalum screen support, and sintering the electrode at a temperature of about 650° F. under a pressure of about 1100 pounds per square inch for about one minute and releasing the sintered electrode from the mold.

### 3,410,936 VACUUM CASTING METHOD AND APPARATUS FOR PRODUCING THE METAL FIBER PLASTIC ARTICLES

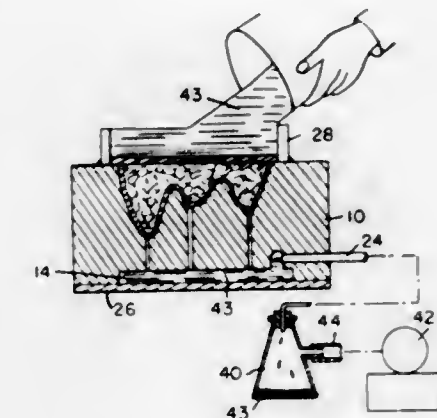
Appy Juras, Madison, Wis., assignor, by mesne assignments, to University Patents, Inc., Chicago, Ill., a not-for-profit corporation of Illinois

Continuation of abandoned application Ser. No. 85,535, Jan. 30, 1961. This application Oct. 21, 1965, Ser. No. 500,385

8 Claims. (Cl. 264—90)

A method of making metal fiber reinforced plastic composite structures wherein the metal fibers are first deposited, preferably by air-felting, into the desired mold form, and subsequently, plastic is introduced into the in-

terstices of the fiber mass by means of vacuum and then the plastic is cured. The metal fibers, because of their



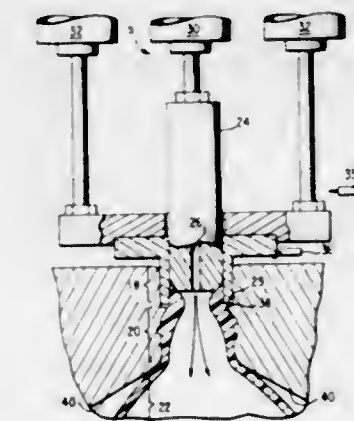
structure and the means of deposit, are maintained substantially unmoved during the vacuum impregnation.

### 3,410,937 MANUFACTURING THERMOPLASTIC ARTICLES

Raymond E. Winchester, Jr., Pawcatuck, Conn., assignor to Monsanto Company, a corporation of Delaware

Continuation of application Ser. No. 323,420, Nov. 13, 1963. This application May 18, 1967, Ser. No. 639,587

7 Claims. (Cl. 264—98)



A method of forming the neck of a hollow plastic article by controlled sequential advancement of a mandrel and coaxial collar into the trailing end of a parison supported on a protrusion in the neck cavity of a closed blow mold. A charge of pressurized gas may be injected into the parison prior to neck forming to partially expand the plastic into gripping engagement with the mold, thereby minimizing parison slippage during neck formation.

### 3,410,938 METHOD AND APPARATUS FOR HOT MELT EXTRUSION

Heinz Schippers, Remscheid-Lennep, Germany, assignor to Barmer Maschinenfabrik Aktiengesellschaft Wuppertal-Oberbarmen, Germany

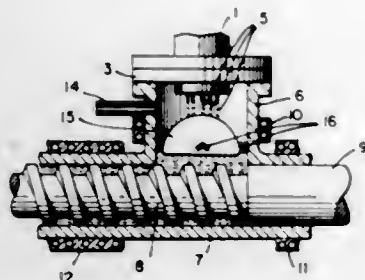
Filed Nov. 19, 1965, Ser. No. 520,812  
Claims priority, application Germany, Nov. 26, 1964, B 79,497

9 Claims. (Cl. 264—102)

Method of processing a thermoplastic polymer in a hot metal extruder for removal of entrapped gas by introducing molten polymer through a vertical feed line where it is separated into a number of freely falling streams, a large throughput being facilitated by interposing an upwardly projecting convex surface to collect and distribute the streams of molten polymer into a thin layer,



the polymer flowing downwardly over the convex surface into the inlet end of the screw extruder, while applying a



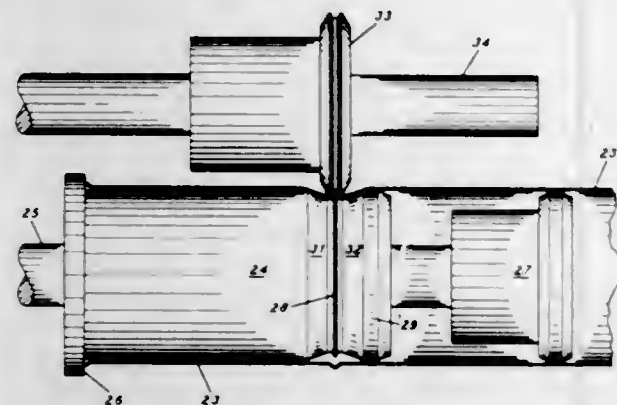
vacuum to the separately flowing streams and to the convex surface for removal of the entrapped gas.

3,410,939

**METHOD FOR SEVERING SLEEVE SECTIONS FROM AN ELONGATED TUBULAR MEMBER**  
Charles E. Driza, Belleville, and Philip R. O'Brien, Westfield, N.J., assignors to Chevron Research Company, a corporation of Delaware

Filed Mar. 17, 1965, Ser. No. 440,479

4 Claims. (Cl. 264—150)



A method for forming and severing sleeve-like members with flared ends from an elongated tube of plastics material where the material has an inherent characteristic called "memory." The method involves clamping the material in the area where the sleeve members are to be severed from the elongated tube, cold working a portion of the material between clamped portions thereof and then severing the tube where the cold working has been performed to produce the sleeve members from the elongated tube.

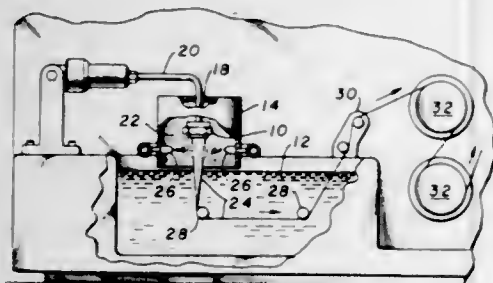
3,410,940

**MIST SPINNING PROCESS**

William B. Henderson and Gerd R. Baur, Decatur, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Oct. 12, 1964, Ser. No. 403,190

6 Claims. (Cl. 264—182)



A process, which substantially increases dye receptivity, tenacity and elongation of acrylic filaments, provides the standard wet-spinning technique with a mist chamber which separates the spinneret from the spin bath by a distance of from one to four inches and which is filled with an atomized coagulant liquid. The atomized liquid contacts the newly formed filaments and coagulates their exterior surfaces to form a skin which contains a core gel thus adapting the filaments to be stretched at least three times their original length prior to contact with the spin bath.

vides the standard wet-spinning technique with a mist chamber which separates the spinneret from the spin bath by a distance of from one to four inches and which is filled with an atomized coagulant liquid. The atomized liquid contacts the newly formed filaments and coagulates their exterior surfaces to form a skin which contains a core gel thus adapting the filaments to be stretched at least three times their original length prior to contact with the spin bath.

3,410,941

**PREPARATION AND SPINNING OF NITRIC ACID POLYACRYLONITRILE SOLUTIONS**

Roland Dagon and Camille Nordmann, Fribourg, Switzerland, assignors to Lonza Ltd., Gampel, Valais, Switzerland, direction: Basel, Switzerland

No Drawing. Continuation-in-part of abandoned applications Ser. No. 258,960, Feb. 14, 1963, and Ser. No. 402,615, Oct. 8, 1964. This application Mar. 30, 1967, Ser. No. 626,936

Claims priority, application Switzerland, Feb. 16, 1962, 1,952/62; Oct. 9, 1963, 12,393/63

9 Claims. (Cl. 264—182)

Acrylonitrile is polymerized in a concentrated nitric acid, and the polymer solution is spun into a nitric acid bath of lower concentration. The nitric acid of the spinning bath may be recovered and reused as solvent for the monomer.

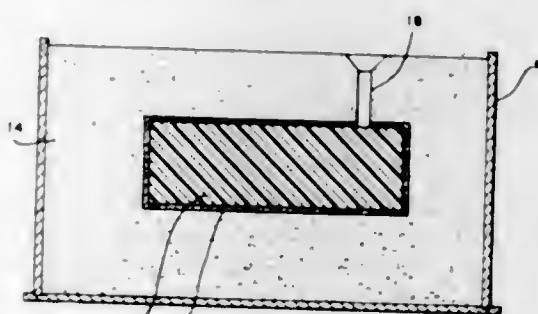
3,410,942

**CASTING METHOD**

Helmut O. Bayer, Mulheim (Main), Germany, assignor to Full Mold Process, Inc., Milwaukee, Wis., a corporation of Delaware

Filed May 24, 1965, Ser. No. 458,395

6 Claims. (Cl. 264—221)



Disclosed herein is a method of removing a cellular plastic pattern from a mold forming material by incorporating a solvent in either mold forming material or into the cold casting resin.

3,410,943

**METHOD OF IMPARTING HIGH GLOSS AND STAIN-RESISTANCE TO THERMOSETTING MOLDED ARTICLES**

Frank B. Rosenberger, Maumee, and Corwin R. Brandt, Toledo, Ohio, assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed May 20, 1960, Ser. No. 30,435

11 Claims. (Cl. 264—255)

1. A process of producing a molded thermoset object of dished configuration having a glossy, stain-resistant generally concave surface that comprises: introducing into a molding zone a charge comprising a molding compound of a fusible, thermosetting resin of the group consisting of urea- and melamine-aldehyde resins; forming said charge into an object of dished configuration and

partially curing the thermosetting resin; introducing, in granular form, on the resulting generally concave surface of the dished object and substantially centrally thereof, a second, fusible, thermosetting resin of the group consisting of melamine- and benzoguanamine-aldehyde resins and which, as measured by "Flow Time Determination," has a flow time of from 1 to 15 seconds; molding said dished object, while the generally concave surface thereof faces upwardly, with said second, fusible, thermosetting resin thereon by applying a downwardly directed force to said surface at a rate to cause flow of said second, fusible, thermosetting resin uniformly over said surface of said object prior to final curing of said charge and said fusible, thermosetting resin thereon; and thereafter, continuing molding of said object until said charge and said flowed resin thereon are finally cured as an integral object.

3,410,944

**PHARMACEUTICAL COMPOSITION CONTAINING 1-(4-HYDROXYPHENYL)-2-(2-(4-HYDROXYPHENYL)ETHYLAMINO)-PROPANOL AND SALTS THEREOF**

Volkert Claassen, Jan Van Dijk, and Hendrik Durk Moed, Van Houtenlaan, Netherlands, assignors to North American Phillips Company Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 25, 1965, Ser. No. 435,344

Claims priority, application Netherlands, Feb. 27, 1964, 6401871

5 Claims. (Cl. 424—330)

1-(4-hydroxyphenyl)-2-(2-(4-hydroxyphenyl)-ethylamino) propanol and salts thereof. These compounds have uterospasmodic activities with a minimum of hypotensive activity. This abstract is not intended to be a description of the invention defined by the claims.

## ELECTRICAL

3,410,945

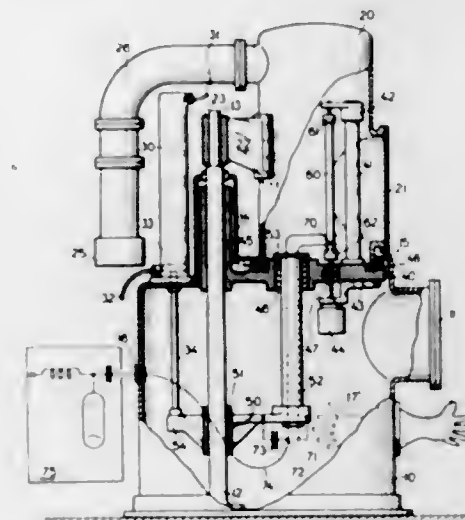
**APPARATUS FOR ZONE MELTING OF SEMICONDUCTOR BODIES THROUGH HIGH-FREQUENCY HEATING**

Karel Regner and Josef Petrasek, Prague, Czechoslovakia, assignors to KCD Praha, oborovy podnik, Prague, Czechoslovakia

Filed Oct. 8, 1965, Ser. No. 494,025

Claims priority, application Czechoslovakia, Oct. 17, 1964, 5,749/64; Apr. 7, 1965, 2,281/65

7 Claims. (Cl. 13—1)



In a zone melting apparatus there are provided an enclosure and a bell, the latter being on top of the former and being separated from the former by a base wall which is slidably arranged and adapted to provide when it engages a rim of the bell a vacuum-tight seal between enclosure and bell. The bell defines a melting chamber. A rod-shaped object which is to be heated to its melting point is held within the bell. An induction coil surrounds said object and is slidable therealong. A flexible cable passes through a bushing in the enclosure wall and connects the power supply to a coaxial lead of the coil. A carrier within the enclosure is hydraulically operated to be raised and to move along with it the base wall and the induction coil. The rod-shaped object is rotated as the induction coil moves along said object. When the base wall sealingly engages the bell, the melting chamber is evacuated. When the induction coil is deenergized, and the vacuum in the sealed melting chamber broken by opening the chamber, the carrier returns to its starting point and a new cycle may begin. The rods to be heated are introduced into the enclosure through an opening therein.

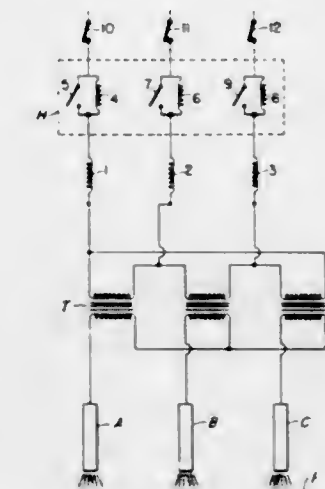
3,410,946

**ALTERNATING CURRENT HOT TOPPING**

Elmer D. Dilling, Toronto, Ohio, and Karl S. Snow, Boulder City, Nev., assignors to Titanium Metals Corporation of America, New York, N.Y., a corporation of Delaware

Filed Apr. 17, 1967, Ser. No. 631,495

9 Claims. (Cl. 13—9)



A method for maintaining a stable melting arc in alternating current melting of consumable electrodes during the end portion of the melt to gradually decrease the size of the molten pool formed at the upper end of the ingot and thereby eliminate or substantially reduce pipe and shrinkage voids in the upper end of the ingot comprising adding reactance to the power circuit to decrease the melting current applied to the electrodes during the end portion of the melt while retaining open circuit voltage for restriking the melting arc. Optionally, adding a metallic compound to the molten pool at spaced intervals during the end portion of the melt to further stabilize the melting arc.

3,410,947

**SOUND REPRODUCING SYSTEM**

Wallace R. Behnke and Curt R. R. Wolfanger, Elkhart, Ind., assignors to C. G. Conn Ltd., Elkhart, Ind., a corporation of Indiana

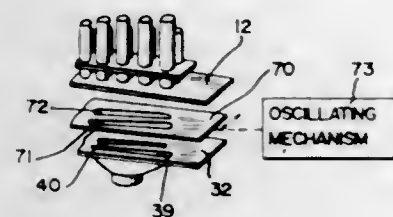
Filed June 24, 1965, Ser. No. 466,668

12 Claims. (Cl. 84—1.01)

Sound reproducing system for electric organ having a multiplicity of pipes of different lengths and diameters projecting from a wall, with loud speakers producing

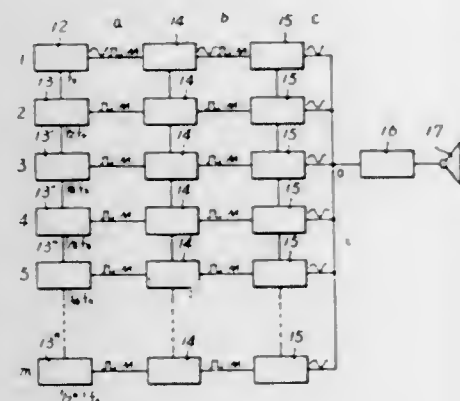


sound on the opposite side of the wall. A baffle of substantial thickness has slots therein for coupling each speaker to a plurality of pipes. Tremolo and other effects can



be provided by modulating the signal applied to the speakers and/or by movable mechanical means in the path of the sound waves. The pipe speaker assembly may be utilized with a bass speaker and/or a rotor speaker.

**3,410,948**  
**SPECTRUM ADDING SYSTEM FOR ELECTRONIC MUSICAL INSTRUMENTS**  
Kazuo Ishibashi, Fuchu, Tokyo, and Hiroshi Ogawa, Yokohama, Japan, assignors to Victor Company of Japan, Limited, Kanagawa-ku, Yokohama, Japan, a corporation of Japan  
Continuation of application Ser. No. 398,922, Sept. 24, 1964. This application Sept. 14, 1967, Ser. No. 667,864  
Claims priority, application Japan, Sept. 30, 1963, 38/52,885  
2 Claims. (Cl. 84-1.11)

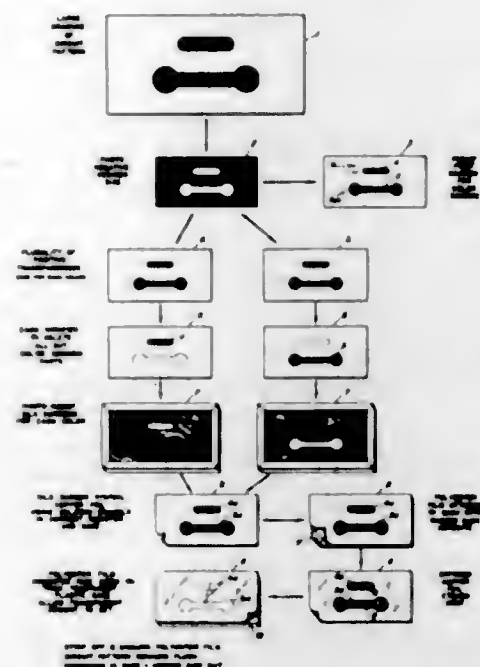


An electronic musical instrument having a master oscillator, a plurality of frequency dividing oscillators dividing the output signal generated from said master oscillator, a plurality of keying circuits for selectively passing the output signals generated from the master oscillator and frequency dividing oscillators, a plurality of low-pass filters connected with each of said keying circuits for correcting the output signal of said keying circuits in a sine or quasi sine wave, and means for adding together the output signal of said low-pass filters.

**3,410,949**  
**PLASTIC EMBEDDED COLOR-CODED PRINTED CIRCUIT**  
Morris Tischler, 3100 Shelburne Road, Baltimore, Md. 21208  
Continuation of application Ser. No. 551,370, May 19, 1966, which is a division of application Ser. No. 470,266, June 14, 1965, now Patent No. 3,282,755, dated Nov. 1, 1966. This application Oct. 16, 1967, Ser. No. 677,837  
4 Claims. (Cl. 174-68.5)

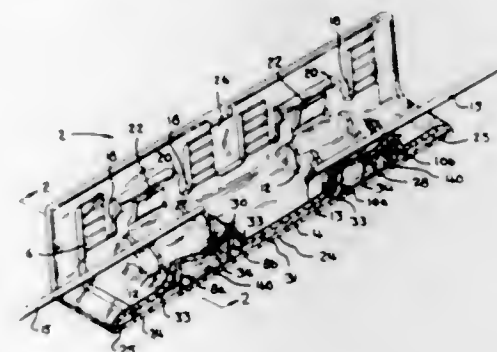
This invention relates to a new combination of a transparent baseboard and a flush-embedded bare metal wiring pattern. The inner side of the wiring pattern is provided

with a baked enamel coating in colors to identify portions thereof. These portions are visible through the baseboard



from one side and other side is available for electrical connection to the identified portions.

**3,410,950**  
**INSULATED MOISTURE-PROOF CONNECTING DEVICE**  
Werner P. Freudenberg, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.  
Filed June 1, 1966, Ser. No. 554,533  
5 Claims. (Cl. 174-84)

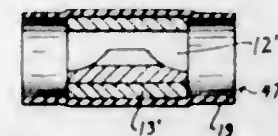


Electrical connector for forming sealed connection comprises U-shaped channel member with insulation piercing projections extending upwardly from web of channel. Entire internal and external surface of connector is covered by film of rupturable material. Sealant is provided between film and web of connector adjacent to projections. Upon crimping connector onto insulating wire, film is ruptured and the sealant flows around, and seals, the interface between the wire and the connector.

**3,410,951**  
**SPLICING UNITS FOR COLD-FLOW SPLICES**  
Eugene H. Souter, 721 Simpson St., Evanston, Ill. 60201  
Original application May 13, 1965, Ser. No. 455,544. Divided and this application Dec. 12, 1966, Ser. No. 600,798  
7 Claims. (Cl. 174-84)

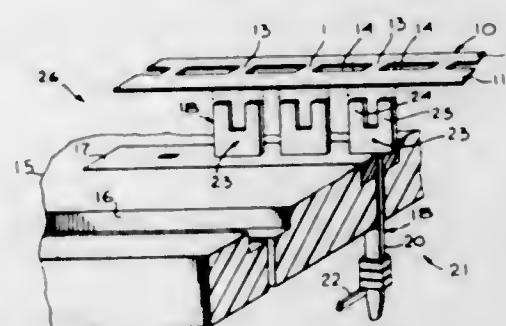
The splicing unit, to which this divisional application is directed, is used with a hand tool, also disclosed, for forming dependable splices, substantially of zero resistance, as in the wires of telephone cables. The two wires to be spliced are laid in a stripper and cutter portion. Upon op-

eration of a thumb lever the wires are cut to even lengths and the insulation stripped from the portions to be spliced. These portions are fed end-first into the splicing unit previously inserted in the tool. This splicing unit includes a copper pin or core having a groove along its side into which



the wires are fed axially. The pin is made to cold-flow around the wire by a plunger which moves lengthwise of the pin while the pin is confined. The pin is preferably confined within a small copper sleeve which is surrounded by an insulating rod. Numerous other features within this framework are disclosed.

**3,410,952**  
**ELECTRICAL BUS STRIP**  
Richard A. Knaub, Canoga Park, Los Angeles, and Gerald G. Koss, Simi, Calif., assignors to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware  
Filed Nov. 4, 1964, Ser. No. 408,888  
10 Claims. (Cl. 174-88)

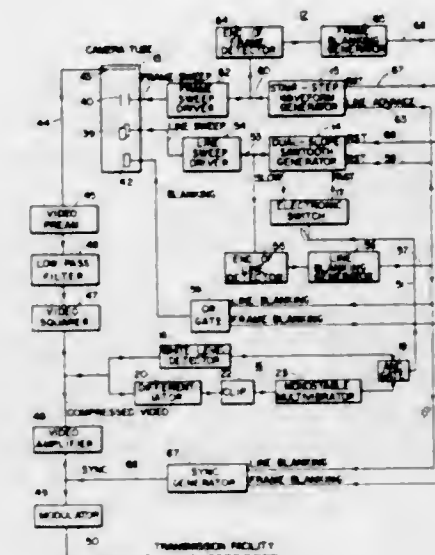


6. A bus strip for electrically connecting a plurality of terminals comprising:  
a pliable strip of electrically conductive material;  
said strip having a body portion, an edge portion and a plurality of connecting strips;  
said connecting strips being arranged to integrally join said body portion and said edge portion together in spaced parallel relationship;  
said connecting strips being of reduced areas of material as compared to the areas of said body portion and of said edge portion such that said connecting strips are readily deformable by the fingers of the human hand along two axes substantially parallel to the longitudinal axis of said strip when placed over the terminals;  
said connecting strips being deformed by bending so that each strip is folded over on itself along said two axes substantially parallel to said longitudinal axis.

**3,410,953**  
**TRANSMISSION TIME REDUCTION SYSTEM AND METHOD**  
Robert V. Quinlan, Fort Wayne, Ind., assignor to International Telephone and Telegraph Corporation, a corporation of Delaware  
Filed Oct. 18, 1965, Ser. No. 496,910  
19 Claims. (Cl. 178-6.8)

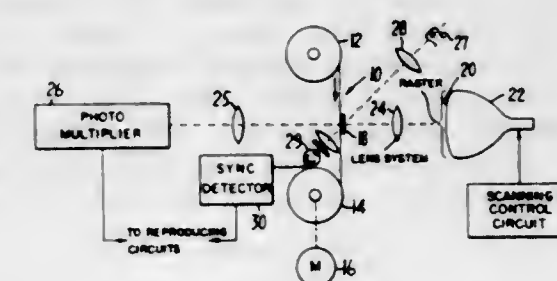
1. An information transmission system comprising: means for selectively generating at relatively slow and fast rates, respectively, an initial time-based electrical signal having a characteristic responsive to the informa-

tion to be transmitted; first means for sensing continuous generation of said initial signal having a predetermined said characteristic for a period in excess of predetermined period; first means for actuating said generating means to generate said signal at said slow rate during said predetermined period and at said fast rate during said excess period; means for transmitting said signal and for receiving the same at a remote location; means for selec-



tively converting said signal at said slow and fast rates, respectively, to output information; second means for sensing reception of the transmitted signal having said predetermined characteristic for said predetermined and excess periods, respectively, and second means for actuating said converting means to convert said signal at said slow rate during said predetermined period and at said fast rate during said excess period.

**3,410,954**  
**FILM SCANNING FOR TELEVISION REPRODUCTION**  
Bernard Erde, Stamford, Conn., assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York  
Filed Mar. 29, 1963, Ser. No. 268,911  
26 Claims. (Cl. 178-7.2)



16. In apparatus for reproducing information, the combination of:  
an information-carrying record medium including an elongated member having a succession of information-bearing segments of uniform dimension in the direction of elongation, and synchronizing record means disposed on the medium at locations associated with the intervals between information bearing segments comprising a plurality of record elements of differing character disposed on the record medium in a selected spatial pattern which extends substantially parallel to the direction of elongation of the record medium;



means for conveying the record medium in the direction of its extent through a scanning area having a dimension in the direction of conveyance of the record medium equal to twice the pitch distance between successive segments of the medium;

scanning means for generating a raster-type scanning beam for interrogating each of the information-bearing segments of the record medium in the scanning area, the scanning beam comprising a succession of scan lines with each thereof being displaced in the direction of record medium conveyance;

first photosensitive means responsive to modulation of the scanning beam by the information carried by the record for producing an electrical signal representing the information in each segment of the record medium;

means for illuminating a portion of the path traversed by the synchronizing record means as the record medium is conveyed through the scanning area to generate a modulated light signal; and

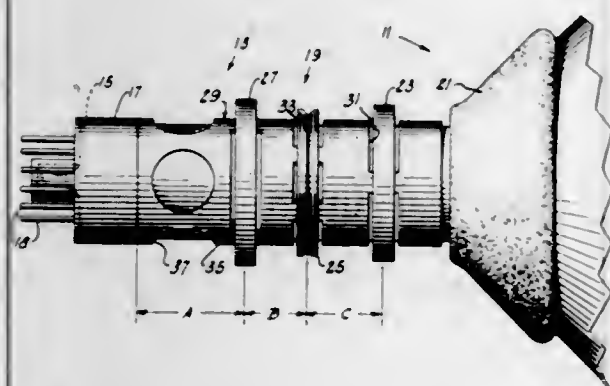
second photosensitive means responsive to the modulated light signal to generate a synchronizing signal indicative of the rate at which the record medium segments are conveyed through the scanning area.

3,410,955

**COMPONENT LOCATING DEVICE**

Donald G. Mackey, Seneca Falls, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed June 29, 1964, Ser. No. 378,693  
7 Claims. (Cl. 178—7.8)



Orientation means for facilitating the location of a plurality of electron beam control components on the exterior of a cathode ray tube envelope relative to the electron gun contained therein, whereof an array of related insulative visual indicators are predeterminedly spaced from one another and a common reference and adhered to the exterior surface of the tube envelope.

3,410,956

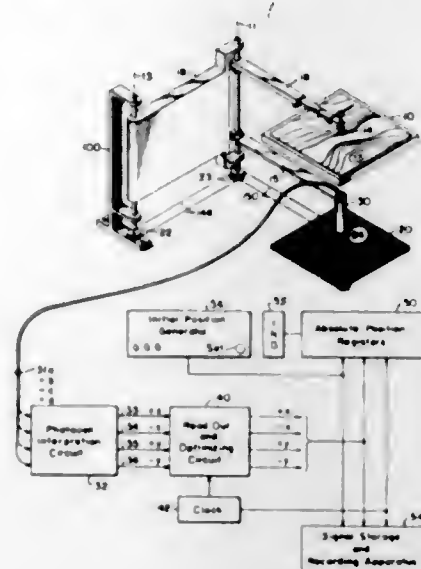
**PLANAR DIGITAL ENCODER**

Herbert P. Grossimon, Arlington, James O. McDonough, Concord, and Gerald T. Moore, Bedford, Mass., assignors to Concord Control, Inc., Boston, Mass., a corporation of Massachusetts

Filed Mar. 23, 1964, Ser. No. 353,793  
13 Claims. (Cl. 178—19)

This invention relates to apparatus for encoding lines on a plane surface such as contour lines on a map in digital form. The apparatus includes means for providing a plane surface such as a table, a floating arm drafting machine having at least two floating arms adapted to move together. The first of the arms supports a stylus at the free end and permits the stylus to be positioned throughout a substantial portion of the table surface. The second arm positions an electro-optical transducer, spaced from the

stylus, over an optical grid. The grid is formed of alternate transparent and opaque sections and is positioned parallel to the table surface and immediately adjacent to the transducer. A light source is positioned to illuminate the transducer through the grid so that as the stylus is moved over the table surface, the transducer receives elec-



trical signals through the grid which quantifies the motion of the stylus over the plane surface. The apparatus also includes electrical circuit means responsive to the signals from the transducer for producing digital signals representative of magnitude and the direction of movement of the stylus over the plane surface. A novel phase comparator is disclosed for this use.

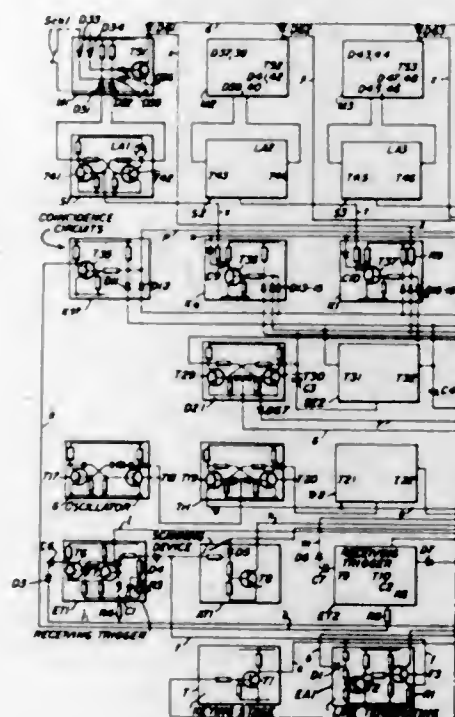
3,410,957

**ELECTRONIC SYSTEM FOR SENDING, RECEIVING, AND REGENERATING TELEPRINTER SIGNALS**

Werner Schiebeler, Eutingen, Baden, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

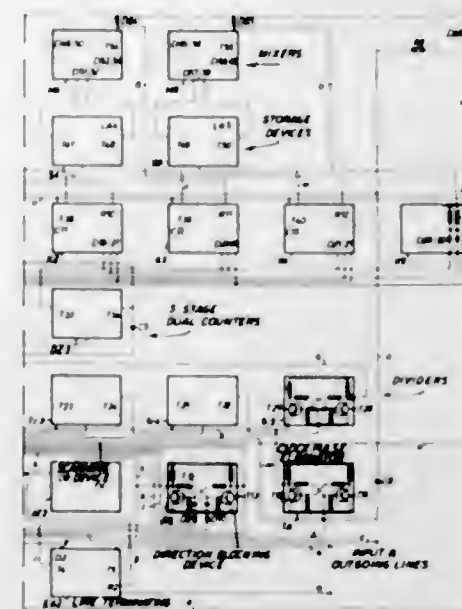
Filed Nov. 16, 1964, Ser. No. 411,419  
Claims priority, application Germany, Nov. 20, 1963,  
St 21,345

4 Claims. (Cl. 178—22)



This system permits the recording or ciphering of teleprinter signals whichever may be the direction of informa-

tion flow. An oscillator whose frequencies can be divided down as determined by the repetition rate of incoming signals furnishes the time base for the regenerated signals.



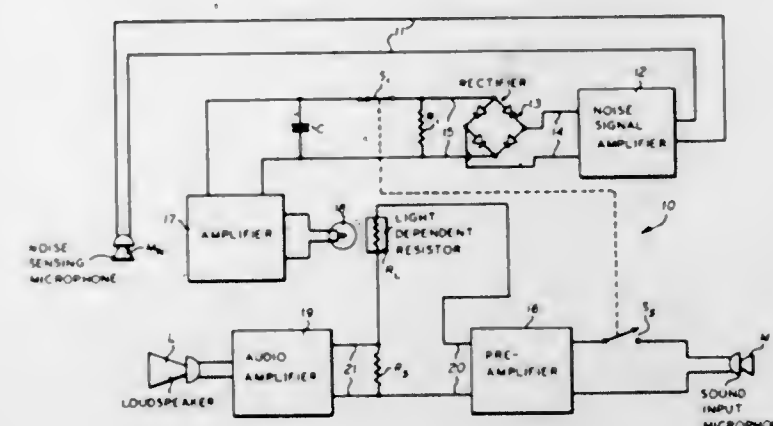
The system further includes a directional blocking device for determining the direction of intelligence flow, a converter for converting between serial and parallel flow, and a storage means for storing the incoming signals.

3,410,958

**NOISE CONTROLLED SOUND REPRODUCING SYSTEM**

Abraham B. Cohen, Oklahoma City, Okla., assignor to Executone Inc., Long Island City, N.Y., a corporation of New York

Filed Mar. 25, 1965, Ser. No. 442,688  
6 Claims. (Cl. 179—1)



The transmission channel is made responsive to ambient noise at the loudspeaker by sensing the noise, amplifying it, and using the amplified signal to vary the resistance of a photocell thereby changing the gain of the amplifier in the transmission channel. Feedback is eliminated by switching off the noise sensing channel during transmission while maintaining its most recent level as a control voltage.

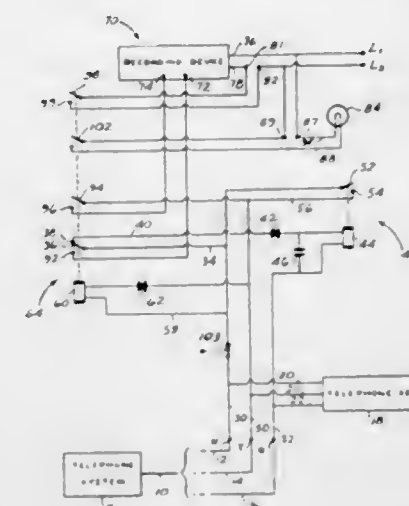
3,410,959

**CALLED LOOP POLARITY REVERSING THREE-WIRE TELEPHONE RECORDER COUPLER**

Raymond Lamberg, Portland, Oreg.  
(3619 Ross Lane, Medford, Oreg. 97501)

Filed Nov. 13, 1964, Ser. No. 410,933  
11 Claims. (Cl. 179—6)

A switching device which responds to called loop polar-



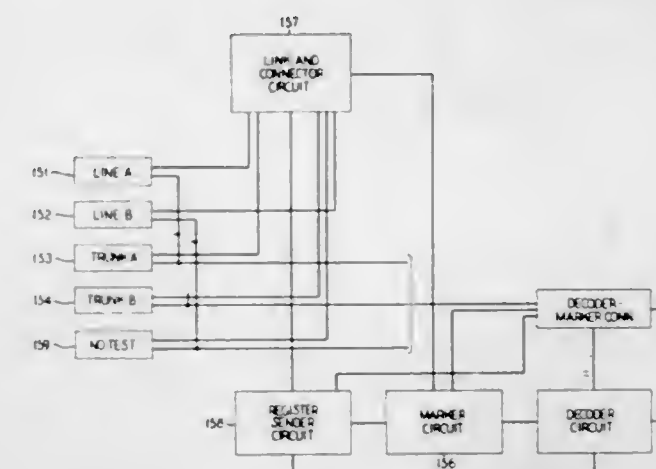
ity reversal in conductors in a three conductor telephone line to connect a recording device for receiving and recording an incoming message at a subscriber's telephone set.

3,410,960

**NO-TEST OR BUSY VERIFICATION IN A PRIVATE BRANCH EXCHANGE TELEPHONE SYSTEM**

Edson L. Erwin, Towaco, and Alexander E. Gerbore, Middletown, N.J., Gerald C. Hobbs, Topeka, Kans., and Henry J. Walsh, New Monmouth, N.J., assignors, by direct and mesne assignments, to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 9, 1965, Ser. No. 438,182  
13 Claims. (Cl. 179—18)



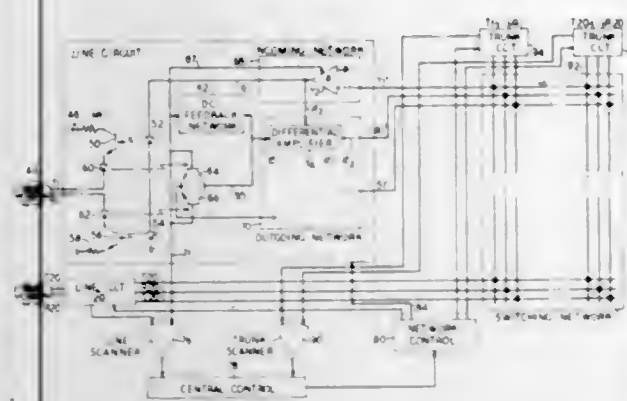
We disclose a crossbar automatic private branch exchange telephone system in which no-test or busy verification connections are established from a no-test facility to a busy line or trunk by way of a link other than that used in an existing call connection and a multiple occurrence of the busy line or trunk. The network is arranged in a plurality of horizontal groups of crossbar switches, each line and trunk circuit having a multiple termination in each horizontal group. When a no-test connection is to be made the marker treats the no-test facility as an originating line, selects an idle link and attempts to establish the connection. If the line to be verified is idle, the connection is thus established as a normal originating connection. When the marker examines the operative state of the crosspoint through which the selective link has access to the line or trunk to be verified and finds it to be already closed, then the marker recycles and selects another idle link in a different horizontal group for the no-test connection.



### 3,410,961 LINE CIRCUIT FOR A TELEPHONE SYSTEM HAVING OPTICAL SOLID STATE MEANS

Matthew F. Slana, Millington, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 12, 1965, Ser. No. 495,155  
11 Claims. (Cl. 179-18)

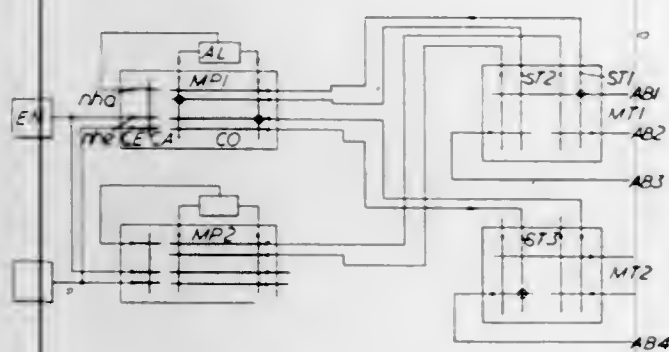


A line circuit is disclosed in which a two way optical coupling permits signals to be transmitted between a telephone line and a switching network with isolation but without the use of a transformer. The coupling between the line and network path comprises light emitting devices in one path and light responsive devices in the other path for each direction of transmission.

### 3,410,962 MULTISELECTORS EMPLOYING CROSSBAR SWITCHES HAVING SPLIT HORIZONTALS OR SELECTION LEVELS

Jacques Pierre Louis Basset, Paris, and Marcel Pierre Bonner, Epinay-sur-Orge, France, assignors to International Standard Electric Corporation

Filed July 8, 1965, Ser. No. 470,437  
Claims priority, application France, July 10, 1964, 981,433; July 31, 1964, 983,801  
14 Claims. (Cl. 179-22)

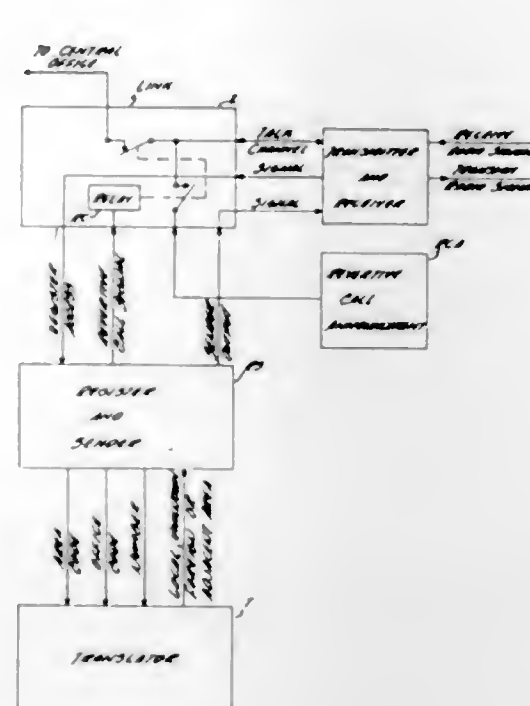


Improvements are provided in crossbar telephone systems in which light traffic is encountered regularly over certain lines while normal or heavy traffic is usual on other lines. The lines carrying normal traffic are connected to terminals of a cross-bar switch so that contact can be completed (over the horizontals or selection levels) to all the selectors. Those lines carrying light traffic are connected to terminals so that connection may be completed to only a few of the selectors. The number of lines carrying light traffic which can be connected is doubled in this way. The result is a cross-bar switch connected to far more lines than is usual, thus affording savings in material and space. The invention also enables the incorporation of both selectors and register finders on a single cross-bar switch to effect great savings in equipment and costs.

### 3,410,963 AUTOMATIC REVERTIVE CALLING OVER A MOBILE TELEPHONE SYSTEM

Marvin Forest Malm, Tinley Park, Ill., assignor to International Telephone and Telegraph Corporation, a corporation of Delaware

Filed Oct. 1, 1964, Ser. No. 400,731  
9 Claims. (Cl. 179-41)

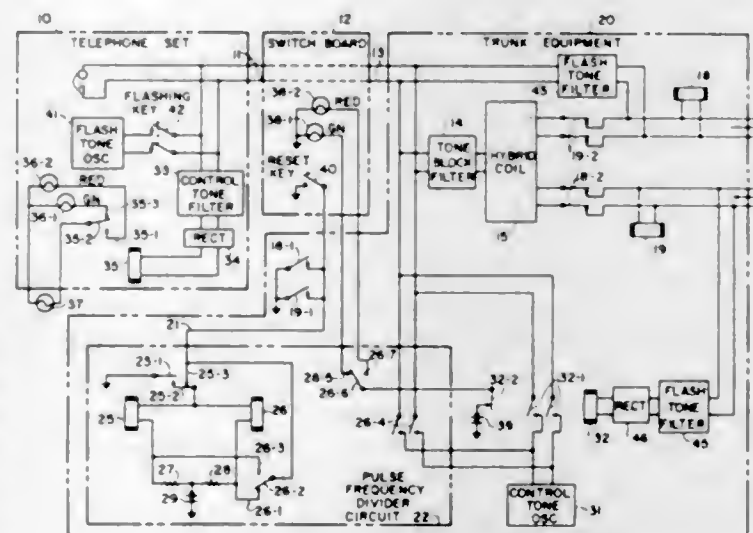


A system is provided for automatic establishment of revertive calls between two mobile subscribers in an automatic mobile telephone network where only a single two-way radio channel is available to complete a connection.

### 3,410,964 TWO-WAY LONG DISTANCE VOICE COMMUNICATION SYSTEM WITH SIGNAL LAMPS

Ernest Starkey Kelsey, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed July 21, 1965, Ser. No. 473,745  
5 Claims. (Cl. 179-81)



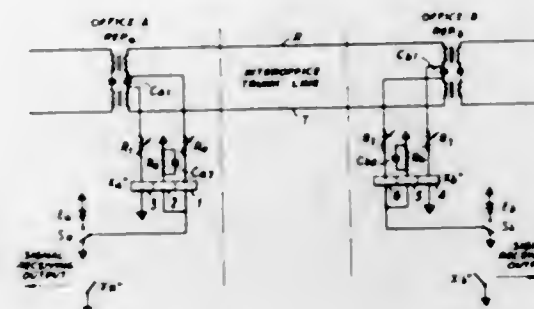
1. In a two-way voice communication system having a pair of stations, each station having a transmission path for transmitting voice signals and a reception path for receiving voice signal transmitted from the opposite station; the improvement at each station comprising: a first generating means for generating a first signal pulse in response to voice signal currents in the transmission path;

a second generating means for generating a second signal pulse in response to voice signal currents in the reception path; pulse frequency divider means having an input and an output, said pulse frequency divider means arranged to produce a signal at said output for alternately activating and deactivating a visual signalling device in response to the termination of successive pulses received at said input from said generating means.

### 3,410,965 D.C. SIGNALLING SYSTEM

Taro Sudo and Akihiro Kitamura, Minatoku, Tokyo, Japan, assignors to Nippon Electric Company Limited, Shiba Minatoku, Tokyo, Japan, a corporation of Japan

Filed June 16, 1965, Ser. No. 464,444  
Claims priority, application Japan, June 20, 1964, 39/35,031  
2 Claims. (Cl. 179-84)

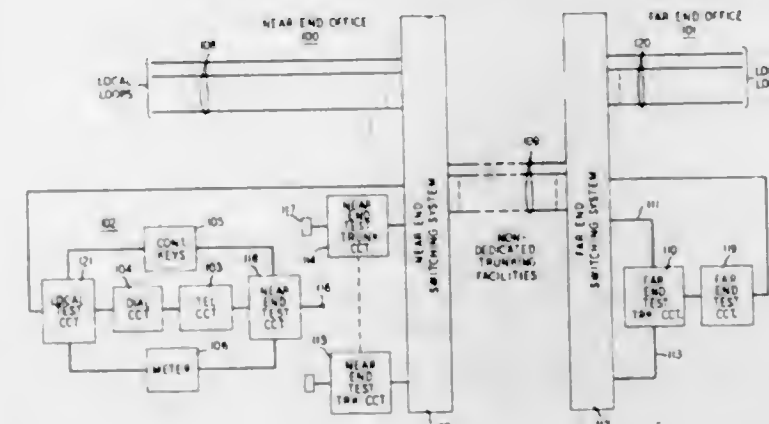


1. A two-way D.C. signalling arrangement in combination with a wire pair comprising at each of the local and distant signalling points: a D.C. source having one terminal coupled to ground; means switchable between the other terminal of said source and ground; a relay having three windings, the first winding being coupled at one end thereof to said means and at the other end to a first one of said wire pair, the second winding being coupled at one end thereof to said means and at the other end to ground, each of said first and second windings being opposite in flux polarity to each other, and the third winding being coupled at one end thereof to ground and at the other end to the second one of said wire pair and being opposite in flux polarity to said first winding.

### 3,410,966 SYSTEM FOR REMOTE TESTING OF TELEPHONE SUBSCRIBERS' LINES

Chauncey R. Davies, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 27, 1965, Ser. No. 459,396  
6 Claims. (Cl. 179-175.2)



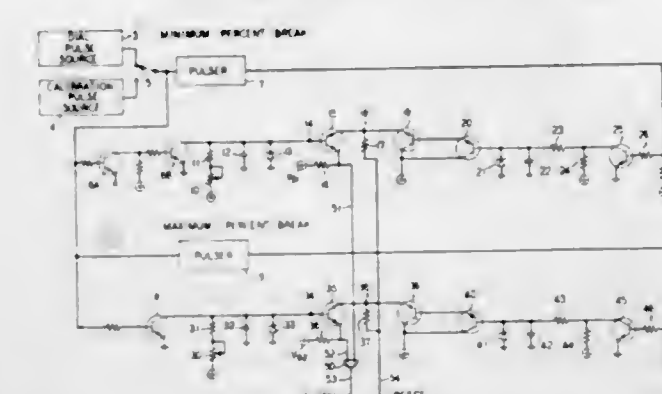
A remotely controlled telephone loop testing system is disclosed in which local key operations are translated into multifrequency tone bursts which operate and release re-

mote test relays. These test relays set up the loop test circuits and the direct current in the remote loop is translated into a variable frequency for transmission back to the local operator. At the local station, the variable frequency signal is retranslated to direct current and displayed on a meter for the local operator. Nondedicated trunks are used for all signaling and, since all signaling is voice frequency alternating current, may be of any length. Key operations are selected by an array of PNP junction diodes connected in parallel such that only one of a plurality breaks down at any one time.

### 3,410,967 SIGNAL DURATION CHECKING CIRCUIT

George L. Boring, Metuchen, N.J., assignor to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York

Filed July 22, 1965, Ser. No. 473,958  
13 Claims. (Cl. 179-175.2)

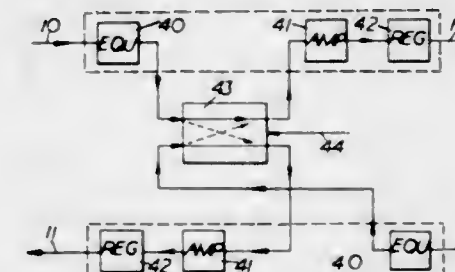


A pulse analyzer circuit is disclosed for testing the make-to-break ratio of any or each pulse of a continuous pulse train. An out-of-tolerance pulse is signaled by energizing an alarm actuated by a differential in the charge stored on two capacitors. One capacitor is charged during the make interval of a pulse, the other is charged during the entire pulse. A variable time constant is provided in one path so that the charge accumulated during the make period can be adjusted to equal the charge accumulated during the entire pulse if the make-to-break ratio of the tested pulse is within proper limits.

### 3,410,968 COMMUNICATION SYSTEMS

Roger Maurice Hochreutner, Harlow, Essex, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed June 21, 1965, Ser. No. 465,387  
Claims priority, application Great Britain, June 26, 1964, 26,502/64  
11 Claims. (Cl. 179-175.31)

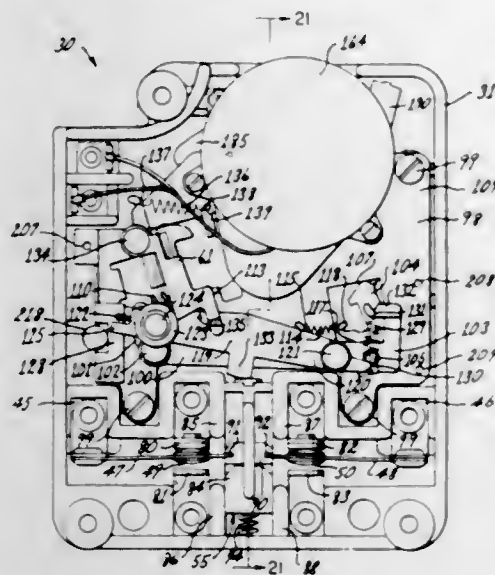


Remote supervision is maintained for a telecommunication line incorporating a plurality of repeater stages. The repeater chain is arranged as a shift register which is stepped off-on by switching line feed current. Line current and signal paths are looped at each repeater in turn by successive pulses so that faulty cable sections and repeaters can be identified. The switching element at each repeater is a silicon controlled rectifier gated by a thermistor.



**3,410,969**  
**SWITCHING DEVICE HAVING A LATCHABLE ACTUATING LEVER**  
 Arthur L. Good, Elkhart, Ind., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

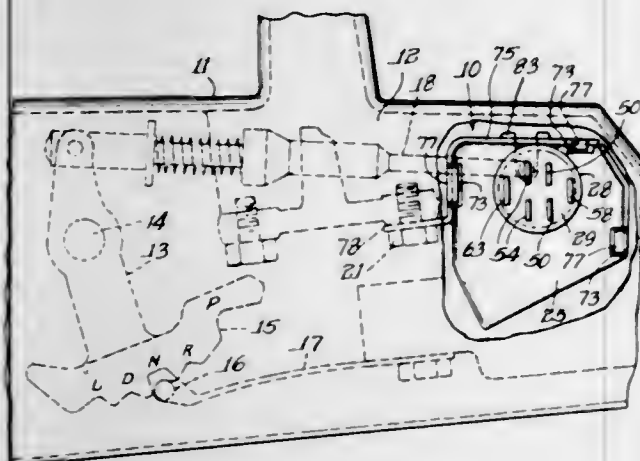
Filed Apr. 13, 1965, Ser. No. 447,765  
 30 Claims. (Cl. 200—38)



This disclosure relates to an electrical switching device or the like that has the actuator thereof moved from one position thereof to another position thereof by an actuating lever, the actuating lever having one end pivotally mounted to a free end of another pivotally mounted lever and having its other end adapted to be latched in one position thereof to provide a pivot point for the actuating lever, when the free end of the other lever is moved by a released spring force, to move the actuator to another operation position thereof.

**3,410,970**  
**NEUTRAL SAFETY AND BACKUP LIGHT SWITCH**  
 Andrew F. Raab, Chicago, Ill., assignor, by mesne assignments, to Littelfuse Inc., a corporation of Texas

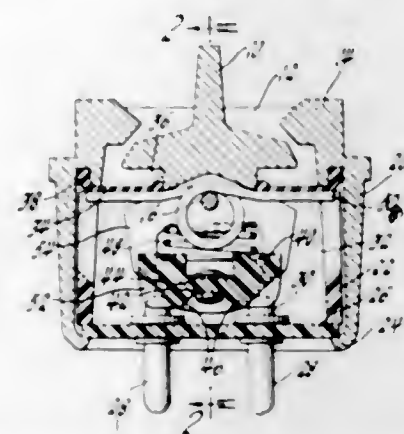
Filed Aug. 4, 1966, Ser. No. 570,237  
 16 Claims. (Cl. 200—61.91)



A neutral safety and backup light switch apparatus is provided for incorporation in an automatic transmission apparatus of an automotive vehicle also having engine starting means and backup light means, the automatic transmission apparatus including a transmission casing and a transmission means in said casing having a control member movable to park, reverse, neutral and forward positions in accordance with the operating conditions of the transmission means. The neutral safety and backup

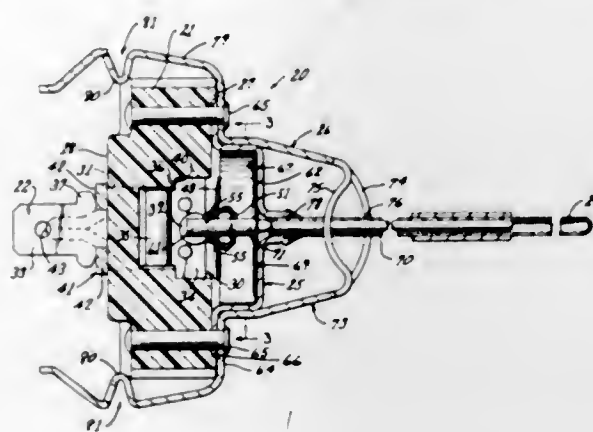
light switch apparatus is mounted within the transmission casing and operated by the control member therein and it provides for external electrical connection to the engine starting means and the backup light means. Where the automatic transmission apparatus also includes electrically operated control devices within the transmission casing, such as a cruise control, a variable pitch control, a direct downshift control, or the like, the switch apparatus of this invention may also make external electrical connections thereto.

**3,410,971**  
**DOUBLE THROW, SNAP ACTING ELECTRIC SWITCH**  
 Bela Sandor, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
 Filed Feb. 23, 1967, Ser. No. 618,033  
 3 Claims. (Cl. 200—67)



In a preferred form, the subject invention teaches a switch having a torsion spring centering means and a compression spring tending to separate a contact carrier from the actuator, the contact carrier having cam portions which serve to center the switch by virtue of the inclined portion of the cam engaging protruding fixed contacts in the switch body. When the actuator is pivoted, the contact carrier is driven along fixed contacts compressing the centering or compression spring with movable contacts carried by the contact carrier being snapped into engagement with the fixed contacts when the highest part of the cam is passed.

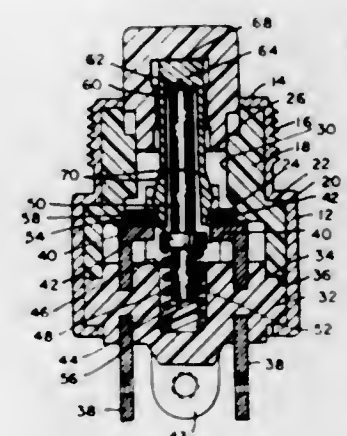
**3,410,972**  
**ELECTRICAL TERMINAL HAVING A TENSION LOOP THEREIN**  
 Hugh J. Tyler, Fairport, N.Y., and Denis G. Wolfe, Youngwood, Pa., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware  
 Original application Oct. 12, 1964, Ser. No. 403,039, now Patent No. 3,316,375, dated Apr. 25, 1967. Divided and this application Feb. 9, 1967, Ser. No. 614,996  
 3 Claims. (Cl. 200—166)



A thermostatically operated electrical switch construction wherein a movable contact is carried by an L-shaped flexible member and is moved toward a stationary contact

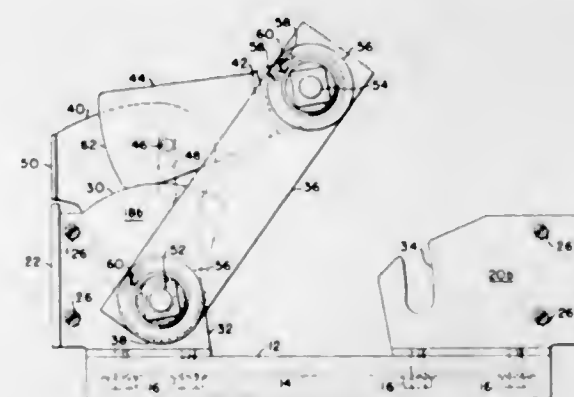
by an expansible and contractible power element, the contacts being electrically interconnected to terminal means having tension loops therein to positively maintain the contact interconnecting portions in fixed position relative to the housing of the switch construction. The switch construction includes unique bracket means for mounting the power element and capillary tube of the temperature sensing bulb to the housing of the switch construction.

**3,410,973**  
**MULTI-SPRING LEG APEX-TYPE SNAP ACTION SWITCH**  
 Robert W. Fraser and William H. Flanagan, Stamford, Conn., assignors to Nexus, Inc., Stamford, Conn., a corporation of Connecticut  
 Filed Dec. 6, 1966, Ser. No. 599,610  
 1 Claim. (Cl. 200—77)



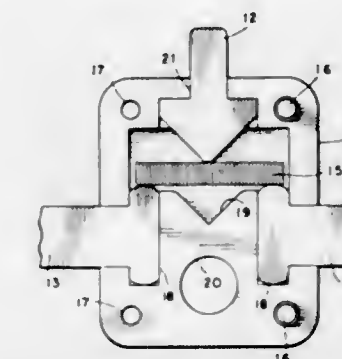
A multi-legged apex type snap action electrical switch having an apertured contact moveable axially in response to manual operation of a plunger into engagement with fixed contacts.

**3,410,974**  
**PRESSURE SWITCH MECHANISM**  
 Edwin E. Kussmaul, Westwood, Mass., assignor to Kelek Company, Norwood, Mass., a corporation of Massachusetts  
 Filed Jan. 30, 1967, Ser. No. 612,592  
 4 Claims. (Cl. 200—162)



A pressure contact switch has spaced mirror image sheet metal terminal parts readily adapted to receive lugs on busses, fuses or other connections. These current carrying terminal parts also serve as cams cooperable with a yoke, such yoke forming a collapsible triangle with an operating handle and the switch blades. This arrangement is combined with blade clamping bolts operable by angular displacement between the blades and the yoke and handle to apply pressure to the contacts in the closed switch position.

**3,410,975**  
**PLUNGER SWITCH WITH COILED SPRING CONTACTOR**  
 Elmo W. Volland, Indianapolis, Ind., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware  
 Filed Dec. 1, 1965, Ser. No. 510,914  
 6 Claims. (Cl. 200—166)

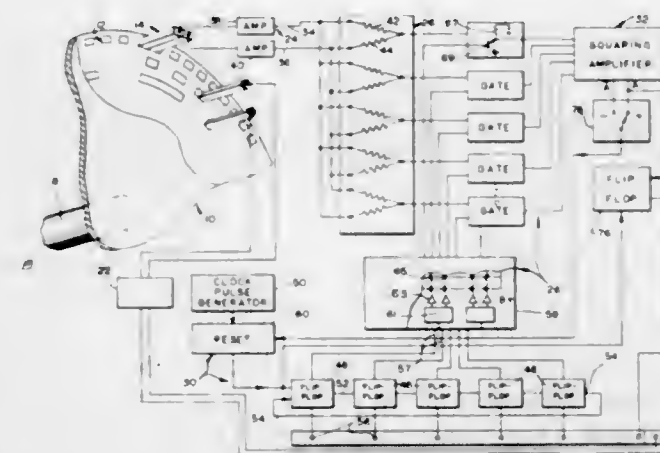


A coil spring contactor rests transversely atop a V-shaped groove in a switch housing. A plunger deforms the spring into the groove when actuated, causing the spring to move in relation to a pair of terminals. In one version of the switch, the spring moves out of contact with the terminals when the plunger is actuated; in another version, the spring moves into contact with the terminals.

#### ERRATUM

For Class 200—166 see:  
 Patent No. 3,411,037

**3,410,976**  
**SHAFT ANGLE ENCODER WITH PHASE DETECTION**  
 Paul C. Watson, Arlington, Mass., assignor, by mesne assignments, to Itek Corporation, Lexington, Mass., a corporation of Delaware  
 Filed June 9, 1965, Ser. No. 462,681  
 11 Claims. (Cl. 250—231)

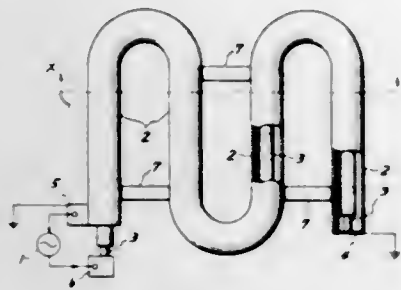


An optical shaft angle encoder having an outer track of alternating opaque and transparent areas sensed by a pair of photocells which are arranged relative to the track such that the signals from the photosensors are phase shifted by 90°. These signals are summed in a weighted resistive network to produce a number of phase displaced output signals. The phase displaced signals are selectively applied to a detector which detects a sign change in the signals indicative of a zero crossover and representative of the position of the encoder disc relative to the sensor. The commutator includes a binary ring counter, matrix, and a plurality of gates to which the signals are applied. When the zero crossover is detected, the binary counter is read out.



# **3,410,977** **METHOD OF AND APPARATUS FOR HEATING THE SURFACE PART OF VARIOUS CONSTRUCTION MATERIALS**

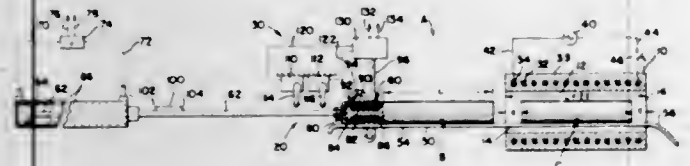
Masao Ando, 72 Higashi-tamagawa-cho, Setagaya-ku, Tokyo, Japan  
 Filed Mar. 28, 1966, Ser. No. 538,040  
 3 Claims. (Cl. 219-10.49)



Method of and apparatus for heating the surface of a road, floor and the like by using a heat-generating pipe buried in the construction material, consisting of an outside pipe made of a highly magnetic metal and an insulated wire disposed in the inside of said outside pipe, one end of said insulated wire being connected to one terminal of an alternating current source and the other end connected to a terminal fixed on one end of said outside pipe, the other end of the outside pipe being directly connected to the other terminal of the alternating current source. When an alternating current flows through the outside pipe, it passes only the inner surface of said pipe by the skin effect of the alternating current so as to generate heat on the inner surface of said pipe without current appearing on the outer surface of said pipe.

# **3,410,978** **APPARATUS AND METHOD FOR LOCATING AN ELONGATED WORKPIECE WITHIN A MULTI-TURN INDUCTION HEATING COIL**

Phillips N. Sorensen, Bedford, Ohio, assignor to Park-Ohio Industries, Inc., a corporation of Ohio  
 Filed Oct. 22, 1965, Ser. No. 501,295  
 9 Claims. (Cl. 219-10.69)



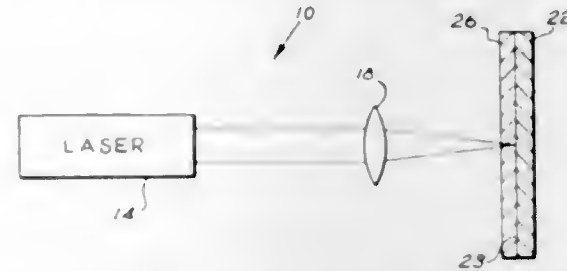
There is provided a method and apparatus for pushing a billet from an induction heating coil and for positioning a successive billet in the center of this coil. A pusher rod is provided with a pole piece that can be selectively magnetized. This pole piece pushes the second billet into the coil and, then when magnetized, it pulls the successive billet back into the proper position within the coil. When the successive billet is in the proper position, the pole piece is demagnetized and removed from the coil.

# **3,410,979** **METHOD AND APPARATUS FOR DRILLING HOLES BY MEANS OF A FOCUSED LASER BEAM**

Ivar F. Larsson, Oakland, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan  
 Filed May 28, 1964, Ser. No. 370,936  
 5 Claims. (Cl. 219-68)

The disclosure is of apparatus for generating holes including a highly absorptive support plate on which is supported a transparent workpiece in which holes are to

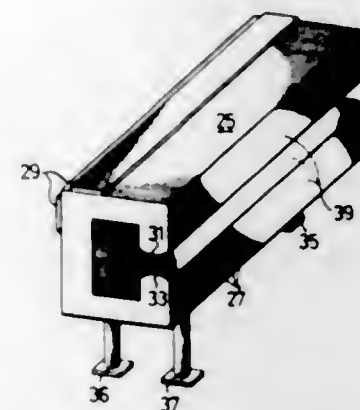
be formed. A laser light generator is coupled with an optical system so that its light beam is focused on the surface of the support plate and thus at the interface of



the workpiece and the support plate. The focused laser beam causes localized heating and vaporization of the surface of the support plate, and this forms holes in the workpiece.

# **3,410,980** **METHOD OF PRODUCING THE INDIVIDUAL MAGNETS OF A CIRCULAR PATH ATOMIC PARTICLE ACCELERATOR INCLUDING FINISHING THE SURFACE OF THE POLES BY ELECTRICAL DISCHARGE MACHINING**

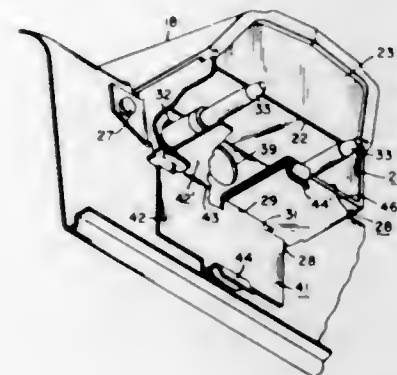
Paul Gugger, Watt, and Udo Strasser, Wallisellen, Switzerland, assignors to Oerlikon Engineering Company, Zurich, Switzerland, a corporation of Switzerland  
 Filed May 6, 1965, Ser. No. 543,774  
 1 Claim. (Cl. 219-69)



Magnetic cores formed of metal laminations are machined in situ, i.e., after they have been installed in their locations of use, by an electrical discharge technique.

# **3,410,981** **BROILER LID IMPROVEMENT FOR FRY PANS**

Harold W. Martin, Martinville, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
 Filed Oct. 28, 1966, Ser. No. 590,266  
 6 Claims. (Cl. 219-386)

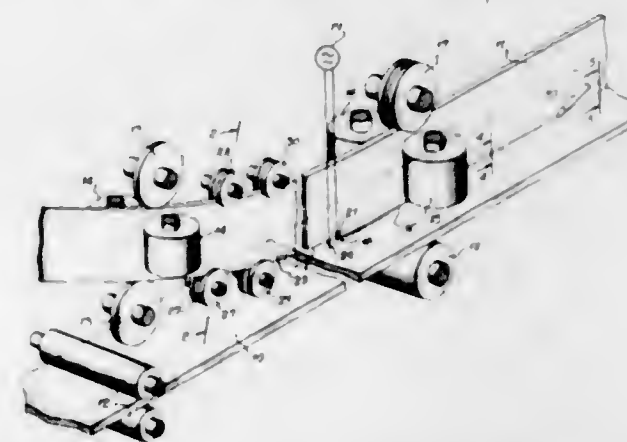


1. Cover structure for cooking apparatus, said structure comprising: a top wall and depending side, front and rear walls, a heater element having terminals and being removably supported by said top wall, said terminals

projecting through apertures in one of said depending walls, said one of said depending walls being provided with an aperture for receiving a probe control, and means supported adjacent said openings for selective blocking thereof whereby hot vapors generated in said cooking apparatus may be prevented from escaping through said openings.

# **3,410,982** **WELDING OF STRUCTURAL SHAPES BY HIGH FREQUENCY CURRENT**

Jack Morris, Monsey, and Fred Kohler, New York, N.Y., assignors to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey  
 Filed Mar. 2, 1965, Ser. No. 436,627  
 8 Claims. (Cl. 219-107)

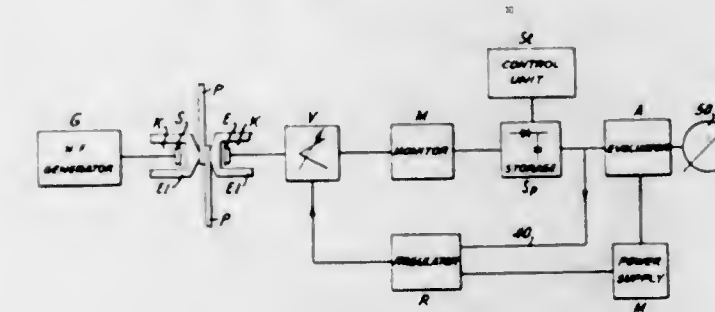


Process and apparatus for welding an edge of a strip-like member to the surface of another member using high frequency current and producing a weld which has a width at least substantially equal to the normal thickness of the strip-like member in which the strip is advanced with the other member along converging paths meeting at the weld point while high frequency current is supplied to the approaching faces and the edge of the strip is deformed prior to the application of the current thereto to provide projecting portions at the corners of the edge. After welding, extruded metal from the projecting portions may be removed.

# **3,410,983** **METHOD AND APPARATUS FOR RESISTANCE WELDING AND TESTING**

Karl Deutsch, Am Dorpweier 60, Wuppertal-Elberfeld, Germany, and Gunter Wilkens, Astenstr. 16, Hannover, Germany  
 Continuation-in-part of application Ser. No. 253,364, Jan. 23, 1963. This application June 8, 1965, Ser. No. 462,283

Claims priority, application Germany, May 23, 1962, D 38,984  
 18 Claims. (Cl. 219-109)

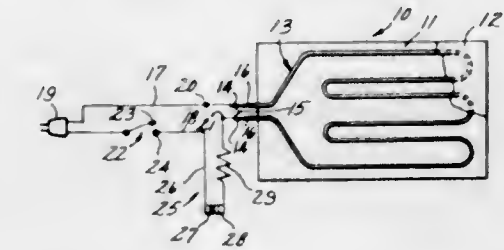


A resistance welder includes electrodes with coolant spaces having ultrasonic transducers therein for welding and testing. The welds are tested by transmitting first ultrasonic pulses through the welding zone while the workpieces are clamped but before flow of current, and

by transmitting second ultrasonic pulses through the welding zone after welding and while the workpieces are still clamped. A comparison circuit includes signal storage means for the first pulses and an evaluator whereby the first and second pulses can be compared to evaluate the welding quality.

# **3,410,984** **FLEXIBLE ELECTRICALLY HEATED PERSONAL WARMING DEVICE**

Phillip A. Sandford, Bryn Mawr, Pa., and William P. Somers, Prospect Heights, Ill., assignors to General Electric Company, a corporation of New York  
 Filed May 3, 1966, Ser. No. 547,363  
 8 Claims. (Cl. 219-212)

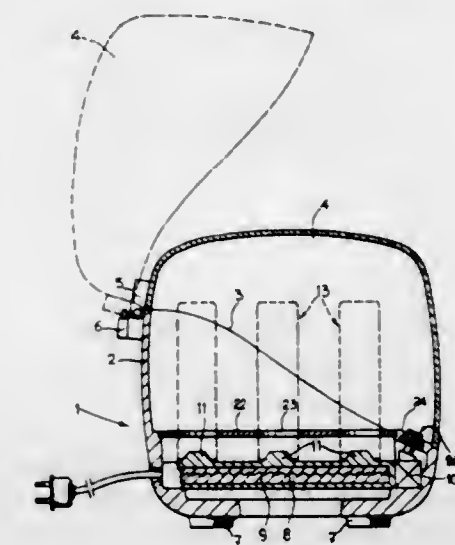


An electrically heated bedcover with a wire-like heater distributed in a pattern within the cover. The heater is formed by a pair of conductors separated by a layer of material having a large positive temperature coefficient of resistance to provide the desired wattage at normal operating temperature. An abnormal temperature over any area is accompanied by reduced heat output over that area.

# **3,410,985** **ELECTRICALLY HEATED HAIR CURLING APPARATUS**

Giovanni Giaccherio, Turin, Italy, assignor, by mesne assignments, to Penelope S.p.A., Turin, Italy  
 Filed Apr. 12, 1966, Ser. No. 542,151  
 Claims priority, application Italy, Jan. 10, 1966, 787/66

5 Claims. (Cl. 219-222)



A hair curler heater has a thermostatically controlled electrically heated support plate provided with upstanding short projections each of which cooperates with a complementary depression in the bottom of a plastic coated hair curler. The curlers are filled with a heat storing substance and have a central core of high heat conductivity material. A heat insulating diaphragm is spaced above the projections and has holes so that curlers may rest on the plate. A transparent cover is provided over the plate. The cover controls an electric heater switch and signal lamps are provided to indicate operation.



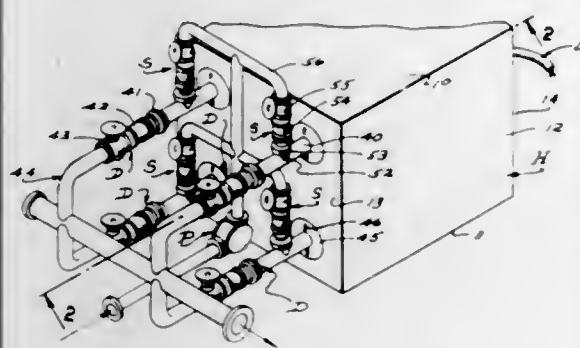
3,410,986

**ELECTRIC STEAM GENERATOR**

David W. Groom, Hemet, Calif. (2262 E. Lake Sammamish Road SE., Issaquah, Wash. 98027)

Filed Mar. 15, 1965, Ser. No. 439,715

15 Claims. (Cl. 219-271)



A steam generator comprising an insulated housing with a front wall and defining a chamber, a plurality of steam vessels with forwardly projecting necks and lead filled jackets arranged within the chamber, resistance heater units extending into the jackets and through the lead therein, steam conducting nipples connected with the vessel necks and with a steam manifold, shut-off valve means accessible at the exterior of the front wall controlling the flow of steam through the nipples and into the steam manifold, a water main, elongate wands extending through the nipples into the vessels and having nozzles to spray water in the rear of the vessels and manually operable valve means accessible at the exterior of said front wall and controlling the flow of water from the main into the vessels.

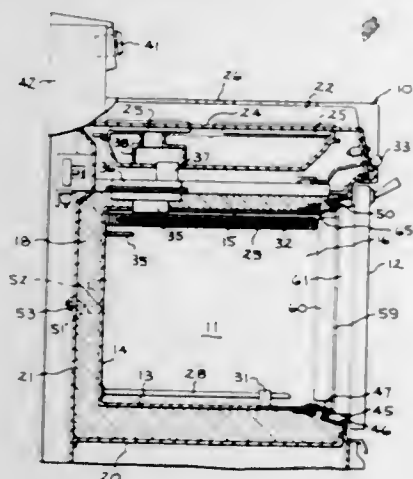
3,410,987

**ELECTRIC BAKING OVEN WITH A FRONT HEATING ELEMENT**

Bohdan Hurko and Raymond L. Dills, Louisville, Ky., assignors to General Electric Company, a corporation of New York

Filed May 12, 1966, Ser. No. 549,590

3 Claims. (Cl. 219-397)



1. An oven comprising a box-like oven liner having a front opening, an oven door for closing the oven liner opening and forming an oven cavity, first heating means for raising the temperature within the oven cavity, second heating means in the vicinity of a gap between the peripheral edge of the door and the front edge of the walls of the oven liner for replenishing heat lost through and around the door, said second heating means extending around the oven liner and being set back from said front edge of the walls of the oven liner, a hold-down strap of substantially the same length as the second heating means and overlying the same, said strap having a heat sink portion that is permanently fastened to the oven liner on the side remote from the said front edge, the area of the strap overlying the second heating means being of re-

duced area of predetermined size so as to govern the direction and amount of flow of heat from the second heating means toward and away from the front edge of the oven liner.

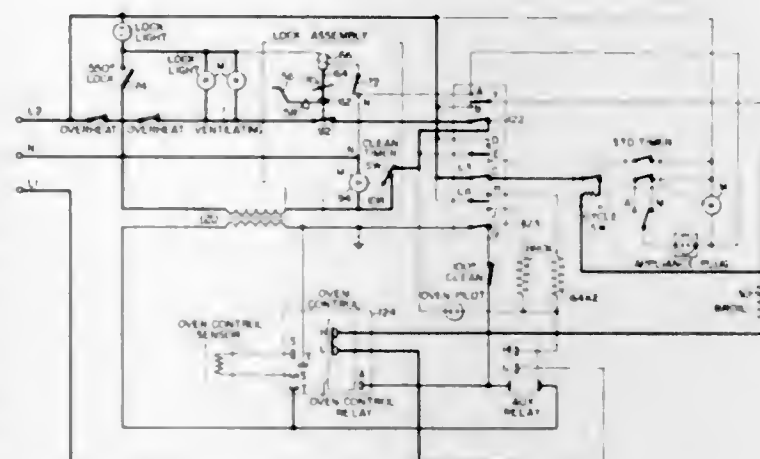
3,410,988

**HEAT-CLEANING OVEN TIMING CONTROL**

George W. Nagel, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 28, 1966, Ser. No. 546,093

7 Claims. (Cl. 219-412)



1. In an oven of heat-cleaning character:  
a cavity adapted to be heated to heat-cleaning temperatures;  
a door mounted on said oven for closing said cavity;  
means for latching said door;  
circuit means for controlling the heating of said cavity, said circuit means including a switch means operable to a position to terminate the heating of said cavity;  
electrically-powered drive means mounted on said oven;  
means driven by said drive means to a position causing said switch means to take a position terminating said heating of said cavity after a predetermined drive period;  
means biasing said driven means to a starting position in which said switch means is positioned to permit said heating of said cavity, said biasing means being disposed to move said driven means to said starting position only when said driven means is disengaged from said drive means; and  
means for effecting engagement of and disengagement of said drive means and said driven means in response to movement of said latch means into and out of the latching position, respectively.

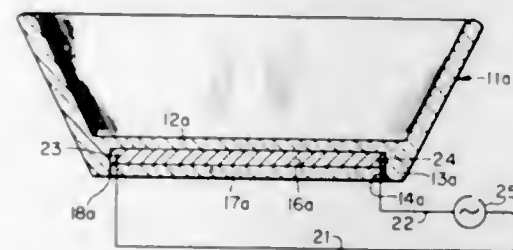
3,410,989

**HEAT TRANSFER MEMBERS AND METHOD OF FABRICATION THEREOF**

John W. Laws, Jr., Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Nov. 14, 1966, Ser. No. 593,772

4 Claims. (Cl. 219-438)



A heat transfer member comprising a parent plate of a glass or glass-ceramic material and graphite heat dis-

tribution plate hermetically sealed in said parent plate with the planar surfaces of the graphite plate disposed parallel with the planar surfaces of the parent plate, the graphite plate preferably being formed of pyrolytic graphite.

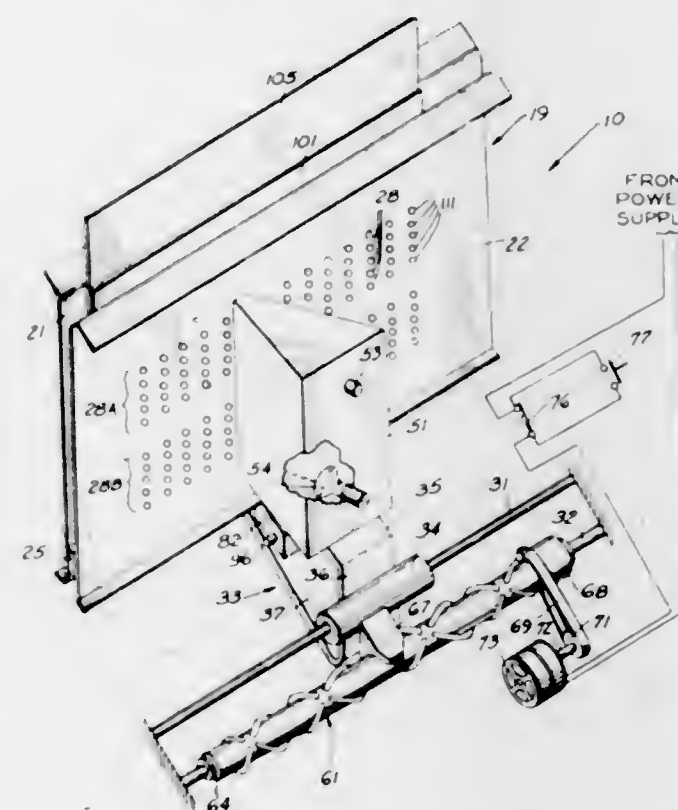
3,410,990

**TEST SCORING MACHINES**

William J. Flaherty, P.O. Box 272, Viola, Ill. 61486

Filed Apr. 1, 1964, Ser. No. 356,460

6 Claims. (Cl. 235-61.6)



A test scoring machine for use with test sheets each having a plurality of answers arranged in a predetermined pattern at answer indicator areas. The machine comprises mounting means for supporting a test sheet in alignment with a perforated key mask and a carriage movable along a linear path from one end of the mounting means to the other and back again. Sensing means comprising a pair of sensing devices each having an effective sensing area corresponding to one of the test sheet answer locations is mounted on the carriage in alignment with lamps or other radiant means for irradiating a limited portion of the test scoring sheet corresponding to one of the answer locations. The machine further includes test score accumulation means and a selector for selectively connecting the accumulation means to one of the sensing devices as the carriage moves in one direction and to the other sensing device as the carriage moves in the opposite direction.

3,410,991

**READING DEVICE FOR AN INFORMATION BEARER**

Petrus Ludovicus Maria van Berkel, Voorburg, Netherlands, assignor to De Staat der Nederlanden, ten Deze Vertegenwoordigd Door de Directeur-Generaal der Posten, Telegrafie en Telefonie, The Hague, Netherlands

Filed Nov. 30, 1960, Ser. No. 72,666

Claims priority, application Netherlands, Dec. 8, 1959,

246,215

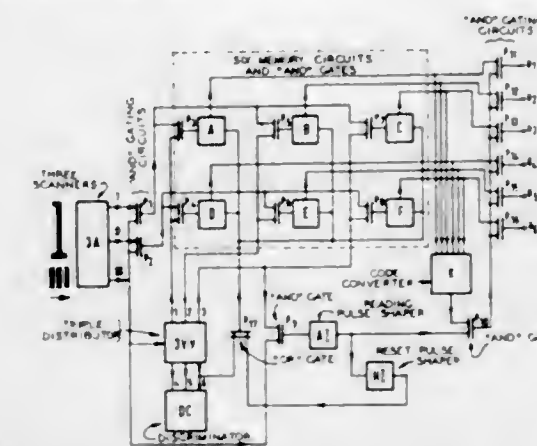
13 Claims. (Cl. 235-61.11)

1. A reading device for an information bearer provided with horizontal rows of characters, said device comprising:

(a) means (I, I', I'' and II, II', II'') for simultaneously

scanning each element of each character of said bearer horizontally at a simultaneous plurality of vertical spots based within the original vertical tolerance of each character on said bearer,

(b) AND gate means connected to said scanning means for detecting said simultaneously scanned spots,



(c) means (A-F) connected to said gate means for storing the information scanned from each character, (d) means (K) connected to said storing means for checking the stored information for validity, and (e) means (P10-P16) connected to said checking means for transferring valid stored information from said storing means.

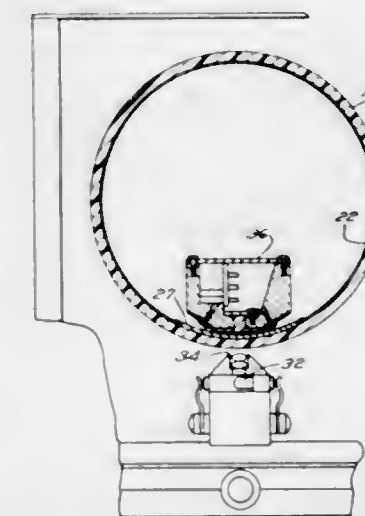
3,410,992

**PUNCHED CARD READING AND PROGRAMMING DEVICE**

Mordechai Wiesler and Virgilijus Martinonis, Brookline, Mass., assignors to Transistor Automation Corp., Cambridge, Mass., a corporation of Massachusetts

Filed Apr. 16, 1964, Ser. No. 360,252

3 Claims. (Cl. 235-61.11)



A drum of translucent material holds a punched card which is curled and inserted therein. A latch holds and positions the card in place. An electro-optical head provides a light source and light detecting elements and extends in spaced relation on opposite sides of the drum wall whereby, when the drum is rotated, coded signals are generated from light passing through the apertures in the punched card.

3,410,993

**FLEXIBLE SIGNAL AVERAGING METHOD AND APPARATUS**

David E. Wood, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

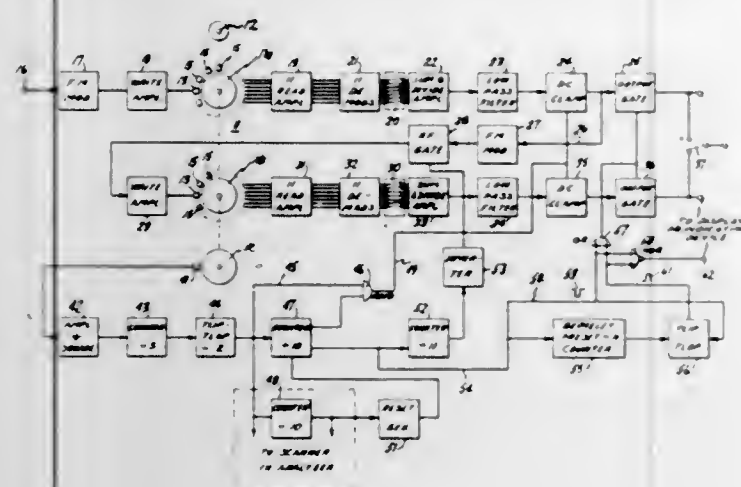
Filed Dec. 10, 1963, Ser. No. 329,464

15 Claims. (Cl. 235-193)

Averaging of many successive spectral cross sections of a signal, with minimum distortion, is achieved by minimizing the number of signal transfers. The successive

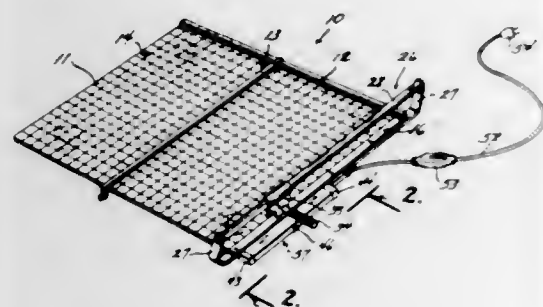


spectral cross sections are continually recorded on a first recording medium and read out in parallel to first averaging apparatus. The resulting averaged signal is recorded in successive spectral cross sections on a second recording



medium. Signals are read out of the second medium in parallel to second averaging apparatus which furnishes its averaged output signal to utilization means, or to third recording means for further averaging the signal one or more times prior to utilization.

**3,410,994**  
**PAPER CUTTER BOARD ILLUMINATOR**  
Louis A. Facto, 3416 Woodland,  
Ames, Iowa 50010  
Filed Nov. 12, 1965, Ser. No. 507,409  
2 Claims. (Cl. 240—2)

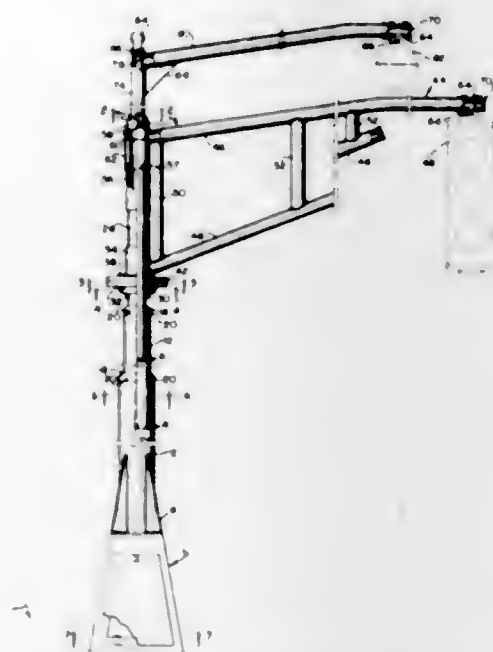


This invention relates to a paper cutter illuminator apparatus wherein immediately below the entire cutting edge of the paper cutter, an illuminating unit is detachably mounted which has a translucent upper wall, the structure such that as the cutting wheel moves along the cutting edge it substantially bisects the upper wall longitudinally thereof as viewed in plan, with the upper wall extended laterally inwardly and outwardly of the line of contact of the cutting wheel with the edge, and wherein light rays are thrown between the cutting edge and the cutter for clearly illuminating, to the naked eye, for example, a line placed on the paper to be cut.

**3,410,995**  
**UPRIGHT, SECTIONAL, TUBULAR SUPPORT STANDARD**  
James F. Gray, 3717 Cedar Elm,  
Wichita Falls, Tex. 76308  
Filed Feb. 24, 1965, Ser. No. 434,804  
15 Claims. (Cl. 240—84)

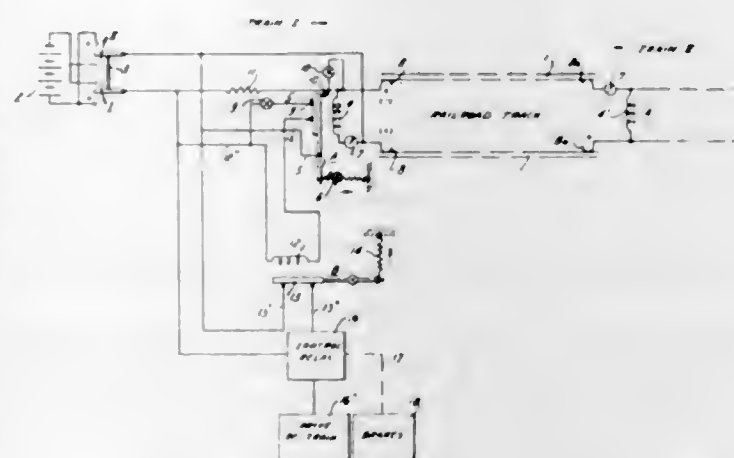
An upright standard of tubular construction, which may be assembled to present substantially the rigidity of a standard of unitary construction, and may be disassembled

and the tubular members of smaller size may be completely telescoped into the larger tubular member and base for shipping and storage. When assembled into an upright standard, the tubular joints are sealed to present a weather tight construction, which enables electrical wires to be run therethrough, when it is desired to install lighting fixtures street lights or the like, near the upper end of the standard. Provision is made to detachably connect an outstanding, tubular arm intermediate the length



of the standard, which arm is in conduit communication with the interior of the upright, tubular standard, to enable wires to pass therethrough in protected relation to a light fixture mounted thereon near the end thereof. Further provision is made to have the arm arcuately rotatable to enable the arm to be moved out of the way of tall objects being moved thereby. Still further provision is made to enable the arm to paravane in event wind pressure exceeds safe limits, which the arm is constructed to withstand.

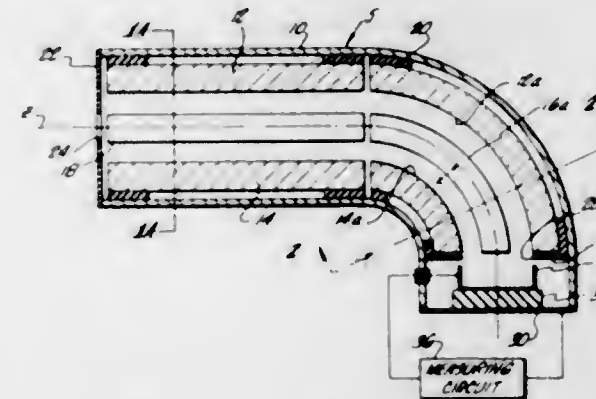
**3,410,996**  
**ARRANGEMENT FOR PREVENTING COLLISION OF TRAINS**  
Carlo Carrino, Taranto, Italy (T/T. Naess Thunder, Nederlandse Norress Scheepvaart Maatschppij N.V., 20-24 Osdorppelein, Amsterdam, Netherlands)  
Continuation-in-part of application Ser. No. 309,620, Sept. 18, 1963. This application June 12, 1967, Ser. No. 651,088  
7 Claims. (Cl. 246—65)



A device for preventing the collision of railway trains on a single track. Trains using a common track are each equipped with the device. When any one train approaches another train within a proximity regarded as unsafe, a signal is transmitted and/or brakes are applied

for the purpose of holding the train. The device is operative regardless of whether the trains are moving in the same or opposite directions. An electromagnetic relay remains energized under normal conditions, and when no collisions are apparent. When, on the other hand, two trains get too close to each other from either the front or the rear, the relay is released, and a signal is transmitted whereby the trains may be stopped.

**3,410,997**  
**MULTIPOLE MASS FILTER**  
Wilson M. Brubaker, Arcadia, Calif., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois  
Filed Sept. 8, 1964, Ser. No. 394,815  
9 Claims. (Cl. 250—41.9)

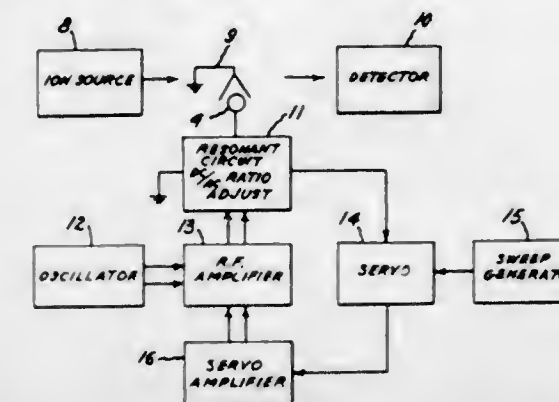


1. A multipole mass filter for selectively detecting charged particles comprising:
  - a source of charged particles,
  - a plurality of substantially parallel first electrodes symmetrically disposed about a central axis, said electrodes being laterally spaced about the central axis electrodes,
  - a source of AC voltage,
  - means coupling the first electrodes to the AC voltage to create an alternating multipole electric field component between the electrodes,
  - a source of DC voltage,
  - means coupling the first electrodes to the DC voltage to create a static multipole electric field component between the electrodes,
  - a plurality of second electrodes disposed in spaced relation to the exit end of the first electrodes, the second electrodes having a portion thereof adjacent the exit end of the first electrodes disposed in alignment with relation to the first electrodes and the central axis of the first electrodes and a portion thereof remote from the exit end of the first electrodes disposed out of alignment with relation to the central axis of the first electrodes,
  - a collector disposed adjacent the exit end of the second electrodes, and
  - means for connecting the plurality of second electrodes to a source of deflecting voltage for diverting the trajectory of a charged particle beam emerging from the exit end of the first electrodes.

**3,410,998**  
**ELECTRICAL CONTROL CIRCUIT FOR A SCANNING MONOPOLE MASS ANALYZER**  
Robert L. Watters, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York  
Continuation-in-part of application Ser. No. 426,832, Jan. 21, 1965. This application Sept. 27, 1965, Ser. No. 490,615  
4 Claims. (Cl. 250—41.9)

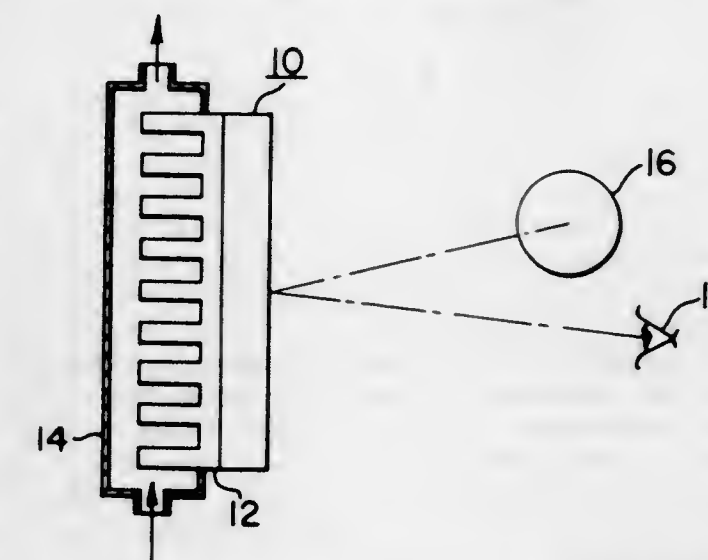
An electrical control circuit for supplying a regulated voltage to a monopole mass analyzer or filter capable of sweeping through a mass range of up to 600 to 1 includes

an oscillator for generating an alternating voltage, a voltage divider for sampling a portion of the alternating voltage, a rectifier for transforming the sample portion into a unidirectional voltage, a servo circuit for regulating the unidirectional voltage to a preselected and selectable frac-



tion of the alternating voltage and a sweep circuit for simultaneously sweeping the absolute values of the unidirectional and alternating voltages through a preselected range without altering the relative values of the alternating and unidirectional voltages to one another.

**3,410,999**  
**DISPLAY SYSTEM UTILIZING A LIQUID CRYSTALLINE MATERIAL OF THE CHOLESTERIC PHASE**  
James L. Ferguson, Penn Hills, Verona, and Arthur E. Anderson, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed June 29, 1965, Ser. No. 467,851  
9 Claims. (Cl. 250—43.5)



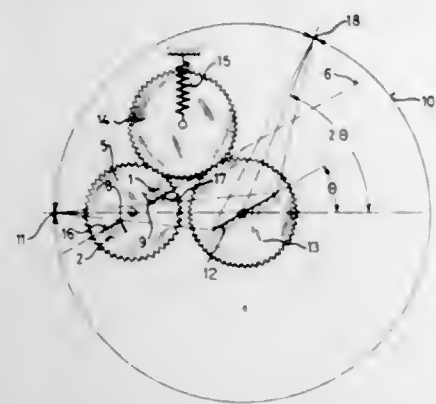
A large area display screen is provided which includes a layer of liquid crystalline material of the cholesteric phase in which a temperature image is applied thereto according to electrical information by means of lossy elements provided in intimate contact with the liquid crystalline material. The lossy elements may be in the form of resistive elements of nonlinear characteristics.

**3,411,000**  
**X-RAY DIFFRACTOMETER DIAPHRAGM WHICH IS SYNCHRONOUSLY ROTATED WITH THE SPECIMEN**  
Rolf Werner Schliephake, Wilhelm Grimberg, and Joachim Ficker, Essen, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a German company  
Filed Apr. 14, 1965, Ser. No. 455,031  
2 Claims. (Cl. 250—51.5)

A diaphragm arrangement, essentially comprising an aperture diaphragm with two diaphragm plates, for use



in an X-ray diffractometer, wherein the surface of a rotatable specimen is intended to be fully scanned, whereby the movement of the diaphragm plane is synchronous



with the movement of the specimen, so that the diaphragm plane is invariably at right angles to the surface of the specimen.

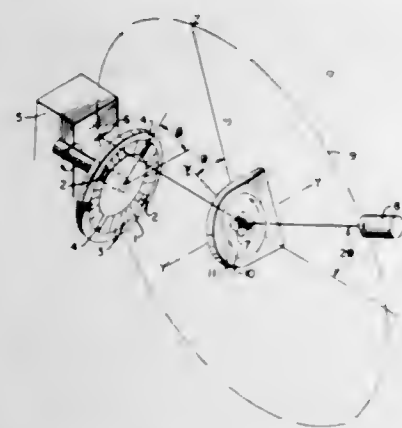
3,411,001

# APPARATUS AND PROCESS FOR ELIMINATING PREFERRED ORIENTATION IN X-RAY DIFFRACTION IN CRYSTALS

Zigmond W. Wilchinsky, Westfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Continuation-in-part of application Ser. No. 403,271, Oct. 12, 1964. This application Oct. 22, 1965, Ser. No. 501,755

16 Claims. (Cl. 250—51.5)



This invention concerns an apparatus and method by which the intensities comprising an X-ray diffraction pattern are averaged using a prescribed weighting factor in the averaging operation. The method may be used to eliminate the distortions in a diffraction pattern due to the presence of preferred orientation in the material under inspection.

3,411,002

# APPARATUS FOR IRRADIATING GOODS DURING MOVEMENT PAST A RADIOACTIVE SOURCE MOUNTED IN A SHIELD ENCLOSURE

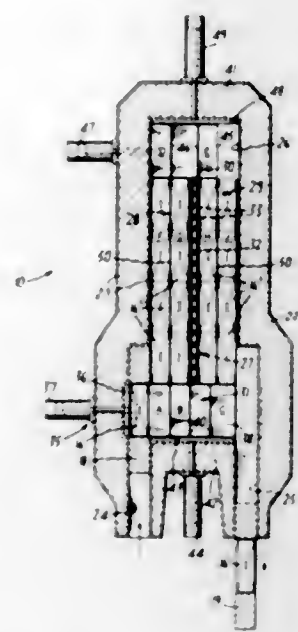
Jack Armel, New York, N.Y., assignor to Parsons-Jurden Corporation, New York, N.Y., a corporation of New York

Filed June 19, 1963, Ser. No. 288,974

10 Claims. (Cl. 250—52)

1. An irradiator comprising a substantially closed shell of radiation-absorbing material providing an enclosed volume, radiation source means in the form of a slab centrally disposed in the enclosed volume and spaced from opposite sides thereof to provide passageways extending longitudinally along opposite sides of the slab, the slab also being spaced from at least one end of the enclosed volume to provide a passageway extending transversely across the end of the enclosed volume, transfer means including a loading breech made of radiation absorbing

material slidable in a recess in the substantially closed shell; for transferring successive units of material to be irradiated into the enclosed volume in sequence and for transferring irradiated units out of the enclosed volume in sequence, and conveying means for conveying the units



to be irradiated by intermittent motion with intervening dwell periods of selected duration along successive paths within the enclosure extending along one side, across one end, and along the other side of the radiation source means.

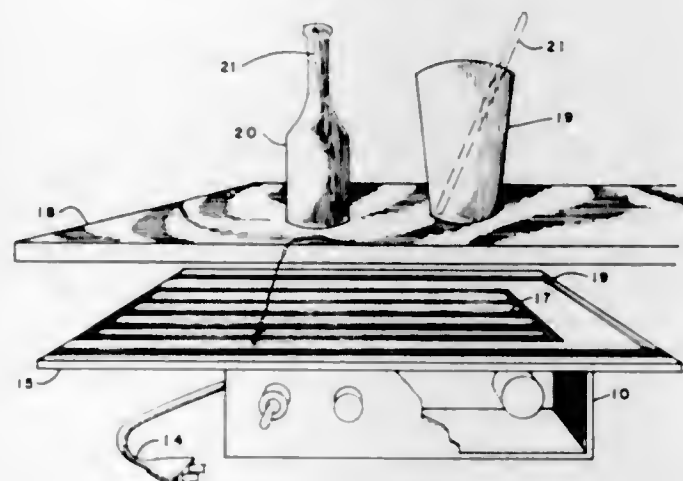
3,411,003

# ILLUMINATED NOVELTY BAR DISPLAY APPARATUS

John I. Pearce, Austin, Tex., assignor to Nu-Tech, Inc., Fairmont, Minn., a corporation of Minnesota

Filed Mar. 31, 1966, Ser. No. 539,193

6 Claims. (Cl. 250—75)



1. Illuminated novelty display apparatus adapted to illuminate upstanding fluorescent gas-filled objects comprising:

- (A) a radio-frequency energizer having
  - (1) at least one electronic control device such as a vacuum tube in
  - (2) an oscillator circuit configuration adapted to oscillate at very low radio frequencies;
- (B) a rectangular antenna-counterpoise array adapted to rest in a horizontal plane and radiate electromagnetic energy in a plane at right angles to the plane of the array;
- (C) Means for mounting said antenna-counterpoise array under a horizontal surface such as a tabletop;

## (D) Novelty and display objects

- (1) fabricated from semitranslucent material
- (2) said objects provided with an internal cavity
- (3) said cavity coated with a fluorescent material, and
- (4) containing a mixture of neon and argon gas and a minute quantity of mercury, such that said objects and display devices are capable of fluorescent illumination when placed in a low frequency electromagnetic field.

3,411,004

# TWO-PIECE RADIATION DETECTOR OF THE POCKET DOSIMETER TYPE

John P. Frank, South Fort Mitchell, Ky., assignor to The Bendix Corporation, Cincinnati, Ohio, a corporation of Ohio

Filed July 27, 1964, Ser. No. 385,146

6 Claims. (Cl. 250—83.3)



- 1. Apparatus for measuring radiation comprising chamber means in which ionization takes place due to radiation to be detected, frame means situate in said chamber means, fiber means being flexible and being connected to said frame means, means for causing said flexible fiber means to be repelled from said frame means, said ionization causing said fiber means to move a corresponding degree closer to said frame means, the position of said fiber means relative to said frame along a given direction being thus representative of the radiation encountered,
- a first elongated housing,
- said chamber means, frame means, fiber means, and means for causing said flexible fiber means to be repelled from said frame means being in said first housing, said housing being light transmitting along its axis and said fiber responding in said given direction transverse said axis,
- a second elongated housing attachable to and removable from said first housing by readily separable telescopic coaxial engagement therewith,
- a light transmitting eyepiece assembly being in said second housing along the axis thereof and comprising a reticle therein having radiation unit markings thereon

along a given direction transverse the axis of said second housing, means for locating said first and second housing in a predetermined rotational registration upon telescopic engagement wherein the reticle in said second housing is aligned with the frame means in said first housing whereby the direction of fiber means displacement coincides with the direction of corresponding displacement of the radiation unit indication markings on the reticle so they are superimposed upon viewing along the axis of the assembled first and second housings.

3,411,005

# COMPACT INFRARED DETECTOR SYSTEMS WITH REGULATED POWER SUPPLY

William C. Taylor, Waterford, Pa., assignor to Automation Devices Inc., Erie, Pa., a corporation of Pennsylvania

Filed Jan. 24, 1966, Ser. No. 522,572

2 Claims. (Cl. 250—83.3)

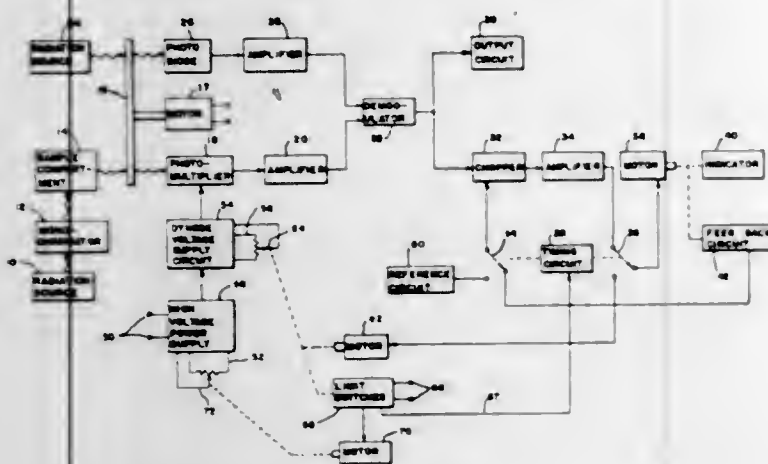


1. An infrared detector system comprising in combination: an emitter probe including a source of infrared energy; a detector probe including means for detecting said infrared energy, said detector probe being positioned so that said infrared energy is impinged upon said detector means; and a control circuit coupled to a source of power and to said emitter probe and said detector probe operated in accordance with the infrared energy impinged on said detector means to provide an output control signal, said control circuit comprising a resistance bridge including as its four legs three resistors, at least one of which is a variable resistor having an output tap, and said detector means, a transistor adapted to compensate for changes in the resistance of said detector means due to temperature having a base electrode which is coupled to the junction between said detector means and one of said resistors, a collector electrode which is coupled through a load resistor to the junction between said detector means and the other one of said resistors and an emitter electrode which is coupled to said output tap of said variable resistor, said transistor being biased by and rendered conductive and non-conductive responsive to the balanced condition of said resistance bridge; output means for providing said output control signal; a transformer having a primary winding and a pair of secondary windings, said source of power being coupled to said primary winding, means coupled to one of said pair of secondary windings for providing a constant voltage to both said source of infrared energy and said resistance bridge, said output means being coupled to the other one of said pair of secondary windings; and means included in said coupling between said secondary winding and said output means normally operative to prevent current flow through said output means and rendered operative to permit current flow through the same to operate it to provide said output signal by said transistor.



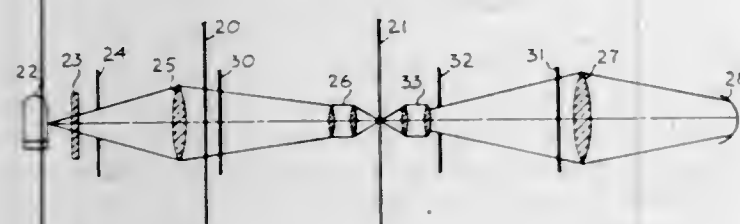
### 3,411,006 GAIN CONTROL SYSTEM COMPRISING TWO MOTORS

James J. Chisholm, Rochester, and Alexander E. Martens, Greece, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York  
Filed Feb. 14, 1966, Ser. No. 527,233  
12 Claims. (Cl. 250-214)



1. A control system comprising:
  - a signal translating circuit adapted to be gain controlled including an input circuit and an output circuit;
  - a gain control circuit coupled to said signal translating circuit for controlling the gain thereof, said gain control circuit including first and second variable impedance means for determining the gain of said signal translating circuit;
  - detection means coupled to said first variable impedance means for developing a control voltage when said first variable impedance means is varied to preset limits;
  - first motor means coupled to drive said second variable impedance means;
  - first circuit means coupling said detection means to said first motor means for applying said control voltage to drive said first motor means in a predetermined direction;
  - second motor means coupled to drive said first variable impedance means;
  - second circuit means coupling said output circuit of said signal translating circuit to said second motor means so that said first and second motor means cooperate to control the gain of said signal translating circuit so that the amplitude of the signal at said output circuit is adjusted to a substantially constant value for variable signal amplitude applied to said input circuit.

**3,411,007  
RADIATION SENSITIVE OPTICAL SYSTEM FOR MATCHING COMPLEMENTARY CODES**  
James S. Thompson, Los Angeles, Calif., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware  
Filed Oct. 27, 1964, Ser. No. 406,779  
13 Claims. (Cl. 250-219)



An optical system for comparing complementary first and second record-bearing media, each defining discrete opaque and light transmissive areas. The record-

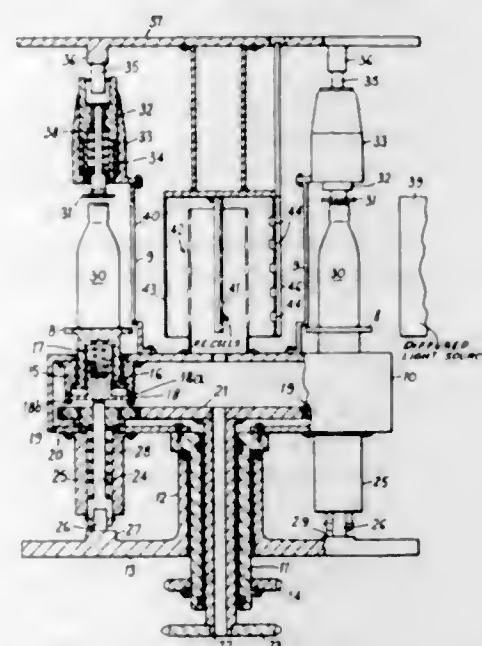
bearing media are superimposed between a light source and a light sensor so that no light is passed to the sensor if the record-bearing media match. In order to eliminate the effects of stray light, masks are utilized having openings smaller than the light transmissive areas of the record-bearing media. A diaphragm is used to eliminate diffracted light from reaching the sensor.

**3,411,008  
ADHESIVE APPLIER USING REGISTER AND SWITCHING DEVICES**  
Bettina Doris Coombes, London, and Bernard Peter Heneage Bunt, Whyteleafe, England, assignors to The Metal Box Company Limited, London, England, a British company  
Filed Sept. 21, 1964, Ser. No. 397,927  
Claims priority, application Great Britain, Sept. 23, 1963, 37,769/63  
12 Claims. (Cl. 250-219)



Discontinuity in lines of adhesive applied to carton blanks is discerned by a detector electrically connected to the first register unit of a plurality of register units which are connected in series and with a driver circuit which produces successive pulses to transfer a signal from said device in succession from one register unit to the next, and a switching means determines from which of the register units a signal is emitted to cause the faulty blank to be displaced relative to other blanks moved in succession past the detector.

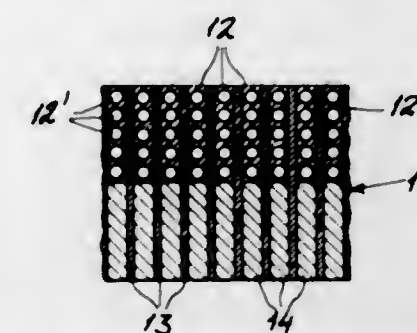
**3,411,009  
RADIATION SENSITIVE APPARATUS FOR DETECTING DIRT IN TRANSPARENT BOTTLES**  
Geoffrey Ewart Ford and Jeffrey Jerome Sainsbury, Bedford, England, assignors to Fords (Fensbury) Limited, Bedford, England, a British company  
Filed Oct. 5, 1964, Ser. No. 401,600  
7 Claims. (Cl. 250-223)



The invention relates to photo-electric inspection apparatus for the detection of dirt or foreign bodies in trans-

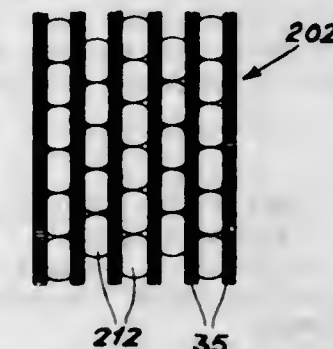
parent bottles in which the bottle is rotated between a diffusing light source and a row of photo-electric cells and is scanned by a slit as the bottle rotates.

**3,411,010  
FIBER-OPTIC CABLE COMPRISING A PLURALITY OF RIBBONS, EACH HAVING A PLURALITY OF LIGHT CONDUCTIVE FIBERS**  
Rudolf Genähr and Kurt Brode, Bad Kreuznach, Germany, assignors to Jos. Schneider & Co., Bad Kreuznach, Germany, a corporation of Germany  
Filed Aug. 8, 1966, Ser. No. 571,035  
Claims priority, application Germany, Sept. 18, 1965, Sch 37,749  
6 Claims. (Cl. 250-227)



1. A fiber-optical cable for the transmission of luminous radiation, comprising a plurality of light-conductive ribbons each composed of a resinous matrix having a plurality of light-conductive fibers imbedded therein in a planar array, a set of metallic first opaque foils wider than said ribbons interleaved with the ends of the latter and assembled therewith into a stack, and a set of narrower second opaque foils of a thickness equaling that of said ends disposed alongside said ends between over-hanging portions of said first foils whereby said stack is solidified throughout a substantially rectangular cross-sectional area, said ends being exposed to incident light along one face of said stack, the combined thickness of a ribbon and an adjoining first foil being a fraction of a millimeter, said fibers having a diameter equal to substantially half said combined thickness.

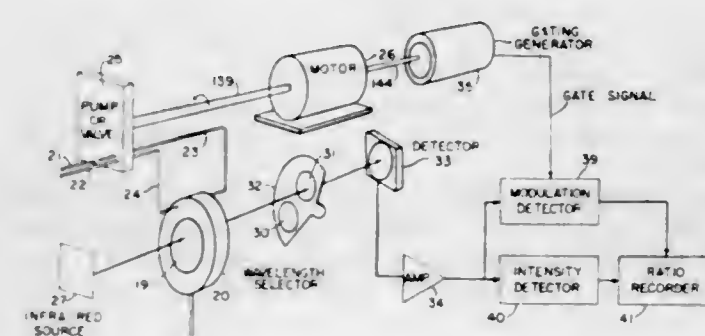
**3,411,011  
FIBER-OPTIC CABLE COMPRISING ROWS OF INTERLEAVED LIGHT-CONDUCTING FIBERS WITH MASKING OF FIBER PORTIONS IN ZONES COMMON TO FIBERS OF ADJACENT ROWS**  
Rudolf Genähr and Kurt Brode, Bad Kreuznach, Germany, assignors to Jos. Schneider & Co., Optische Werke Kreuznach, Bad Kreuznach, Germany, a corporation of Germany  
Continuation-in-part of application Ser. No. 571,035, Aug. 8, 1966. This application Aug. 11, 1967, Ser. No. 659,926  
Claims priority, application Germany, Sept. 18, 1965, Sch 37,749; Aug. 17, 1966, Sch 39,414  
1 Claim. (Cl. 250-227)



Fiber-optical transmission system wherein a flat cable composed of a multiplicity of light-transmissive fibers has a straight input end designed to receive a luminous

image of an object to be measured, the output end of the cable being curved in a circular arc centered on an axis about which a disk, carrying one or more radial light conductors, is rotatable in the plane of the cable to scan the confronting terminations of the fibers and to pick up luminous impulses therefrom; advantageously, the extremities of the fibers extend radially toward the disk axis at the output end and similarly converge toward the source of illumination at the input end.

**3,411,012  
INFRARED ABSORPTION DEVICE FOR DETECTING SMALL CHANGES IN THE ISOTOPIC PURITY OF WATER**  
John G. Bayly, Deep River, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation of Canada  
Filed July 9, 1965, Ser. No. 470,688  
Claims priority, application Canada, Sept. 1, 1964, 910,772  
8 Claims. (Cl. 250-43.5)



An apparatus for measuring the concentration of a specific contaminant is described in which illumination from a source is passed through a sample cell into which may be introduced a test sample of the substance with an unknown concentration of contaminant and a sample of the same substance with a known concentration alternately. The radiation passing through the sample cell is led through a filter and falls on a detector. The output from the detector is then passed to a modulation detector which determines the variation in illumination caused by the test sample and the reference sample. Subsequently the filter is changed to pass a wavelength band in which it is known that the contaminant offers a different absorption to the radiation with respect to the absorption by the substance than in the first filter wavelength pass band. The two modulation signals are then compared and the compared output is dependent upon the unknown concentration of contaminant in the test sample.

### ERRATUM

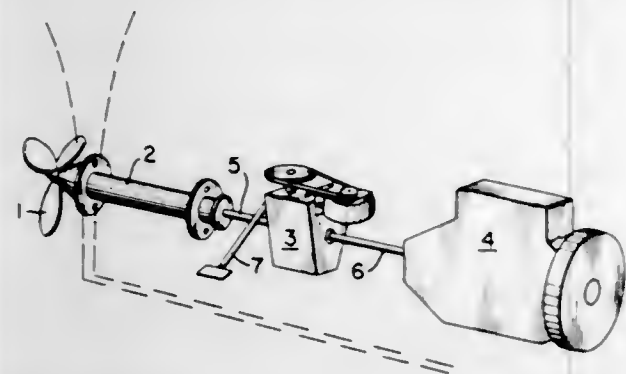
For Class 250-231 see:  
Patent No. 3,410,976

**3,411,013  
MARINE ACCESSORY DRIVE**  
Roger G. Vogelsang, Box 283, Ada, Mich. 49301  
Filed Apr. 4, 1966, Ser. No. 539,936  
9 Claims. (Cl. 290-4)

1. An accessory drive system for sailing craft and the like, comprising in combination: a propeller element rotatably mountable upon such a craft; an internal combustion engine for providing power to drive said propeller; means interconnecting said propeller and engine for coupling said power source to said propeller and also for uncoupling said propeller from said engine; said propeller when uncoupled and drawn through the water by the

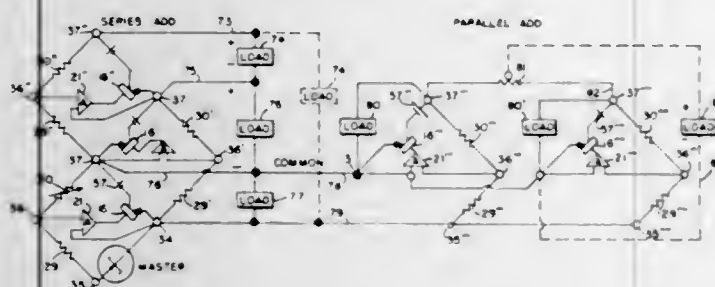


movement of said craft while under sail and being substantially freely rotatable; and generating means coupled



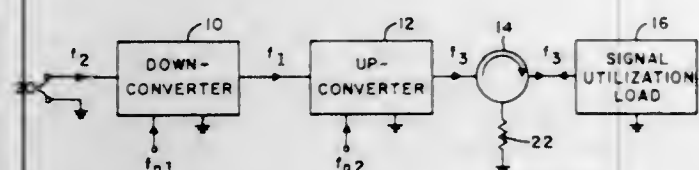
to said propeller element to be driven thereby, for generating electrical power as a result of the rotation of the uncoupled propeller.

**3,411,014**  
**REGULATED POWER SUPPLIES COMBINED IN SERIES VOLTAGE AIDING AND SHUNT CURRENT AIDING COMBINATIONS**  
Kenneth Kupferberg, Flushing, N.Y., assignor to Forbro Design Corp., New York, N.Y., a corporation of New York  
Original application Mar. 15, 1962, Ser. No. 179,851, now Patent No. 3,275,927, dated Sept. 27, 1966. Divided and this application June 16, 1966, Ser. No. 558,015  
5 Claims. (Cl. 307-24)



Bridge controlled multiple voltage and current regulated power supplies are combined to provide higher voltages and higher currents in master-slave relationship wherein the output voltages of two or more voltage regulated power supplies are added together to supply one or more loads and the output currents of two or more current regulated power supplies are added together to supply a further load or loads.

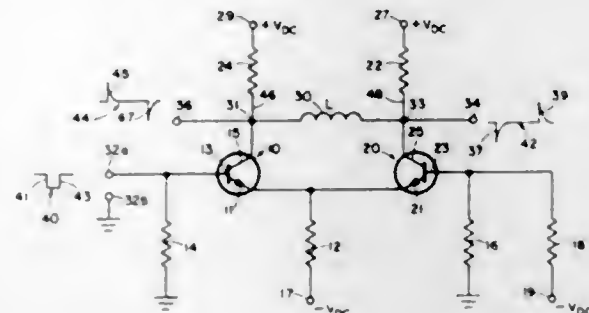
**3,411,015**  
**PARAMETRIC AMPLIFICATION SYSTEMS UTILIZING LOW PUMP FREQUENCIES**  
Richard La Rosa, South Hempstead, N.Y., assignor to Hazeltine Research, Inc., a corporation of Illinois  
Original application Nov. 10, 1964, Ser. No. 410,177, now Patent No. 3,320,432, dated May 16, 1967. Divided and this application Mar. 23, 1967, Ser. No. 646,774  
5 Claims. (Cl. 307-88.3)



A low noise parametric amplification system having a parametric down-converter for converting input signals of frequency  $f_2$  to a lower frequency  $f_1$ . The down-converter is coupled to a parametric upper-sideband up-converter

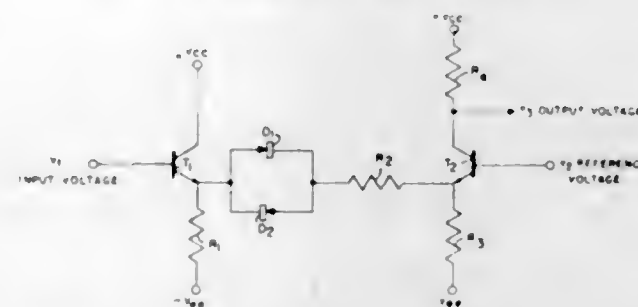
which converts signals of frequency  $f_1$  to a higher frequency  $f_2$ . The up-converter is coupled to the utilization load either directly or through a circulator. The noise signals that are generated by the load are prevented from being coupled to the down-converter, where they would be amplified, by either the circulator or the up-converter. Alternative arrangements are also covered.

**3,411,016**  
**DIFFERENTIATOR CIRCUIT USING A PAIR OF CURRENT SWITCHING TRANSISTORS**  
Amram Rasiel, Manchester, Mass., assignor to EG & G, Inc., a corporation of Massachusetts  
Filed June 25, 1965, Ser. No. 466,993  
4 Claims. (Cl. 307-229)



A semiconductor circuit using two current control devices, preferably transistors, with their emitters connected at a common point so as to share a common impedance and having an inductor connected between the output electrodes of the two current control devices. Cross coupling is provided to produce sharp differentiation of the input waveform.

**3,411,017**  
**SIGNAL SLICER CIRCUIT**  
Leslie E. Hoffman, Bala Cynwyd, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army  
Filed Mar. 30, 1965, Ser. No. 444,095  
3 Claims. (Cl. 307-235)

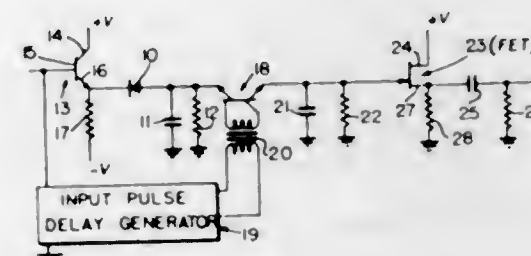


A signal slicer circuit is disclosed. The emitters of two transistors are coupled through a pair of oppositely poled parallel connected diodes. An input voltage is applied to the base of the first transistor and a reference voltage is applied to the base of the second transistor. The output voltage is taken at the collector of the second transistor. The magnitude and polarity of the reference voltage determines what portion of the input signal will be removed or sliced out. Any portion of a given input signal can be removed by selecting the proper reference voltage.

**3,411,018**  
**PULSE AMPLITUDE DIFFERENCE INTEGRATOR**  
James C. Dapper and Frank L. Wedig, Cincinnati, Ohio, assignors to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware  
Filed Sept. 27, 1965, Ser. No. 490,207  
8 Claims. (Cl. 307-235)

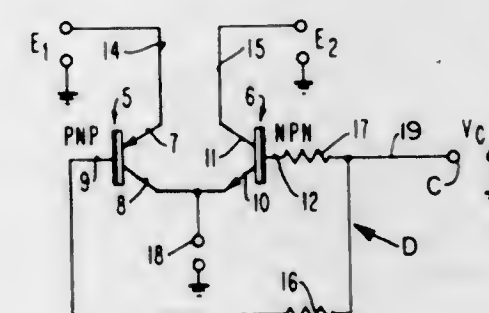
A circuit for emphasizing pulse amplitude differences comprising a peak detector network including a first ca-

pacitor which charges to a voltage level equal substantially to the amplitude of a series of applied and detected input pulses. An integrator network including a second capacitor of larger capacity is coupled to the peak detector network by a transmission gate gated in the rhythm of the input pulses but delayed with respect to the pulses for interchanging energy between the detector and integrator networks. The interchange in energy between the detector network and the integrator network produces a



dynamic equilibrium condition at which the peak level dynamically attained by the voltage wave forms across the second capacitor is a measure of the amplitude level of the series of received pulses. A differentiating network comprising a series capacitor and shunt resistor is connected to the integrator network for eliminating the direct current component from the wave forms so that after detection of a series of equal amplitude pulses, the wave forms related to the pulses diminish substantially to zero.

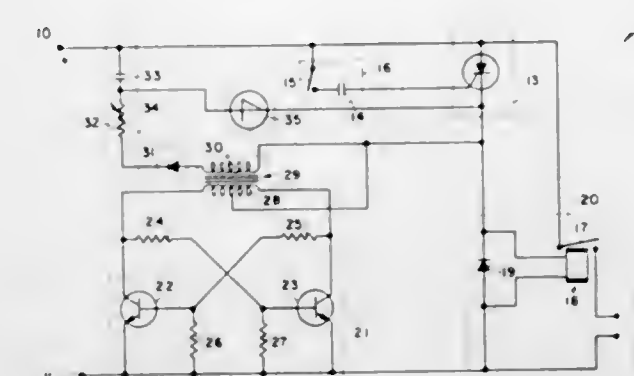
**3,411,019**  
**ELECTRONIC CONVERTER AND SWITCHING MEANS THEREFOR**  
Pierre Jorgensen, L'Hay-les-Roses, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, Hauts-de-Seine, France  
Filed Mar. 25, 1965, Ser. No. 442,592  
Claims priority, application France, Mar. 26, 1964, 968,763  
17 Claims. (Cl. 307-243)



An electronic commutation circuit comprising two electronic valves of opposite polarity, such as an NPN type transistor and a PNP type transistor, the emitter of one and the collector of the other having signal voltages of predetermined maximum and minimum values applied thereto, the remaining emitter and collector being connected to a common terminal, and the base terminals thereof being connected to a common source of conduction control signals, each through a resistor, said control signals having voltage potentials at least as small as said minimum value or at least as great as said maximum value relative to a common reference value. A circuit having components similarly connected and the predetermined maximum voltage applied to said common terminal. The combination of a plurality of such commutation circuits for converting reflected binary numbers to pure binary numbers and the combination of such a commutator cir-

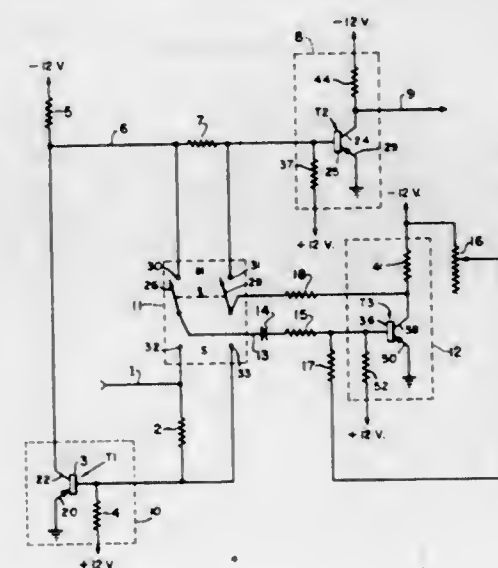
cuit with a bistable multi-vibrator as a source of said maximum and minimum signal voltages.

**3,411,020**  
**POWER TURN-OFF TIMER**  
Lelyn D. Lake, Carmel, Ind., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware  
Filed Oct. 11, 1965, Ser. No. 494,485  
14 Claims. (Cl. 307-252)



A power turn-off timer which includes an astable multi-vibrator having an output signal which is altered by rectifier means coupled thereto. The altered output signal of the multivibrator is the input signal to an RC circuit which cooperates with a four-layer diode to force commutate a controlled rectifier. The commutation of the controlled rectifier substantially prevents further flow of current to a load.

**3,411,021**  
**LINE DRIVER FOR MODIFYING LENGTHS OF POLAR SIGNALS**  
John Elich, Staten Island, N.Y., assignor to The Western Union Telegraph Company, New York, N.Y., a corporation of New York  
Filed Oct. 23, 1965, Ser. No. 502,908  
4 Claims. (Cl. 307-265)



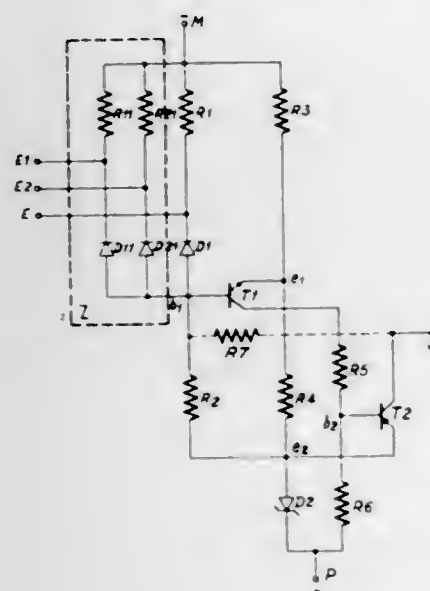
The disclosure describes a line driver circuit for a telegraph line in which alternating polar mark and space signals are transmitted. In order to compensate or correct for bias distortion in such a circuit either the mark or space pulses can be lengthened while the others are shortened. The circuit includes two stages of transistorized amplification. A time delay circuit controlled by a transistorized gate is connected via a double throw switch to



either stage of amplification to effect the desired correction of pulse lengths.

### 3,411,022 LOGICAL CIRCUITS

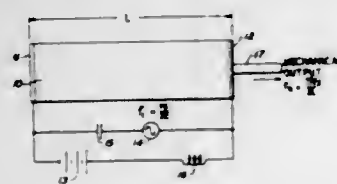
Lucien Budts, Paris, France, assignor to Thomson Automatismes, Chatou, France, a corporation of France  
Filed Mar. 5, 1965, Ser. No. 437,494  
Claims priority, application France, Mar. 18, 1964, 967,850  
10 Claims. (Cl. 307—288)



A signal intensifier for logical circuitry includes a bridge network of passive resistance elements connected between opposite terminals of a direct-current source in series with a Zener diode which normally biases the second stage of a two-stage transistor amplifier to cutoff but which allows saturation of that stage upon the triggering of an associated first stage, connected across a diagonal of the bridge, by an input signal applied to the junction of a resistor and another diode in one of the bridge arms to block current flow through the last-mentioned diode. A feedback resistor regeneratively connected between the two stages accelerates the switchover from cutoff to saturation and vice versa.

### 3,411,023 ELASTIC WAVE GENERATOR

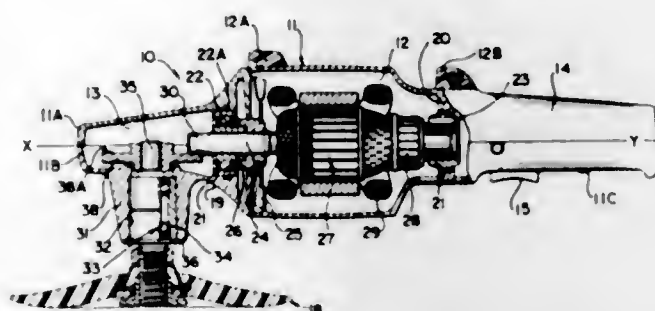
Calvin F. Quate, Los Altos Hills, Calif., and Ping K. Tien, Chatham Township, Morris County, N.J.; said Tien assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Dec. 29, 1965, Ser. No. 517,216  
9 Claims. (Cl. 310—8)



An elastic wave generator in which noise present in a solid state elastic wave amplifier having no input is synchronized into a plurality of parametrically coupled coherent modes of oscillation by a low level, low frequency signal that is a submultiple of the desired signal to provide a high power, high efficiency source of elastic waves. The synchronizing signal may be superimposed, for example, upon the direct current biasing field.

### 3,411,024 RIGHT-ANGLE PORTABLE ELECTRIC TOOL WITH SPLIT HOUSING AND BEARING ARRANGEMENT THEREFOR

George E. Maffey, Jr., Timonium, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland  
Filed Apr. 29, 1966, Ser. No. 546,346  
7 Claims. (Cl. 310—50)

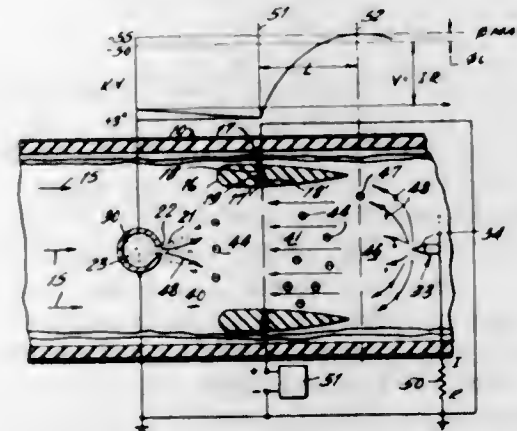


1. In a portable power-operated tool, the combination of:

- (A) An elongated housing comprising a pair of complementary mating halves including a top housing half and a bottom housing half secured together along a common horizontal midplane;
- (B) a motor including an armature shaft journaled in spaced-apart bearings retained between the complementary mating halves of the housing, the axis of the armature shaft being substantially within the common horizontal midplane;
- (C) a driving pinion on the forward end of the armature shaft;
- (D) a depending boss formed on the lower housing half, the boss extending transversely away from the common horizontal midplane and having a through bore formed therein;
- (E) a double-row ball bearing retained within the bore formed in the depending boss;
- (F) a spindle journaled solely in the double-row bearing; and
- (G) a gear carried by the spindle and having teeth engaging the drive pinion, thereby providing for the transmission of power directly from the armature shaft to the spindle.

### 3,411,025 METHOD AND APPARATUS FOR PRODUCING CHARGED AEROSOLS

Alvin M. Marks, 153—16 10th Ave.,  
Whitestone, N.Y. 11357  
Filed Mar. 11, 1965, Ser. No. 438,930  
12 Claims. (Cl. 310—11)

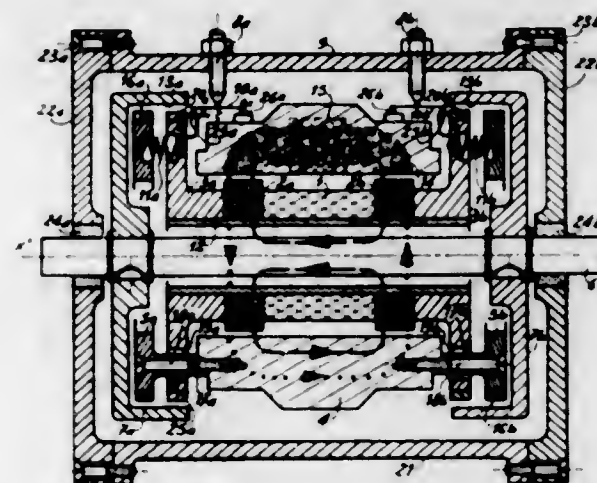


A device to convert the heat kinetic power of a moving gas to electric power in which a moving gas under pressure containing a condensable vapor cools as it flows through ions in an electric field, the vapor condenses on

the ions to form minute charged droplets and thereafter further condenses upon the droplets to form larger charged droplets which are passed through a conversion space having a repelling electric field. A collector electrode at the exit of the conversion space discharges the charged droplets, an electrical load is connected between the collector electrode and the ionizer. Various means for charging, forming, controlling and introducing the droplets are also disclosed.

### 3,411,026 BALANCED LOW-SPEED ELECTRIC MOTOR

Claude Rosain, 50 Rue Raynouard, Paris 16eme, France, and Georges Stcherbatcheff, 29 Ave. la Bourdonnais, Paris 7eme, France  
Filed May 31, 1966, Ser. No. 553,859  
Claims priority, application France, June 9, 1965, 20,016  
8 Claims. (Cl. 310—82)



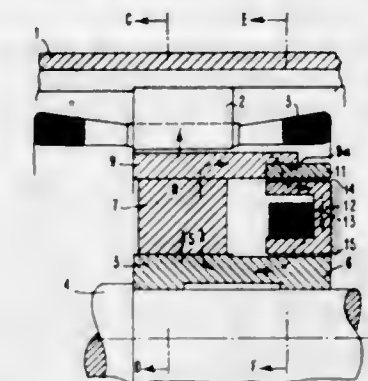
1. A motor comprising a casing; an inductor within said casing, said inductor having a magnetic circuit; a generally cylindrical armature having at least one magnetic body for providing therein a constant radial magnetic field, said body having frontal surfaces, at least two generally circular magnetic circuit portions, associated with said inductor magnetic circuit and adjacent said frontal surfaces; at least one first roller located outwardly with respect to said circuit portions coaxial with said armature and rigidly connected thereto; at least one further roller coaxial with said armature and rigidly connected to said inductor; an output shaft journaled in said casing; at least one cup-shaped member rigidly connected to said output shaft, said cup-shaped members each having a rollway cooperating with said rollers; means for providing a rotary magnetic field in said magnetic circuit and coupling means connecting the rollers, the inductor and the casing together.

### 3,411,027 PERMANENT MAGNET EXCITED ELECTRIC MACHINE

Heinz Rosenberg, Bad Neustadt, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany  
Filed July 8, 1965, Ser. No. 470,401  
Claims priority, application Germany, July 16, 1964, S 92,076  
14 Claims. (Cl. 310—181)

An electric machine with a permanent magnet rotor in which the useful flux, and hence the generated voltage or speed of the machine, is controllable by varying the direct voltage applied to the excitation winding of a magnetizable structure joined with the stator in magnetic shunt relation thereto. The controllable magnetomotive force of the shunt becomes additively or subtractively superim-

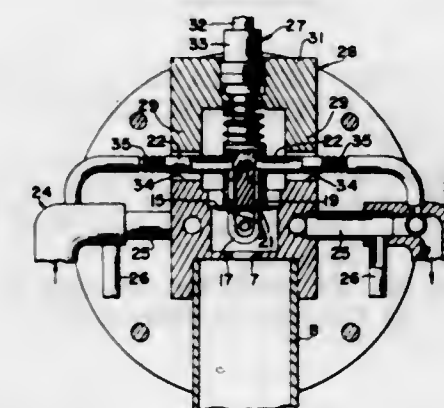
posed upon the magnetomotive force of the rotor magnets and thus increases or decreases the resultant useful flux,



depending upon the polarity and magnitude of the shunt excitation voltage.

### 3,411,028 CAVITY RESONATOR TUNER FOR VELOCITY MODULATION TUBES

Joseph K. Mann, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California  
Filed Oct. 7, 1965, Ser. No. 493,860  
7 Claims. (Cl. 315—5.48)



A multicavity klystron amplifier is disclosed. The amplifier tube includes a plurality of tunable re-entrant cavity resonators successively arranged along the beam path for electromagnetic interaction with the beam to produce an amplified output. The tube is tunable over a band of frequencies by means of capacitive tuning elements disposed within the cavity resonators for changing the gap capacity of the resonator. The tuning elements include a generally U-shaped conductive rod projecting into the cavity resonator and extending around the interaction gap. The U-shaped rod structure is movable transversely of the axis of the tube such that the bridging conductive portion of the U-shaped member, which interconnects the two leg portions of the U-shaped rod structure, varies the gap capacity of the cavity resonators for tuning their resonant frequencies. In a preferred embodiment, the conductive tuning rod is fixed to an inductive tuning diaphragm to be movable therewith such that a combined inductive and capacitive tuning effect is obtained. In another embodiment, the U-shaped conductive rod structure is made hollow to permit the flow of a coolant through the U-shaped tuning rod.

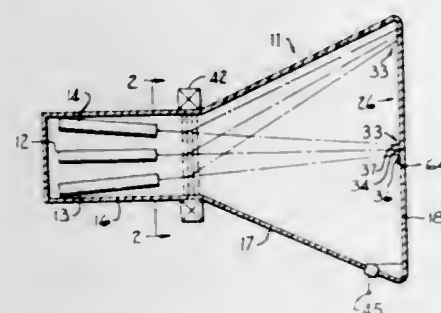
### 3,411,029 COLOR TELEVISION PICTURE TUBE

Richard D. Karr, 1720 Dean York Lane,  
St. Helena, Calif. 94574  
Filed Apr. 4, 1966, Ser. No. 540,009  
7 Claims. (Cl. 315—13)

A three-gun color television picture tube and an electron focusing system therefor is described. The tube includes a display screen having three different color radiat-



ing materials disposed on the display surface in separate horizontal rows in a repeating color sequence with adjacent rows of material radiating a different color upon electron bombardment. Three electron guns, one for each of the color radiating materials are positioned at different elevations for directing electron beams unto the display screen. The electron accelerating system of each

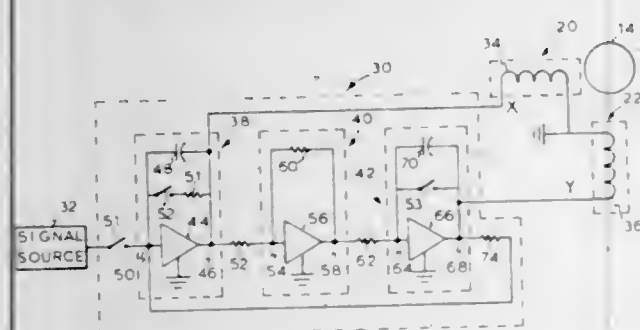


electron gun assembly includes a dynamic focusing electrode which is disposed between two segments of the initial accelerating electrode. A varying voltage generator is coupled to the dynamic focusing electrode to impress upon it a voltage which varies during the scanning of the electron beam over the display screen substantially in accordance with the variation in distance between the gun assembly and the screen.

3,411,030

#### APPARATUS FOR GENERATING CRT DEFLECTION SIGNALS FOR DESCRIBING A CIRCULAR PATTERN

Martin C. Henderson, Canoga Park, and Herman W. Hutchcraft, Camarillo, Calif., assignors to The Bunker-Ramo Corporation, Canoga Park, Calif., a corporation of Delaware  
Filed Jan. 20, 1967, Ser. No. 610,626  
13 Claims. (Cl. 315-22)



An apparatus for generating signals to be applied to the horizontal and vertical deflection means of a cathode ray tube for causing the CRT beam to describe a substantially circular pattern. The apparatus employs two integrators and an inverter connected in a closed loop. The integrators each introduce a 90° phase shift and the inverter introduces a 180° phase shift. A closed loop so constructed oscillates providing sine wave signals in phase quadrature suitable for application to the horizontal and vertical deflection means of the CRT for causing the beam to describe a circular pattern.

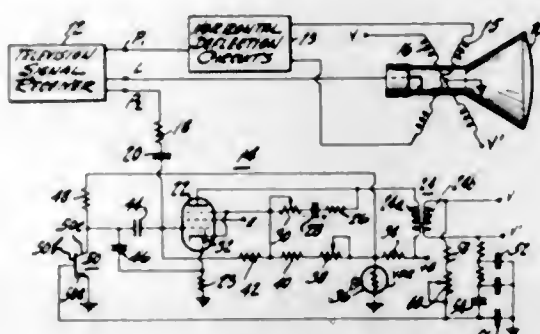
3,411,031

#### TRANSISTOR DEFLECTION CIRCUIT

Jack A. Dean, Flemington, N.J., assignor to Radio Corporation of America, a corporation of Delaware  
Filed Mar. 21, 1967, Ser. No. 624,775  
14 Claims. (Cl. 315-27)

A television vertical deflection circuit comprising a transistor oscillator stage and a pentode electron tube output stage. A resistance-capacitance sawtooth generating circuit is coupled to the input of the electron tube. A further resistance-capacitance network including a diode is

coupled in a feedback arrangement between the output and input of the electron tube and develops a feedback

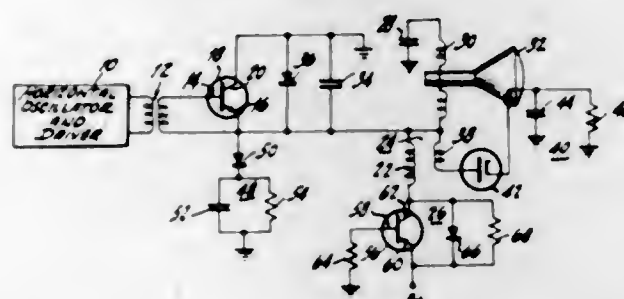


voltage which is added to the sawtooth for vertical linearity and vertical size control. Compensation is provided for supply voltage variations.

3,411,032

#### TRANSISTOR TELEVISION DEFLECTION CIRCUITS HAVING PROTECTION MEANS

Chi-Sheng Liu, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware  
Filed May 13, 1965, Ser. No. 455,415  
8 Claims. (Cl. 315-27)

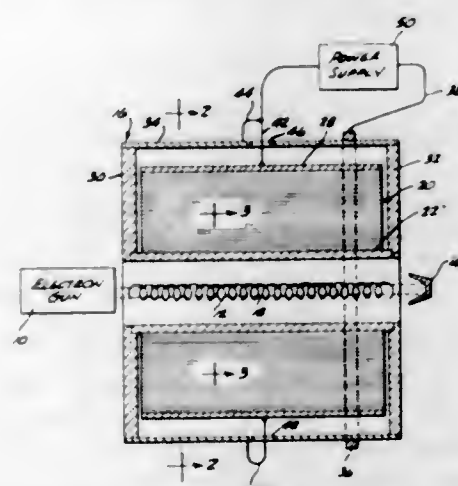


In a television deflection circuit, a protection transistor, biased to a low impedance conductive state, is coupled in series between the B+ supply and the primary winding of an output transformer, the series combination being coupled to the output terminals of a horizontal deflection output transistor. Arcing or other shorting of the transformer drives the protection transistor to a high impedance state to protect the output transistor.

3,411,033

#### ELECTRON BEAM FOCUSING DEVICE EMPLOYING A FOIL WOUND SOLENOID

Leonard T. King, Hermosa Beach, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware  
Filed Feb. 21, 1967, Ser. No. 617,622  
5 Claims. (Cl. 315-31)



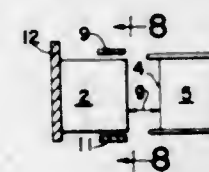
The disclosed electron beam focusing solenoid includes an electrically conductive foil wound about and connected to a non-magnetic electrically conductive bobbin having a

thickness much greater than the foil thickness, with a non-magnetic electrically conductive tube disposed about and connected to the outermost foil winding. A ferromagnetic tube encircling the foil solenoid is mounted on a pair of ferromagnetic pole pieces extending radially outwardly from opposite ends of the bobbin. The ferromagnetic members provide a magnetic return path and also carry the solenoid input current.

3,411,034

#### MICROWAVE AMPLIFIER TUBE HAVING CAPACITIVE LOADING MEANS FOR THE SLOW WAVE CIRCUIT

George K. Farney, New Providence, N.J., assignor to S-F-D Laboratories, Inc., Union, N.J., a corporation of New Jersey  
Filed June 11, 1965, Ser. No. 463,221  
7 Claims. (Cl. 315-39.3)



A capacitively shunt loaded coupled vane slow wave circuit and tubes using same are disclosed. The slow wave circuit includes a vane array having a conductive member overlaying the side edges of the vanes near the tips thereof for increasing the shunt capacity loading of the slow wave circuit to improve its electronic bandwidth. In a preferred embodiment, the capacitive loading structure comprises two conductive members disposed on opposite sides of the vanes near the tips thereof and running the length of the circuit. In another embodiment, a dielectric material is disposed between the loading members and the vanes for increasing the capacity of the loading structure. In another embodiment, the capacitive loading structure is conductively connected via the side walls of the tube structure to the roots of the vanes with the electrical length of the capacitive loading structure being substantially longer than the electrical length of the vanes. In another embodiment, the capacitive loading structure includes conductive tabs protruding into the spaces between adjacent vanes for increasing the capacitive loading of the capacitive loading structure. In another embodiment, the vanes are T-shaped with the cross arm portions of the "T" forming the capacitive portion of the vanes for substantially improving the electronic bandwidth of the circuit. In another embodiment of the slow wave circuit, the circuit is coupled to a transmission line via a transition section connected essentially to the center of an end vane such that the power flow is equally divided between the top and bottom halves of the capacitively loaded vane structure defined by the space between the side edges of the vanes and a pair of capacitive loading members disposed on opposite sides of the vanes.

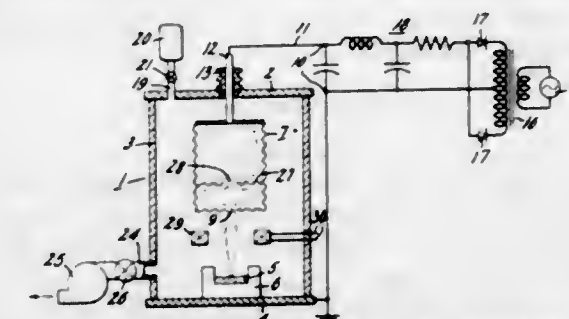
3,411,035

#### MULTI-CHAMBER HOLLOW CATHODE LOW VOLTAGE ELECTRON BEAM APPARATUS

William C. Necker, Cincinnati, and Charles I. McVey, Shaker Heights, Ohio, assignors to General Electric Company, a corporation of New York  
Filed May 31, 1966, Ser. No. 554,007  
13 Claims. (Cl. 315-111)

A hollow cathode structure having perforated or non-perforated side walls is partitioned into two or more coupled chambers. The cathode is operable in a low pressure gaseous medium and at a relatively low cathode-to-anode potential, the interaction of the gas and electric

potential forming a body of ionized gas plasma in each cathode chamber. The plasmas are interconnected and an

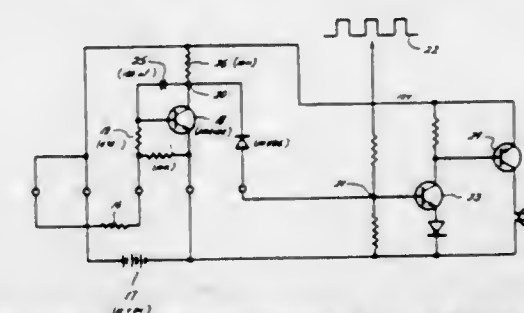


electron beam is emitted from one or more exit apertures in the cathode.

3,411,036

#### WARNING ASSEMBLY

Charles F. Casey, Houston, Tex., assignor to Automatic Power, Inc., Houston, Tex.  
Filed June 9, 1966, Ser. No. 556,349  
7 Claims. (Cl. 315-149)

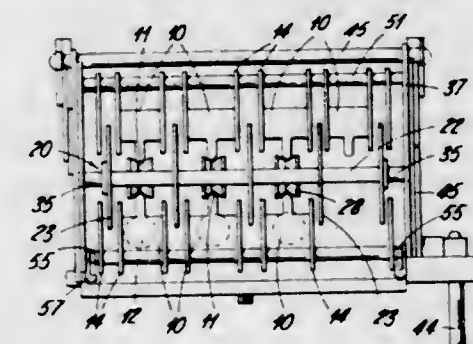


1. A warning light assembly for offshore structures and the like comprising first and second flashing light systems each having a power supply, a light source, and means coupling the power supply to the respective light sources and, upon actuation, causing the light sources to be intermittently energized to cause the same to flash periodically; and a control circuit for inhibiting actuation of the second system while the first system is operative including light sensitive means positioned to view flashes of light by the first system, means responsive to said light sensitive means for maintaining an inhibiting voltage within a predetermined range effective to inhibit the second system while said light sensitive means is exposed to light, and means for maintaining said voltage within said range during the time interval the light sensitive means is exposed to darkness between flashes of light from said first system.

3,411,037

#### ELECTRIC SWITCH UTILIZING MOVABLE ROLLER CONTACTS COACTING WITH FIXED ELONGATED BAR CONTACTS

Dennis William Charles Smith, London, England, assignor to Westwood Switchgear Limited, London, England, a British company  
Filed Jan. 18, 1967, Ser. No. 610,178  
Claims priority, application Great Britain, Jan. 20, 1966, 2,722/66  
5 Claims. (Cl. 200-166)



An electric switch has a roller contact movable along a bar contact, the electrical connection being broken

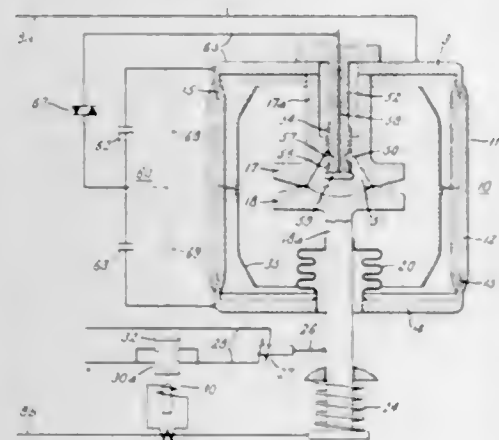


when the roller moves off the end of the bar. The roller has a peripheral groove which engages the bar with line or point contacts. The two sides of the groove are on separate parts of the roller urged together to make pressure contact with the bar.

3,411,038

**VACUUM-TYPE CIRCUIT INTERRUPTER**  
Thomas H. Lee, Nether Providence, Pa., assignor to General Electric Company, a corporation of New York

Filed July 22, 1966, Ser. No. 567,282  
11 Claims. (Cl. 317-11)



1. A vacuum-type circuit interrupter for alternating current circuits comprising:

- (a) a highly evacuated envelope having a normal pressure of  $10^{-4}$  mm. of mercury or less,
- (b) a pair of electrodes within said envelope having a spaced-apart position defining a primary gap therebetween,
- (c) triggering means including a trigger gap within said envelope for initiating an arc-over of said primary gap in response to spark-over of said trigger gap,
- (d) means for producing a spark-over of said trigger gap when the voltage across said primary gap reaches a predetermined value, comprising:
  - (i) a voltage divider connected across said primary gap and comprising series-connected capacitors,
  - (ii) a trigger circuit comprising a bidirectional diode thyristor having a resistance that changes from a very high value to a very low value when the voltage applied thereto reaches a predetermined avalanche value,
  - (iii) means for connecting said trigger circuit across one of said capacitors, whereby a predetermined percentage of the voltage appearing across said primary gap is applied to said trigger circuit,
  - (iv) and means for applying a voltage pulse to said trigger gap in response to said thyristor switching to its low resistance state.

3,411,039

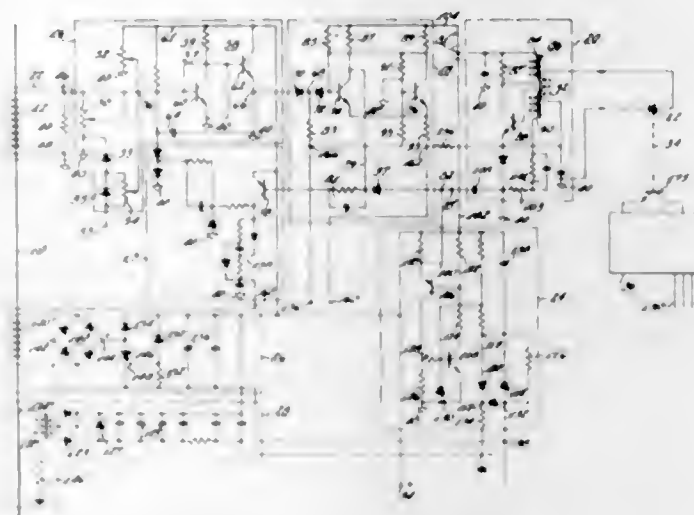
**OVERCURRENT PROTECTIVE MEANS INCLUDING SOLID STATE POWER SUPPLY SENSING MEANS**

Clifford H. Moulton, Portland, Oreg., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed May 16, 1966, Ser. No. 550,551  
2 Claims. (Cl. 317-33)

The means for sensing and measuring line current and producing an output signal based thereon in a high voltage electrical system are driven by a first power supply and a second power supply. In accordance with the invention, an unlocking circuit is provided to control appearance of the output signal in response to the relation-

ships between the two power supplies. Thus, if either or both power supplies are operating above a predetermined level, the unlocking circuit is unlocked and the output signal is able to appear. However, if both power sup-

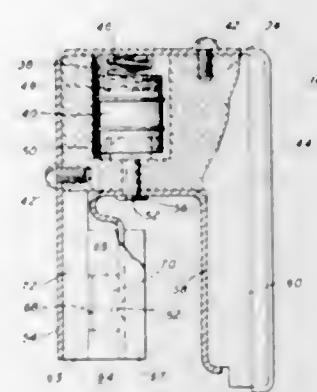


plies are operating below a predetermined level, the unlocking circuit is locked and the output signal is unable to appear. The unlocking circuit comprises a multivibrator and a control circuit which governs the on-off condition of the multivibrator.

3,411,040

**VOLTAGE-FAULT ABSORBING DEVICE INCLUDING GAS TUBES AND CARBON ARRESTORS**  
Alfred E. Dietz, Towson, Md., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York

Filed Sept. 14, 1966, Ser. No. 579,387  
8 Claims. (Cl. 317-62)



1. A fault-absorbing device for connection across one of a plurality of terminal means on a communications protector frame, comprising a gas tube, a carbon spark arrestor, housing means; two C-shaped conductive elements of different size and forming with said gas tube, said carbon arrestor and said housing means a C-shaped assembly with one of said conductive elements extending along the inner edge of said C-shaped assembly and the other of said conductive elements extending along the outer edge of said C-shaped assembly, said C-shaped assembly forming arms transverse to its central body, the distance between said elements in each arm being sufficient to fit into the terminal means so as to make contact therewith, said housing means extending into said central body and having in the central body a holding portion closer to one arm than the other for holding said gas tube, said holding portion being wider than the distance between the C-shaped faces of said assembly and wider than the distance between like parts on adjacent terminals, the sum of the distance between the faces of said assembly and the width of said holding portion being less

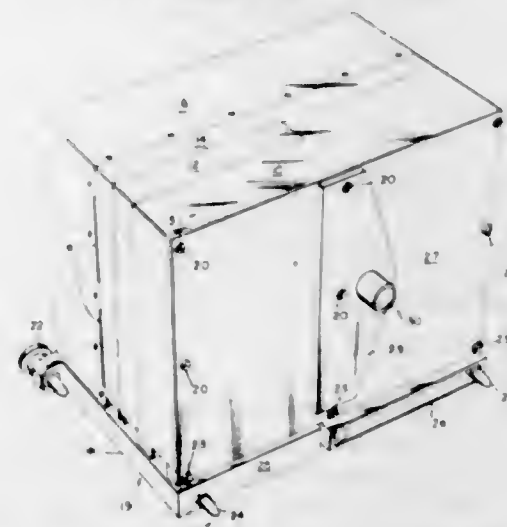
than twice the distance between like parts on adjacent terminals whereby identical ones of a plurality of respective assemblies may be connected to adjacent terminals by alternating the arm contacting one terminal relative to the arm contacting the adjacent terminal.

3,411,041

**HEAT EXCHANGER PACKAGE FOR HIGH-DENSITY, HIGH-POWERED ELECTRONIC MODULES**  
Jay M. Block, Thousand Oaks, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Continuation-in-part of application Ser. No. 603,833, Dec. 22, 1966. This application July 17, 1967, Ser. No. 668,727

12 Claims. (Cl. 317-100)

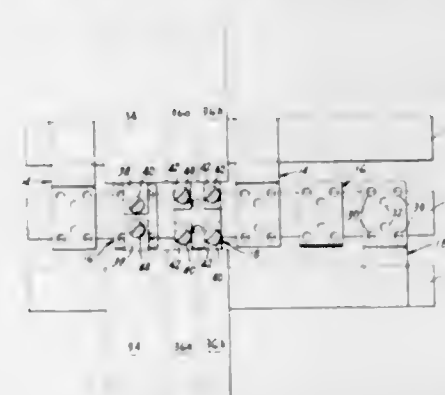


A package for dissipating large quantities of heat per unit volume from a high-power, high-density electronic system assembled from a base plate and at least two electronic modules. Each module includes electronic components and circuitry and a rigid frame supported on and by the base plate and all the modules are structurally united together by tension bolts passing through the frames. Each frame includes a plurality of large area parallel webs to form compartments or cells for a series of printed circuit cell cards. Passages for flow of a coolant are formed in the frames adjacent the webs. When the modules are assembled, the passages, which are electrically insulated from, but in thermal contact with the cells and the cell cards, are aligned to provide continuous conduits permitting the flow of the coolant.

3,411,042

**PANEL ASSEMBLY FOR SINGLE AND HALF WIDTH CIRCUIT BREAKERS**  
Keith W. Klein, Simsbury, Conn., assignor to General Electric Company, a corporation of New York

Filed May 23, 1967, Ser. No. 640,638  
6 Claims. (Cl. 317-119)



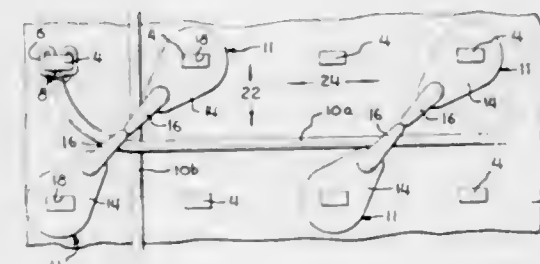
A panel assembly for circuit breakers of the type comprising a rectangular insulating casing with connecting terminals at opposite ends, the terminal at one end com-

prising a short flat strap or "tab" extending from a back corner of the casing parallel to the back wall and beyond the end of the casing. The panel includes three bus bars, which are connected to a three-phase A-C source, have a series of branch straps attached thereto, all having connecting portions aligned in a row centrally of the panel and parallel to the bus bars. Each connecting portion of the branch straps has a plurality of holes, the holes being arranged in a particular pattern such that either a single unit or modular width circuit breaker or two half-modular width circuit breakers can be connected. Also, either one single or two one-half modular width circuit breakers can be positioned in end-opposed relationship to the other breaker or breakers and can be similarly connected to the same branch strap portion by means of the holes therein.

3,411,043

**WIRE RETAINER FOR PANELBOARD**  
Robert Franklin Cough, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed Mar. 3, 1966, Ser. No. 531,617  
3 Claims. (Cl. 317-122)



Wire retainer for panelboard having terminal posts thereon comprises column having a laterally extending arm at its upper end and a plate-like base. Terminal post extends through opening in plate-like base. Arms of two adjacent retainers extend axially towards each other to form coacting pair of arms which bridge interval between the associated posts. Wires are retained between arms and surface of panelboard.

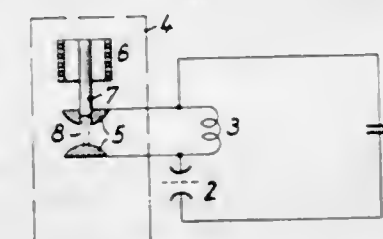
3,411,044

**CURRENT PULSE CIRCUIT**  
Walter Langhein, Frankfurt am Main, and Andreas Von Zorkoczy, Dreieichenhain u. Langen, Hesse, Germany, assignors to Licentia Patent-Verwaltungs-GmbH, Frankfurt am Main, Germany

Filed Apr. 27, 1964, Ser. No. 362,885

Claims priority, application Germany, Apr. 25, 1963, L 44,732

8 Claims. (Cl. 317-123)



A current pulse circuit having a load and a switch connected in parallel with the load for short-circuiting the same at the instant of maximum excitation. The switch is in the form of two electrodes between which an intensive coherent electromagnetic beam, such as a laser, is directed for producing a plasma discharge, thereby to short-circuit the load.

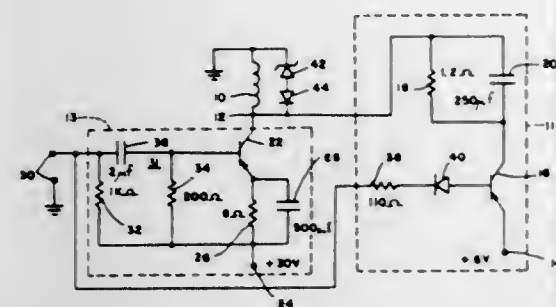


3,411,045

**ELECTRICAL CIRCUIT FOR RAPIDLY DRIVING AN INDUCTIVE LOAD**

Noel L. Reyner, Hilton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Mar. 30, 1966, Ser. No. 538,734  
9 Claims. (Cl. 317-123)



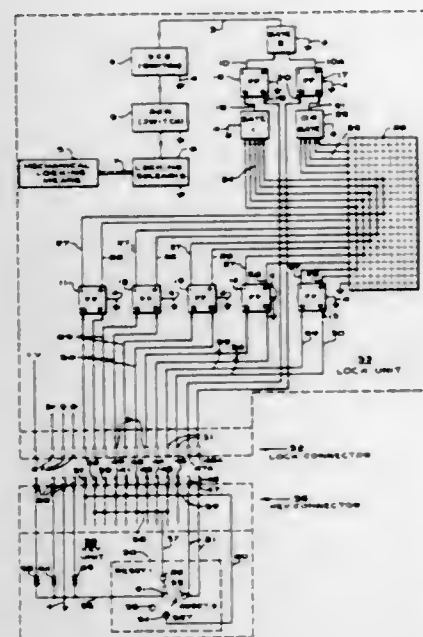
A circuit is disclosed for rapidly driving an inductive load. Two switching circuits are connected in series circuits with the inductive load. One of the series circuits includes a resistive means to speed up its response. A switching signal is applied to the switching circuits so that the current flow through the circuit including the resistive means rises substantially faster than the other and drops off before the other reaches its peak current.

3,411,046

**ELECTRONIC COMBINATION LOCK SYSTEM**

John M. Swannick, Dover, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed June 6, 1966, Ser. No. 556,812  
5 Claims. (Cl. 317-134)

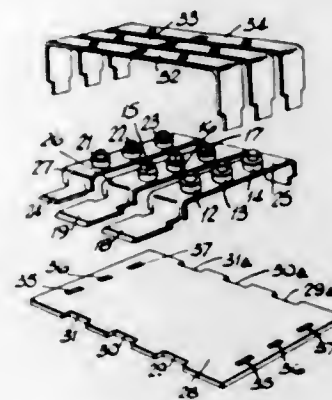


2. An electronic combination lock system for a mechanically movable locking means comprising in combination, an electronic lock unit for operating said locking means and including an electro-mechanical operating device therefor, and an electronic key unit, said lock and key units each having a lock and key connector providing terminals adapted to be engaged in operation and to be disconnected out of operation, and said lock unit further including a plurality of flip-flop circuits adapted to control said electro-mechanical operating elements selectively in accordance with established connections to set and reset the circuit elements of said lock unit.

**TWO DIRECT CURRENT OUTPUT THREE PHASE RECTIFIER**

Alfred Dickens Baker, Solihull, and Frank Grenville Hudson, Sutton Coldfield, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England, a British company

Filed Oct. 4, 1965, Ser. No. 492,544  
Claims priority, application Great Britain, Oct. 14, 1964, 41,859/64  
4 Claims. (Cl. 317-233)



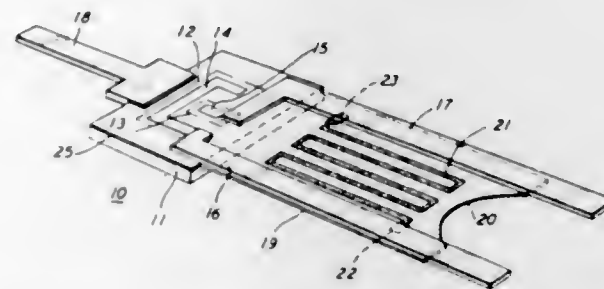
A three phase rectifier having two separate direct current outputs formed by a set of three conductive members extending in the same direction with a set of three diodes supported on each member with each set of diodes having the same type terminal connected to each respective conductive member. The set of diodes on two of the conductive members having the same type terminals connected thereto and the third set having the opposite type terminals connected to its supporting conductive member. A second set of three conductive members extending transversely of the first mentioned conductive members, with each of the second set conductive members connected to the terminal of a separate diode of each set of diodes which terminal is not connected to a first set conductive member. Each of the second set of conductive members being adapted to be connected to a different phase of a three phase supply and each of the two first set conductive members connected to the same type diode terminals forming one terminal of a separate direct current output, while the third member thereof forms a common other terminal for both D.C. outputs.

3,411,048

**SEMICONDUCTOR INTEGRATED CIRCUITRY WITH IMPROVED ISOLATION BETWEEN ACTIVE AND PASSIVE ELEMENTS**

Martin P. Lepselter, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 19, 1965, Ser. No. 457,083  
5 Claims. (Cl. 317-234)



A passive electric element is mounted in close proximity to other elements of a semiconductor integrated circuit by forming a thin film resistor or capacitor on a thin web of silicon oxide suspended between, and wholly supported by, heavy metal interconnection members of the beam lead type which are not only self-supporting but also sup-

portive of the semiconductor elements comprising the device. Such a thin oxide web is formed by selective etching methods.

3,411,049

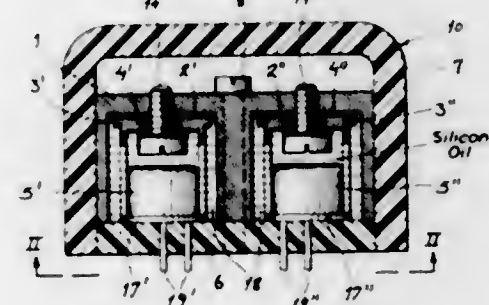
**TEMPERATURE-EQUALIZING MOUNTING FOR ELECTRICAL COMPONENTS SUCH AS TRANSISTORS**

Fabrizio Trincoosi, Genoa, and Alberto Braghieri, Milan, Italy, assignors to Societa Italiana Telecomunicazioni Siemens S.p.A., Milan, Italy, a corporation of Italy

Continuation-in-part of application Ser. No. 527,340, Feb. 14, 1966. This application Mar. 4, 1966, Ser. No. 531,659

Claims priority, application Italy, Feb. 12, 1965, 2,916/65

10 Claims. (Cl. 317-234)



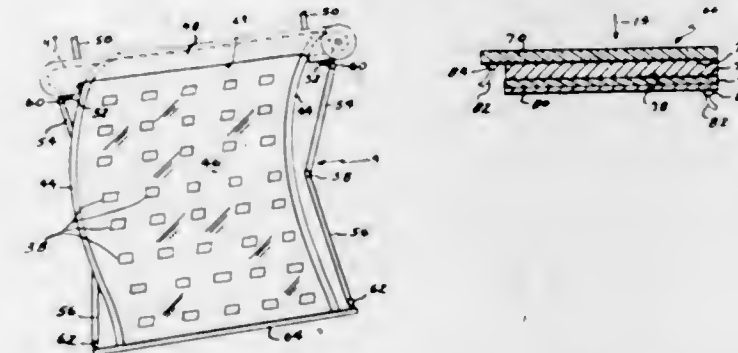
1. A temperature-equalizing mounting for a plurality of electrical components, comprising:
  - a metallic body having a surface provided with a plurality of juxtaposed recesses for the accommodation of respective electrical components;
  - a metallic retaining cap in each of said recesses having an end open toward said surface for the insertion of a component to be accommodated, said cap being positioned in its recess with clearance from the walls thereof;
  - fastening means securing an opposite end of said cap to said body with interposition of thin layer of dielectric material;
  - a fluid mass of thermally conductive but electrically insulating material occupying each recess and filling the clearance between said walls and said cap; and
  - a dielectric closure member abutting said body along said surface and overlying said recesses for holding the components thereof in position and preventing the escape of said fluid mass.

3,411,050

**FLEXIBLE STORABLE SOLAR CELL ARRAY**

Arthur E. Middleton and Edwin R. Hill, Columbus, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force

Filed Apr. 28, 1966, Ser. No. 546,487  
1 Claim. (Cl. 317-234)



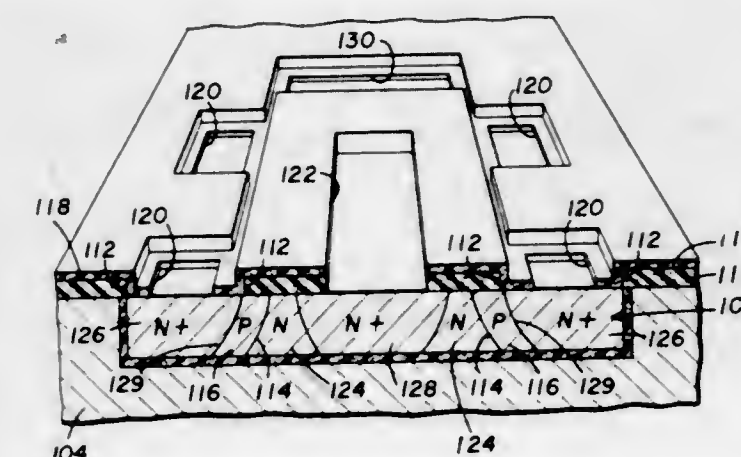
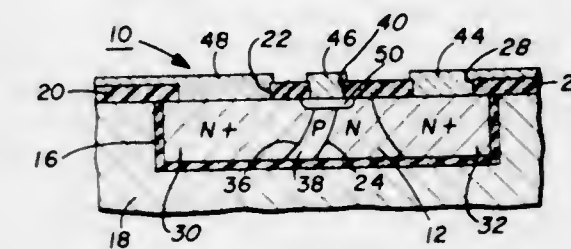
Apparatus having a flexible matrix for carrying solar cells in electrical circuit array quickly movable between storage and extended positions. The cells are encapsulated between transparent layers of material. Flexible metal strips connect leads of cells.

3,411,051

**TRANSISTOR WITH AN ISOLATED REGION HAVING A P-N JUNCTION EXTENDING FROM THE ISOLATION WALL TO A SURFACE**

Jack S. Kilby, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Dec. 29, 1964, Ser. No. 421,880  
12 Claims. (Cl. 317-235)



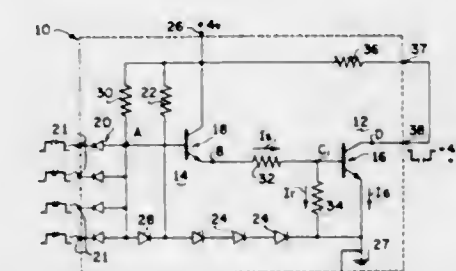
1. A semiconductor device, comprising:
  - (a) a portion of single crystalline semiconductor material beneath a major surface of a substrate, said portion being at least in part electrically isolated from said substrate by an insulation layer extending to said major surface;
  - (b) said portion of single crystalline semiconductor material comprising at least two zones of opposite conductivity type with a P-N junction intermediate said at least two zones, said P-N junction intersecting said insulation layer and extending to said one major surface.

3,411,052

**LOGICAL CIRCUIT ARRANGEMENT HAVING A CONSTANT CURRENT GAIN FOR CONTROLLED OPERATION IN SATURATION**

Donald K. Lauffer, Gardena, and Robert O. Gunderson, Torrance, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Oct. 28, 1965, Ser. No. 505,477  
10 Claims. (Cl. 317-235)



A monolithic integrated circuit providing a logic building block for logical systems comprising a diode-transistor logical circuit (DTL) having a diode gating input circuit coupled to an emitter-follower stage and controlling an output stage to perform a switching operation in the out-



put stage for producing high and low logical level output signals in response to high and low level logical signals applied to the diode gating circuit. Current regulation of logical circuit is provided to maintain a constant current gain of a switching transistor in the output stage during switching intervals and during operation in a state of saturation to provide a low impedance, constant current output at the low logical level. Compensation for supply voltage and temperature variations to produce the constant current gain is provided by current regulation wherein a voltage reference circuit in combination with an interstage coupling resistor regulate the bias current supplied to the switching transistor.

3,411,053

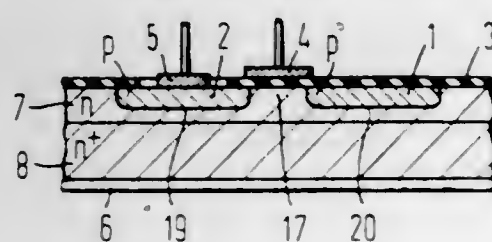
### VOLTAGE-SENSITIVE VARIABLE P-N JUNCTION CAPACITOR WITH INTERMEDIATE CONTROL ZONE

Richard Wiesner, Munich, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany

Filed Apr. 5, 1966, Ser. No. 540,321

Claims priority, application Germany, Apr. 7, 1965, S 96,402

9 Claims. (Cl. 317-235)



A semiconductor body of one conductivity type has at least two zones of the other conductivity type mutually spaced beside one another and each forming a respective p-n junction. One zone constitutes one electrode and the body of the other electrode of a voltage-dependent capacitor which includes one of the p-n junctions, an intermediate body portion interconnecting the zones and including a control for controlling the electrical conductivity thereof to selectively electrically connect the other zone to the one zone and in parallel therewith in the p-n junction capacitor in response to selective voltage applied across the control and the body, whereby the capacitance variation range of the capacitor is selectively widenable in response to the control.

3,411,054

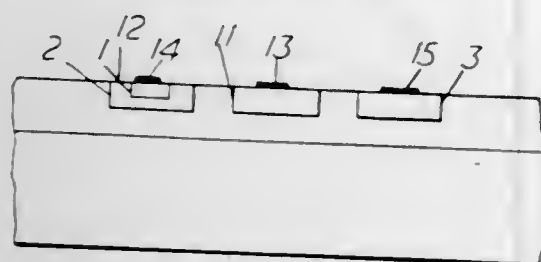
### SEMICONDUCTOR SWITCHING DEVICE

Roger Cullis, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 28, 1965, Ser. No. 451,451

Claims priority, application Great Britain, May 25, 1964, 21,566/64

3 Claims. (Cl. 317-235)



This invention is for a four layer semiconductor switching device having two current paths which simulate the effect of two thyristors in parallel wherein all p-n junctions are formed by operations performed from one side

of the slice of the semiconductor material, and all metallic ohmic connections are made from the same side of the said slice of semiconductor material.

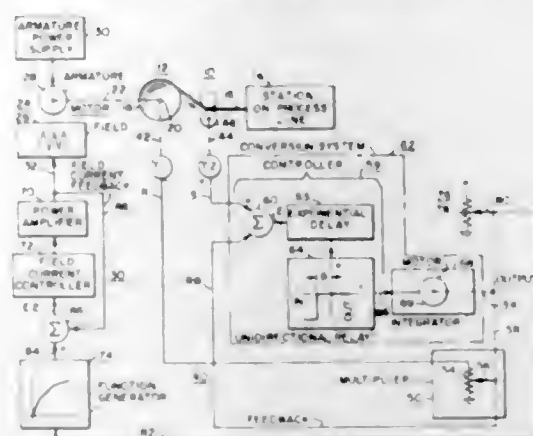
3,411,055

### APPARATUS OPERATING AS A FUNCTION OF THE CHANGING DIAMETER OF A ROTATING ROLL OF TRAVELING STRIP MATERIAL

Woodward C. Carter II, West Seneca, and Curtis L. Ivey, Amherst, Williamsville, N.Y., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 6, 1965, Ser. No. 469,435

12 Claims. (Cl. 318-6)



Torque is applied to the roll by a dynamoelectric machine, and the system has a roll diameter detector including an electromechanical integrator arrangement and an input controller for the integrator, which controller responds to the difference between a voltage proportional to the linear speed of the strip material and a voltage proportional to the product of the roll rotational speed and the mechanical output of the integrator. The integrator changes output whenever this difference is significantly different from zero to return it to essentially zero, thereby keeping the integrator mechanical output position proportional to the roll diameter. A memory feature is obtained by making the controller unidirectional during normal operation. The memory allows the detector to provide an output proportional to roll diameter at all times even when the roll is at standstill, or when the strip breaks. The field flux of the roll drive dynamoelectric machine is regulated in response to the difference between two signals which are respectively functions of the motor field current and of the output of the roll diameter detector.

3,411,056

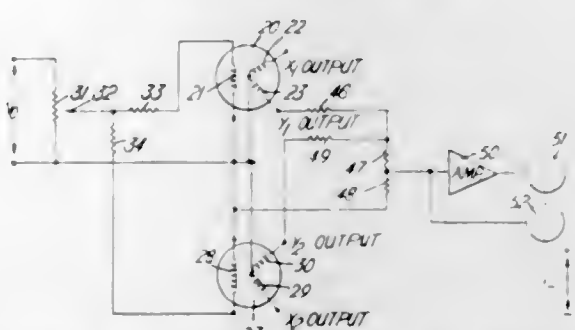
### OXYGEN JET CUTTING MACHINE FOR SIMULTANEOUSLY MAKING TWO CUTS

Derek Harry Redman, Croydon, Surrey, England, assignor to Hancock & Co. (Engineers) Limited, Croydon, Surrey, England, a British company

Filed Sept. 29, 1964, Ser. No. 400,146

Claims priority, application Great Britain, July 20, 1964, 29,477/64

3 Claims. (Cl. 318-18)



An oxygen jet cutting machine for simultaneously making two cuts using two photoelectric line follower

heads mounted for independent transverse movement on a beam, each line follower controlling one cutting burner, the beam being moved longitudinally of the machine at a speed proportional at any instant to the mean of the two longitudinal movement signals derived from the follower heads.

3,411,057

### DIGITAL FINE AND COARSE SYSTEM WITH PULSE WIDTH TORQUER

John H. Knight and Juris Vikmanis, Dayton, Ohio, assignors to The Bendix Corporation, a corporation of Delaware

Filed Nov. 18, 1964, Ser. No. 411,981

7 Claims. (Cl. 318-18)



An electrical positioning device is disclosed in which the prime mover for a relatively movable carriage obtains its energy from a source of energy having its energy level maintained at a constant magnitude throughout the entire range of displacement of the carriage. The displacement is controlled through the control of the frequency and/or width of the energy pulse as the desired displacement is reached.

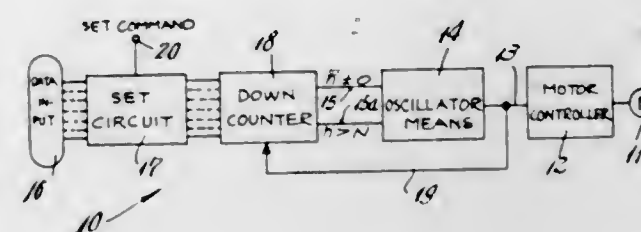
3,411,058

### ACCELERATION DECELERATION CONTROL CIRCUIT FOR A STEPPING MOTOR

Elmer W. Madsen, Bristol, and Albert C. Leenhouts, Granby, Conn., assignors to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut

Filed Jan. 19, 1965, Ser. No. 426,633

9 Claims. (Cl. 318-138)



A motor control circuit for a stepping motor that supplies a train of pulses to the motor with each pulse producing an incremental movement in which the pulses are derived for a variable frequency oscillator whose frequency is increased for the initial pulses of the train and decreased for the terminal pulses of the train.

3,411,059

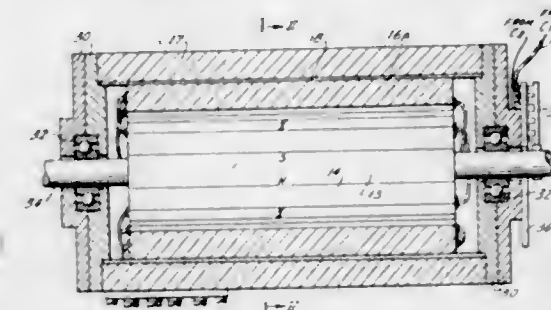
### PULSE MOTOR AND CONTROL SYSTEM THEREFOR

Toshimasa Kaiwa, Kawasaki, Japan, assignor to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan

Filed Apr. 18, 1966, Ser. No. 543,408

Claims priority, application Japan, Apr. 19, 1965, 40/23,121, 40/23,123

7 Claims. (Cl. 318-138)



1. Pulse motor comprising a rotor member and a stator member, each of said members having a plurality of poles arranged in coaxial circles, at least some of the poles of one of said members being formed at least partly of magnetic material and being electrically conductive, means for producing a magnetic field in the poles formed with magnetic material, and means for passing a current through the poles formed with magnetic material in a direction transverse to said magnetic field whereby a torque is applied to said rotor member for turning said rotor member through a predetermined angle.

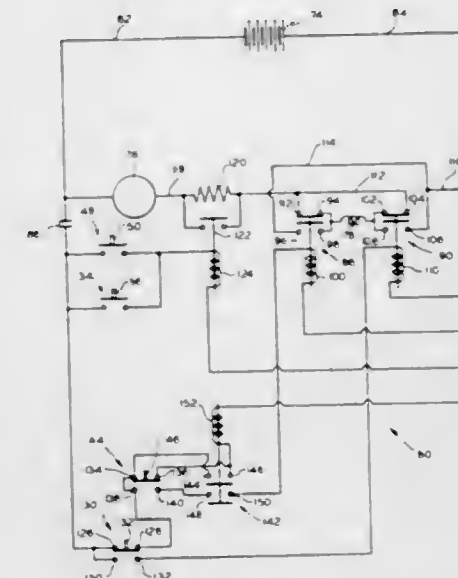
3,411,060

### SAFETY DEVICE FOR A VEHICLE

Gary L. De Pung and Louis A. Haddock, Jr., Battle Creek, Mich., assignors to Clark Equipment Company, a corporation of Michigan

Filed Dec. 16, 1965, Ser. No. 514,202

3 Claims. (Cl. 318-283)



A safety device for vehicles operable to reverse the direction of a self-propelled industrial type hand truck when the control lever engages an object during forward movement of the truck.

3,411,061

### FAST CRITICALLY DAMPED MOTOR DRIVE SYSTEM

Donald J. Poitras, Haddonfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware

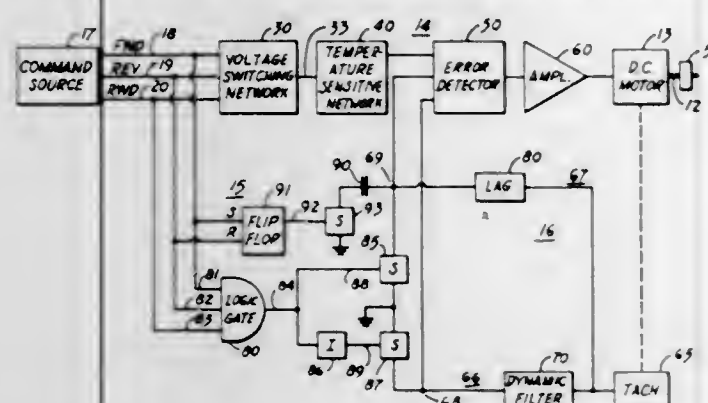
Filed Aug. 20, 1965, Ser. No. 481,278

16 Claims. (Cl. 318-326)

Tape station motor feedback and drive arrangement for fast, critically damped turn-on and turn-off transients and



for fast reversal transients. A switching circuit responds to the motor drive command signals to connect a dynamic filter having a small lag into the feedback loop during the turn-on and reversal transients and to connect a relatively larger lag network into the feedback circuit during the turn-off time. The dynamic filter reduces the effective out-



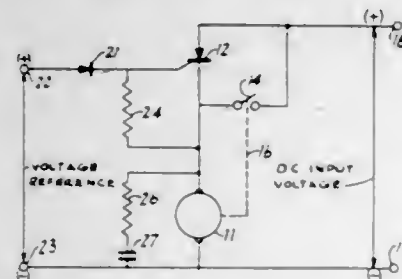
put resistance of the tachometer by the betas of the complementary transistors Q3 and Q4 (FIG. 6) thereby reducing the time constant of the filter. Transistors Q1 and Q2 (FIG. 6) constitute a temperature sensitive network to compensate for variations of the betas of the transistors Q3 and Q4 with temperature.

3,411,062

#### D.C. OPERATED ELECTRONIC GOVERNOR FOR D.C. MOTOR

Bruce H. Kamens, Thomaston, Conn., assignor to Consolidated Electronics Industries Corp., New York, N.Y., a corporation of Delaware

Filed Mar. 18, 1965, Ser. No. 440,890  
23 Claims. (Cl. 318—331)



A governor circuit for D.C. motors operated from direct current and incorporating a voltage controlled current discharge device in series with the motor. One electrode of the discharge device is also connected to a reference voltage so that the conductivity of the discharge device is controlled by comparison of the reference voltage and the back E.M.F. of the motor. Separate means are also provided to turn the discharge device off periodically to permit the back E.M.F. to compare to the reference voltage. In this way discharge device controls the speed of the motor by allowing pulses of driving current to be applied to the motor to cause the motor to run at a speed at which its back E.M.F. will be related to the reference voltage in a pre-determined ratio.

3,411,063

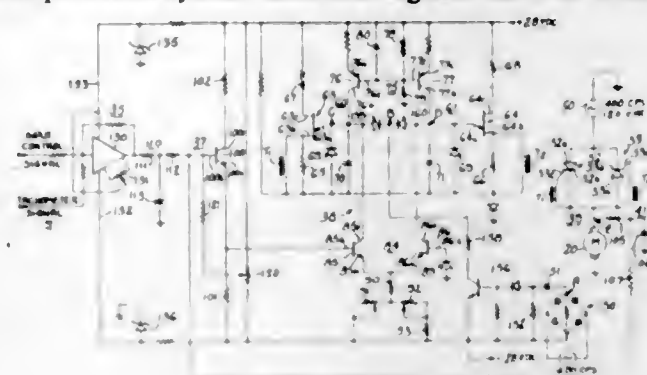
#### CONTROL CIRCUIT FOR A DIRECT CURRENT MOTOR

Stanley C. Schoonover, Chester, Vt., assignor to Textron, Inc., Providence, R.I., a corporation of Rhode Island

Filed Dec. 29, 1965, Ser. No. 517,320  
10 Claims. (Cl. 318—331)

This invention is directed to a system for selectively controlling the amount of energy provided from an alternating current source to a DC motor. In particular, the invention is directed to the use of first and second oscillators whose frequencies of oscillation are controlled in

accordance with an input control signal. Further, the invention provides synchronization signals derived from the



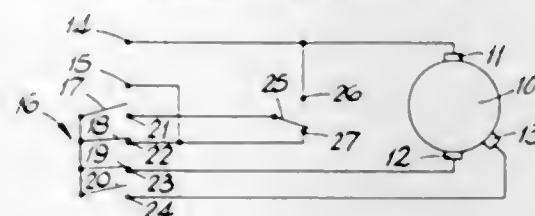
alternating current source to control the operation of the oscillators.

3,411,064

#### VARIABLE SPEED WINDSCREEN WIPER SYSTEMS USING PERMANENT MAGNET MOTORS

Walter Mellor, Sutton Coldfield, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company

Filed Oct. 11, 1965, Ser. No. 494,491  
Claims priority, application Great Britain, Oct. 21, 1964, 42,871/64  
1 Claim. (Cl. 318—339)



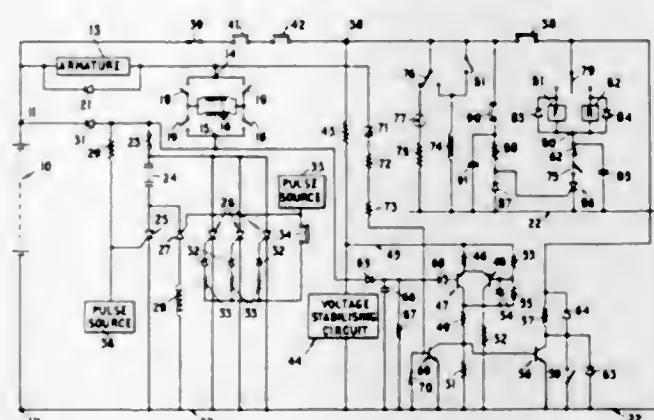
1. A windscreen wiper motor system for a road vehicle, comprising a permanent magnet windscreen wiper motor having a commutator, a pair of brushes diametrically opposite one another and engaging said commutator, a third brush engaging said commutator and angularly spaced from said pair of brushes, said third brush having a circumferential length which is shorter than the circumferential length of said pair of brushes, and switch means operable selectively to energize said pair of brushes or one of said pair of brushes and said third brush, whereby to operate the motor at different speeds.

3,411,065

#### ELECTRICAL CONTROL SYSTEM FOR AN INDUSTRIAL TRUCK

David Clifford Tedd, Great Barr, Birmingham, England, assignor to Eaton Yale & Towne Inc., a corporation of Ohio

Filed Oct. 26, 1965, Ser. No. 505,257  
Claims priority, application Great Britain, Nov. 17, 1964, 46,720/64  
6 Claims. (Cl. 318—341)



Relates to an electrical control system for driving a vehicle in which pulsating current is supplied to the driv-

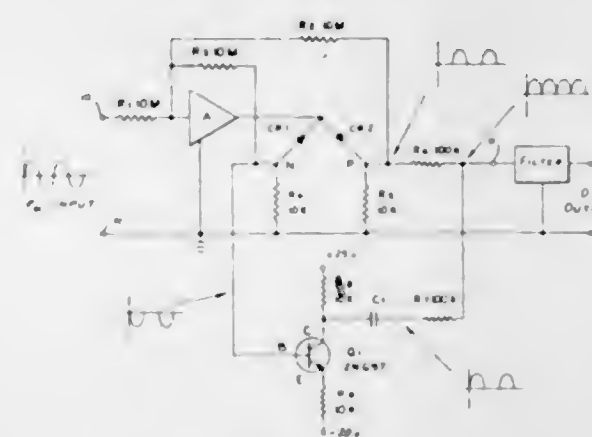
ing motor through contactors which determine direction of current flow through the field coil of the motor. A safety circuit is provided for opening the contactors whenever a switching device, for supplying pulses, is on for longer than a predetermined period of time and an inhibiting circuit for preventing operation of a safety circuit unless at least one of the contactors is closed.

3,411,066

#### AC TO DC CONVERTER FOR AC VOLTAGE MEASUREMENT

Frank R. Bravenec, Houston, Tex., assignor, by mesne assignments, to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Jan. 15, 1965, Ser. No. 425,843  
8 Claims. (Cl. 321—8)



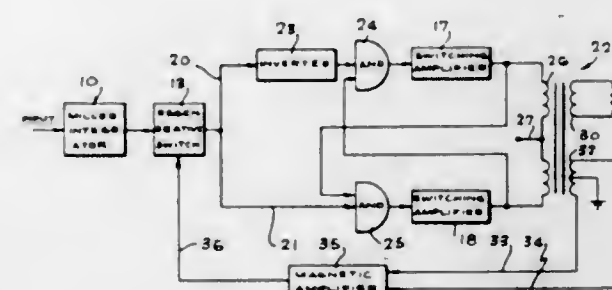
An AC to DC converter is disclosed which converts an AC signal whose voltage is to be determined to a measurable DC voltage. The AC signal is fed to an amplifier and from there to a pair of oppositely poled diodes connected in parallel to produce respectively positive and negative half wave rectified signal outputs. One of the outputs is inverted in a signal inverter circuit to produce a signal of the same magnitude and polarity as the other output. The inverted signal and said other output are then mixed in a mixing circuit to produce a full wave rectified output which may then be filtered and measured.

3,411,067

#### TRANSFORMER CONNECTED AMPLIFIER CIRCUITS INCLUDING MEANS FOR MINIMIZING UNBALANCED TRANSFORMER CURRENTS

David R. Rodal, Canoga Park, Calif., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed Mar. 14, 1966, Ser. No. 534,217  
10 Claims. (Cl. 321—16)



A circuit utilizing transformer connected switching amplifiers connected in push-pull relationship and including feedback means for eliminating DC current unbalance in the transformer. The feedback means includes a special transformer secondary winding which operates an error integrating magnetic amplifier to produce a DC output

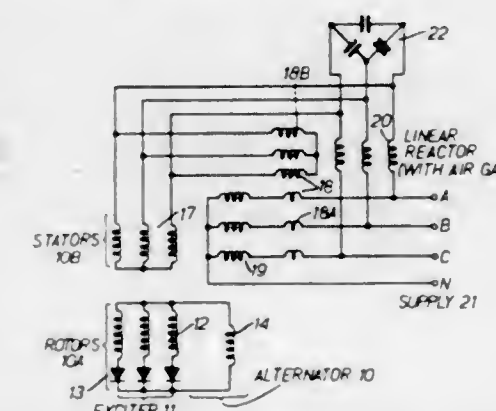
signal. The DC output signal is fed back to the switching amplifier inputs to vary the threshold of a regenerative switch to thus vary the time symmetry of the amplifier output signals coupled to the transformer.

3,411,068

#### BRUSHLESS ALTERNATORS OF THE SELF-REGULATING AND SELF-EXCITING TYPE

Ernst Wolfgang Krebs, Purley, England, assignor to Selectra Limited, Purley, England, a British company

Claims priority, application Great Britain, Dec. 31, 1964, 53,102/64  
9 Claims. (Cl. 322—25)



The invention provides a brushless alternator of the type having a rotating field winding excited from a separate rotary frequency changer exciter including a rotating armature mounted on the shaft of the alternator to rotate with the main field winding to which it is permanently connected via a field rectifier also mounted on the same shaft. A single exciter stator primary winding is supplied through a primarily nonresistive constant impedance with a component of excitation current which is dependent on and derived from the output voltage of the alternator, and also is supplied with a component of excitation current which is dependent on the load current of the alternator and is obtained therefrom by a current transformer. The constant impedance is independent of current variations at a given frequency, and may either comprise a capacitor, or a linear auto-transformer having an air gap in its core whereby the auto-transformer also acts as the current transformer, being connected in series with the exciter primary winding across the output terminals of the alternator and having a tapped portion of its winding connected in series with the stator winding of the alternator to carry the load current thereof.

3,411,069

#### CAPACITIVE VOLTAGE TRANSFORMER AND CURRENT TRANSFORMER COMBINATION UNIT

Alfred Kubler, Karlsruhe-Durlach, Hans Jahn, Karlsruhe, and Helmut Pilz, Berlin, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany

Filed July 1, 1966, Ser. No. 562,210  
Claims priority, application Germany, July 8, 1965, S 98,086  
9 Claims. (Cl. 323—44)

1. A single structural unit for an electrical power line, comprising a first substantially tubular electrically insulating member, a second substantially tubular electrically insulating member positioned inside said first insulating member and radially spaces therefrom, a first housing portion fluid tightly affixed to one end of said first and second insulating members, a second housing portion fluid tightly affixed to the opposite end of said first and second insulating members, said







bellows. The magnetic axis of the magnet is parallel to the legs, which have saturating windings thereon, energized by half-wave rectified A.C., and the winding senses are such that the magnet aids the A.C.-induced flux in one leg, and opposes it in the other. The legs also have bias windings energized by D.C., and wound in a sense such as to induce flux in the legs opposed to the flux induced by the magnet therein. The parameters of the transducer are adjusted so that both legs saturate simultaneously with the magnet in a given position, whereby if the magnet moves out of that position, one leg will saturate before the other. The legs also have sensing windings in which voltages are induced in opposed senses by the varying leg fluxes, till saturation. The net voltage has amplitude and sense reflecting the amount and sense of magnet position-change and is used to vary the level of D.C. in the bias windings in such sense as to restore simultaneous saturation, so that the D.C. level becomes a measure of magnet position.

3,411,077

# PROCESS FOR TESTING CORES BY DETERMINING AVERAGE MINIMUM RESTORE DIGIT CURRENT AND MAXIMUM DISTURB DIGIT CURRENT

William V. Rausch, Richard J. Petschauer, and Peter L. Morawetz, Minneapolis, Minn., assignors to Fabri-Tek Incorporated, Minneapolis, Minn., a corporation of Wisconsin

Filed Nov. 9, 1964, Ser. No. 409,686  
11 Claims. (Cl. 324-34)

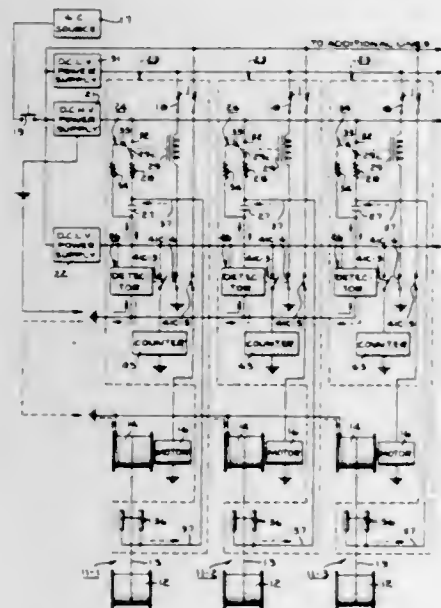
The method of testing magnetic core arrays comprising the steps of pulse testing each core to determine an average minimum restore digit current, again pulse testing each core to determine an average maximum disturb digit current, and comparing the ratio of disturb digit current to restore digit current to a predetermined quality factor.

3,411,078

# APPARATUS INCLUDING PLURAL DETECTORS FOR DETECTING FAULTS IN ELECTRICALLY NONCONDUCTING MATERIAL

Alfred E. Hartman, Ralston, Nebr., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed July 6, 1966, Ser. No. 563,127  
10 Claims. (Cl. 324-54)



Apparatus for detecting faults in the insulation of at least two electrical conductor wires includes a high-voltage source, a fault detector for each of the insulated wires and a capacitor for energizing each fault detector. A fault in the insulation on one of the wires completes

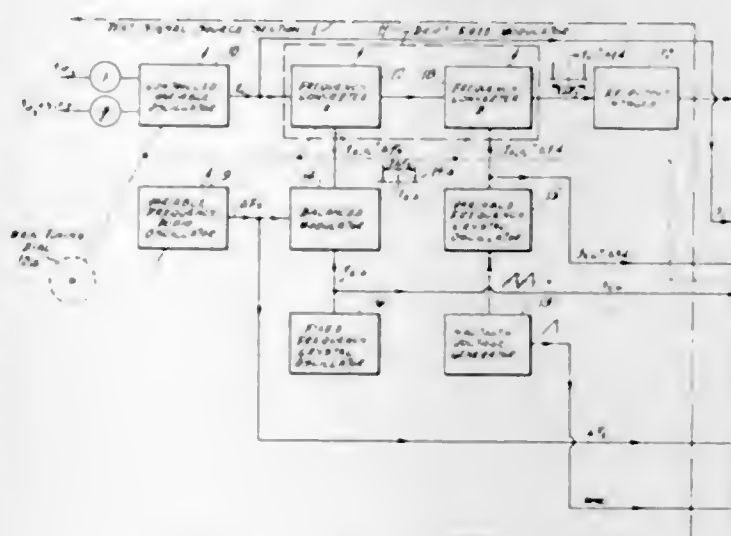
a discharge path for both capacitors through the fault, whereby the capacitor associated with the wire discharges to operate its fault detector. The discharge path of the other capacitor, however, is such that its discharge time constant is longer than that of the first capacitor, and before the second capacitor can discharge its discharge path is opened by a device responsive to the energized fault detector, to preclude the second capacitor from discharging to operate its fault detector.

3,411,079

# CIRCUIT AND METHOD FOR ASCERTAINING INTERMODULATION DISTORTION

Anthony C. Palatinus, 68-17 60th Road, Maspeth, N.Y. 11378

Filed Sept. 11, 1964, Ser. No. 395,965  
3 Claims. (Cl. 324-57)



Circuit and method for the measurement and the automatic recording, in a sequential manner of the intermodulation distortion characteristics of a network under test responding to a two-tone frequency swept signal that maintains a constant or fixed frequency separation between the tones. The distortion plotting technique is implemented by a test set that comprises a two-tone "swept-in-step" signal generation source which simultaneously supplies operating signals to an output response analysis recorder. One operating signal is a sweep frequency carrier wave representative of the frequency deviation of the mean frequency location of the two-tone swept test signal. This latter signal is supplied to a resolving frequency con-

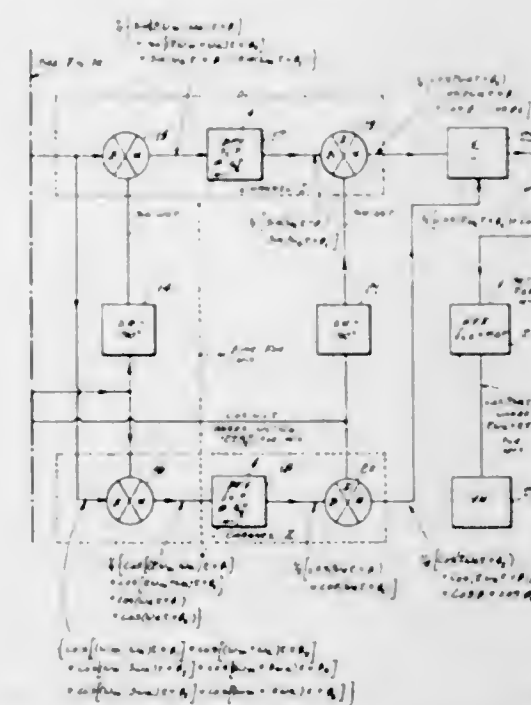
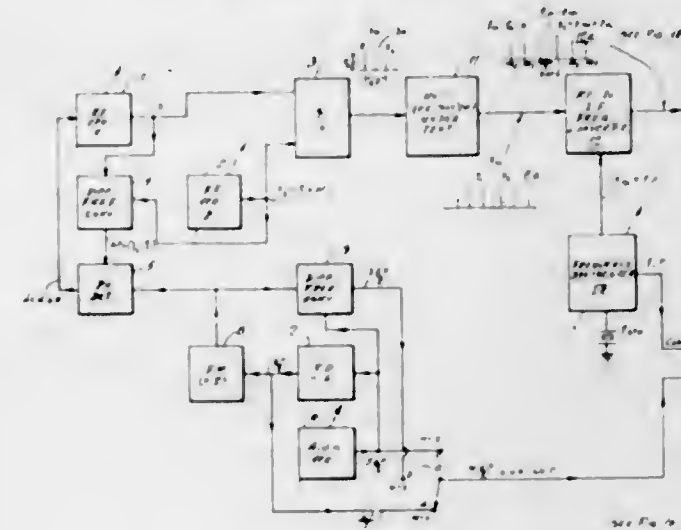
version operation and negates the sweep frequency excursion of the response output from the network under test resulting in the selective filtering of a static response. A second operating signal, representative of the two tone fixed frequency separation or a harmonic multiple thereof, produces successive frequency offsetting steps of the sweep negating action. The two tones and their intermodulation distortion products sequentially coincide with the resolving passband, and the response component is detected and synchronously displayed.

3,411,080

# INTERMODULATION DISTORTION WAVE ANALYZER

Anthony C. Palatinus, 68-17 60th Road, Maspeth, N.Y. 11378

Filed June 29, 1965, Ser. No. 468,180  
3 Claims. (Cl. 324-57)



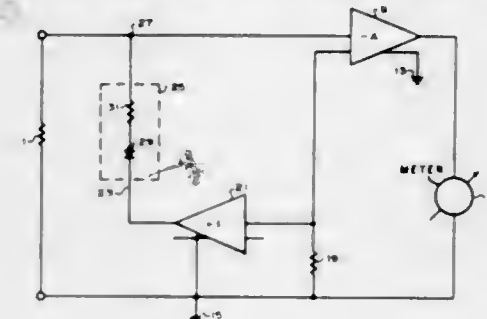
A multi-frequency system intermodulation (IM) wave analysis of the spectrum response output. A frequency controlled two-tone equal amplitude test signal is applied to a system which possesses an internal heterodyne operation. The system intermodulation distortion test and wave analysis technique is implemented by a single audio frequency reference integrated test set arrangement comprising a frequency difference stabilized two tone signal source which has its frequency reference functioning in the frequency stabilization and audio tuning of a wide frequency range and an audio frequency tuned selective filter output analyzer. This distortion measurement operation sequentially indicates the relative amplitude relationship of the 3rd and 5th odd order distortion products to one tone of the applied two tone signal.

3,411,081

# OHMMETER CIRCUIT INCLUDING INDICATION-LINEARIZING FEEDBACK

Donald F. Schulz, Loveland, Colo., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed Jan. 24, 1966, Ser. No. 522,689  
4 Claims. (Cl. 324-62)



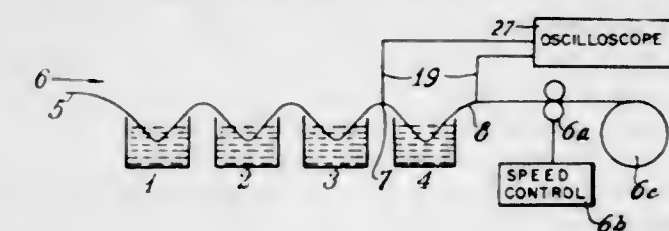
In the present ohmmeter circuit an output indication that is linearly proportioned to the impedance to be measured is provided by connecting one terminal of a signal current source to the element to be measured and by maintaining the voltage at the other terminal of the signal current source equal to the voltage drop across the element to be measured.

3,411,082

# METHOD OF MEASURING THE POTENTIAL DIFFERENCE ACROSS A CONDUCTIVE SHEET MATERIAL FOR CONTROLLING THE PICKLING OF SAID SHEET

Christian Van Den Hove, Bressoux, Belgium, assignor to Centre National de Recherches Metallurgiques, Brussels, Belgium

Filed Dec. 12, 1963, Ser. No. 330,086  
Claims priority, application Belgium, Dec. 20, 1962, 39,638, Patent 626,376  
7 Claims. (Cl. 324-65)



This specification discloses a method and apparatus for the control of the descaling of a metallic sheet passing continuously through a pickling bath, wherein the presence or absence of scaling is detected by placing a pair of electrodes in contact with the sheet at spaced locations and recording the potential difference between them when a current flows, and wherein the speed of passage of the sheet through the bath is controlled in order to achieve the desired degree of descaling at the location of the electrodes.

3,411,083

# VIBRATION RECORD ANALYZER

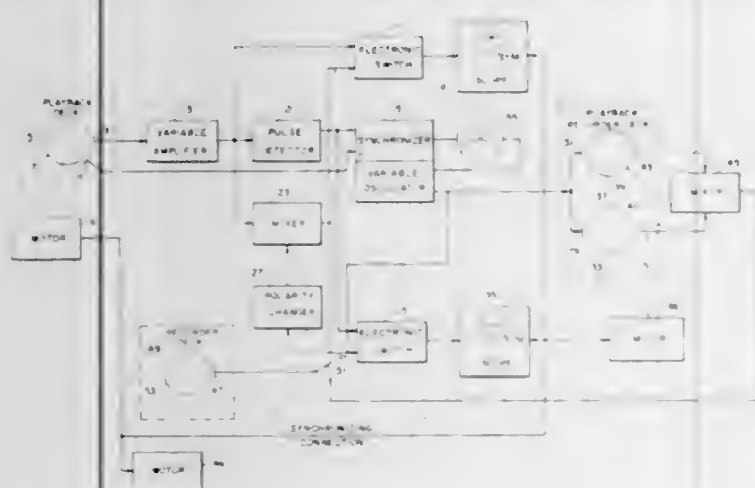
Ernest E. Seiler, Madison, Ala., assignor to the United States of America as represented by the Secretary of the Army

Filed Feb. 1, 1966, Ser. No. 524,359  
8 Claims. (Cl. 324-77)

1. A vibration record analyzer comprising: a playback deck for playing back a vibration record sample which is to be analyzed, said playback deck having a first and a second output; an amplifier having an input connected to said first output of said playback deck; a detector having an input connected to an output of said amplifier; a first switch having a first and second input and an output, said first input being connected to said output of said amplifier;



a first mixer having a first input connected to said output of said amplifier and an output connected to said second input of said first switch; a first oscilloscope connected to said output of said first switch for displaying alternately said vibration sample and a signal output of said first mixer; a synchronizer and variable oscillator having a first and second input and an output, said first input being connected to an output of said detector, said second input being connected to said second output of said playback deck; a playback recorder having an input and a first and second output, said input being connected to said output of said synchronizer and variable oscillator; a polarity changer connected between said output of said synchronizer and variable oscillator and a second input of said first mixer; a second switch having a first and second input and an output, said first input of said second switch being connected



to said output of said detector, said second input of said switch being connected to said output of said synchronizer and variable oscillator; a second oscilloscope connected to said output of said second switch for displaying alternately signal outputs of said detector and said synchronizer and variable oscillator; a second mixer having a first and second input and an output, said first and second inputs being connected respectively to said first and second outputs of said playback recorder; a recorder connected to said output of said second mixer through one position of the contacts of a manual switch, said recorder being alternately connected to said output of said first mixer through a second position of the contacts of said manual switch, whereby a difference signal representing the difference of said sample signal and a signal generated by said variable oscillator which represents one force present in said vibration record which is being analyzed.

### 3,411,084 MICROWAVE DEVICES UTILIZING MAGNETORESISTANCE EFFECT

Shoel Kataoka, Kitatama-gun, Tokyo-to, and Hiroyuki Fujisada, Shinagawa-ku, Tokyo-to, Japan, assignors to Agency of Industrial Science and Technology Ministry of International Trade and Industry, Tokyo-to, Japan, an authority of the Japanese Government

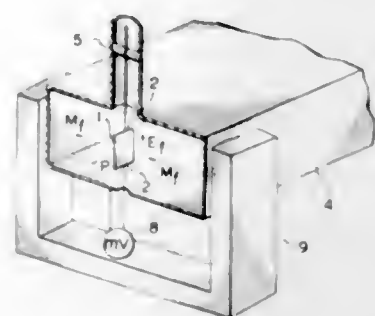
Filed June 13, 1963, Ser. No. 287,678

Claims priority, application Japan, June 15, 1962, 37/24,319; Sept. 14, 1962, 37/39,517; Sept. 17, 1962, 37/39,956; Oct. 3, 1962, 37/42,778

6 Claims. (Cl. 324-95)

1. An apparatus for measuring microwave energy by utilizing the magnetoresistance effect of a semiconductor element, comprising a waveguide; an adjustable coaxial piston mounted on the upper central part of said waveguide; a central conductor supported by said coaxial piston, a magnetoresistance element enclosed in the microwave magnetic field in said waveguide, said magnetoresistance element having two terminal lead wires, one of said lead wires being connected to said central conductor and the other of said lead wires extending exteriorly of

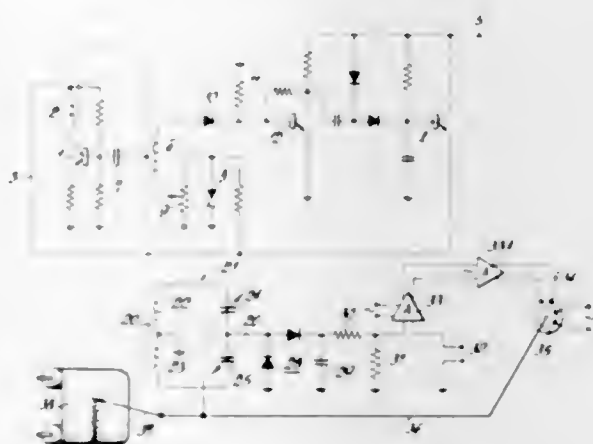
said waveguide, means applying a bias magnetic field across said semiconductor element whereby variations in the microwave magnetic field in said waveguide produce corresponding variations in the resistance of said semi-



conductor element, and means for measuring across opposite ends of said semiconductor element the direct current voltages induced by said microwave magnetic field in said semiconductor element thereby measuring microwave energy in said waveguide.

**3,411,085  
DIRECT CURRENT POTENTIOMETER SYSTEM  
EMPLOYING AUTOMATIC BALANCING**  
Winfried Schulz, Berlin, Germany, assignor to Continental Elektroindustrie Aktiengesellschaft, Askania-Werke, Berlin-Mariendorf, Germany, a corporation of Germany  
Filed Aug. 26, 1964, Ser. No. 392,240  
Claims priority, application Germany, June 11, 1964, C 33,098

7 Claims. (Cl. 324-99)

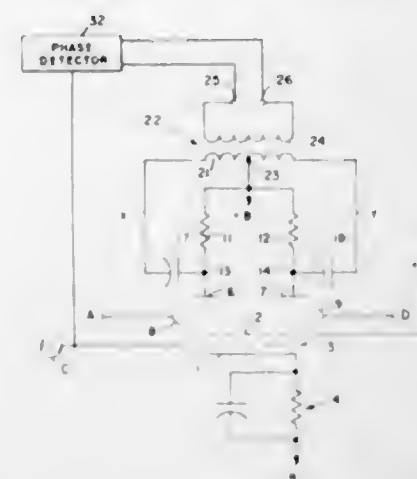


A self-balancing direct current potentiometer system in which a stabilized alternating signal source is used to drive a bridge circuit having variable reactance elements (for example, capacitors). The output of the bridge circuit is rectified and compared with the direct current to be measured by the system. A control motor is activated to an extent determined by the results of the comparison. This motor in turn controls the setting of the bridge reactance elements in such sense as to equalize the rectified bridge circuit output and the direct current to be measured by the system.

**3,411,086  
D.C. VOLTAGE COMPARATOR SYSTEM USING A  
BEAM DEFLECTION TUBE**  
Guntis Brunins, Hyattsville, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army  
Filed Mar. 9, 1964, Ser. No. 350,625  
10 Claims. (Cl. 324-121)

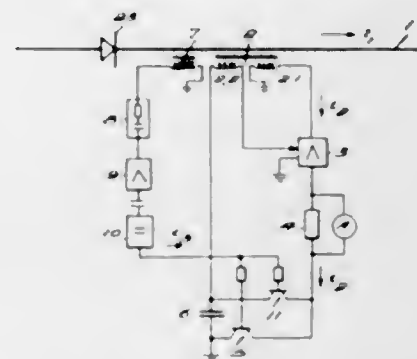
A D.C. voltage comparator system using a beam deflec-

tion tube with an A.C. biasing voltage, applying the D.C. signal inputs to the deflecting plates of the tube, and



utilizing an A.C. output circuit across the plates of the tube.

**3,411,087  
APPARATUS FOR MEASURING DIRECT  
CURRENT IMPULSES**  
Xaver Vogel, Wettingen, and Peter Knapp, Nussbaumen, Aargau, Switzerland, assignors to Aktiengesellschaft Brown Boveri & Cie, Baden, Switzerland, a joint-stock company  
Filed June 11, 1965, Ser. No. 463,206  
7 Claims. (Cl. 324-127)

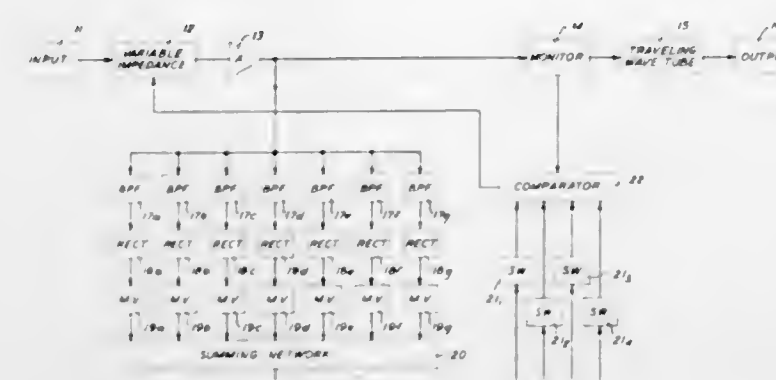


1. Apparatus for measuring direct current impulses comprising a current transformer including first and second secondary windings adapted to be brought into conductive relationship with the line conductor carrying the direct current impulses desired to be measured, a controllable amplifier and a current measuring device connected in series in a measuring circuit connected to said first secondary winding, said amplifier serving to compensate for voltage drops in said measuring circuit and being blocked in the absence of current flow in said line conductor, and control circuit means connecting said second secondary winding with the control means provided on said amplifier for unblocking the same to establish current flow to said measuring device but only when current flows in said line conductor.

**3,411,088  
AUTOMATIC INPUT POWER LEVEL ADJUSTMENT  
APPARATUS FOR AMPLIFIER OF A BROAD-  
BAND REPEATER**  
Paul T. Hutchison, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Feb. 9, 1965, Ser. No. 431,312  
9 Claims. (Cl. 325-3)

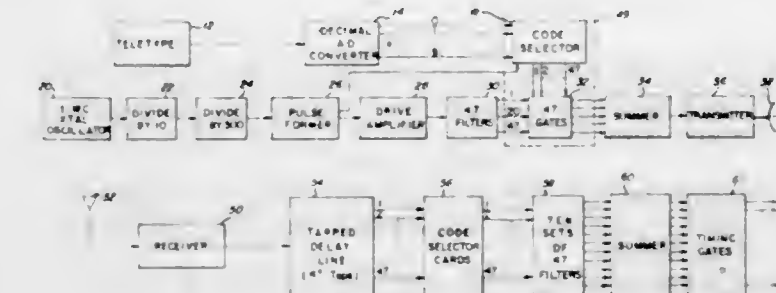
Broadband repeaters used in random access systems must accommodate a plurality of randomly present sig-

nals. Consequential vacillation in power level at the input of the repeater amplifier results in saturation of the amplifier. Non-saturated operation is accomplished by the



automatic adjustment of the power input level to the amplifier, in accordance with the number of received intelligence signals present at the input of the amplifier.

**3,411,089  
COMMUNICATION SYSTEM**  
Francis A. Gicca, Bedford, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware  
Filed June 28, 1962, Ser. No. 207,158  
15 Claims. (Cl. 325-33)



1. In combination:  
means for producing a time dispersed wave pattern corresponding to an informational signal;  
means for varying said pattern in accordance with a predetermined code;  
and means for receiving and converting said wave pattern to a composite output signal corresponding to the summation of the amplitudes of individual waves in said pattern to provide said corresponding informational signal.

**3,411,090  
SIGNAL PHASE CONTROL CIRCUITS**  
Frank W. Lescinsky, Middletown Township, Monmouth County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Dec. 17, 1965, Ser. No. 514,583  
10 Claims. (Cl. 325-323)

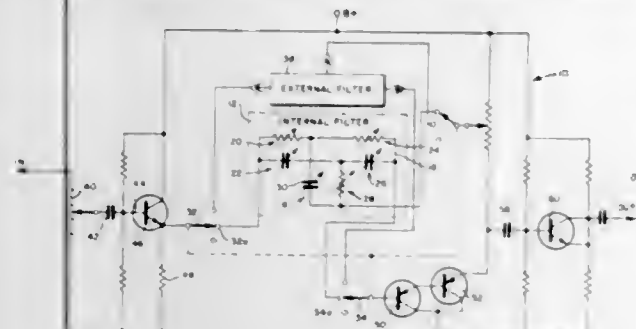
10. In combination:  
means receiving a multilevel coded data signal including a train of data symbols occurring at a predetermined rate,  
means generating a transition pulse each time said signal includes a signal excursion between adjacent ones of multiple information-determinant levels thereof,  
means receiving a train of timing signals,  
means responsive to said timing signals generating a train of regularly recurring pulses, the latter pulses







and an intermediate arm, an input circuit connected to said input arm, means coupled to said output arm for developing a signal in phase with the signal on said output



arm, said intermediate arm connected to said means so that a portion of the in phase signal is fed back to the parallel-T filter section.

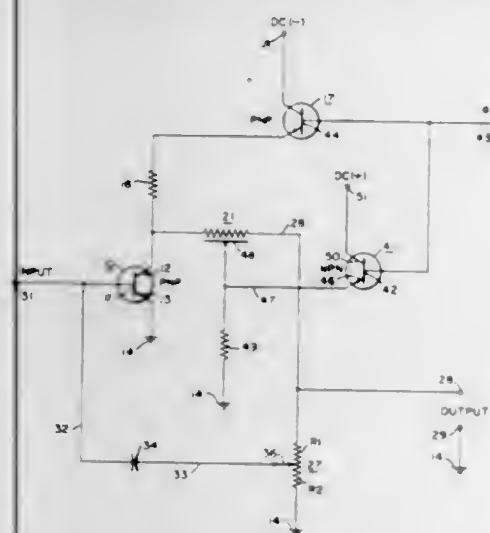
3,411,099

### AUTOMATIC GAIN AND FREQUENCY CONTROL SYSTEM FOR SEMICONDUCTOR AMPLIFIER

Irving F. Barditch, Baltimore, Md., Robert Bento, Tiverton, R. I., and Charles G. Brooks, Baltimore, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 21, 1965, Ser. No. 515,374

4 Claims. (Cl. 330-26)



1. A band-pass signal translation system comprising an input terminal, an output terminal, a common input-output terminal, at least two paths between said input and said output terminals, one of said paths including a transistor connected in a grounded emitter configuration and a passive voltage responsive phase shifting distributed RC network, a source of AGC voltage which is a function of the signals applied to the input, and means responsive to said AGC voltage for simultaneously varying the gain of said transistor and shifting the RC product of said network so that the center frequency of the band-pass is not changed in response to variations in the amplitude of the input signals.

3,411,100

### ELECTROSTATICALLY FOCUSED TRANSVERSE FIELD BACKWARD WAVE AMPLIFIER

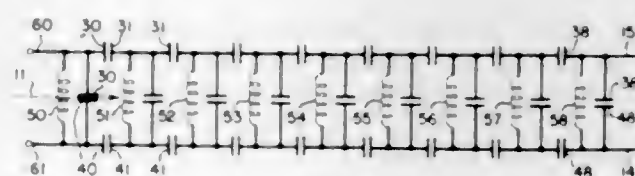
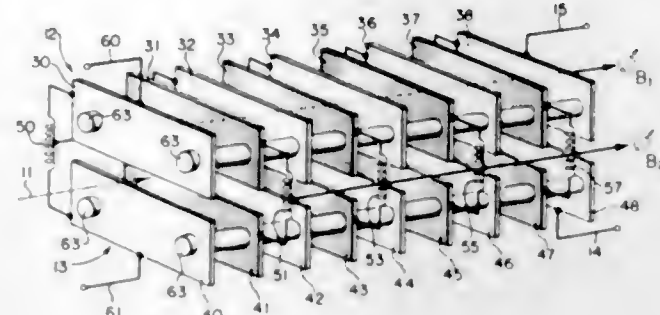
Peter G. Everett, Oak Park, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Feb. 21, 1966, Ser. No. 528,964

14 Claims. (Cl. 330-43)

1. Electron interaction apparatus comprising: means for projecting an electron stream along a path; field-producing means for establishing a condition of transverse resonance for the electrons in said stream;

a plurality of pairs of electrodes spaced successively along said path with the individual electrodes of each pair being disposed respectively on opposite sides of said path and with each electrode being capacitively coupled to the other of its pair and to a corresponding one of the electrodes in each adjacent pair; inductor means for individually inductively coupling together the individual electrodes of each of said pairs;



and signal translating means coupled across the individual electrodes of an end one of said pairs, said electrodes and the aforesaid capacitive and inductive coupling together constituting a transmission line propagative of said signal with a wave velocity so related to the average velocity of electrons in said stream as to effect interaction between said stream and fields created by said signal on said line.

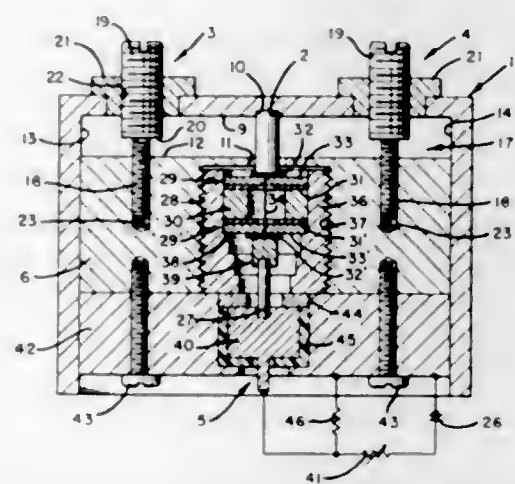
3,411,101

### WAVEGUIDE TUNNEL DIODE AMPLIFIER

Hyman Plutchok, Los Altos, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware

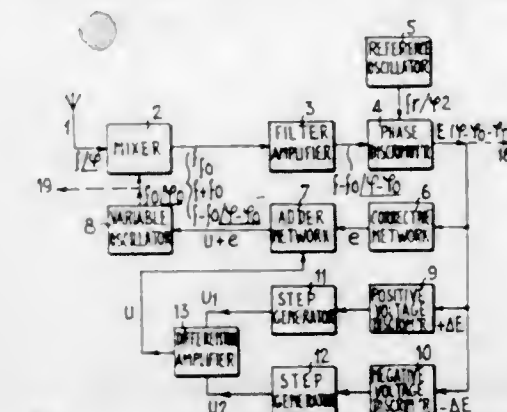
Filed Feb. 1, 1966, Ser. No. 524,180

10 Claims. (Cl. 330-56)



1. A tunnel diode amplifier having prescribed operating frequencies comprising  
a waveguide for propagating electromagnetic wave signals,  
a tunnel diode having first and second terminals, said tunnel diode being oriented in said waveguide transversely to wave propagation therein,  
means for coupling said terminals of said tunnel diode to said waveguide,

bias means operable to bias said tunnel diode into its negative resistance region for amplifying electromagnetic signals,  
an electrically conductive post extending through said waveguide transversely of the direction of wave propagation in the waveguide and being electrically connected to said waveguide at junctions of said post and said waveguide, said post providing a reactance in said waveguide, and  
means for moving said post in the interior of said waveguide,  
said post having first and second sections with different cross-sectional dimensions measured transversely to the directions of post movement and wave propagation in the waveguide whereby post movement changes the lengths of said differently dimensioned post sections within the waveguide to correspondingly vary the reactance produced by the post and the operating frequencies.



3,411,102

### AUTOMATIC FREQUENCY CORRECTION FOR PHASE LOCKED OSCILLATOR SYSTEMS

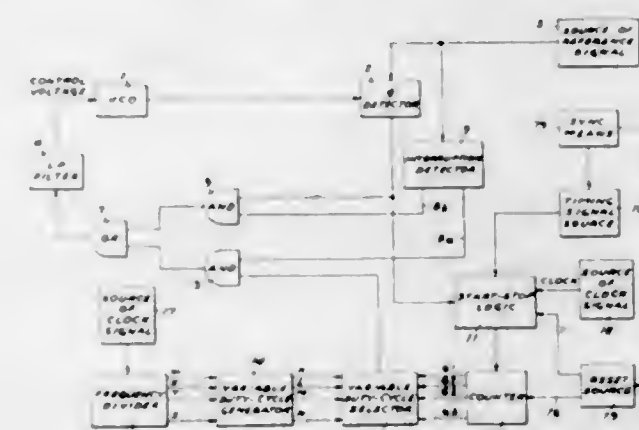
Rolf Gunnar Sommerud, Bekkestua, and Christian Fredrik Holmboe, Strommen, Norway, and James Francis De Lorme, Irvington, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Continuation-in-part of application Ser. No. 573,556,

Aug. 19, 1966. This application Jan. 16, 1968, Ser.

No. 706,210

11 Claims. (Cl. 331-14)



A digital system for automatically maintaining phase lock in a phase locked oscillator loop wherein a digital signal having substantially the same duty cycle as the output waveform from the phase detector is fed to the voltage controlled oscillator when the "reference signal" is interrupted. In this manner, phase lock is maintained without the drift inherent in the known systems which use capacitor storage devices.

3,411,103

### ANGLE-LOCK SIGNAL PROCESSING SYSTEM INCLUDING A DIGITAL FEEDBACK LOOP

Pierre Deman, Paris, and André Lukasiewicz, Nanterre, France, assignors to Compagnie Francaise, Thomson Houston-Hotchkiss Brandt, Paris, France, a corporation of France

Filed May 16, 1966, Ser. No. 550,452

Claims priority, application France, May 21, 1965,

17,889

11 Claims. (Cl. 331-17)

In a phase-lock signal receiving system in which a signal received at an antenna (1) is heterodyned in a mixer (2) with a signal from a variable-frequency oscillator (8), the heterodyned signal is applied to one input of a phase discriminator (4) receiving a reference oscillator

(5) signal at its other input, and the phase-discriminator error output is then applied by way of a feedback loop to the frequency-varying input of the variable oscillator (8), the invention provides a composite feedback loop having two parallel branches one of which comprises an RC

integrating network (6) and the other a digital integrating network (9, 10, 11, 12, 13) generating a quantized staircase voltage which is combined with the output of said RC integrating network (6) in an adding circuit (7) and serves to reduce the error to less than a prescribed level (FIG. 1).

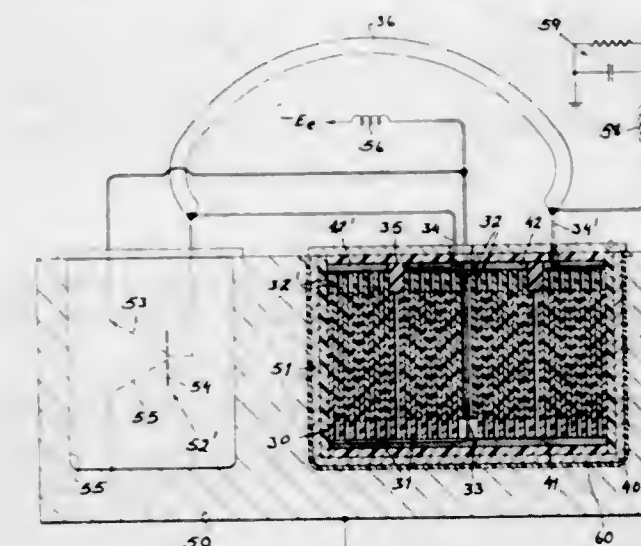
3,411,104

### COMPACT CONDENSER STRUCTURE AND CIRCUIT INCORPORATING SAME

Robert H. Pintell, Congers, N.Y., assignor to Intron International, Inc., Congers, N.Y., a corporation

Filed Dec. 19, 1966, Ser. No. 602,845

9 Claims. (Cl. 331-68)



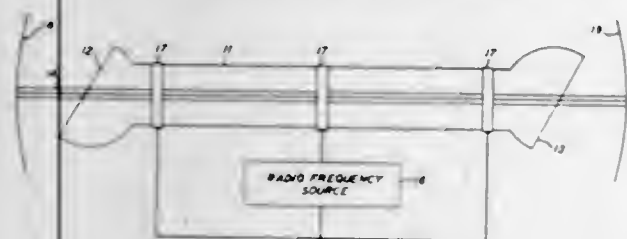
A condenser for high-frequency currents is formed from two interleaved and axially overlapping metalized dielectric foils wound into a substantially cylindrical coil body so that each end face of the cylindrical coil body exposes a spiral edge forming part of the metal layer of one or the other foil. A lead attached to one of these metal layers, on one of the end faces of the coil body, extends laterally outwardly from that end face while a second lead, similarly attached to the other metal layer on the opposite end face, passes substantially axially through the coil body to extend close to and approximately parallel to the first lead, thereby minimizing the inductivity of the supply circuit of which these leads form a part. Such a condenser may be incorporated in an oscillatory circuit of negligible parasitic inductance, advantageously an oscillation generator of the Colpitts type formed in the same coil by means of at least one additional metalized foil.



### 3,411,105 POLYATOMIC GASEOUS INFRARED OPTICAL MASER

Chandra K. N. Patel, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 15, 1963, Ser. No. 265,529  
5 Claims. (Cl. 331-94.5)



1. An infrared optical maser comprising means forming an enclosed space, a gaseous mixture within said space comprising an auxiliary monatomic gas and an active polyatomic gas of unlike atoms, and means for supplying energy to said mixture to establish a population inversion between an optically connected pair of energy levels of said active gas, said pair of energy levels having an energy difference corresponding to an infrared wavelength to provide for stimulated emission of radiation at said infrared wavelength, the gaseous mixture being selected from the group consisting of:

He-CO	Ne-CO	He-CN
He-CO <sub>2</sub>	Ne-CO <sub>2</sub>	Ne-CN
He-NO	Ne-NO	Ne-HCl
He-NO <sub>2</sub>	Ne-N <sub>2</sub> O	He-SF <sub>6</sub> ; and

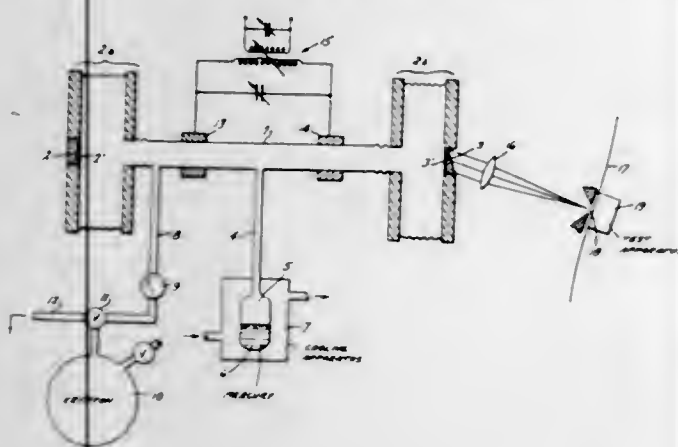
means disposed about said forming means for resonating said infrared radiation from said gaseous mixture whereby the stimulated emission of radiation is obtained selectively at said infrared wavelength.

### 3,411,106 MERCURY-KRYPTON LASER

Wolfgang Friedl, Hanau am Main, Germany, assignor to Quarzlampen Gesellschaft m.b.H., Hanau am Main, Germany

Filed Mar. 18, 1963, Ser. No. 265,953  
Claims priority, application Germany, Mar. 19, 1962, Q 703

4 Claims. (Cl. 331-94.5)



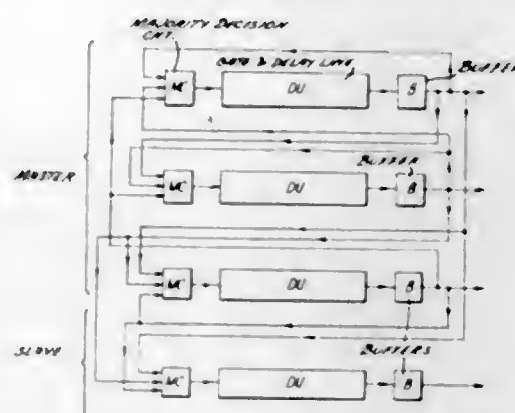
1. Quantum-mechanical oscillator for producing an oriented beam of coherent radiation in a frequency range including visible and ultraviolet light, comprising a tubular gas discharge chamber; first and second reflectors located at the opposite ends of said tubular gas discharge chamber for reflecting between them-

selves in axial direction of said chamber radiation produced therein, the first reflector at one of said ends causing total reflection, the second reflector at the opposite end causing only partial reflection and permitting an output of said coherent radiation therethrough in said axial direction; a gaseous filling within said tubular gas discharge chamber comprising a mixture of krypton gas and mercury vapor, means for creating a predetermined partial pressure in said krypton gas in the order of  $5 \times 10^{-2}$  torr, the preferred population of the krypton being in the  $1s_2$  ( $5^2P_2$ ) krypton level, and a predetermined partial pressure of said mercury vapor in said chamber of the order of about  $1.3 \times 10^{-2}$  torr; and high frequency generator means including electrodes assembled with said tubular gas discharge chamber for producing in said gaseous filling therein high-frequency gas discharges resulting in said radiation, the spectral range thereof depending upon said partial pressure in said krypton gas.

### 3,411,107 ELECTRICAL OSCILLATION GENERATORS Frederick Henry Rees, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 8, 1967, Ser. No. 614,746  
Claims priority, application Great Britain, Feb. 11, 1966, 6,091/66

14 Claims. (Cl. 331-111)



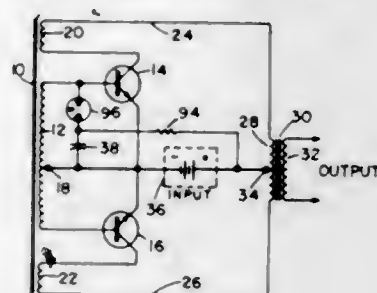
An oscillator is provided with a delay line cyclically fed from at least one pulse driven monostable device. When an output of the monostable device reaches a certain point in the delay line, a signal is fed back to trigger the next cycle. To provide greater stability and accuracy, a number of circuits are connected in parallel to provide a "majority decision" circuit.

### 3,411,108 STARTING CIRCUITS FOR MAGNETIC CORE VOLTAGE INVERTER SYSTEMS

Robert A. Phillips, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Feb. 2, 1967, Ser. No. 613,564

2 Claims. (Cl. 331-113)

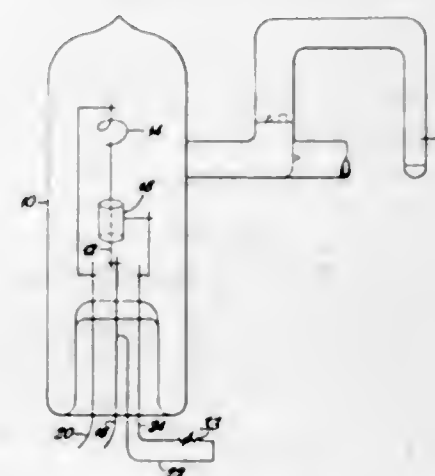


A plurality of starting circuits for two-transformer transistorized inverter circuits which do not load the

power supply during inverter operation. Speed-up capacitors, SCR's and negative resistance devices are used to start a transistorized inverter.

### 3,411,109 THERMIONIC DIODE OSCILLATOR Ralph Forman, Rocky River, Ohio, assignor to Union Carbide Corporation, a corporation of New York Continuation-in-part of application Ser. No. 182,605, Mar. 20, 1962. This application Sept. 6, 1966, Ser. No. 584,294

8 Claims. (Cl. 331-126)



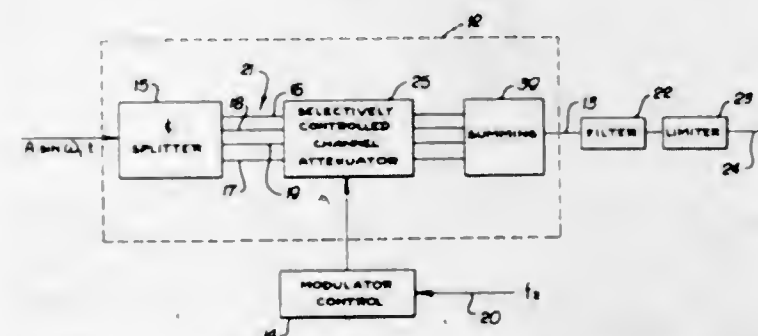
An oscillator is constructed by first obtaining a thermionic diode whose operational characteristics are such that a negative resistance region exists in the anode current-anode voltage characteristic of the diode, and then adjusting the external load circuit so that the load line intersects the negative resistance portion of this characteristic at two points.

### 3,411,110 SINGLE SIDE BAND SUPPRESSED CARRIER MODULATOR

Winston G. Walker, Santa Ana, Calif., assignor to Astrodia, Inc., Anaheim, Calif., a corporation of California

Filed Aug. 9, 1965, Ser. No. 478,157

7 Claims. (Cl. 332-44)



The disclosure concerns accurately controlling or shifting the phase of a high frequency signal such as a carrier, in such manner as to produce what may be characterized as single side band suppressed carrier modulation, or a "vernier" controlled carrier frequency.

### 3,411,111 MAST FOR LOOP DIRECTION FINDING SYSTEM

Elmer A. Meyers, Jr., Cupertino, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Nov. 5, 1965, Ser. No. 506,920

6 Claims. (Cl. 333-12)

1. A mast for a direction finding antenna comprising: an elongated tubular mast; a shielded cable extending throughout the entire length of said tubular mast; a hollow

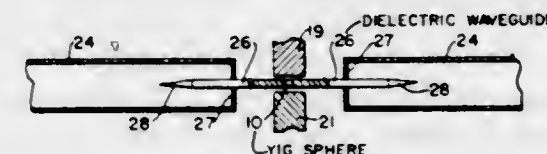
ferrite cylinder supported within said tubular mast, said cable passing through the hollow portion of said ferrite cylinder; means for insulating said cable from said ferrite cylinder throughout the length of said ferrite cylinder except at the extreme top end thereof; means for conduc-



tively connecting the extreme top end of said ferrite cylinder to said cable; a thin conductive cylinder surrounding the outer portion of said ferrite cylinder and two conductive discs, one conductively joined to each end of said cylinder and to said conductive cylinder.

### 3,411,112 FERRIMAGNETIC COUPLERS EMPLOYING A TRANSITION FROM AIR DIELECTRIC WAVE- GUIDE TO SOLID DIELECTRIC WAVEGUIDE William M. Honig, Brooklyn, N.Y., and Edward J. Wrobel, Orlando, Fla., assignors to Loral Corporation, New York, N.Y., a corporation of New York

Filed Apr. 15, 1966, Ser. No. 542,957  
5 Claims. (Cl. 333-24)



Apparatus for coupling RF energy to a ferrimagnetic resonator by means of waveguides comprises two opposing solid dielectric waveguides abutting against opposite sides of a YIG sphere. The product of the dielectric constant ( $\epsilon$ ) and permeability ( $\mu$ ) of the solid dielectric is approximately equal to the product of the dielectric constant and permeability of the YIG sphere for a range of frequencies including the resonant frequency of the sphere. Means are provided for coupling the RF energy from a standard air dielectric waveguide to one of the solid dielectric waveguides and for coupling energy from the other of the solid dielectric waveguides to a second air dielectric waveguide.

### 3,411,113 MICROWAVE GYROMAGNETIC DEVICE WHERE- IN THE GYROMAGNETIC MEMBER HAS SEV- ERAL PARALLEL APERTURES THROUGHOUT ITS LENGTH

William C. Heithaus, Clearwater, Fla., assignor to Sperry Rand Corporation, a corporation of Delaware

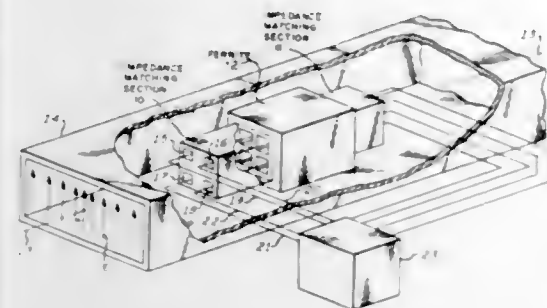
Filed Dec. 2, 1966, Ser. No. 598,864

13 Claims. (Cl. 333-24.1)

A microwave gyromagnetic device containing a plurality of parallel, longitudinally-extending apertures threaded by electrical conductors through which electrical currents may



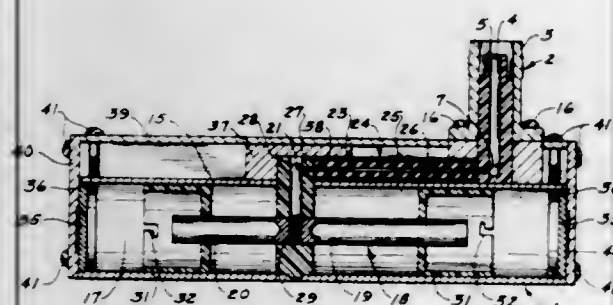
be transmitted to establish individual magnetic fields around prescribed apertures, the individual magnetic fields combining to produce a net magnetic bias field having a



desired orientation in a plane transverse to the longitudinal axis of the gyromagnetic member for interacting with an electromagnetic wave propagating therein.

3,411,114

**MICROWAVE TRANSMISSION-LINE T-FILTERS**  
Pierre E. Schmid and Heinz M. Schilleke, Fox Point, Horace S. Dudley, Milwaukee, and Richard F. Neuens, Waukesha, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin  
Filed Apr. 30, 1965, Ser. No. 452,049  
20 Claims. (Cl. 333-73)



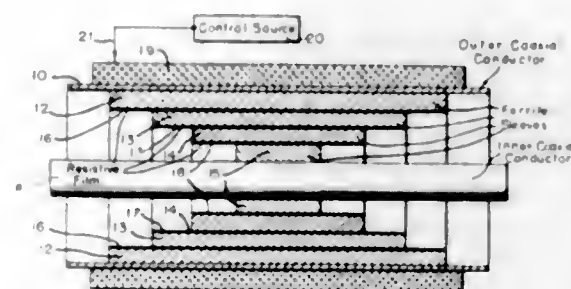
This invention relates to a microwave filter and there is shown and described a microwave filter comprising an electrically T-shaped configuration made up of three microwave transmission lines. Two transmission lines branch out from a junction common with one end of the third transmission line, and the other end of the third transmission line forms a terminal for connection with a signal propagating line that comprises an input line from a signal source and an output line extending to an electrical load. The filter of the invention is thus shunt connected to the line for which it is to perform a filtering function. The invention further teaches that a plurality of the above-described T-filters may be connected in parallel or cascade to form a multi-channel filter network.

3,411,115

**RECIPROCAL FERRITE ATTENUATOR**  
Frank Reggia, Bethesda, Md., and Ting Hei Mak, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Army  
Filed Nov. 16, 1966, Ser. No. 596,046  
6 Claims. (Cl. 333-81)

Coaxial or stripline structure having a propagating medium of a laminated configuration comprising plural layers of ferrite material separated from one another by layers of resistive material symmetrically placed within the conductor. When the ferrite layers are unmagnetized, the resistive material has no effect on wave propagation.

When the ferrite is magnetized, a component of the RF field is generated in a direction parallel to the plane of



the resistive layers resulting in reciprocal attenuation of the electromagnetic field.

3,411,116

**PARASITIC MODE FILTER**

Paul Boutelant, Sceaux, France, assignor to Compagnie Generale d'Electricite, Paris, France  
Filed July 30, 1965, Ser. No. 475,982  
Claims priority, application France, July 30, 1964, 983,639  
22 Claims. (Cl. 333-98)

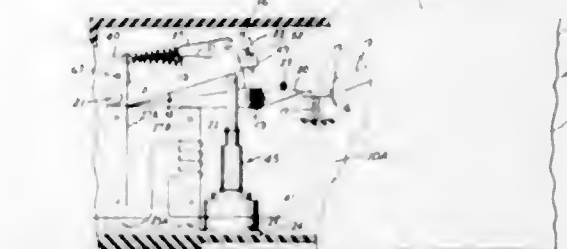


1. A parasitic mode filter for a transmission line including a principal cylindrical wave guide for transmitting a principal mode of order  $[m, n]$  and within which at least one parasitic mode of order  $[m, (n+p)]$  is transmitted comprising guide filter means connected to said principal cylindrical wave guide for attenuating said parasitic mode including an inner guide section connected to said principal cylindrical wave guide for propagating said principal mode, said inner guide section having apertures in the outer wall thereof and an outer coaxial filter section coupled to said inner guide section by means of said apertures for absorbing said parasitic mode, said outer coaxial filter section having dimensions capable of propagating a mode of order  $[m, q]$  higher than said principal mode having a phase velocity equal to that of said parasitic mode in the principal wave guide but differing from the phase velocity of the principal mode therein, and matched absorptive terminations at either end of said coaxial filter section.

3,411,117

**TIME-DELAY MAGNETIC TRIP UNIT FOR CIRCUIT BREAKER**

Charles L. Jencks, Avon, and George W. Kiesel, Unionville, Conn., assignors to General Electric Company, a corporation of New York  
Filed Dec. 9, 1966, Ser. No. 600,631  
5 Claims. (Cl. 335-61)

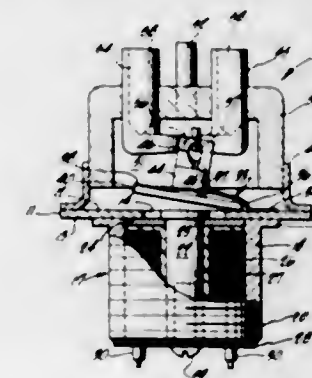


An electric circuit breaker having at least one magnetic tripping means. The response time of the magnetic tripping means is determined by a dashpot which includes a rod-operated piston moving within an oil filled rigid cylinder, the oil flowing around the piston. The change in volume caused by the entrance of the rod into the cylinder as the piston moves therein is accommodated by a flexible and elastic sleeve attached to the piston rod and the cylinder wall, in effect closing the top wall of the cylinder. Fluid flows through the space around the periphery of the piston and into the elastic sleeve as the piston moves into the cylinder. On reverse movement, a one-way valve permits flow through a hole in the piston for fast-resetting.

3,411,118

**VACUUM RELAY WITH IMPROVED ARMATURE MOUNTING AND MOVABLE CONTACT**

William N. Fellows, Altadena, and Michael E. Balch, South Pasadena, Calif., assignors to High Vacuum Electronics, Inc., Pasadena, Calif., a corporation of California  
Filed July 28, 1966, Ser. No. 568,631  
4 Claims. (Cl. 335-151)



A vacuum relay having an armature which is supported by a U-shaped leaf spring which urges the armature away from a magnet pole piece. A blade-shaped movable contact is coiled around and secured to a terminal post which extends through a dielectric envelope of the relay. An insulated actuator member is secured to the armature and coupled to the movable contact to actuate the relay when the magnet is energized.

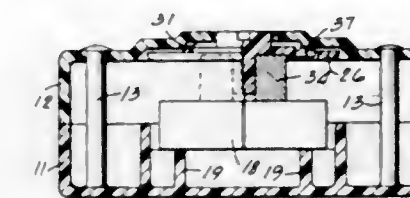
3,411,119

**ELECTRONIC COMPONENTS WITH RESILIENT SPACER**

Raymond E. Wood, Palatine, Ill., assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio  
Filed Dec. 29, 1966, Ser. No. 605,670  
9 Claims. (Cl. 335-210)

A resilient spacer element for electronic assemblies consisting of a wafer-type element having integral flexible

fingers struck therefrom and extending beyond the plane of the wafer to provide for taking up manufacturing toler-

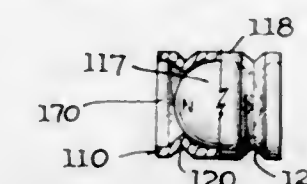


ances and, in some applications, to provide braking pressure between the elements.

3,411,120

**MAGNETS FOR MAGNETIC FILTER ASSEMBLIES AND METHOD OF PRODUCING SAME**

Saburo Miyata, 58 Shimo Takanawa, Minato-ku, Yokohama, Japan  
Filed June 2, 1965, Ser. No. 460,674  
7 Claims. (Cl. 335-302)

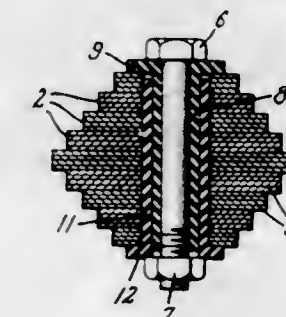


A filter comprising a chamber having inlet and outlet ports is provided in the chamber with a plurality of spherical magnets to form a porous mass of magnetic material. The spherical magnets are encased in sleeves of nonferrous material to prevent lining up of magnetic poles. A sleeve is formed from a sheet of material rolled about the sphere and having portions thereof deformed inwardly toward the diameter of the sleeve to confine the sphere.

3,411,121

**INSULATED CLAMPING MEANS FOR LAMINATED MAGNETIC CORE**

Thomas J. Twomey, Rome, Ga., assignor to General Electric Company, a corporation of New York  
Filed June 27, 1967, Ser. No. 649,159  
6 Claims. (Cl. 336-210)



A laminated magnetic core wherein the insulation for bolts used to position and secure stacked laminations together is comprised of a pair of telescoping tubes surrounding each bolt, the cooperating tubes being self adjustable in length to accommodate variations in final compressed thickness of the core.

3,411,122

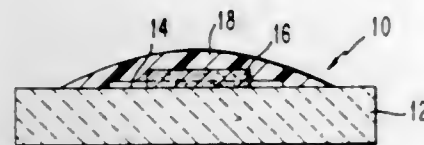
**ELECTRICAL RESISTANCE ELEMENT AND METHOD OF FABRICATING**

Julius M. Schiller and Melvin N. Turetzky, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Jan. 13, 1966, Ser. No. 520,534  
12 Claims. (Cl. 338-262)

An electrical resistance structure with an insulating



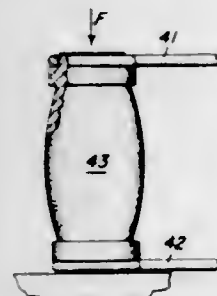
base supporting a conductive layer of a finely divided metal and metal oxide, and a layer of a polyimide condensation product of a diamine and a tetracarboxylic acid or a tricarboxylic acid.



condensation product of a diamine and a tetracarboxylic acid or a tricarboxylic acid.

### 3,411,123 PYROLYTIC GRAPHITE ELECTRICAL RESISTANCE ELEMENT

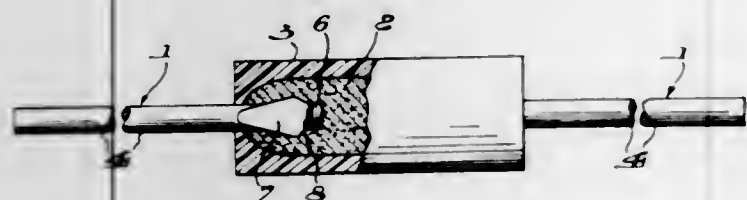
Paul H. Kydd, Scotia, N.Y., assignor to General Electric Company, a corporation of New York  
Filed May 10, 1966, Ser. No. 549,034  
15 Claims. (Cl. 338—318)



A pyrolytic graphite electrical resistance element is described comprising a pyrolytic graphite body in combination with means for conducting electrical current to and away from the graphite body and with means for mechanically applying a compressive force to at least one end of the graphite body in the direction of the crystallographic "c" axis to prevent separation due to delamination of the graphite body, and the connections between the conducting means and the graphite body being such that electrical current in traversing the graphite body passes in the direction of the crystallographic "c" axis of the graphite body.

### 3,411,124 MOLDED RESISTOR WITH EMBEDDED TERMINALS

Robert V. Total, Kane, and George W. Wittman and Bernard F. Shields, St. Marys, Pa. (all % Stackpole Carbon Co., St. Marys, Pa. 15857)  
Filed Jan. 17, 1967, Ser. No. 609,937  
1 Claim. (Cl. 338—331)



A molded resistance element has a pair of wire leads projecting from its opposite ends. The leads have a head embedded in the molded element.

### 3,411,125 VACUUM RETAINED ELECTRIC PROBE

James J. Hill, 3750 E. 10th Court,  
Hialeah, Fla. 33013  
Filed Nov. 8, 1966, Ser. No. 592,820  
4 Claims. (Cl. 339—12)

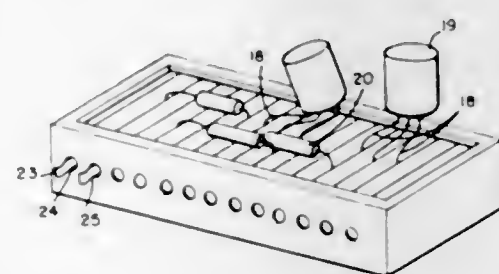
The instant device comprises a vacuum cup provided with a coiled spring mounted in a centrally disposed bore in the wall of the cup and having a pointed end extending

toward the cup opening. The opposite end of the coiled spring is connected to a wire sealingly extending through the wall of the cup and connected to an insulating wire



disposed in the bore of a handle carrying the cup. When applied to a flat surface, the vacuum cup holds the pointed end of the spring in contact therewith.

3,411,126  
CIRCUIT BOARD DEVICE  
Ralph R. Batcher, 240—02 42nd Ave.,  
Douglaston, N.Y. 11363  
Filed June 3, 1966, Ser. No. 555,182  
1 Claim. (Cl. 339—18)



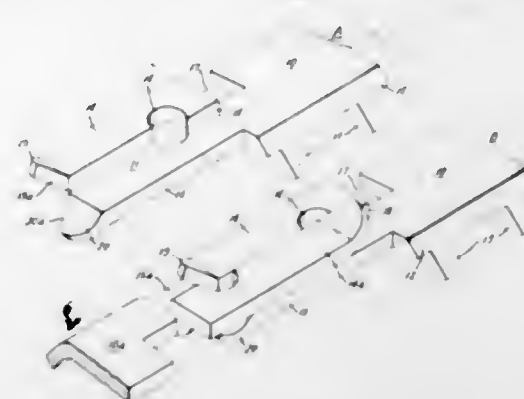
Strips of flexible metal are sandwiched between strips of extruded rubber to form a circuit connector block. The upper edges of the rubber strips are rounded to facilitate the insertion of component leads and the lower edges are rounded so that the inserted leads can be soldered to form a permanent circuit package.

### 3,411,127 SELF-MATING ELECTRIC CONNECTOR ASSEMBLY

Charles J. Adams, Bloomington, Ill., assignor to General Electric Company, a corporation of New York  
Filed July 8, 1963, Ser. No. 293,415  
3 Claims. (Cl. 339—47)

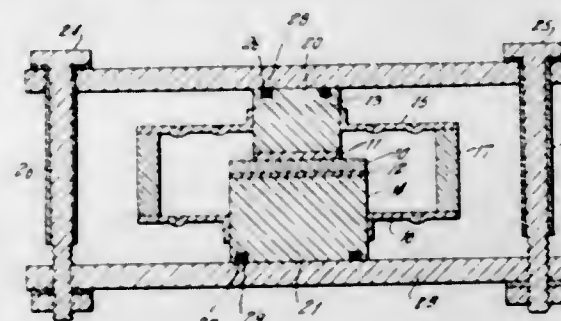
1. A detachable electric connector contact comprising a blade of resilient electrically conducting material having a base portion at one end and a longitudinally split multiplanar mating head at the opposite end, the split in said mating head having an enlarged aperture at its inner end and defining a single pair of flat fingers disposed in closely spaced edge-to-edge parallel relation, each of said fingers having a planar contacting face with the contacting faces parallel and oppositely positioned on the fingers, said fingers being relatively offset perpendicular to their contacting faces with their contacting faces sub-

stantially coplanar, the leading tips of said fingers being outturned away from each other and out of the planes of the respective fingers to facilitate complementary mating with a contact having a like mating head by longitudinal



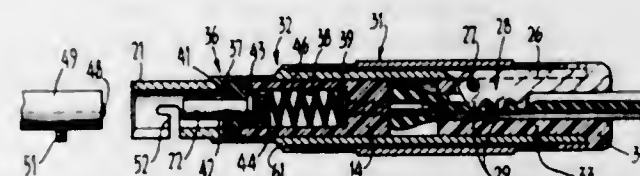
sliding engagement, said tips being outturned about oblique lines extending from the outer edges of said fingers towards the end of said split to the inner edges of said fingers.

3,411,128  
ELECTRICAL JOINT COMPOUND  
Harold Weinstein, Van Nuys, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California  
Filed Apr. 26, 1967, Ser. No. 633,970  
5 Claims. (Cl. 339—95)



Tungsten particles carried in a silicone grease carrier are coated between two metal surfaces which are to be electrically connected. The particles are hard enough to cut through oxide coatings on the metal surfaces to be connected to assure good electrical and thermal connection between the surfaces. A metal mesh may be used to improve its ability to retain the grease under high temperature conditions. A sealing ring is captured between the surfaces to prevent outward flow of the grease under high compression forces and high temperatures.

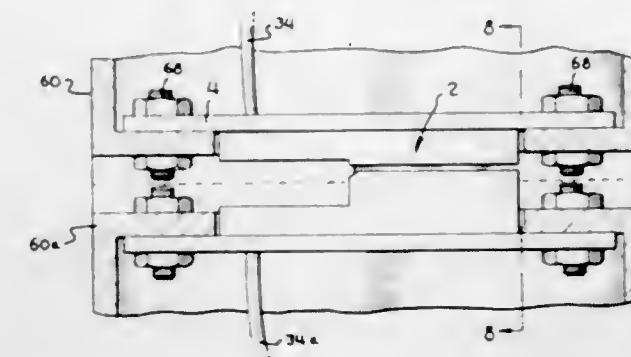
3,411,129  
QUICK COUPLING CONNECTOR  
Rudolph W. Peters, 3334 Brookdale Ave.,  
Oakland, Calif. 94602  
Filed Apr. 14, 1967, Ser. No. 630,917  
11 Claims. (Cl. 339—100)



An electrical connector arranged for quick solderless coupling of the conductors of a power cord to contact elements of the connector. A mechanical connective joint is established between prongs connected to the contact

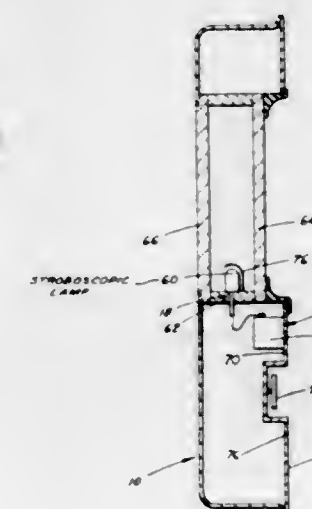
elements and the ends of the power cord conductors such that the power cord insulation is not severed by the prongs in the process.

3,411,130  
ELECTRICAL CONNECTOR  
Dale Nelson Bushey, York, Pa., assignor to AMP Incorporated, Harrisburg, Pa.  
Filed Mar. 13, 1967, Ser. No. 622,553  
8 Claims. (Cl. 339—176)



A separable electrical connector comprised of a pair of housing assemblies are arranged to be mounted in the sides of hermetically sealed cans containing electronic modules. The housing assemblies include a series of telescopically interengageable contacts with each contact being connected to a lead wire which passes from the obverse face of the housing to the reverse face through a slot in the bottom of a well into which a potting compound is put for preserving the hermetic seal.

3,411,131  
EMERGENCY EXIT SIGNAL DEVICE  
FOR AIRCRAFT  
Basil Victor Hewes, College Park, Ga., assignor to Aero Safety Devices, Inc., Trenton, N.J., a corporation of New Jersey  
Filed Oct. 5, 1965, Ser. No. 493,145  
7 Claims. (Cl. 340—27)



A normally off light, mounted between the inner and outer walls of an aircraft fuselage, is illuminated by closure of an inertia switch responsive to the impact of an aircraft crash. The light includes one or more lamps disposed between translucent panels mounted in the inner and outer walls adjacent an emergency exit. The device projects a brilliant light signal through the exterior panel to aid a rescue party in locating the aircraft and in par-



tical the exit, and simultaneously projects a softer light through the inner panel to show the passengers the exit location.

3,411,132

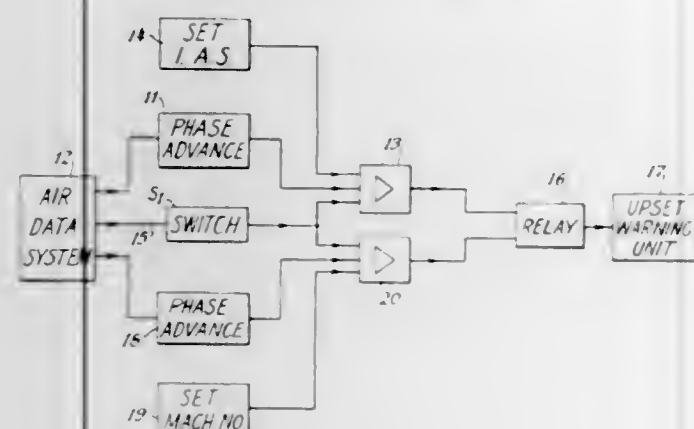
**WARNING APPARATUS FOR AIRCRAFT**

Eric Priestley, Lewisham, London, England, assignor to Elliott Brothers (London) Limited, London, England, a British Company

Filed Feb. 7, 1966, Ser. No. 525,752

Claims priority, application Great Britain, Feb. 17, 1965, 6,822/65

11 Claims. (Cl. 340—27)



A warning signal, to indicate that an aircraft is in an upset condition, is provided by two basic signals. One signal represents the difference between a predetermined maximum speed and the actual speed of the aircraft and is operable, when the latter exceeds the former, to actuate the warning signal. The second signal is derived by comparing the first signal with a signal representing the actual rate at which the aircraft speed is changing, and when the latter exceeds the former, the warning is energized. In this way, the warning allows the pilot additional time to take recovery action from the upset condition.

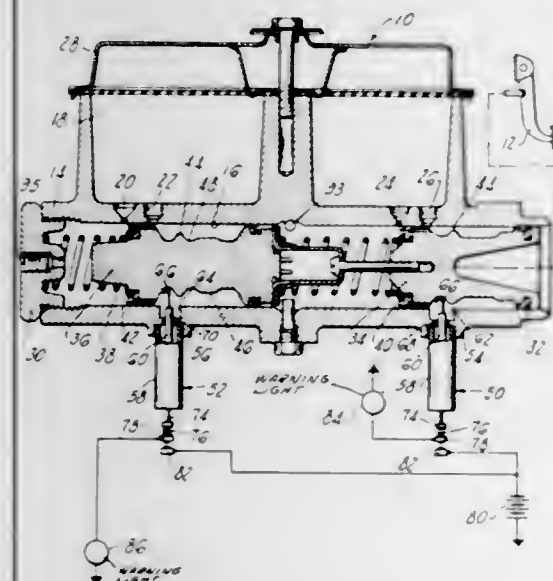
3,411,133

**MASTER CYLINDER WARNING DEVICE**

Delbert J. Gardner, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware

Filed Oct. 13, 1965, Ser. No. 495,482

10 Claims. (Cl. 340—60)



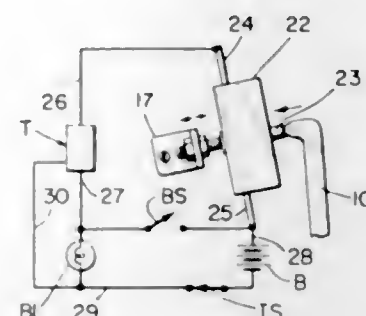
An indicating means for a hydraulic actuator having switch operator means operatively connected to a trailing body of a piston to provide information on abnormal travel thereof.

**3,411,134  
CONTROL DEVICE FOR VEHICLE BRAKE LIGHT**

Max Shames, 1213 Preston Way, Venice, Calif. 90291

Continuation-in-part of application Ser. No. 426,965, Jan. 21, 1965. This application Aug. 23, 1965, Ser. No. 481,826

1 Claim. (Cl. 340—71)



A combination brake light and accelerator control device is provided as a single unit for automobiles. The unit is secured adjacent to the throttle valve mechanism and is interconnected with the brake light and electrical system of the car such that when a driver releases his foot from the accelerator pedal, the brake light will be immediately energized. The contact arrangement effecting this energization also simultaneously provides a proper control of closing of the throttle so that the engine will not die. A timer means is included to extinguish the brake light after releasing the accelerator pedal if the normal brakes are not applied within a given time interval.

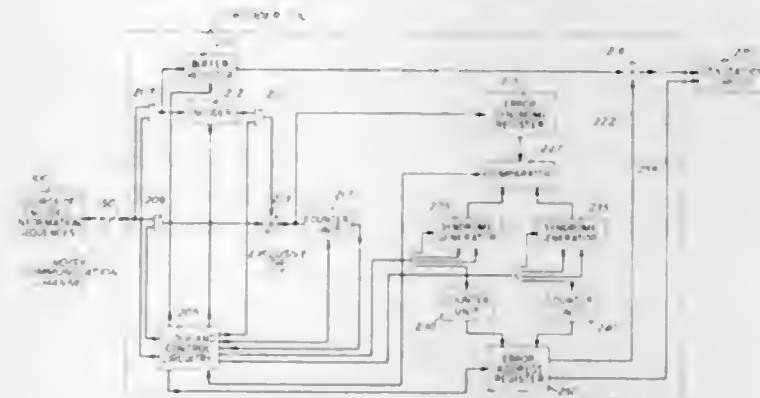
3,411,135

**ERROR CONTROL DECODING SYSTEM**

Robert N. Watts, Westfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 15, 1965, Ser. No. 439,650

6 Claims. (Cl. 340—146.1)



A decoder for automatically detecting and correcting certain types of erroneously-received digital data sequences that have been encoded in accordance with a cyclic or pseudo-cyclic code includes two syndrome units. These units generate in a predetermined sequential order a set of binary indications representative of all those single- and double-error patterns that include at least one erroneous information digit. Two counters, a comparator and associated circuitry function in combination with the syndrome units to locate and correct erroneous information digits in a received sequence or to provide an indication that the received sequence contains detected but uncorrectable errors.

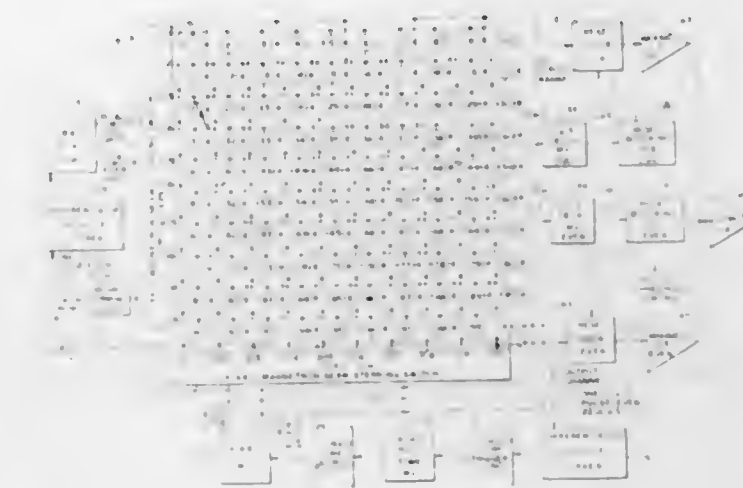
3,411,136

**ELECTRONIC COMMUTATOR**

Arthur W. Ellis, Jr., Templeton, and Albert A. Black, Cochituate, Mass., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Jan. 25, 1966, Ser. No. 522,997

10 Claims. (Cl. 340—166)



An electronic commutator which commutates sequentially a large number of high impedance inputs over a closely controlled period of time measured in microseconds. A hold time is provided at the end of each complete readout of the matrix. A hold time switch signal is fed to a monostable multivibrator that in turn biases the input off for a given time constant.

3,411,137

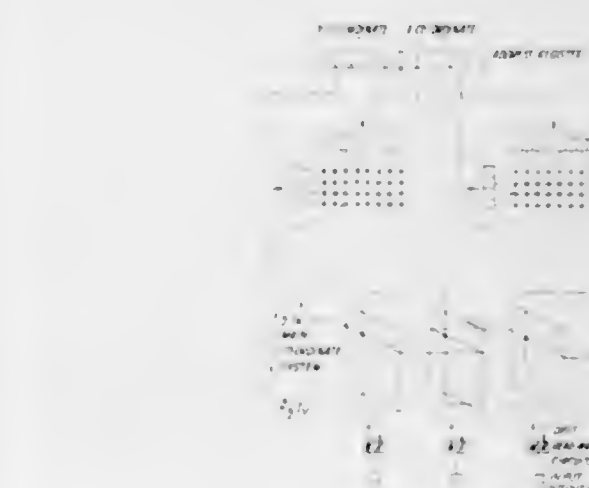
**DATA PROCESSING EQUIPMENT**

George Aneurin Howells and Geoffrey Allen Hunt, Aldwych, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 15, 1965, Ser. No. 524,998

Claims priority, application Great Britain, Nov. 16, 1964, 46,533/64

7 Claims. (Cl. 340—172.5)



Data processing equipment whereby single faults in the address register and associated circuitry, in the decoder circuitry, or in the circuitry of the main store selection system, are by-passed by complementation of the original binary data, with said complementation taking place automatically whenever a fault is disclosed by detection means including current measuring circuitry and an encoder.

3,411,138

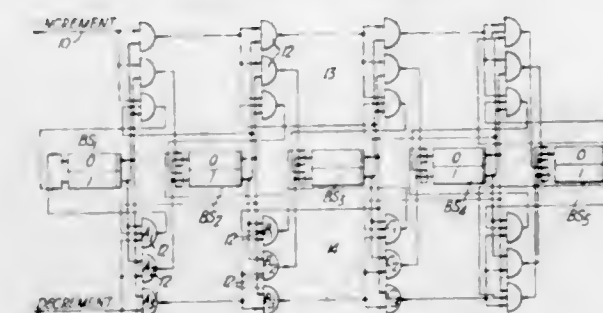
**SELF-ADAPTIVE INFORMATION STORAGE DEVICES**

John Hugh Andreae, Peter Lawrence Joyce, and Brian Ronald Gaines, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 18, 1965, Ser. No. 480,717

Claims priority, application Great Britain, Aug. 21, 1964, 34,260/64

8 Claims. (Cl. 340—172.5)



A digital store is provided in which the response to an input depends upon the condition of the store on receiving the input; e.g., each input pulse causes the store to shift to a predetermined fraction of an existing value.

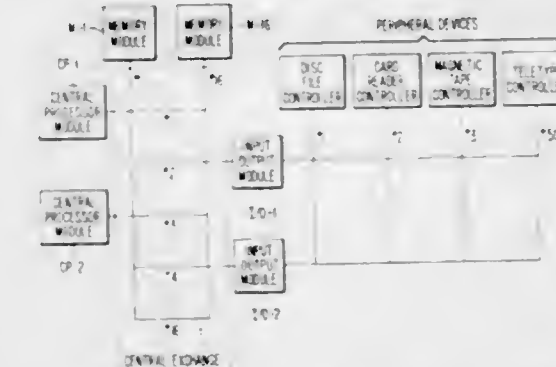
3,411,139

**MODULAR MULTI-COMPUTING DATA PROCESSING SYSTEM**

John T. Lynch, Lionville, Walter C. Fresch, Phoenixville, Blair C. Thompson, King of Prussia, and Richard E. Bradley, Wayne, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Nov. 26, 1965, Ser. No. 509,719

24 Claims. (Cl. 340—172.5)



A modular data processing system is disclosed which is capable of concurrently computing sequential segments of a single program while simultaneously performing parallel processing upon a plurality of programs. The system includes functional modules each of which have been compartmentalized into a plurality of separate units, each unit, in turn, is capable of substantially independent operation. Further, the thin film memory modules used in main memory are plural word/line organized to permit multi-word readout for an individual access time. Also included is a plurality of modularly structured control programs to provide a data processing system with both modular hardware and software to enable parallel processing at many new levels.

3,411,140

**NETWORK STATUS INTELLIGENCE ACQUISITION, ASSESSMENT AND COMMUNICATION**

Joseph W. Halina, Brussels, Belgium, Leslie B. Haigh, West Orange, N.J., and William S. Litchman, New York, N.Y., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware

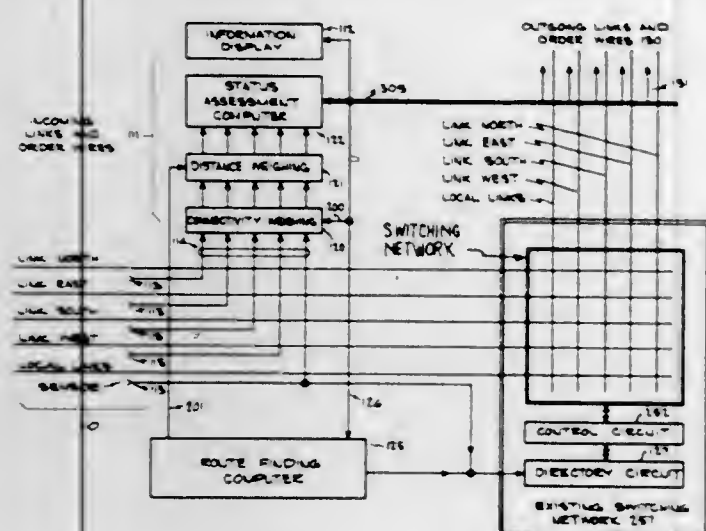
Filed Mar. 17, 1965, Ser. No. 440,436

25 Claims. (Cl. 340—172.5)

A distributed switching network is provided for routing telephone and data signals over wide areas by the best



available routes. The network includes a number of nodes at each of which automatic switching equipment makes a continuous assessment of the system based on assessment signals from adjacent nodes. Each node weights assess-



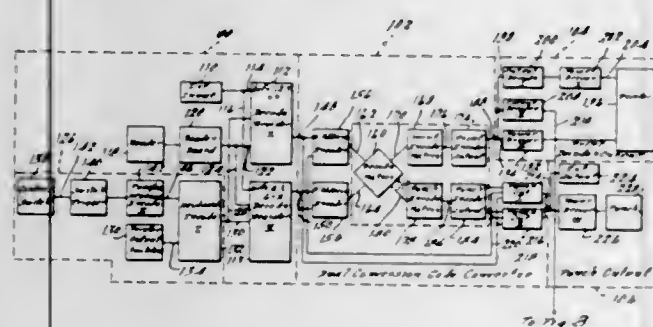
ment signals received in accordance with pre-established criteria. Means are provided responsive to the assessment signals as weighted by each node to supply an optimum route through the network.

3,411,141

## INPUT/OUTPUT SYSTEM

Donald R. Bernier, Detroit, and Helmut Falk, Lake Orion, Mich., assignors, by mesne assignments, to Intercontinental Systems, Inc., Los Angeles, Calif., a corporation of California

Filed Oct. 23, 1965, Ser. No. 503,855  
32 Claims. (Cl. 340-172.5)



This invention relates generally to business machine systems and more specifically to data processing systems to be utilized in conjunction with business machines which are adapted to receive, transfer and utilize variously coded input data in the form of coded information signals from a plurality of input data sources wherein the output coded information may be fed to a plurality of data utilizing systems which may be selectively actuated, or the system may be utilized as a terminal system and associated with a master data processing system for extending the capabilities of the terminal system.

3,411,142

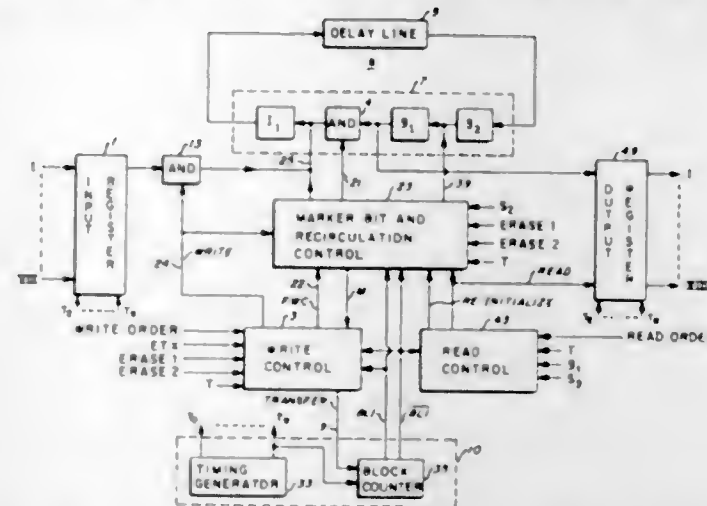
## BUFFER STORAGE SYSTEM

Franklin Lee, Acton, and Bertram L. Courlang, Sharon, Mass., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Dec. 27, 1965, Ser. No. 516,501  
8 Claims. (Cl. 340-172.5)

Variable length blocks of information characters received from an external source stored by recirculation in a single delay line buffer during alternately occurring

predetermined periods of time defined by a timing source. During different alternately occurring periods of time, the characters of a previously stored block of information



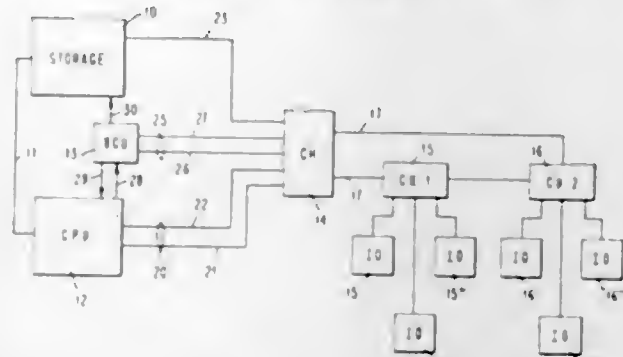
are read out to an output device in a manner whereby the readout of such characters proceeds simultaneously with the storage of newly received characters.

3,411,143

## INSTRUCTION ADDRESS CONTROL BY PERIPHERAL DEVICES

William F. Beausoleil, Le Cap Antibes, France, and Andris Padegs, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 13, 1966, Ser. No. 520,414  
6 Claims. (Cl. 340-172.5)



A data processing system having a memory and an input/output (I/O) channel for controlling an I/O device. A sequence of command control words are stored in sequential addresses in memory. An initial instruction to the channel gives the channel the address where the first command control word is stored in memory. The location address of this first command control word is retained in the channel. At the completion of the I/O operation called for by this first command, the location address of the first command retained in the channel is incremented by one address to thereby specify the next sequential address and hence, the next command. Upon the occurrence of a signal from the I/O device, the channel increments the address by more than one so that the next sequential command is passed over. This provides a way of modifying the sequence of commands without interrupting the computer to obtain a new initializing command.

3,411,144

## INPUT-OUTPUT APPARATUS

Francis R. Rausch, Vestal, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Apr. 26, 1966, Ser. No. 545,506  
6 Claims. (Cl. 340-172.5)

Data communications between peripheral units and a central processor are controlled by an address register

and a count register, the former selecting from the processor storage unit the first in a series of bytes of information to be transferred while the count register determines



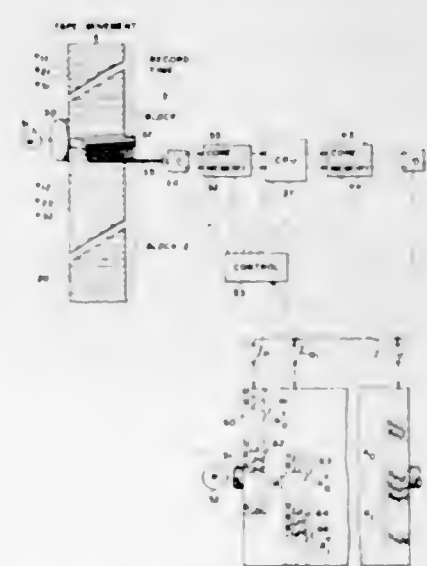
the number of bytes involved in the series. A plurality of signal lines are enabled to transfer the information under control of an auxiliary channel clock while the processor clock is disabled.

3,411,145

## MULTIPLEXING AND DEMULTIPLEXING OF RELATED TIME SERIES DATA RECORDS

Harvey G. Cragon, Dallas, Robert G. Cochran and William J. Watson, Richardson, and Patrick H. Poe, Houston, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed July 1, 1966, Ser. No. 562,257  
7 Claims. (Cl. 340-172.5)



5. A system for demultiplexing  $m$  multiplexed signals which are ordered in successive time blocks, with each block including one word from each of said  $m$  signals, which comprises:

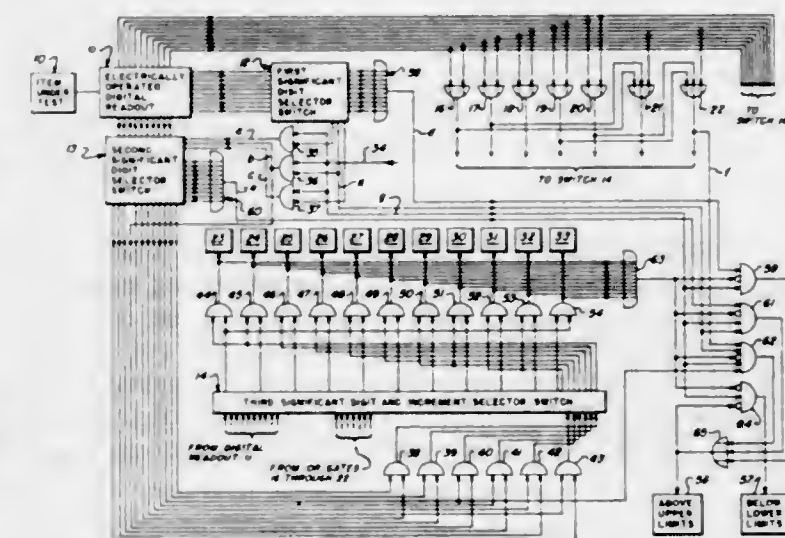
- a buffer memory having four storage areas each of capacity to receive one submatrix of data words where each submatrix is made up of  $p$  blocks,
- means for storing said submatrices of said data words alternately in a first and second of said areas,
- means for alternately and successively transposing submatrices stored in said first and second areas for storage in third and fourth areas of said memory while storing said second submatrix and a third submatrix in said second and first areas, respectively,
- a drum, and

(e) means for transferring different columns of the first transposed submatrix from said memory to separate tracks on said drum and for transferring like columns of succeeding transposed submatrices on corresponding tracks on said drum with the columns of said succeeding transposed submatrices forming continuous drum data tracks with the columns of the first transposed submatrix with the signals forming the multiplexed time series on separate drum tracks in the relationships existing in said signals before multiplexing.

3,411,146

## DIGITAL DATA SORTING LOGIC SYSTEM

Richard E. Knutson, Albuquerque, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission  
Filed Sept. 21, 1966, Ser. No. 581,420  
8 Claims. (Cl. 340-172.5)



1. A logic system for organizing digital data received from an electrically energized digital readout device into a plurality of storage registers, each individually responsive to numerical values in fixed relation to predetermined center values whereby a frequency distribution of said numerical values may be presented comprising:

- a selectively actuatable switching means coupled to the output of said readout device for selecting said values,
- means for applying an interrogating signal to the switching means each time it is desirable to enter a piece of data,
- means including a first logic circuit coupled to the switching means for combining said numerical values,
- means including a second logic circuit coupled to first logic circuit for activating individual storage registers in accordance to the value received,
- and means including a third logic circuit coupled to the switching and interrogating means for indicating values received that are either above or below the numerical values selected for recording in the storage registers.

3,411,147

## APPARATUS FOR EXECUTING HALT INSTRUCTIONS IN A MULTI-PROGRAM PROCESSOR

Roger E. Packard, Glendora, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan  
Filed Mar. 24, 1966, Ser. No. 537,172  
10 Claims. (Cl. 340-172.5)

1. In a processor in which coded instructions are transferred from an addressable storage in predetermined sequence to a command register and executed by the proc-



essor through control circuitry responsive to the contents of the command register, apparatus for halting operation of the processor in response to a particular instruction comprising means responsive to a first portion of the contents of the command register for reading out a first word from a predetermined location in memory, means responsive to a second portion of the contents of the

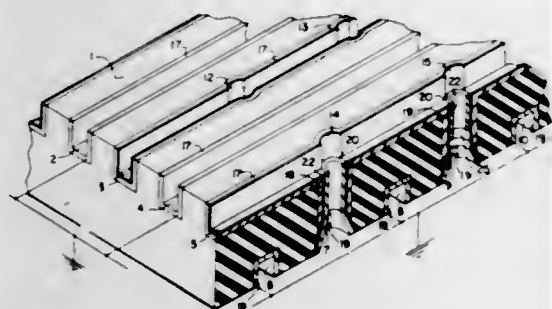


command register for generating a group of digits, means comparing selected digits of the first word and said group of digits for equality, means responsive to the comparing means when equality is sensed for reading out a second word from a predetermined location in memory, and means responsive to a first coded condition of the second word for halting further operation of the processor.

3,411,148

**CAPACITIVE FIXED MEMORY SYSTEM**

Harry D. Fetterolf, San Jose, Calif., and Beuford E. Tindal, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York  
Continuation of application Ser. No. 394,241, Sept. 3, 1964. This application Oct. 6, 1967, Ser. No. 673,521  
1 Claim. (Cl. 340-173)



A capacitive fixed memory structure employing capacitive coupling elements formed in holes in a panel, the capacitive elements of which are electrically connected to selected conductors arranged transversely to each other on opposite sides of the panel.

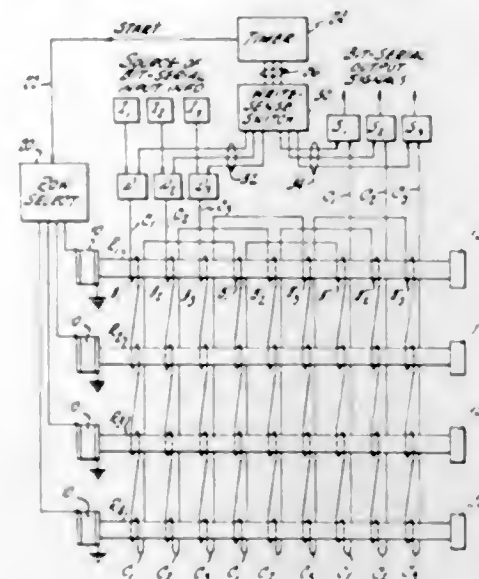
3,411,149

**MAGNETIC MEMORY EMPLOYING STRESS WAVE**

Rabah Shabbender, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware  
Filed Sept. 4, 1964, Ser. No. 394,545  
13 Claims. (Cl. 340-174)

8. A memory array comprising a plurality of rows of thin film magnetic memory elements, means to propagate a sonic stress wave through any

selected one of said rows of memory elements, said memory elements in each row being closely spaced so that said sonic stress wave spans a plurality of memory elements, a number of electrical conductors substantially equal to or less than the number of memory elements spanned by a sonic stress wave, each of said conductors linking a plurality of nonadjacent memory elements in one row which are sufficiently spaced from each other so that only one memory element in the row is stressed at a time, each conductor also linking corresponding memory elements of all other rows,



means to energize each of said electrical conductors with bit-serial information signals occurring in time-position synchronism with a sonic stress wave passing through memory elements linked by the conductor along any selected one of said rows, whereby information is stored in the memory elements, and a plurality of sense amplifiers each coupled to one of said electrical conductors to receive stored information in the form of bit-serial information signals induced on the electrical conductor in response to the propagation of a sonic stress wave through any selected one of the rows of memory elements.

3,411,150

**ALARM SYSTEM**

Joseph Schulein, P.O. Box 1825, Vancouver, Wash. 98663  
Filed Aug. 2, 1965, Ser. No. 476,248  
3 Claims. (Cl. 340-216)

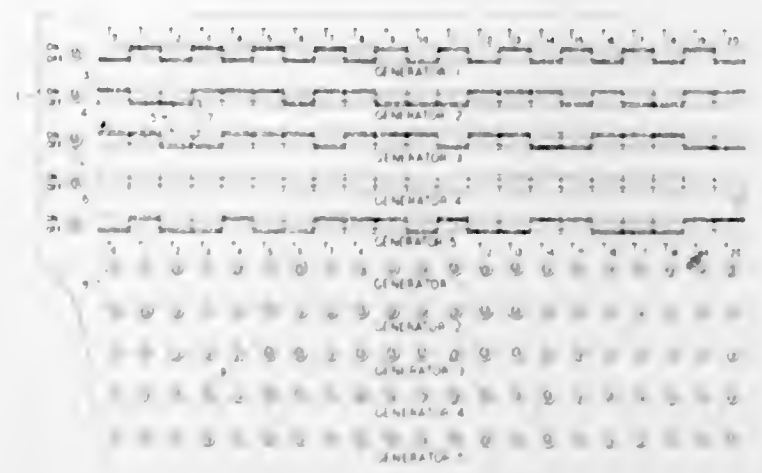


An alarm system for indicating when the plug of an electrical appliance has been disconnected from an electrical outlet which is supplied electrical power from a pair of supply conductors. The system includes a switch in the outlet which is closed upon removal of the plug, and a transmitter also contained within the outlet which is energized on closing of the switch, and which on being energized transmits an electrical signal from a pair of output terminals to respective supply conductors. A receiver remote from the transmitter is connected to the supply conductors to receive such a signal.

3,411,151

**DISPLAY UNIT**

John L. Abernathy, Burlington, N.C., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Mar. 10, 1966, Ser. No. 533,319  
14 Claims. (Cl. 340-225)

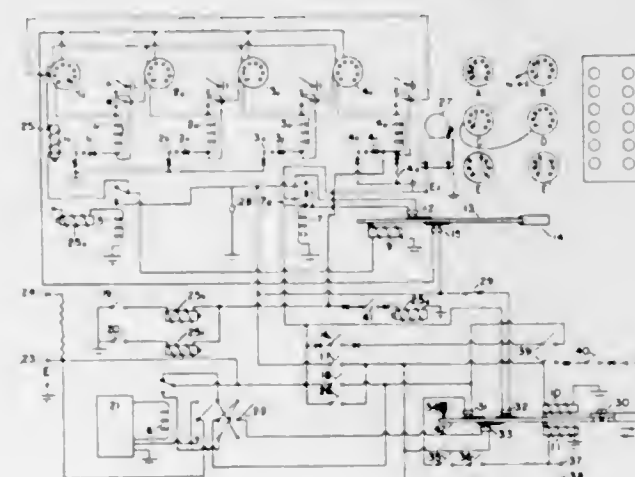


1. A display unit for providing a visual representation of an electric wave composed of a series of two different types of pulses, said display units having control means adapted for effecting selective control of the sequential appearance of said two types of pulses in said electric wave, said display unit also comprising a panel having a first row of horizontally disposed indicia each representing one type of pulse, a second row of horizontally disposed indicia each representing the other type of pulse, a row of vertically disposed indicia interposed between said first and second rows, and said control means being further adapted for effecting the selective illumination of certain horizontal indicia in said first and second rows in accordance with the sequential appearance of said two types of pulses in said electric wave whereby said illuminated horizontal indicia cooperate with at least some of said vertical indicia for forming a visual representation of said electric wave.

3,411,152

**ELECTRIC PERMUTATION LOCKS**

H. T. Jackson, Denison, Tex., assignor of one-half to Don H. Daniel, Bellaire, Tex.  
Filed June 15, 1965, Ser. No. 472,165  
18 Claims. (Cl. 340-274)



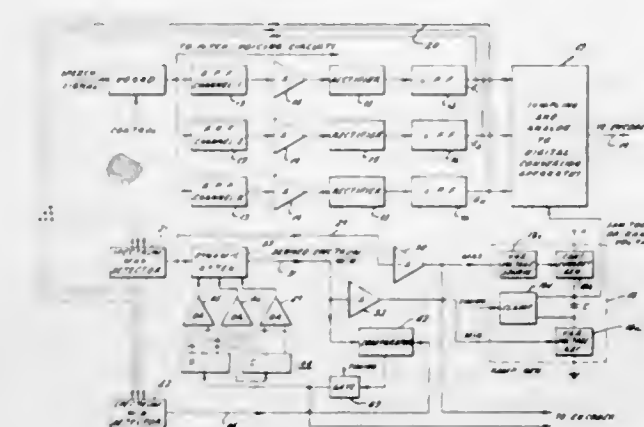
It is the concept of this invention that each phase of vital home protection and convenience as related to electric permutation locks, fire alarms, intruder protection

and community alert be objectively utilized, intermeshed, exploited and combined so as to create the greatest complementary aspects toward the perfection and efficiency of the whole.

3,411,153

**PLURAL-SIGNAL ANALOG-TO-DIGITAL CONVERSION SYSTEM**

Robert W. Steele, Philadelphia, Pa., assignor to Philco-Ford Corporation, a corporation of Delaware  
Filed Oct. 12, 1964, Ser. No. 403,310  
11 Claims. (Cl. 340-347)

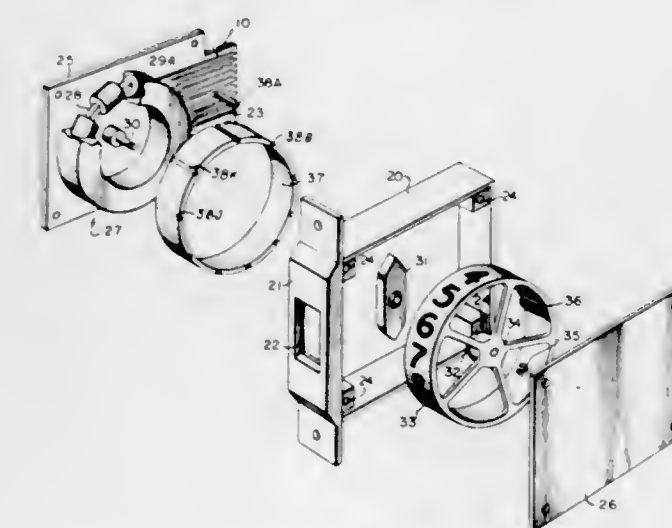


Analog to digital conversion apparatus wherein a vogad output is analyzed via N band pass and low pass filter channels and the channel outputs are sequentially sampled by a sawtooth ramp type analog to digital converter organization. An auxiliary circuit is included for automatically adjusting the dynamic range of the converter ramp signal and includes spectrum detectors for deriving maximum and minimum components of the analyzed analog input. The spectrum is processed in circuitry for automatically adjusting the limits of the ramp sawtooth of the converter.

3,411,154

**DETENTING APPARATUS FOR ELECTROMAGNETIC INDICATOR WHEEL STRUCTURE**

John A. Watkins, Cheshire, Conn., assignor, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware  
Filed Sept. 8, 1966, Ser. No. 577,929  
3 Claims. (Cl. 340-378)



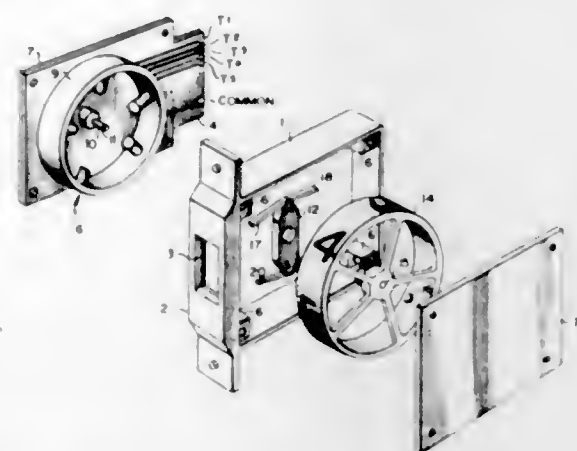
1. In a symbol display device of the type utilizing:  
(1) a panel having a window;  
(2) a stator for selectively establishing any one of a plurality of discretely oriented magnetic fields, the stator having an annular ferromagnetic core; and



- (3) a rotor having a permanent magnet attached to a drum, the drum having a plurality of symbols marked upon its periphery, the drum being situated to present its symbols in the window of the panel, the magnet being encircled by the stator's core and the stator's core being encircled by the drum, the rotor being mounted to permit the magnet to rotate into alignment with the discretely oriented magnetic field established by the stator;

the improvement comprising

- (a) a plurality of magnetizable detent elements arranged in a circular array surrounding the annular ferromagnetic core of the stator, and  
(b) a register magnet affixed to the drum and positioned to travel in a circular path outside the annular core and close to the circular array of detent elements, the register magnet being attracted by the adjacent magnetized detent element to a station where a symbol is registered in the window of the panel.



**3,411,155**  
**MAGNETIC DETENT APPARATUS FOR ELECTRO-MAGNETIC INDICATOR WHEEL STRUCTURE**

John A. Watkins, Cheshire, Conn., assignor, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware

Filed Sept. 29, 1966, Ser. No. 582,938  
3 Claims. (Cl. 340—378)

1. In a symbol display device of the type utilizing:  
(1) a panel having a window;  
(2) a stator having radial poles protruding inwardly from an annular ferromagnetic core, the radial poles carrying electrically energizable windings for causing the stator to selectively establish any one of a plurality of discretely oriented magnetic fields; and

the improvement comprising

- a ferrous detent arm secured to and extending from a pole of the rotor's permanent magnet, the ferrous detent arm having its free end adjacent to a radial pole of the stator when the rotor's permanent magnet is aligned with a magnetic field established by the electrically energized stator, and the attractive force between the ferrous detent arm and the adjacent radial pole causing the rotor to move to a different position upon collapse of the stator's magnetic field.

## DESIGNS

NOVEMBER 12, 1968

**212,666**  
**PANTY GIRDLE**  
Sarah Kaufman, 842 Broadway,  
New York, N.Y. 10003  
Filed Jan. 12, 1968, Ser. No. 10,146  
Term of patent 7 years  
(Cl. D2—4)



**212,667**  
**SAFETY HELMET**  
Suzanne E. Vanderbilt, Royal Oak, Mich., assignor to  
American Safety Equipment Corporation of Michigan,  
Southfield, Mich.  
Filed Mar. 20, 1968, Ser. No. 11,044  
Term of patent 14 years  
(Cl. D2—231)



**212,668**  
**PAINT BRUSH**  
John B. Miller, 4178 Conley Circle,  
Conley, Ga. 30027  
Filed Mar. 8, 1968, Ser. No. 10,894  
Term of patent 14 years  
(Cl. D4—38)



**212,669**  
**BOTTLE**  
Richard L. Weckman, Perrysburg, Ohio, assignor to  
Owens-Illinois, Inc., Toledo, Ohio, a corporation  
of Ohio  
Filed Sept. 27, 1967, Ser. No. 8,768  
Term of patent 14 years  
(Cl. D9—42)



**212,670**  
**JUG**  
James L. Linn, Jr., Maumee, Ohio, assignor to Owens-  
Illinois, Inc., Toledo, Ohio, a corporation of Ohio  
Filed Jan. 19, 1968, Ser. No. 10,227  
Term of patent 14 years  
(Cl. D9—44)

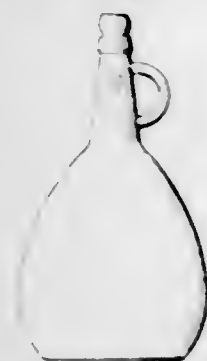




212,671  
JUG

Hans Peter Jurgens, San Francisco, Calif., assignor to Almaden Vineyards, Inc., San Francisco, Calif., a corporation of Delaware

Filed June 22, 1967, Ser. No. 7,567  
Term of patent 14 years  
(Cl. D9—48)

212,672  
BOTTLE

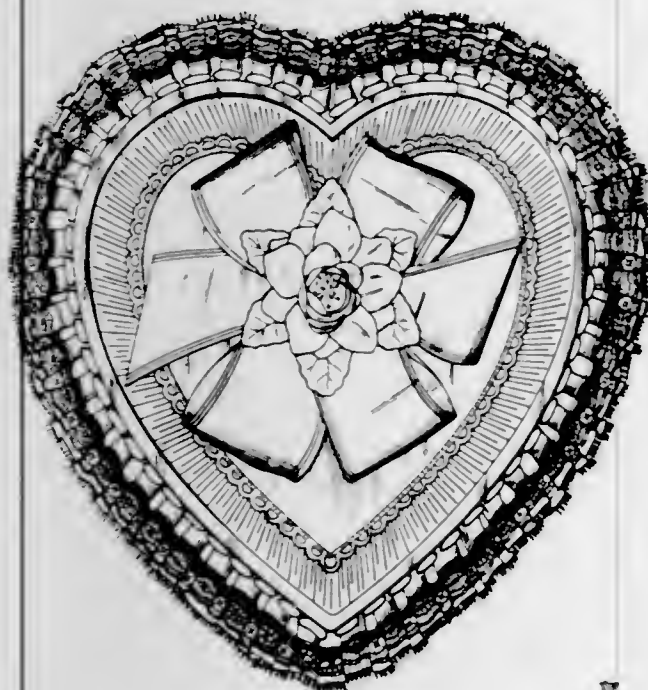
Richard L. Weckman, Perrysburg, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio

Filed Jan. 19, 1968, Ser. No. 10,224  
Term of patent 14 years  
(Cl. D9—111)

212,673  
CANDY BOX

Joseph Ehrenfeld, Clifton, N.J., assignor to A. Klein & Co. Inc., New York, N.Y.

Filed Jan. 8, 1968, Ser. No. 10,071  
Term of patent 14 years  
(Cl. D9—174)

212,674  
CANDY BOX

Joseph Ehrenfeld, Clifton, N.J., assignor to A. Klein & Co. Inc., New York, N.Y.

Filed Jan. 8, 1968, Ser. No. 10,075  
Term of patent 14 years  
(Cl. D9—174)

212,675  
CANDY BOX

Joseph Ehrenfeld, Clifton, N.J., assignor to A. Klein & Co. Inc., New York, N.Y.

Filed Jan. 8, 1968, Ser. No. 10,072  
Term of patent 14 years  
(Cl. D9—174)

212,676  
CANDY BOX

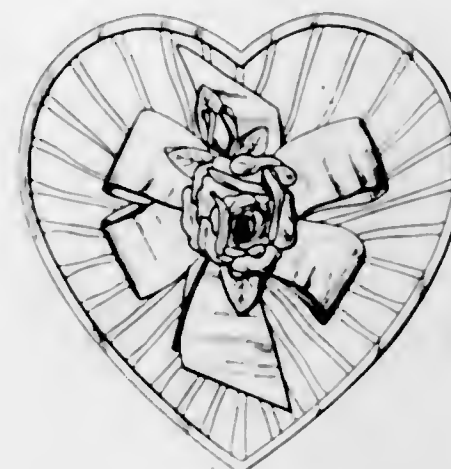
Joseph Ehrenfeld, Clifton, N.J., assignor to A. Klein & Co. Inc., New York, N.Y.

Filed Jan. 8, 1968, Ser. No. 10,091  
Term of patent 14 years  
(Cl. D9—174)

212,677  
CANDY BOX

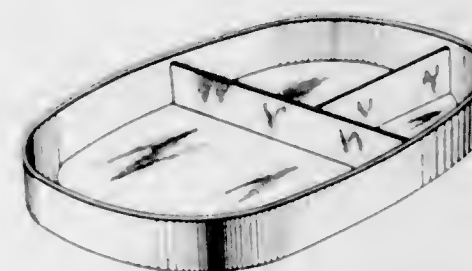
Joseph Ehrenfeld, Clifton, N.J., assignor to A. Klein & Co. Inc., New York, N.Y.

Filed Jan. 8, 1968, Ser. No. 10,076  
Term of patent 14 years  
(Cl. D9—174)

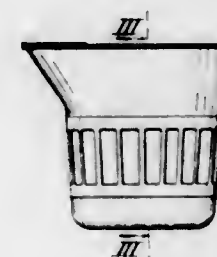
212,678  
COMPARTMENTED CARRYING CONTAINER  
AND THE LIKE

James Baldwin Swett, 8 Devonshire Drive, Barrington, R.I. 02806

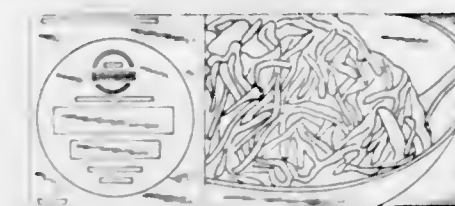
Filed July 27, 1967, Ser. No. 8,019  
Term of patent 14 years  
(Cl. D9—185)



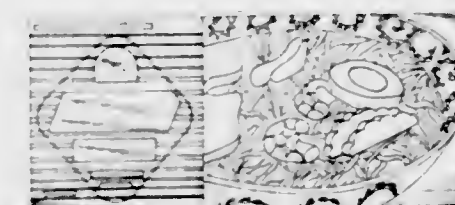
212,679  
CONTAINER FOR POURABLE MATERIAL  
Jacques Gaspard Honoré Ollier, 17 Rue du General Henion Bertier, Neuilly-sur-Seine, France; Georges Frédéric Grosshans, 53 bis Rue de Boulainvilliers, Paris, France; and Robert Gaston Masson, 10 Blvd. de Courbevoie, Neuilly-sur-Seine, France  
Filed Sept. 27, 1966, Ser. No. 4,054  
Term of patent 14 years  
(Cl. D9—219)



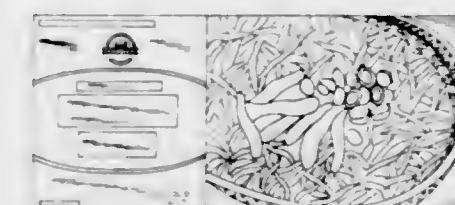
212,680  
PAPERBOARD CARTON  
Momofuku Ando, 34-7 Masumicho, Ikeda, Japan  
Filed May 16, 1967, Ser. No. 7,143  
Term of patent 14 years  
(Cl. D9—225)



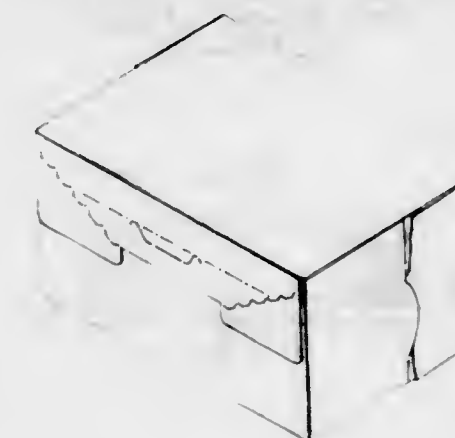
212,681  
PAPERBOARD CARTON  
Momofuku Ando, 34-7 Masumicho, Ikeda, Japan  
Filed May 16, 1967, Ser. No. 7,144  
Term of patent 14 years  
(Cl. D9—225)



212,682  
PAPERBOARD CARTON  
Momofuku Ando, 34-7 Masumicho, Ikeda, Japan  
Filed May 16, 1967, Ser. No. 7,145  
Term of patent 14 years  
(Cl. D9—225)



212,683  
ICE CREAM CARTON  
Harry I. Roccaforte, Chicago, and Elvise M. Jordan, Wilmette, Ill., and William C. Inch, Whittier, Calif., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington  
Filed Mar. 10, 1967, Ser. No. 6,164  
Term of patent 14 years  
(Cl. D9—240)





212,684

## ICE CREAM CARTON

Harry I. Roccaforte, Chicago, and Elverse M. Jordan, Wilmette, Ill., and William C. Inch, Whittier, Calif., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington

Filed Mar. 10, 1967, Ser. No. 6,168  
Term of patent 14 years  
(Cl. D9—240)



212,685

## PULL

James R. Deadrick, Winston-Salem, N.C., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

Filed Apr. 2, 1968, Ser. No. 11,263  
Term of patent 14 years  
(Cl. D10—8)

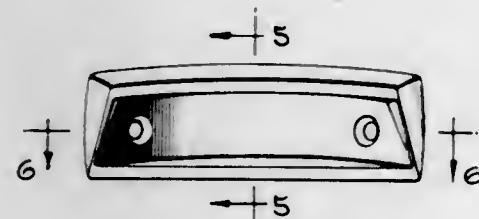


212,686

## SASH LIFT

Roland V. Fowler, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Connecticut

Filed Apr. 8, 1968, Ser. No. 11,351  
Term of patent 14 years  
(Cl. D10—10)

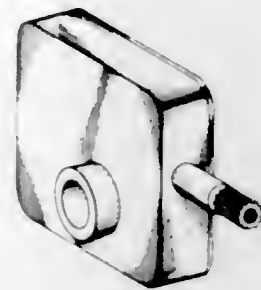


212,687

## WINDOW OPERATOR

Robert L. Fahs, Fairborn, and Willard N. Miller, Troy, Ohio, assignors to Phillips Industries, Inc., Dayton, Ohio, a corporation of Ohio

Filed Feb. 27, 1968, Ser. No. 10,750  
Term of patent 14 years  
(Cl. D10—10)



212,688

## CAR WASH BUILDING

Richard J. Shelstad, Mequon, Wis., assignor to Edick Laboratories, Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed Feb. 29, 1968, Ser. No. 10,787  
Term of patent 14 years  
(Cl. D13—1)

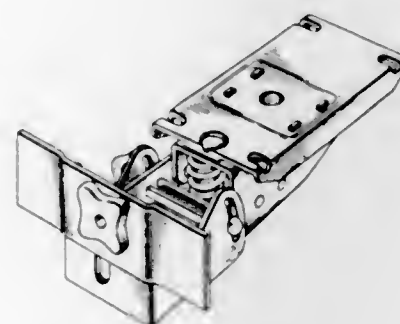


212,689

## ADJUSTMENT CONTROL UNIT FOR A CHAIR

Frank Doerner, Waterloo, Ontario, Canada, assignor to Doerner Products Co. Limited, Waterloo, Ontario, Canada, a corporation of Canada

Filed Aug. 11, 1967, Ser. No. 8,239  
Term of patent 14 years  
(Cl. D15—1)

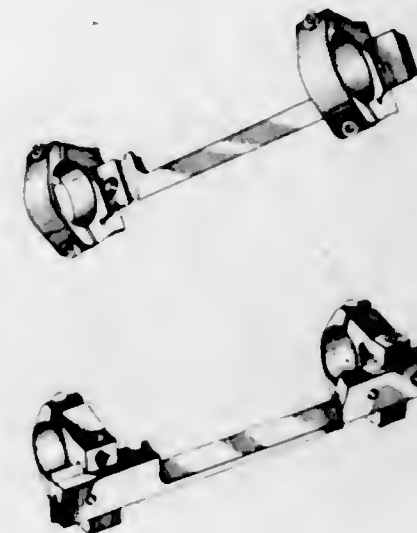


212,690

## FIXED TELESCOPE SIGHT MOUNT FOR FIREARMS

Thomas Kuharsky, Jr., Erie, Pa., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Mar. 26, 1968, Ser. No. 11,148  
Term of patent 14 years  
(Cl. D22—7)

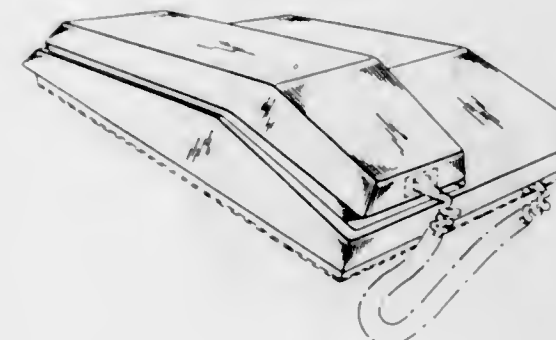
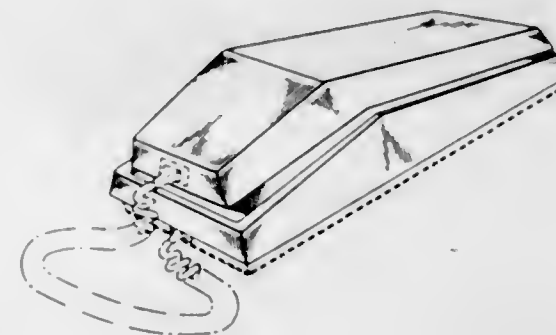


212,691

## TELEPHONE INSTRUMENT

John F. Tyson, Ottawa, Ontario, Canada, assignor to Northern Electric Company, Limited, Montreal, Quebec, Canada

Filed Nov. 15, 1966, Ser. No. 4,666  
Term of patent 14 years  
(Cl. D26—14)

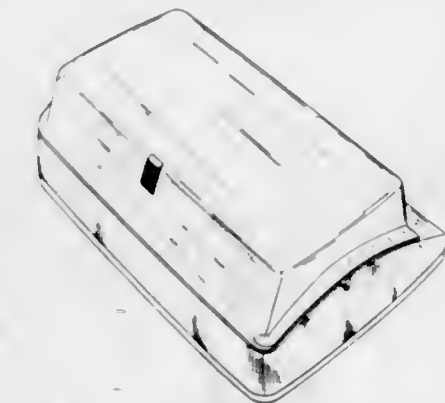


212,692

## TELEPHONE ACOUSTIC COUPLER

Robert G. Plantholt, Rochester, Mich., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Jan. 8, 1968, Ser. No. 10,070  
Term of patent 14 years  
(Cl. D26—14)

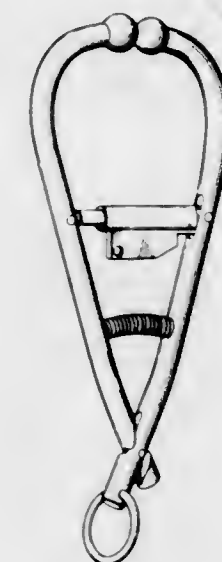


212,693

## CATTLE NOSE TONGS

Robert E. Shell, Houston, Tex. (P.O. Box 192, Eagle Lake, Tex. 77434)

Filed Apr. 22, 1968, Ser. No. 11,547  
Term of patent 14 years  
(Cl. D30—99)





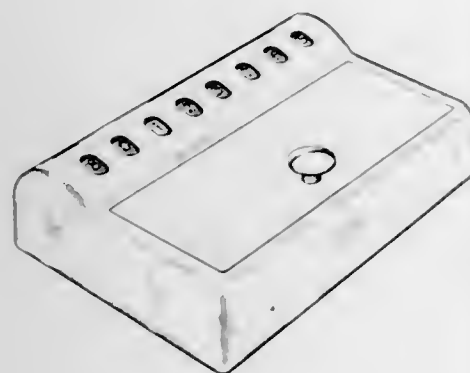
**212,694**  
**BOOKCASE**  
 Herbert E. Spencer, 3852 Division Ave. SE.,  
 Grand Rapids, Mich. 49508  
 Filed Sept. 28, 1967, Ser. No. 8,771  
 Term of patent 14 years  
 (Cl. D33-2)



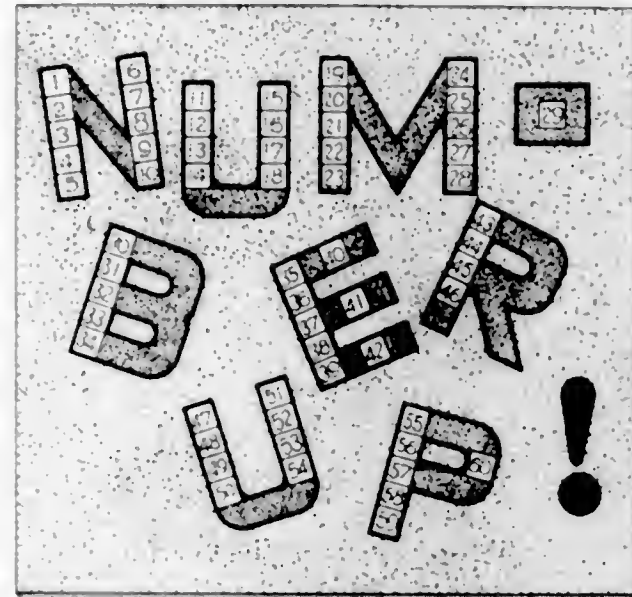
**212,695**  
**CABINET**  
 Herbert E. Spencer, 3852 Division Ave. SE.,  
 Grand Rapids, Mich. 49508  
 Filed Sept. 28, 1967, Ser. No. 8,772  
 Term of patent 14 years  
 (Cl. D33-19)



**212,696**  
**GAME DEVICE OR SIMILAR ARTICLE**  
 John S. Minarovich, Garland, Tex., assignor to Jole Enterprises Incorporated, Dallas, Tex., a corporation of Texas  
 Filed July 28, 1967, Ser. No. 8,045  
 Term of patent 14 years  
 (Cl. D34-5)



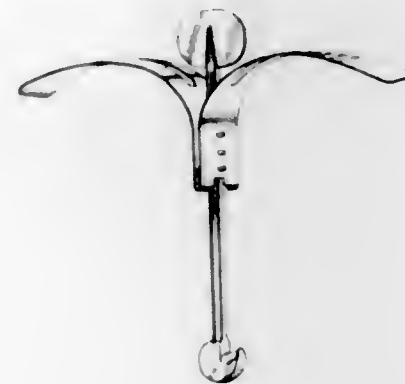
**212,697**  
**GAME BOARD**  
 Mary A. Farrell and Glenn F. Farrell, both of  
 1511 Kane St., Carlyle, Ill. 62231  
 Filed Mar. 8, 1968, Ser. No. 10,926  
 Term of patent 14 years  
 (Cl. D34-5)



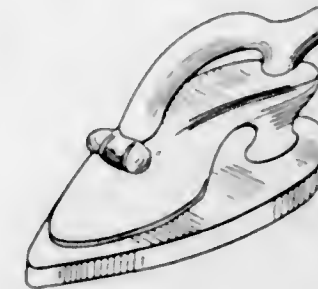
**212,698**  
**TOY ROLLER COASTER TRACKWAY**  
 Alfred Einfalt, Nuremberg, Germany, assignor to  
 Gebruder Einfalt Blechspielwarenfabrik, Nuremberg, Germany, a firm of Germany  
 Filed Aug. 11, 1966, Ser. No. 3,431  
 Claims priority, application Germany Feb. 12, 1966  
 Term of patent 14 years  
 (Cl. D34-15)



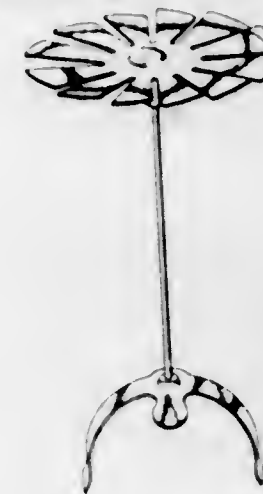
**212,699**  
**AERIAL TOY**  
 Lloyd S. Turner, Los Gatos, Calif., assignor of one-fourth  
 each to Richard B. Evanoff, San Jose, Calif., Emil  
 Damia, Burlingame, Calif., and Emerson Wiser, Oak-  
 land, Calif.  
 Filed Aug. 17, 1967, Ser. No. 8,294  
 Term of patent 14 years  
 (Cl. D34-15)



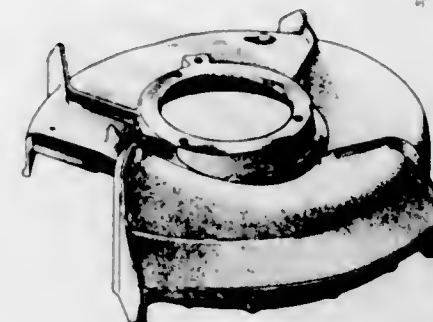
**212,700**  
**TOY FLAT IRON OR SIMILAR ARTICLE**  
 Emil Teleki, 125 E. 15th St., New York, N.Y. 10003  
 Filed Aug. 29, 1967, Ser. No. 8,420  
 Term of patent 14 years  
 (Cl. D34-15)



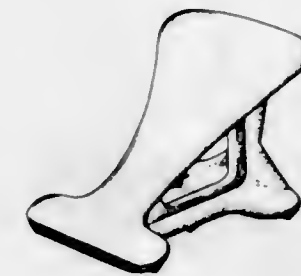
**212,701**  
**HEAD MOUNTED SPINNING TOY**  
 Joseph Cefalde, 1128 S. Meridian Road,  
 Youngstown, Ohio 44511  
 Filed Apr. 5, 1968, Ser. No. 11,323  
 Term of patent 14 years  
 (Cl. D34-15)



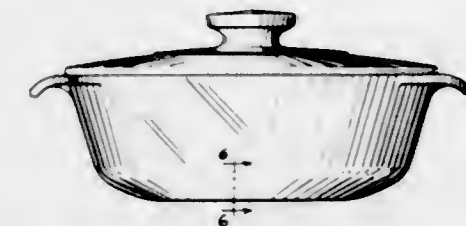
**212,702**  
**LAWNMOWER HOUSING**  
 William R. Smith, McDonough, Ga., assignor to  
 McDonough Power Equipment, Inc.  
 Filed Mar. 13, 1968, Ser. No. 10,951  
 Term of patent 14 years  
 (Cl. D40-1)



**212,703**  
**VEHICLE WHEEL WEDGE OR SIMILAR ARTICLE**  
 Joseph W. E. Whitright, Cheshire, Conn., assignor to  
 Cheshire Manufacturing Co., Inc., Cheshire, Conn.,  
 a corporation of Connecticut  
 Filed Feb. 19, 1968, Ser. No. 10,636  
 Term of patent 14 years  
 (Cl. D41-1)



**212,704**  
**CASSEROLE OR SIMILAR ARTICLE**  
 Frank J. Benes, Lancaster, Ohio, assignor to Anchor  
 Hocking Glass Corporation, Lancaster, Ohio, a cor-  
 poration of Delaware  
 Filed Dec. 6, 1966, Ser. No. 4,928  
 Term of patent 14 years  
 (Cl. D44-15)



**212,705**  
**LAMP BASE**  
 Robert L. Martin, 4548 St. Elmo Drive,  
 Los Angeles, Calif. 90019  
 Filed Feb. 28, 1967, Ser. No. 5,980  
 Term of patent 14 years  
 (Cl. D48-20)

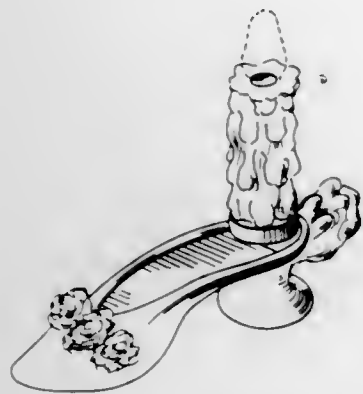




212,706

**ELECTRIC LAMP**

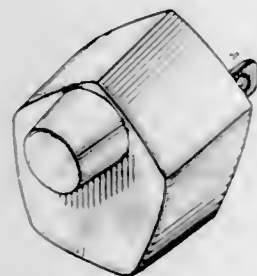
Emil Teleki, 125 E. 15th St., New York, N.Y. 10003  
 Filed Dec. 27, 1967, Ser. No. 9,936  
 Term of patent 14 years  
 (Cl. D48—20)



212,707

**NIGHT LIGHT**

Richard Keith Tyler, 14858 Round Valley Drive,  
 Sherman Oaks, Calif. 91403  
 Filed May 7, 1968, Ser. No. 11,832  
 Term of patent 14 years  
 (Cl. D48—20)

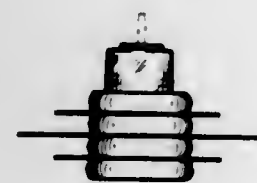


212,708

**LIGHTING UNIT**

Karl Mayer, 1975 Falardeau St., Montreal, Quebec, Canada, and Laszlo Velekei, 275 Pelletier, Ville de Jacques Cartier, Quebec, Canada  
 Continuation-in-part of design application Ser. No. 2,170, May 5, 1966. This application Sept. 11, 1967, Ser. No. 8,559

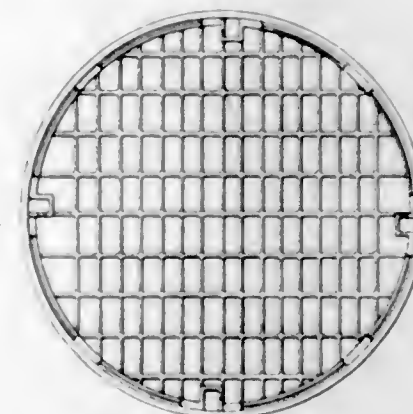
Term of patent 7 years  
 (Cl. D48—23)



212,709

**DISHWASHING BASKET**

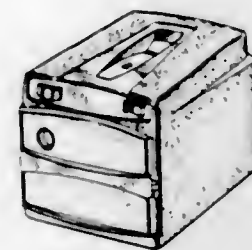
Louis Maslow, Huntsville Road, Dallas, Pa. 18612  
 Filed Jan. 17, 1968, Ser. No. 10,199  
 Term of patent 14 years  
 (Cl. D49—1)



212,710

**VACUUM UNIT FOR BARBER SHOP**

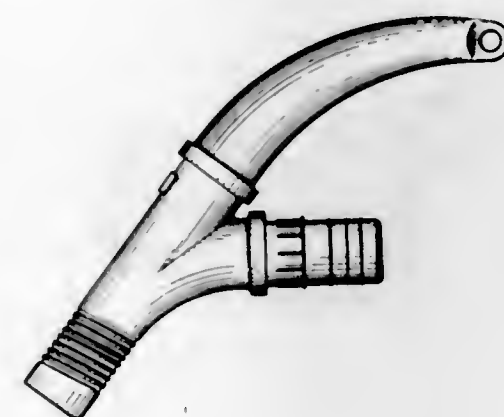
Joseph R. Mango, Midlothian, and Roy E. Meyer, Sterling, Ill., assignors to Wahl Clipper Corporation, Sterling, Ill., a corporation of Illinois  
 Filed Jan. 30, 1968, Ser. No. 10,365  
 Term of patent 14 years  
 (Cl. D49—11)



212,711

**VACUUM CLEANER HANDLE OR SIMILAR ARTICLE**

Gerard J. McLane, Morris Plains, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York  
 Filed Mar. 8, 1968, Ser. No. 10,902  
 Term of patent 14 years  
 (Cl. D49—17.2)



212,712

**GOLF CLUB CLEANER**

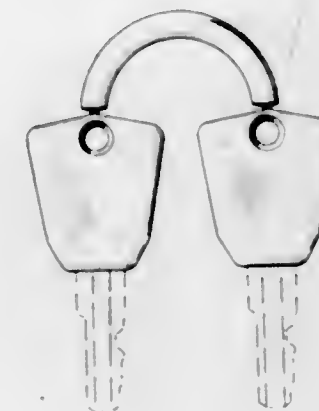
Edwin A. Godfrey, 4551 Montair Ave., Apt. 14,  
 Long Beach, Calif. 90808  
 Filed Feb. 8, 1968, Ser. No. 10,497  
 Term of patent 14 years  
 (Cl. D49—23)



212,713

**CONNECTED KEY BOWS**

Robert K. Unter, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware  
 Filed Oct. 25, 1967, Ser. No. 9,158  
 Term of patent 14 years  
 (Cl. D50—4)



212,714

**ESCUTCHEON PLATE**

John R. Morgan, Wheeling, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Connecticut  
 Filed Feb. 16, 1968, Ser. No. 10,620  
 Term of patent 14 years  
 (Cl. D50—6)



212,715

**ADJUSTABLE TIEDOWN**

William E. Fox, 6626 4th Ave.,  
 Sacramento, Calif. 95818  
 Filed Dec. 11, 1967, Ser. No. 9,734  
 Term of patent 14 years  
 (Cl. D54—11)



212,716

**PORTABLE RADIO**

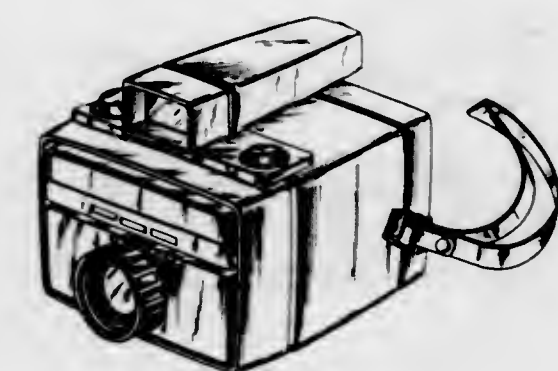
Richard Martin Keenan, Utica, N.Y., assignor to General Electric Company, a corporation of New York  
 Filed Feb. 29, 1968, Ser. No. 10,790  
 Term of patent 14 years  
 (Cl. D56—4)



212,717

**CAMERA**

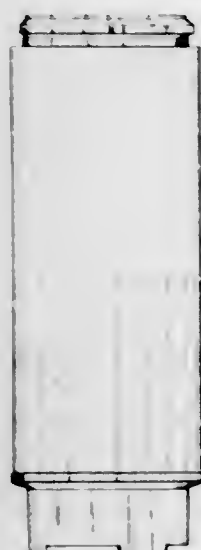
Thomas C. Mills, Wheaton, Ill., assignor to Camera Corporation of America (Canada) Ltd., Toronto, Ontario, Canada  
 Filed Jan. 23, 1968, Ser. No. 10,277  
 Term of patent 14 years  
 (Cl. D61—1)





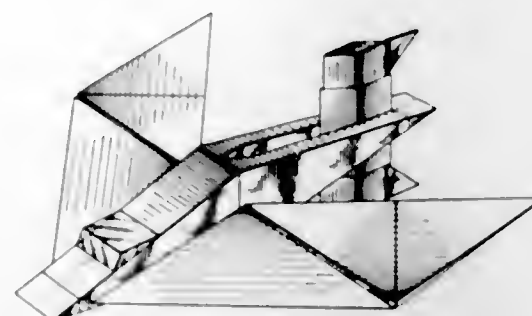
212,718

**PHOTOGRAPHIC PROCESSING DRUM**  
Paul Romano, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
Filed Jan. 17, 1968, Ser. No. 10,196  
Term of patent 14 years  
(Cl. D61—1)



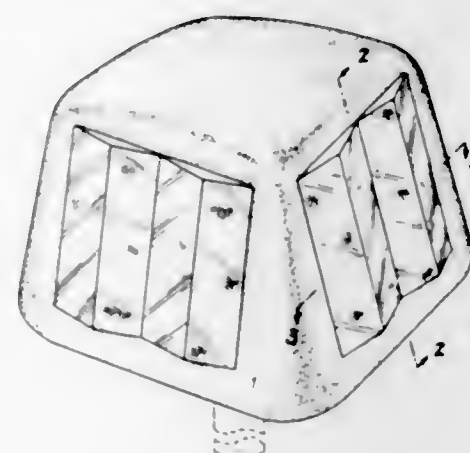
212,720

**RAPIDLY CHANGEABLE AIRCRAFT**  
Frank A. Petry, 156A, Brentwood Hospital, Veterans Administration Center, Los Angeles, Calif. 90073  
Filed July 17, 1967, Ser. No. 7,813  
Term of patent 7 years  
(Cl. D71—1)



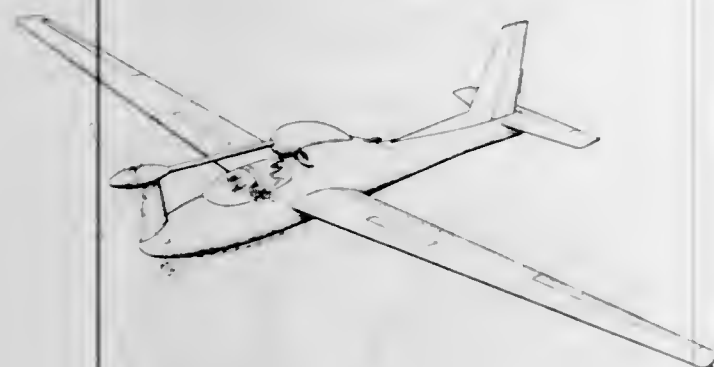
212,721

**AIRPORT REFLECTOR**  
Wallace A. Stanley, Bloomfield Hills, Mich., assignor to Reflex Corporation of America, Troy, Mich., a corporation of Michigan  
Filed Nov. 14, 1966, Ser. No. 4,662  
Term of patent 14 years  
(Cl. D72—1)



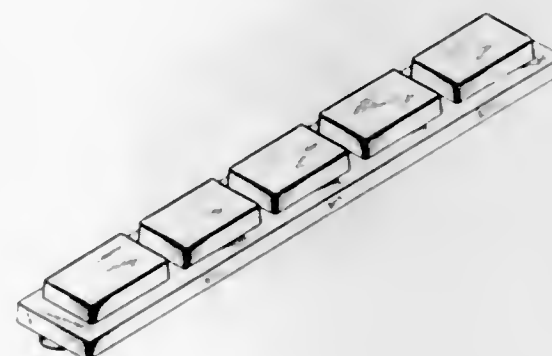
212,719

**HIGH ASPECT RATIO AIRCRAFT**  
Andrew D. Galbraith, Sunnyvale, and Jack B. Baumann, Los Altos, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.  
Filed Oct. 9, 1967, Ser. No. 8,911  
Term of patent 14 years  
(Cl. D71—1)



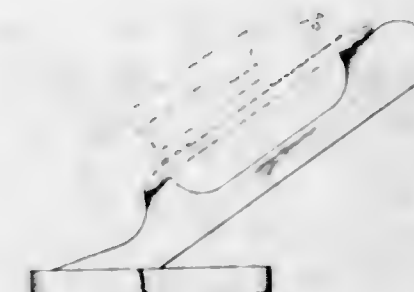
212,722

**FLASHING SIGNAL UNIT**  
Robert D. Kahn, Rockville Centre, N.Y., assignor to Fedtro, Inc., Rockville Centre, N.Y., a corporation of New York  
Filed Nov. 13, 1967, Ser. No. 9,385  
Term of patent 14 years  
(Cl. D72—1)



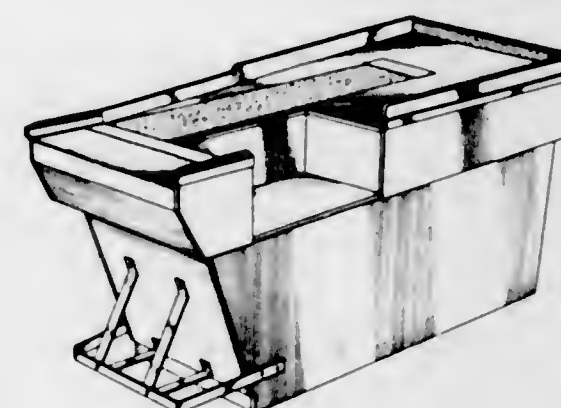
212,723

**DESK STAND FOR A STAPLER OR THE LIKE**  
Leda K. Holley, 1890 Kalmia St., Sweet Home, Ore. 97386  
Filed Oct. 6, 1967, Ser. No. 8,887  
Term of patent 14 years  
(Cl. D74—5)



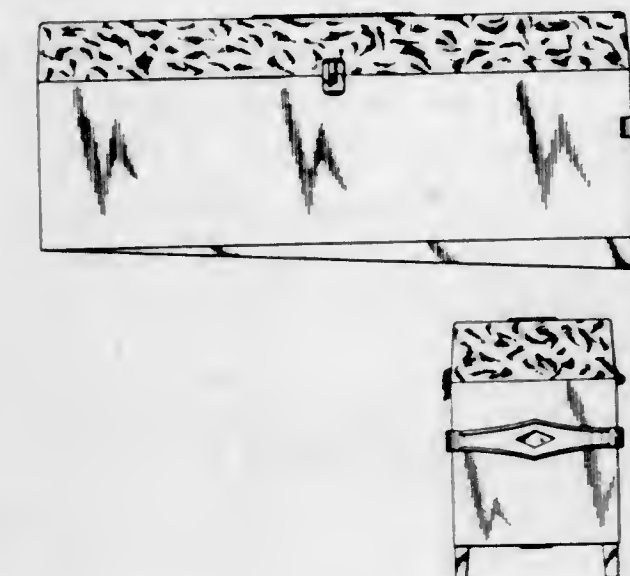
212,724

**CHECKOUT COUNTER**  
Gerald D. Ailshie, Arcadia, and Thomas K. Bell, Covina, Calif., assignors to Modern Village Stores, Inc., El Monte, Calif., a corporation of California  
Filed June 1, 1967, Ser. No. 7,330  
Term of patent 14 years  
(Cl. D80—2)



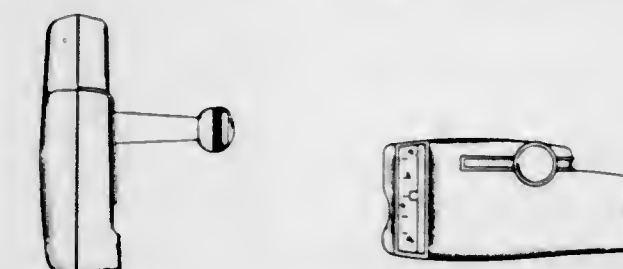
212,726

**COMBINED ARM REST AND STORAGE CONTAINER FOR TAPE CARTRIDGES**  
Anthony Di Vona, 27 Hawthorne St., Selden, N.Y. 11784, and William Eckelkamp, 29 Peak St., Ronkonkoma, N.Y. 11779  
Filed Nov. 28, 1967, Ser. No. 9,571  
Term of patent 14 years  
(Cl. D87—1)



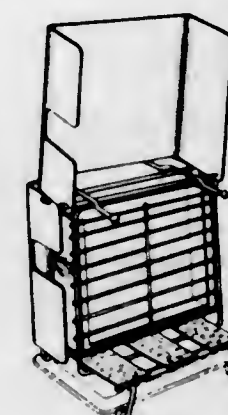
212,727

**GEAR SHIFTING CONSOLE FOR A BICYCLE**  
Keizo Shimano, 81 Midorigaoka, Minamicho, 3 cho, Sakai, and Norio Sato, 414 Takesono-cho, Suita, both of Osaka Prefecture, Japan  
Filed Dec. 6, 1967, Ser. No. 9,662  
Claims priority, application Japan Sept. 18, 1967  
Term of patent 7 years  
(Cl. D90—1)



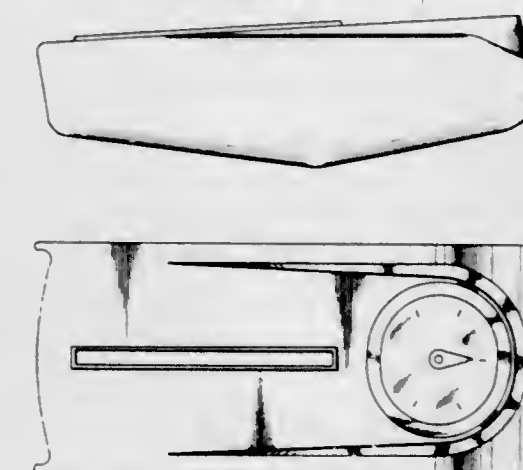
212,725

**COMBINED GRILL AND STOVE**  
William Rich, Jr., 6 Lee St., Huntington, N.Y. 11743  
Filed Feb. 26, 1968, Ser. No. 10,712  
Term of patent 14 years  
(Cl. D81—10)



212,728

**GEAR SHIFTING CONSOLE FOR A BICYCLE**  
Keizo Shimano, 81 Midorigaoka, Minamicho, 3 cho, Sakai, and Norio Sato, 414 Takesono-cho, Suita, both of Osaka Prefecture, Japan  
Filed Dec. 6, 1967, Ser. No. 9,663  
Claims priority, application Japan Aug. 11, 1967  
Term of patent 7 years  
(Cl. D90—1)





212,729

**GEAR SHIFTING CONSOLE FOR A BICYCLE**

Keizo Shimano, 81 Midorigaoka, Minamicho, 3 cho, Sakai,  
and Norio Sato, 414 Takesono-cho, Suita, both of Osaka  
Prefecture, Japan

Filed Dec. 6, 1967, Ser. No. 9,664

Claims priority, application Japan Aug. 11, 1967

Term of patent 7 years  
(Cl. D90—1)



212,730

**TEXTILE FABRIC**

Seroun Kesh, 18982 Ardmore, Detroit, Mich. 48235  
Substituted for abandoned design applications Ser. No.  
5,257, Ser. No. 5,260, and Ser. No. 5,261, Jan. 3, 1967.  
This application Jan. 18, 1968, Ser. No. 10,214

Term of patent 14 years  
(Cl. D92—1)

**LIST OF REISSUE PATENTEEES**

TO WHOM

PATENTS WERE ISSUED ON THE 12TH DAY OF NOVEMBER, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- Bendix Corp., The: See—  
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Bull. Glen C. Dispensing container with compressed mass dis-  
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Caveney, Jack E., and R. A. Moody, to Panduit Corp. Binder  
strap tool. Re. 26,482, 11-12-68, Cl. 140—93.2.  
Colbert, Dolores B.: See—  
Colbert, Lee J. Re. 26,491.  
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Jensen, Knud A., to Infanseat Co. Baby carrier apparatus.  
Re. 26,490, 11-12-68, Cl. 287—377.  
Moody, Roy A.: See—  
Caveney, Jack E., and Moody. Re. 26,492.  
Panduit Corp.: See—  
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- Armstrong, David L., to Armstrong Nurseries, Inc. Rose  
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Ando, Momofuku. Paperboard Carton. 212,681, 11-12-68, Cl.  
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D9—225.  
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Damla, Emil: See—  
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Ehrenfeld, Joseph. 212,676.  
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 Maslow, Louis. Dishwashing basket. 212,709, 11-12-68, Cl. D49-1.  
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 Roccaforte, Harry I., E. M. Jordan, and W. C. Inch. Ice cream carton. 212,684, 11-12-68, Cl. D9-240.  
 Romano, Paul, to Eastman Kodak Co. Photographic processing drum. 212,718, 11-12-68, Cl. D61-1.  
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 Shell, Robert E. Cattle nose tongs. 212,693, 11-12-68, Cl. D30-99.  
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 Shimano, Keizo, and N. Sato. Gear shifting console for a bicycle. 212,727, 11-12-68, Cl. D90-1.  
 Shimano, Keizo, and N. Sato. Gear shifting console for a bicycle. 212,728, 11-12-68, Cl. D90-1.  
 Shimano, Keizo, and N. Sato. Gear shifting console for a bicycle. 212,729, 11-12-68, Cl. D90-1.  
 Smith, William R., to McDonough Power Equipment, Inc. Spencer, Herbert E. Bookcase. 212,694, 11-12-68, Cl. D33-2.  
 Spencer, Herbert E. Cabinet. 212,695, 11-12-68, Cl. D33-19.  
 Stanley, Wallace A., to Reflex Corp. of America. Airport reflector. 212,721, 11-12-68, Cl. D72-1.  
 Stewart-Warner Corp.: See—  
 Deadrick, James R. 212,685.  
 Sweet, James B. Compartmented carrying container and the like. 212,678, 11-12-68, Cl. D9-185.  
 Teleki, Emil. Toy flat iron or similar article. 212,700, 11-12-68, Cl. D34-15.  
 Teleki, Emil. Electric lamp. 212,706, 11-12-68, Cl. D48-20.  
 Turner, Lloyd S., 1/4 each to R. B. Evanoff, E. Damia, and E. Wiser. Aerial toy. 212,699, 11-12-68, Cl. D34-15.  
 Tyler, Richard K. Night light. 212,707, 11-12-68, Cl. D48-20.  
 Tyson, John F., to Northern Electric Co., Ltd. Telephone instrument. 212,691, 11-12-68, Cl. D26-14.  
 Unter, Robert K., to National Lock Co. Connected key bows. 212,713, 11-12-68, Cl. D50-4.  
 Vanderblit, Suzanne E., to American Safety Equipment Corp. Safety helmet. 212,667, 11-12-68, Cl. D2-231.  
 Velekel, Laszlo: See—  
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 Wahl Clipper Corp.: See—  
 Mango, Joseph R., and Meyer. 212,710.  
 Weckman, Richard L., to Owens-Illinois, Inc. Bottle. 212,669, 11-12-68, Cl. D9-42.  
 Weckman, Richard L., to Owens-Illinois, Inc. Bottle. 212,672, 11-12-68, Cl. D9-111.  
 Whitright, Joseph W. E., to Cheshire Mfg. Co., Inc. Vehicle wheel wedge or similar article. 212,703, 11-12-68, Cl. D41-1.  
 Wiser, Emerson: See—  
 Turner, Lloyd S. 212,699.  
 Xerox Corp.: See—  
 Plantholt, Robert G. 212,692.

## LIST OF PATENTEES

TO WHOM

## PATENTS WERE ISSUED ON THE 12TH DAY OF NOVEMBER, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AB C J Wennbergs Mekaniska Verkstad: See—  
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 Abdo, Milton K., to Mobil Oil Corp. Waterflood employing a viscoelastic, shear-hardening, positive nonsimple liquid with stabilizing agent. 3,410,343, 11-12-68, Cl. 166-9.  
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- Longbottom, Parker W., and Huggins. 3,409,956.
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- Hughes, Calvin L.: See—
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- Inventors Engineering, Inc.: See—
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- Ireland, Glen V. Flexible coupling. 3,410,111, 11-12-68, Cl. 64-9.
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- Ironside, Donald S., to DASA Corp. Storage device for a flexible ribbon. 3,410,471, 11-12-68, Cl. 226-200.
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- Isbell, Joe A., to Union Metall Products, Inc. Scaffold structure. 3,410,365, 11-12-68, Cl. 182-179.
- Isbell, William F., and J. E. Grant. Strand winding machine lubricating device. 3,410,496, 11-12-68, Cl. 242-27.
- Ishibashi, Kazuo, and Hiroshi Ogawa, to Victor Co. of Japan, Ltd. Spectrum adding system for electronic musical instruments. 3,410,948, 11-12-68, Cl. 84-1.11.
- Ishizuka, Mizuro, to Mitsubishi Jukogyo Kabushiki Kaisha. Damper construction for damping torsional vibrations of a revolving body. 3,410,369, 11-12-68, Cl. 188-1.
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- Jackson, Carey B., to "Automatic" Sprinkler Corp. of America. Method and apparatus for atmosphere control in closed compartments. 3,410,191, 11-12-68, Cl. 98-1.5.
- Jackson, Charles A., E. C. Beason, and D. G. Duncan, to Phillips Petroleum Co. Packaging articles with heat shrinkable tubing. 3,410,394, 11-12-68, Cl. 206-59.
- Jackson, Earl V., to Bausch & Lomb, Inc. Mechanical mounting for interpupillary distance measurement instrument. 3,410,637, 11-12-68, Cl. 351-5.
- Jackson, H. T., 1/2 to D. H. Daniel. Electric permutation locks. 3,411,152, 11-12-68, Cl. 340-274.
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Jencks, Charles L., and G. W. Kiesel, to General Electric Co. Time delay magnetic trip unit for circuit breaker. 3,411,117, 11-12-68, Cl. 335-61.

Jenson, Renold O. Towbar quick-latch. 3,410,579, 11-12-68, Cl. 240-491.

Jenssen, Jens W. Trawl boards. 3,401,014, 11-12-68, Cl. 43-43.

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Johnson, John A., to Cedar Hill Forms, Inc. Case filling and stacking machine. 3,410,046, 11-12-68, Cl. 53-61.

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Johnston, Mack S., to Johnston Enterprises, Inc. Beer tapping device. 3,410,458, 11-12-68, Cl. 222-400.7.

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Jones, William L., to General Electric Co. Metallizing and bonding non-metallic bodies. 3,410,714, 11-12-68, Cl. 117-46.

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Jorgensen, Pierre, to Compagnie de Saint-Gobain. Electronic converter and switching means therefor. 3,411,019, 11-12-68, Cl. 307-243.

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Kaiser, Karl N., and A. A. Anapol. Power actuated ball ejecting and return apparatus for table tennis. 3,410,556, 11-12-68, Cl. 273-30.

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Kajimura, Hiroshi, T. Ota, and S. Nagata, to O-M Ltd. Drawing frame. 3,409,944, 11-12-68, Cl. 19-262.

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Olson, Danford H., Bailey, and Kelly. 3,410,920.

Kelly, William, and G. H. Levey. Fluid valve having low wear and wear-compensation characteristics. 3,410,523, 11-12-68, Cl. 251-315.

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Kennedy, James C., Jr., and D. B. Shotwell, to Caterpillar Tractor Co. Damped and turned dynamic absorber for vehicles. 3,410,358, 11-12-68, Cl. 180-64.

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Kilp, Gerald R., P. M. Bergstrom, and H. M. Ferrari, to Westinghouse Electric Corp. Process for producing annular composite members. 3,409,973, 11-12-68, Cl. 29-420.

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King, Donald E., to Protection Instrument Co. Kitchen exhaust hood. 3,410,195, 11-12-68, Cl. 98-115.

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Kite, James C.: See—  
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Klein, Ernst, to Schloemann Aktiengesellschaft. Shears for trimming thick metal sheets of plates. 3,410,167, 11-12-68, Cl. 83-556.

Klein, Keith W., to General Electric Co. Panel assembly for single and half width circuit breakers. 3,411,042, 11-12-68, Cl. 317-119.

Klein, Morton J., and R. G. Maguire, to Mine Safety Appliances Co. Monoethyltetrafluorane. 3,410,911, 11-12-68, Cl. 260-606.5.

Klimashko, Vladimir V.: See—  
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Kloess, Hans K., and P. Horstmann; said Horstmann, assor. to said Kloess. Ship and cargo deck construction. 3,410,242, 11-12-68, Cl. 114-72.

Klosek, Felix P., R. E. Nicolson, and S. P. Spence, to Union Carbide Corp. Continuous milling and devolatilizing apparatus. 3,409,937, 11-12-68, Cl. 18-2.

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Knaub, Richard A., and G. G. Koss, to The Bunker-Kamo Corp. Electrical bus strip. 3,410,952, 11-12-68, Cl. 174-88.

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Knutson, Richard E., to United States of America, Atomic Energy Commission. Digital data sorting logic system. 3,411,146, 11-12-68, Cl. 340-172.5.

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Kohrehel, Peter M., and P. Mandrik, to General Motors Corp. Buckle and retractor combination. 3,409,940, 11-12-68, Cl. 24-77.

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Kondrot, Bruno J., to Hercules Inc. Cleaning or treating process. 3,410,724, 11-12-68, Cl. 134-22.

Konstant, Francisco G. Heating drying and ventilating apparatus. 3,409,906, 11-12-68, Cl. 34-91.

Koolstra, John A., to Davis & Furber Machine Co. Clutch and brake construction for spinning and twisting frames. 3,410,380, 11-12-68, Cl. 192-18.

Kopcsnki, John F. Screw crown for a container. 3,410,435, 11-12-68, Cl. 215-39.

Korr, Abraham L., to United States of America, Army. Timing mechanism. 3,410,083, 11-12-68, Cl. 58-116.

Kosbar, Robert J., to Minnesota Mining and Mfg. Co. Fluorinated oxo-compounds. 3,410,863, 11-12-68, Cl. 260-248.

Koss, Gerald G.: See—  
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Kourtz, Raymond E., and P. L. Ku, to American Cyanamid Co. Addition of insoluble additives to fibers during manufacture. 3,410,819, 11-12-68, Cl. 260-29.6.

Kraemer, Sandy F. Movable surface marble game with goal pockets. 3,410,560, 11-12-68, Cl. 278-115.

Kramer, David N.: See—  
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Magrath, Richard A., to Baird-Atomic, Inc. Interference filter. 3,410,826, 11-12-68, Cl. 350-166.

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Martin, Joseph L., to New England Realty Co. Corrosion protected conduit system. 3,410,313, 11-12-68, Cl. 138-103.

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Martini, Leo A. Percussion tools. 3,410,353, 11-12-68, Cl. 173-73.

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Marzocchi, Alfred, G. E. Benson, and R. W. Roth, to Owens-Corning Fiberglass Corp. Bulky yarn. 3,410,077, 11-12-68, Cl. 57-144.

Mas, Roland G., to Commissariat a l'Energie Atomique. Device for securing remote-control manipulators against rotation. 3,410,419, 11-12-68, Cl. 214-1.

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Maxson, Vernon A.: See—

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187-29	: 3,410,385		: 3,410,428		: 3,410,512		: 3,410,852	150	: 3,410,955	318-6	: 3,410,653
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188-1	: 3,410,387		: 3,410,430		: 3,410,514		: 3,410,854	267-64	: 3,410,957	62	: 3,410,655
42	: 3,410,388		: 3,410,431		: 3,410,515		: 3,410,855	271-12	: 3,410,958	100	: 3,410,656
73	: 3,410,389		: 3,410,432		: 3,410,516		: 3,410,856	64	: 3,410,959	119	: 3,410,657
196	: 3,410,390		: 3,410,433		: 3,410,517		: 3,410,857	65	: 3,410,960	122	: 3,410,658
251	: 3,410,391		: 3,410,434		: 3,410,518		: 3,410,858	70	: 3,410,961	123	: 3,410,659
264	: 3,410,392		: 3,410,435		: 3,410,519		: 3,410,859	102	: 3,410,962	134	: 3,410,660
190-44	: 3,410,393		: 3,410,436		: 3,410,520		: 3,410,860	150	: 3,410,963	233	: 3,410,661
192-02	: 3,410,394		: 3,410,437		: 3,410,521		: 3,410,861	182	: 3,410,964	234	: 3,410,662
3.33	: 3,410,395		: 3,410,438		: 3,410,522		: 3,410,862	267-64	: 3,410,965	318-6	: 3,410,663
2	: 3,410,396		: 3,410,439		: 3,410,523		: 3,410,863	271-12	: 3,410,966	33	: 3,410,664
18	: 3,410,397		: 3,410,440		: 3,410,524		: 3,410,864	64	: 3,410,967	62	: 3,410,665
24	: 3,410,398		: 3,410,441		: 3,410,525		: 3,410,865	70	: 3,410,968	100	: 3,410,666
107	: 3,410,399		: 3,410,442		: 3,410,526		: 3,410,866	102	: 3,410,969	119	: 3,410,667
194-2	: 3,410,400		: 3,410,443		: 3,410,527		: 3,410,867	150	: 3,410,970	122	: 3,410,668
4	: 3,410,401		: 3,410,444		: 3,410,528		: 3,410,868	182	: 3,410,971	134	: 3,410,669
195-28	: 3,410,402		: 3,410,445		: 3,410,529		: 3,410,869	267-64	: 3,410,972	233	: 3,410,670
	: 3,410,403		: 3,410,446		: 3,410,530		: 3,410,870	64	: 3,410,973	234	: 3,410,671
36	: 3,410,404		: 3,410,447		: 3,410,531		: 3,410,871	70	: 3,410,974	318-6	: 3,410,672
103.5	: 3,410,405		: 3,410,448		: 3,410,532		: 3,410,872	102	: 3,410,975	33	: 3,410,673
197-114	: 3,410,406		: 3,410,449		: 3,410,533		: 3,410,873	150	: 3,410,976	62	: 3,410,674
198-27	: 3,410,407		: 3,410,450		: 3,410,534		: 3,410,874	182	: 3,410,977	100	: 3,410,675
37	: 3,410,408		: 3,410,451		: 3,410,535		: 3,410,875	267-64	: 3,410,978	119	: 3,410,676
114	: 3,410,409		: 3,410,452		: 3,410,536		: 3,410,876	64	: 3,410,979	122	: 3,410,677
129	: 3,410,410		: 3,410,453		: 3,410,537		: 3,410,877	70	: 3,410,980	134	: 3,410,678
200-28	: 3,410,411		: 3,410,454		: 3,410,538		: 3,410,878	102	: 3,410,981	233	: 3,410,679
61.91	: 3,410,412		: 3,410,455		: 3,410,539		: 3,410,879	150	: 3,410,982	318-6	: 3,410,680
67	: 3,410,413		: 3,410,456		: 3,410,540		: 3,410,880	182	: 3,410,983	33	: 3,410,681
77	: 3,410,414		: 3,410,457		: 3,410,541		: 3,410,881	267-64	: 3,410,984	62	: 3,410,682
162	: 3,410,415		: 3,410,458		: 3,410,542		: 3,410,882	64	: 3,410,985	100	: 3,410,683
166	: 3,410,416		: 3,410,459		: 3,410,543		: 3,410,883	70	: 3,410,986	119	: 3,410,684
	: 3,410,417		: 3,410,460		: 3,410,544		: 3,410,884	102	: 3,410,987	122	: 3,410,685
202-158	: 3,410,418		: 3,410,461		: 3,410,545		: 3,410,885	150	: 3,410,988	134	: 3,410,686
177	: 3,410,419		: 3,410,462		: 3,410,546		: 3,410,886	182	: 3,410,989	233	: 3,410,687
203-10	: 3,410,420		: 3,410,463		: 3,410,547		: 3,410,887	267-64	: 3,410,990	234	: 3,410,688
29	: 3,410,421		: 3,410,464		: 3,410,548		: 3,410,888	64	: 3,410,991	318-6	: 3,410,689
37	: 3,410,422		: 3,410,465		: 3,410,549		: 3,410,889	70	: 3,410,992	33	: 3,410,690
44	: 3,410,423		: 3,410,466		: 3,410,550		: 3,410,890	102	: 3,410,993	62	: 3,410,691
204-1	: 3,410,424		: 3,410,467		: 3,410,551		: 3,410,891	150	: 3,410,994	100	: 3,



# GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

(NOTE.—CODES ARE CHANGED AS OF JANUARY 1, 1967)

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Alaska.....	2	Louisiana.....	22	Pennsylvania.....	42
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Arizona.....	4	Maryland.....	24	Rhode Island.....	44
Arkansas.....	5	Massachusetts.....	25	South Carolina.....	45
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Colorado.....	8	Mississippi.....	28	Texas.....	48
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Delaware.....	10	Montana.....	30	Vermont.....	50
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(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

## PATENTS

1 : 3,409,991	6 : 3,410,357	6 : 3,410,907	9 : 3,410,693	12 : 3,411,125	17 : 3,410,482
3,410,172	3,410,384	3,410,922	3,410,694	3,410,236	3,410,501
3,410,500	3,410,390	3,410,923	3,410,718	3,410,322	3,410,519
3,410,559	3,410,439	3,410,952	3,410,750	3,410,588	3,410,522
3,410,578	3,410,454	3,410,986	3,410,763	3,410,654	3,410,537
3,410,644	3,410,458	3,410,997	3,410,780	3,411,121	3,410,547
3,410,647	3,410,470	3,411,007	3,410,876	3,411,131	3,410,551
3,410,940	3,410,473	3,411,023	3,410,887	3,410,403	3,410,582
3,411,083	3,410,477	3,411,028	3,410,888	Re: 26,492	3,410,591
4 : 3,409,981	3,410,492	3,411,029	3,410,891	3,409,935	3,410,614
3,410,219	3,410,494	3,411,030	3,410,912	3,409,968	3,410,620
3,410,558	3,410,504	3,411,033	3,410,916	3,409,972	3,410,622
3,410,640	3,410,507	3,411,041	3,410,937	3,410,009	3,410,698
3,411,093	3,410,518	3,411,052	3,410,973	3,410,010	3,410,778
3,411,095	3,410,520	3,411,067	3,411,042	3,410,017	3,410,789
3,411,108	3,410,523	3,411,070	3,411,058	3,410,023	3,410,790
5 : 3,410,276	3,410,524	3,411,097	3,411,062	3,410,028	3,410,803
3,410,554	3,410,532	3,411,101	3,411,117	3,410,173	3,410,828
6 : 3,409,910	3,410,539	3,411,110	3,411,154	3,410,033	3,410,894
3,409,912	3,410,549	3,411,111	3,411,155	3,410,050	3,410,911
3,409,925	3,410,556	3,411,118	3,410,080	3,410,052	3,410,921
3,409,931	3,410,556	3,411,128	3,410,461	3,410,064	3,410,929
3,409,948	3,410,561	3,411,129	3,410,557	3,410,067	3,410,930
3,409,971	3,410,564	3,411,134	3,410,658	3,410,081	3,410,951
3,409,993	3,410,566	3,411,147	3,410,678	3,410,117	3,410,963
3,410,001	3,410,571	3,411,148	3,410,732	3,410,125	3,410,970
3,410,002	3,410,576	8 : 3,410,100	3,410,834	3,410,131	3,410,990
3,410,013	3,410,586	3,410,223	3,410,866	3,410,140	3,411,100
3,410,011	3,410,606	3,410,933	3,410,933	3,410,152	3,411,119
3,410,015	3,410,613	3,410,569	Re: 26,488	3,410,166	3,411,127
3,410,026	3,410,634	3,410,619	3,410,516	3,410,234	3,410,156
3,410,049	3,410,641	3,410,646	3,410,007	3,410,248	3,410,157
3,410,065	3,410,646	3,410,702	3,410,021	3,410,250	3,410,157
3,410,066	3,410,704	3,410,704	3,410,027	3,410,271	3,410,161
3,410,092	3,410,722	3,410,722	3,410,048	3,410,302	3,410,178
3,410,128	3,410,735	3,411,081	3,410,068	3,410,303	3,410,179
3,410,154	3,410,765	9 : 3,410,016	3,410,086	3,410,320	3,410,181
3,410,190	3,410,776	3,410,088	3,410,108	3,410,332	3,410,227
3,410,196	3,410,787	3,410,175	3,410,109	3,410,333	3,410,228
3,410,208	3,410,795	3,410,253	3,410,191	3,410,334	3,410,243
3,410,209	3,410,796	3,410,279	3,410,199	3,410,352	3,410,252
3,410,269	3,410,805	3,410,304	3,410,287	3,410,360	3,410,266
3,410,288	3,410,824	3,410,311	3,410,297	3,410,371	3,410,275
3,410,296	3,410,861	3,410,391	3,410,364	3,410,395	3,410,288
3,410,301	3,410,869	3,410,393	3,410,441	3,410,416	3,410,375
3,410,310	3,410,872	3,410,462	3,410,487	3,410,433	3,410,388
3,410,317	3,410,873	3,410,517	3,410,502	3,410,448	3,410,570
3,410,345	3,410,902	3,410,529	3,410,562	3,410,598	3,410,598
3,410,348	3,410,904	3,410,530	3,410,819	3,410,456	3,410,617
3,410,351	3,410,905	3,410,652	3,411,113	3,410,457	3,410,734

## GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

xxxvii

18	: 3,410,757	26	: 3,410,020	34	: 3,410,649	36	: 3,410,631	39	: 3,410,408	42	: 3,410,621
	3,410,851		3,410,034		3,410,656		3,410,633		3,410,417		3,410,669
	3,410,947		3,410,045		3,410,661		3,410,636		3,410,421		3,410,739
	3,410,953		3,410,089		3,410,682		3,410,637		3,410,424		3,410,751
	3,410,969		3,410,106		3,410,719		3,410,639		3,410,429		3,410,766
	3,410,975		3,410,112		3,410,740		3,410,645		3,410,432		3,410,779
	3,411,020		3,410,130		3,410,749		3,410,650		3,410,436		3,410,844
	3,411,133		3,410,146		3,410,771		3,410,653		3,410,469		3,410,879
19	: Re: 26,490		3,410,153		3,410,773		3,410,662		3,410,472		3,410,914
	3,410,042		3,410,159		3,410,775		3,410,673		3,410,486		3,410,918
	3,410,538		3,410,182		3,410,792		3,410,674		3,410,508		3,410,950
	3,410,577		3,410,225		3,410,794		3,410,675		3,410,527		3,410,984
	3,410,994		3,410,231		3,410,797		3,410,676		3,410,528		3,410,999
20	: 3,410,022		3,410,255		3,410,799		3,410,686		3,410,550		3,410,988
	3,410,193		3,410,294		3,410,801		3,410,688		3,410,574		3,411,005
	3,410,217		3,410,295		3,410,802		3,410,696		3,410,575		3,411,017
	3,410,298		3,410,306		3,410,807		3,410,710		3,410,611		3,411,038
	3,410,475		3,410,309		3,410,813		3,410,728		3,410,670		3,411,043
	3,411,072		3,410,325		3,410,816		3,410,733		3,410,671		3,411,071
21	: 3,410,195		3,410,330		3,410,818		3,410,738		3,410,677		3,411,124
	3,410,714		3,410,331		3,410,843		3,410,745		3,410,706		3,411,130
	3,410,926		3,410,362		3,410,856		3,410,746		3,410,715		3,411,139
	3,410,987		3,410,366		3,410,859		3,410,748		3,410,716		3,411,153
	3,411,004		3,410,373		3,410,862		3,410,772		3,410,723		3,411,153
22	: 3,410,791		3,410,411		3,410,870		3,410,774		3,410,730		3,410,077
	3,410,808		3,410,415		3,410,871		3,410,804		3,410,731		3,410,126
	3,410,924		3,410,427		3,410,885		3,410,820		3,410,747		3,410,127
23	: 3,410,326		3,410,463		3,410,928		3,410,822		3,410,768		3,410,138
	3,410,687		3,410,476		3,410,935		3,410,841		3,410,798		3,410,316
	3,410,711		3,410,478		3,410,939		3,410,847		3,410,810		3,410,512
24	: 3,409,909		3,410,480		3,410,960		3,410,848		3,410,811		3,410,703
	3,409,920		3,410,515		3,410,961		3,410,857		3,410,826		3,409,960
	3,410,143		3,410,534		3,410,966		3,410,875		3,410,839		3,410,496
	3,410,206		3,410,536		3,410,967		3,410,878		3,410,845		3,410,244
	3,410,212		3,410,568		3,410,979		3,410,884		3,410,846		3,410,700
	3,410,246		3,410,572		3,410,981		3,410,886		3,410,881		3,410,076
	3,410,249		3,410,603		3,411,001		3,410,913		3,410,883		3,410,197
	3,410,289		3,410,610		3,411,031		3,410,934		3,410,931		3,410,282
	3,410,460		3,410,684		3,411,034		3,410,955		3,410,943		3,410,337
	3,410,514		3,410,697		3,411,046		3,410,972		3,410,946		3,410,365
	3,410,521		3,410,699		3,411,048		3,410,982		3,410,978		3,410,552
	3,410,545		3,410,743		3,411,061		3,410,989		3,411,018		3,410,708
	3,410,546		3,410,781		3,411,068		3,410,993		3,411,035		3,410,737
	3,410,593		3,410,817		3,411,090		3,410,998		3,411,050		3,410,825
	3,410,595		3,410,858		3,411,105		3,411,002		3,411,057		3,410,892
	3,410,663		3,410,971		3,411,135		3,411,006		3,411,109		3,410,909
	3,410,707		3,411,013		3,411,149		3,411,014	40	: 3,409,987	48	: Re: 26,489
	3,410,741		3,411,060	35	: 3,409,998		3,411,015		3,409,977		3,409,977
	3,410,756		3,411,141	36	: Re: 26,491		3,411,021		3,410,163		3,409,992
	3,410,761		3,411,141		3,409,911		3,411,025		3,410,261		3,409,996
	3,410,889		3,409,990		3,409,916		3,411,045		3,410,305		3,410,096
	3,410,949		3,410,005		3,409,917		3,411,055		3,410,341		3,410,122
	3,411,024		3,410,025		3,409,970		3,411,073		3,410,344		3,410,136
	3,411,040		3,410,063		3,409,974		3,411,076		3,410,394		3,410,137
	3,411,086		3,410,098		3,409,978		3,411,079		3,410,440		3,410,342
	3,411,098		3,410,103		3,409,985		3,411,080		3,410,533		3,410,343
	3,411,099		3,410,185		3,409,986		3,411,104		3,410,724		3,410,346
	3,411,115		3,410,258		3,410,024		3,411,112		3,410,788		3,410,347
25	: 3,409,913		3,410,418		3,410,030		3,411,122		3,410,806		3,410,347
	3,409,914		3,410,431		3,410,055		3,411,123		3,410,836		3,410,353
	3,409,932		3,410,438		3,410,058		3,411,126		3,410,903		3,410,355
	3,410,000		3,410,449		3,410,060		3,411,144		3,410,906		3,410,483
	3,410,004		3,410,767		3,410,062		3,410,919		3,410,925		3,410,490
	3,410,029		3,410,853		3,410,093	37	: 3,409,919		3,410,932		3,410,604
	3,410,082		3,410,882		3,410,099		3,409,945		3,410,958		3,410,605
	3,410,162		3,411,077		3,410,113		3,409,946	41	: 3,409,936		3,410,660
	3,410,173		28 : 3,410,350		3,410,120		3,409,947		3,410,035		3,410,759
	3,410,189		3,410,450		3,410,121		3,409,957		3,410,134		3,410,793
	3,410,235		29 : 3,410,210		3,410,132		3,410,101		3,410,259		3,410,838
	3,410,264		3,410,229		3,410,133		3,410,114		3,410,959		3,410,893
	3,410,300		3,410,587		3,410,142		3,410,115		3,411,039		3,410,919
	3,410,315		3,410,625		3,410,168		3,410,273	42	: 3,409,908		3,410,995
	3,410,321		3,410,720		3,410,177		3,410,466		3,409,941		3,411,003
	3,410,338		3,410,769		3,410,222		3,410,691		3,409,963		3,411,036
	3,410,380		3,410,831		3,410,245		3,410,755		3,409,966		3,411,051
	3,410,392		3,410,864		3,410,255		3,410,908		3,409,967		3,411,066
	3,410,409		3,410,898		3,410,275		3,410,927		3,409,973		3,411,145
	3,410,446	30	: 3,410,428		3,410,285		3,411,151		3,410,018		3,411,152
	3,410,459		3,410,485		3,410,298	38	: 3,410,221		3,410,019	49	: 3,410,579
	3,410,474	31	: 3,410,491		3,410,301	39	: 3,409,927		3,410,040	50	: 3,409,955
	3,410,495		3,410,601		3,410,312		3,409,953		3,410,057		3,410,381
	3,410,531		3,411,078		3,410,327		3,409,969		3,410,078		3,411,063
	3,410,544	34	: 3,409,930		3,410,339		3,409,975		3,410,083	51	: 3,409,956
	3,410,626		3,409,937		3,410,376		3,409,976		3,410,085		3,410,118
	3,410,727		3,409,961		3,410,382		3,409,989		3,410,104		3,410,207
	3,410,777		3,410,056		3,410,383		3,409,994		3,410,105		3,410,262
	3,410,785		3,410,097		3,410,401		3,410,008		3,410,129		3,410,374
	3,410,809		3,410,116		3,410,420		3,410,032		3,410,151		3,410,397
	3,410,865		3,410,203		3,410,422		3,410,037		3,410,170		3,410,664
	3,410,956		3,410,204		3,410,432		3,410,046		3,410,263		3,410,689
	3,410,974		3,410,230		3,410,434		3,410,047		3,410,268		3,410,854
	3,410,976		3,410,239		3,410,435		3,410,095		3,410,283	53	: 3,410,635
	3,410,992		3,410,265		3,410,451		3,410,160		3,410,290		3,411,150
	3,411,016		3,410,266		3,410,464		3,410,180		3,410,323	54	: 3,410,659
	3,411,089		3,410,363		3,410,497		3,410,183		3,410,385		3,410,822
	3,411,092		3,410,398		3,410,506		3,410,205		3,410,402	55	: 3,409,922
	3,411,136		3,410,399		3,410,513		3,410,226		3,410,471		3,409,926
	3,411,142		3,410,405		3,410,535		3,410,247		3,410,489		3,409,926
26	: 3,409,923		3,410,565		3,410,540		3,410,299		3,410,511		3,409,963
	3,409,924		3,410,585		3,410,553		3,410,313		3,410,543		3,410,061
	3,409,949		3,410,623		3,410,555		3,410,324		3,410,548		3,410,101
	3,409,965		3,410,627		3,410,563		3,410,329		3,410,589		3,410,111
	3,409,980		3,410,628		3,410,573		3,410,367		3,410,596		3,410,122
	3,409,988		3,410,638		3,410,629		3,410,386		3,410,615		3,410,153
	3,409,997		3,410,648		3,410,630		3,410,396		3,410,618		3,410,200



55 : 3,410,232 3,410,400	55 : 3,410,580 3,410,581	55 : 3,410,690 3,410,729	55 : 3,410,770 3,410,783	55 : 3,410,936 3,411,075	55 : 3,411,114 56 : 3,410,094
Design Patents					
212,671 212,699 212,705 212,707 212,712 212,715 212,719 212,720 212,724	9 : 212,703 13 : 212,668 212,702 17 : 212,683 212,684 212,686 212,697 212,710 212,713	17 : 212,714 212,717 26 : 212,667 212,692 212,694 212,695 212,721 212,730 34 : 212,673	34 : 212,674 212,675 212,676 212,677 212,711 212,666 212,700 212,706 212,716	36 : 212,718 212,722 212,725 212,726 37 : 212,685 39 : 212,669 212,670 212,672 212,687	39 : 212,701 212,704 41 : 212,723 42 : 212,690 212,709 44 : 212,678 48 : 212,693 212,696 55 : 212,688
Plant Patents					
2,844	6 : 2,845	12 : 2,846			

# U.S. DEPARTMENT OF COMMERCE

## OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

November 12, 1968 Volume 856 Number 2

## TRADEMARKS

### NOTICES

#### Service by Publication

A petition to cancel each of the registrations identified below having been filed, and the notice of such proceedings sent by registered mail to each registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrants listed herein, their assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, the cancellation will be proceeded with as in the case of default.

Carroll W. C. Lorbeer, d.b.a. Carroll Lorbeer Farms, Santa Monica, Calif., Reg. No. 532,863; Canc. No. 9198.

Davis Bros. Fisheries Co., Inc., Gloucester, Mass., Reg. No. 442,158, Canc. No. 9207.

Namm-Loeser's Inc., assignee by change of name and assignment from A. I. Namm & Son, Brooklyn, N.Y., Reg. No. 297,749, Canc. No. 9210.

EDWIN L. REYNOLDS,  
First Assistant Commissioner of Patents.

#### Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 231,389 (ALCOA), Aluminum Company of America, Ingots of aluminum and aluminum base alloys; Reg. No. 284,996, same, Aluminum sand mold and permanent mold castings, aluminum billets and ingots, aluminum forgings and extruded shapes, aluminum foil and sheet, aluminum solder, and granulated aluminum; Reg. No. 288,976, same, Aluminum

shingles, corrugated roofing, down spouts, and gutters and flashings; Reg. No. 756,313 (GEOMETRIC DESIGN), same, Aluminum ingots, aluminum sheet, aluminum plate, aluminum extruded shapes, aluminum castings, aluminum rod, aluminum bar, and aluminum tubing, filed June 20, 1968, D.C., E.D.N.Y. (Brooklyn), Doc. 68-C-631, *Aluminum Co. of America v. Syra Industries, Inc.* Consent judgment for injunction, Aug. 14, 1968. Same, filed Aug. 6, 1968, D.C.N.J. (Camden), Doc. 631-68, *Aluminum Company of America v. Melmar Industries, Inc.* Consent judgment for permanent injunction and restraint, Aug. 6, 1968. Same, filed Aug. 13, 1968, D.C.N.J. (Newark), Doc. 812-68, *Aluminum Company of America v. Alumalife, Inc. et al.* Consent judgment for permanent injunction, Aug. 14, 1968.

Reg. No. 284,996. (See Reg. No. 231,389.)

Reg. No. 288,976. (See Reg. No. 231,389.)

Reg. No. 547,321 (AAA WITHIN A DESIGN), American Automobile Association, Services rendered to motor vehicle owners, motorists and travelers generally—namely, disseminating travel information, making travel arrangements, rating tourist accommodations, providing emergency road service, adjusting damage claims, recovering stolen motor vehicles, apprehending motor vehicle thieves and so-called hit and run drivers; obtaining insurance, legal services, bail and other bond, motor vehicle license plates, and title certificates; teaching motor vehicle operation, arranging for discount pur-

### CONDITION OF TRADEMARK APPLICATIONS AS OF SEPTEMBER 30, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]..... 15,450  
Date of oldest new application..... November 17, 1967  
Date of oldest amended application (filing date)..... January 5, 1965

C. M. WENDT, Director, Trademark Examining Operation		Oldest Application	
TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION		New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B.....		2-9-68	5-3-66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200.....		12-1-67	10-18-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36.....		11-17-67	10-20-65
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 106, 106, and 107.....		11-27-67	1-5-65
Renewals (All Classes).....		8-19-68	
Sec. 12(c) Publications (All Classes).....		8-26-68	

Applications filed during the month of September 1968—2,238

Registrations Issued ..... 476—No. 859,875 to No. 860,350  
Renewals Issued ..... 100

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price \$12.00 per annum, foreign mailing \$4.00 additional; single copies, 25 cents each.

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chases, sponsoring school safety patrols, conducting traffic and pedestrian safety campaigns and giving traffic safety lessons, advocating legislation favorable to safe and economical motor vehicle travel, operation and maintenance; conducting motor vehicle speed trials and endurance tests and making tests of automotive and related products; **Reg. No. 608,115** (APPROVED AAA IN OVAL DESIGN), same, Serving of food and beverages in restaurants and providing lodging in motor courts and hotels; **Reg. No. 625,602** (AAA AND DESIGN), same, Signs, mechanical or structural, non-electric traffic and street signs, theft plate signs, badges, medals, pins, and buttons made of base metal, membership emblems, automobile door initial emblems and flags, filed Apr. 29, 1968, D.C. Md. (Baltimore), Doc. 19443, *American Automobile Association, Inc. v. John A. Keith, doing business as Holly Hill Motel*.

**Reg. No. 559,020** (PERMALUME), Collis R. Grems, doing business as Grems Mfg. Co., Roof paint of polystyrene resins and powdered copper and aluminum, filed Aug. 8, 1967, D.C. Ore. (Portland), Doc. 68-445, *Permalume Plastics, Inc., etc. v. Thermochemical Products, Inc., etc.*

**Reg. No. 608,115.** (See Reg. No. 547,321.)

**Reg. No. 625,602.** (See Reg. No. 547,321.)

**Reg. No. 633,188.** (See Reg. No. 765,496.)

**Reg. No. 635,311.** (See Reg. No. 689,246.)

**Reg. No. 687,371.** (See Reg. No. 689,246.)

**Reg. No. 688,656** (KEPCO), Kepco Laboratories, Inc. Power supplies, converters and parts thereof, filed Aug. 8, 1967, D.C.N.J. (Camden), Doc. 840-67, *Kepco, Inc. v. Kearns Electronic Products Company*. Stipulation of dismissal, June 5, 1968.

**Reg. No. 689,246** (FRED HARVEY), Fred Harvey, Restaurant and cocktail services; **Reg. No. 633,311**, same, Whiskey; **Reg. No. 706,085**, same, Candies, cookies, coffee, salad dressings, jelly, ice cream, ice cream bars, sandwiches, and fluid milk; **Reg. No. 687,371** (HARVEY HOUSE), same, Restaurant services; **Reg. No. 775,925** (HARVEY GIRL), same,

Candy, filed July 5, 1968, D.C. Del. (Wilmington), Doc. C-3229, *Fred Harvey v. Harvey House, Inc. and Delaware Special Agency, Inc.* Consent judgment, plaintiff Fred Harvey is the owner of the trade names, trademarks and service marks, "Harvey House," "Harvey Girl" and "Fred Harvey." Said marks and registrations are valid, defendants permanently enjoined. The counterclaim and crossclaim of the defendant, Delaware Special Agency, Inc., dismissed with prejudice, July 23, 1968.

**Reg. No. 756,313.** (See Reg. No. 231,389.)

**Reg. No. 765,496** (DURA-GLO), Dura-Vent Corporation, Fireplace; **Reg. No. 633,188** (DURA-VENT), G. L. Ohrstrom, doing business as G. L. Ohrstrom Associates (Richard Riggs Ohrstrom and Elizabeth J. Ohrstrom, executors of the estate of said George L. Ohrstrom, deceased, assigns to Dura-Vent Corporation, Vent pipes and fittings for vent pipes, filed Aug. 19, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68-1378-HP, *Dura-Vent Corp. of California v. John Hirschel, doing business as Calmer Ltd. et al.*

**Reg. No. 775,925.** (See Reg. No. 689,246.)

**Reg. No. 798,788** (HUSTLER), B. L. McLoughlin, Golf clubs, filed Aug. 19, 1968, D.C., S.D.N.Y., Doc. 68-C-3330, *Mattel, Inc. v. John H. Goettsch, etc.*

**Reg. No. 802,204.** (See Reg. No. 820,669.)

**Reg. No. 802,669** (U), Cooke Engineering Company, Titration apparatus; **Reg. No. 802,204** (V), same, filed Aug. 22, 1968, D.C. Conn. (New Haven), Doc. 12719, *The Cooke Engineering Company v. Lindro Chemical Co., Inc.*

**Reg. No. 817,329** (DRINK-LITE), E. W. Gilson, Battery operated, portable signal light, filed Jan. 25, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c131, *Crossbow, Inc. et al. v. Glove-makers, Inc.* Cause dismissed by agreement, June 27, 1968.

**Reg. No. 837,511** (SOOPER-GOOPER), Mattel, Inc., Toy heating device for making edible figures, filed Aug. 19, 1968, D.C., S.D.N.Y., Doc. 68-C-3330, *Mattel, Inc. v. John H. Goettsch, etc.*

## MARKS PUBLISHED FOR OPPOSITION

### SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 20 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105. A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 253,312. Hooker Glass & Paint Mfg. Co., Chicago, Ill. Filed Aug. 29, 1966.

### HOOKER

**Class 11—Inks and Inking Materials**

For Stencil Inks (Int. Cl. 16).

**Class 16—Protective and Decorative Coatings**

For Interior and Exterior Paints, Varnishes, Enamels, Oil Stains, Varnish Stains, and Japan Colors (Int. Cl. 2).

First use in or about 1855.

SN 263,791. G. H. Wood and Company Limited, Toronto, Ontario, Canada. Filed Feb. 17, 1967.

GH Wood's

"G. H. Wood" is the president of applicant corporation, whose consent is of record. Owner of Canadian Reg. No. 129,004, dated Dec. 7, 1962.

**Class 2—Receptacles**

For Mop Buckets, Paper Drinking Cups, Paper Baking Cups, and Foli Butter Plates (Int. Cl. 21).

**Class 4—Abrasives and Polishing Materials**

For Floor Waxes and Furniture Polish (Int. Cl. 3).

**Class 6—Chemicals and Chemical Compositions**

For Insecticides, Disinfectants, and Air and Surface Deodorants (Int. Cl. 5).

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Soap Dispensers, Towel Dispensers, Serviette (Table Napkin) Dispensers, and Toilet Tissue Dispensers (Int. Cl. 21).

**Class 16—Protective and Decorative Coatings**

For Floor Sealers (Int. Cl. 2).

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Floor Scrubbers and Floor Polishers for Industrial and Commercial Use, Mop Wringers and Dollies, Surgical Soap Dispensers, Non-Refrigerated Vending Machines, Self-Propelled Automatic Scrubbing Machines, Industrial Vacuum Cleaners (Int. Cls. 7 and 9).

**Class 29—Brooms, Brushes, and Dusters**

For Mops, Mop Heads, and Push Brooms (Int. Cl. 21).

**Class 37—Paper and Stationery**

For Paper Products—Namely, Beverage Coasters, Dollies, Place Mats, Serviettes (Table Napkins), Toilet Seat Covers, Toilet Tissue, Towels, Sanitary Towels, and Tray Covers (Int. Cl. 16).

**Class 39—Clothing**

For Paper Shower Slippers (Int. Cl. 25).

**Class 52—Detergents and Soaps**

For Floor Cleaning Preparations, Rug Cleaning Preparations, Sweeping Compounds, Liquid and Powdered Toilet Soaps (Int. Cl. 3).

SN 263,914. Hydraulic Specialties, Inc., Warren, Mich. Filed Feb. 3, 1967.

H S I

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Hydraulic Presses and Power Units, Hydraulic Pumps, Hydraulic Cylinders, Hydraulic Manifolds, Hydraulic Valve Panels, Pneumatic Cylinders, Pneumatic Valve Panels, and Pneumatic Presses; and Parts of or Replacement Parts for Said Machinery (Int. Cl. 7).

**Class 26—Measuring and Scientific Appliances**

For Hydraulic Test Stands and Pneumatic Test Stands (Int. Cl. 9).

First use on or about Nov. 4, 1966.

SN 265,217. James S. Christy, Jr., d.b.a. Soapy Sales Company, Maryland Heights, Mo. Filed Feb. 21, 1967.

### SOAPY SALES

**Class 4—Abrasives and Polishing Materials**

For Floor Wax (Int. Cl. 3).

**Class 6—Chemicals and Chemical Compositions**

For Fabric Softener, Borax, Household Bleach, Disinfectants, and Ammonia (Int. Cls. 3 and 5).

**Class 52—Detergents and Soaps**

For Soaps and Detergents for General Household Use, Soaps and Detergents for Laundry and Dish Washing, All Purpose Cleaners, Shampoo, Bowl Cleaners, and Scouring Powder (Int. Cl. 3).

First use Dec. 1, 1966.



SN 265,943. Weathermeasure Corporation, Sacramento, Calif., assignee of Aerojet-General Corporation, El Monte, Calif. Filed Mar. 6, 1967.



**Class 21—Electrical Apparatus, Machines, and Supplies**  
For Radio Transponders (Int. Cl. 9).

**Class 26—Measuring and Scientific Appliances**

For Meteorological Instruments—Namely, Remote Recording Rain Gages, Remote Recording Heated Snow Gages, Solar Radiation Recorders, Wind Vanes, Air Meters, Anemometers, Hygrothermographs, Barographs, Thermographs, and Psychrometers (Int. Cl. 9).

First use Nov. 9, 1965.

SN 269,910. Maxon Premix Burner Company, Inc., Muncie, Ind. Filed Apr. 24, 1967.



**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Valves for Air and for Gas and Liquid Fuels, and Controls for Such Valves (Int. Cl. 6).

**Class 34—Heating, Lighting, and Ventilating Apparatus**

For Gas Burners, Gas-Oil Burners, Air and Gas Mixing Devices and Blowers for Gas Burners, Gas Fired and Oil-Gas Fired Industrial Heaters, and Gas-Fired Industrial Heating Systems (Int. Cl. 11).

First use September 1951.

SN 274,489. Bishop Industries Inc., Union, N.J. Filed June 22, 1967.



**Class 40—Fancy Goods, Furnishings, and Notions**

For Eyelashes (Int. Cl. 26).

**Class 51—Cosmetics and Toilet Preparations**

For Hair Spray and Nail Extender and Nail Repair Kits (Int. Cl. 3).

First use May 25, 1967.

SN 278,556. William M. Karlyn, Peabody, Mass., assignee of Autoroll Decorated Products, Inc., Salem, Mass. Filed Aug. 18, 1967.



**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Printing Machines (Int. Cl. 7).  
First use at least as early as Mar. 29, 1963.

**Class 34—Heating, Lighting, and Ventilating Apparatus**

For Drying Ovens for Printed Material (Int. Cl. 11).  
First use at least as early as Apr. 31, 1964.

**Class 101—Advertising and Business**

For Printing Services (Int. Cl. 35).  
First use at least as early as January 1963.

SN 283,299. Hallmark Cards, Incorporated, Kansas City, Mo. Filed Oct. 25, 1967.



Owner of Reg. Nos. 107,653, 712,525, and others.

**Class 2—Receptacles**

For Cups; Plates; Nut Cups; Treat Bags; Merchandise Bags; and May Baskets, All Made of Paper (Int. Cls. 16 and 21).

First use June 15, 1945, on merchandise bags.

**Class 7—Cordage**

For Cord and Yarn Ties (Int. Cl. 22).  
First use Apr. 2, 1956.

**Class 9—Explosives, Firearms, Equipments, and Projectiles**

For Matches (Int. Cl. 34).  
First use June 15, 1960.

**Class 22—Games, Toys, and Sporting Goods**

For Face Masks and Monster Heads for Holidays and Children's Parties; Pen and Card Sets—Namely, Playing Cards, Score Pad and Pen (Int. Cls. 16 and 28).  
First use June 15, 1960, on face masks.

**Class 37—Paper and Stationery**

For Napkins; Coasters; Guest Towels; Table Covers; Dobbies; Place Mats; Party Goods Coordinated Sets—Namely, Invitations and Paper Table Settings, Including Table Covers, Napkins, and Place Cards; Luncheon Ensembles—Namely, Sets of Luncheon Napkins, Beverage Napkins and Coasters; Saucer Mats; Memorandum Pads; Score Pads; Address Labels; Booklets, Such as Memorandum, Christmas List Record and Address Booklets; and Scrap Books, All Made of Paper (Int. Cl. 16).

First use Mar. 8, 1954, on address labels.

**Class 38—Prints and Publications**

For Party Books, Containing Material Concerning Party Themes, Games, Decorations and Menus; Recipe Booklets; Books, Including Poetry, Biographies, Quotations, Children's Books, and the Like; and Picture Post Cards (Int. Cl. 16).  
First use Dec. 1, 1963, on post cards.

**Class 40—Fancy Goods, Furnishings, and Notions**

For Bows and Plastic Bow Pins; Gift Kits Containing Fabric, Thread, Instructions for Making Bags, Pillows, and Similar Articles (Int. Cl. 26).  
First use Apr. 2, 1956, on bows.

**Class 50—Merchandise Not Otherwise Classified**

For Cake Decorations, Such as Figures, Numerals, Flowers, and the Like; Anniversary Numerals—Namely, Decorative

Numerals for Cakes, Packages and Centerpieces; Home Decorations, Such as Flowers and Centerpieces; Party Favors and Decorations; Package Decorations, All Made of Paper; Gift Kits, Including Materials for Making Articles Such as Wallets, Bird Feeders, Tie Racks, and the Like; Decorative Wall Plaques; Paper Party Hats; and St. Patrick's Day Pins (Int. Cls. 16 and 20).  
First use Oct. 22, 1966, on package decorations.

SN 285,785. Shelby American Inc., Los Angeles, Calif. Filed Nov. 29, 1967.



**Class 19—Vehicles**

For Automobile Parts and Accessories—Namely, Roll Bars, Hoodpin Kits, Rear Quarter Window Kits, Wheels, Wheel Covers, Steering Wheels and Suspension Components, Including Shock Absorbers, Stabilizer Bars, Traction Bars and Front End Parts (Int. Cl. 12).  
First use Jan. 24, 1967.

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Automobile Parts and Accessories—Namely, Engine Assemblies, Cam Shaft Kits, Cylinder Heads, Valve Covers, Oil Pans, Oil Cooler Kits, Pistons and Piston Pins, Valves and Valve Springs, Fuel/Air Induction Units, Super Charger Kits, Intake Manifolds, Carburetor Linkage Kits, Exhaust Systems, Exhaust Headers, Transmissions, Clutch and Clutch Assemblies, Differential Units and Transaxles (Int. Cl. 12).  
First use Jan. 6, 1966.

**Class 26—Measuring and Scientific Appliances**

For Automobile Parts and Accessories—Namely, Electrical Tachometers, Oil Pressure Gauges and Oil Gauge Sending Units (Int. Cl. 9).  
First use Oct. 13, 1966.

**Class 31—Filters and Refrigerators**

For Automobile Parts and Accessories—Namely, Air Cleaners and Air Cleaner Covers (Int. Cl. 12).  
First use Feb. 28, 1966.

SN 286,788. Uni-Tech Chemical Manufacturing Company, Sun Valley, Calif. Filed Dec. 13, 1967.



**Class 2—Receptacles**

For Receptacles for Laboratory Reagents and Industrial Chemicals—Namely, Polyethylene Bottles and Polyethylene Lined Containers, Glass Cuvettes, and Containers for Samples Used in Photometric and Colorimetric Instruments (Int. Cls. 20 and 21).

**Class 6—Chemicals and Chemical Compositions**

For Laboratory Reagents Used in Diagnostic Testing; Chemical Laboratory Diagnostic Testing Kits; Industrial Chemicals—Namely, Organic and Inorganic Acids, Bases, and Salts, and Fine Biological Chemicals, Namely, Enzymes Such as Nucleotides and Nucleic Acids and Their Substrates (Int. Cl. 1).

**Class 18—Medicines and Pharmaceutical Preparations**

For Organic and Inorganic Chemicals and Biological Preparations for Human Ingestion Used in Connection With Medical Laboratory Clinical Testing Procedures (Int. Cl. 5).

**Class 34—Heating, Lighting, and Ventilating Apparatus**

For Electrically Heated Refractory Furnaces (Int. Cl. 11).

**Class 38—Prints and Publications**

For Scientific Bulletins and Reports in the Fields of Medical Laboratory Diagnostic Procedures and Industrial Laboratory Techniques (Int. Cl. 16).

First use in or before December 1959.

SN 289,556. Artistic Wire Products Company, Inc., Taftville, Conn. Filed Jan. 25, 1968.



**Class 2—Receptacles**

For Houseware and Giftware Items Made Principally of Wrought Iron and Metallic Screen—Namely, Wine Racks, Window Guard Planters, Napkin Holders, and Fruit Baskets (Int. Cl. 21).

**Class 34—Heating, Lighting, and Ventilating Apparatus**

For Houseware and Giftware Items Made Principally of Wrought Iron and Metallic Screen—Namely, Candle Holders (Int. Cl. 21).

First use October 1967.

SN 289,939. Sauna-Seura r.y., Vaskinlempi, Lanttasari, Finland. Filed Jan. 31, 1968.



Owner of Finnish Reg. No. 48,787, dated Oct. 5, 1966.

**Class 12—Construction Materials**

For Sauna Buildings and Parts Thereof (Int. Cl. 19).

**Class 34—Heating, Lighting, and Ventilating Apparatus**

For Heating Units for Saunas (Int. Cl. 11).

SN 291,657. Amerock Corporation, Rockford, Ill. Filed Feb. 23, 1968.



Owner of Reg. Nos. 381,468, 381,714, and 524,864.

**Class 12—Construction Materials**

For Corner Molding and Plastic Molding Strips (Int. Cl. 19).

First use September 1939.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Cabinet Door and Drawer Pulls and Knobs; Door Hinges; Drawer Slides; Desk and Chair Hardware; Shelf Hardware; Coat Hooks; Door Stops; Handrail Brackets; Pulls and Hinges for Vending Machines, Dishwashers, Washers, Ovens and Refrigerators; Rollers and Pulls for Sliding Patio Doors; Finger Lifts, Operators, and Counterbalancing Devices for Windows (Int. Cl. 6).

First use September 1939.

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Installation Tools for Pulls, Knobs, Hinges, Catches, Moldings and Drawer Slides; Adjusting Tools for Hinges; and Cutting Tools for Moldings (Int. Cl. 8).

First use September 1939.

**Class 25—Locks and Safes**

For Cabinet Door and Drawer Catches; Patio Door and Window Locks; Latches for Vending Machines, Dishwashers, and Ovens (Int. Cl. 6).

First use September 1939.



**Class 32—Furniture and Upholstery**

For Rotating Shelves (Int. Cl. 20).  
First use January 1958.

SN 293,092. Normark Corporation, Minneapolis, Minn. Filed Mar. 13, 1968.

**Normark**

**Class 22—Games, Toys, and Sporting Goods**

For Fishing Rods (Int. Cl. 28).

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Fishing and/or Hunting Knives (Int. Cl. 8).  
First use August 1967.

**SECTION 2**

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.  
A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

**Class 1—Raw or Partly Prepared Materials**

SN 276,968. Uguine Kuhlmann Societe Anonyme, Paris, France. Filed July 27, 1967.

**VOLKARIL**

Priority claimed under Sec. 44(d) on French Reg. No. 719,688, dated Feb. 8, 1967.  
For Synthetic Resins for Industry (Int. Cl. 1).

SN 280,967. Woburn Chemical Corp., Harrison, N.J. Filed Sept. 22, 1967.

**WOTHANE**

For Two-Part Package for Use in Compounding Mix-In-Place Polyurethane (Int. Cl. 1).  
First use June 20, 1967.

SN 290,855. Honeycomb Products, Inc., Miami, Fla. Filed Feb. 12, 1968.

**HMX**

For Resin Impregnated, Fibrous Paper Honeycomb Cellular Material, Sold in Bulk (Int. Cl. 16).  
First use on or about Nov. 15, 1967.

SN 302,570. The Product Machine Company, Bridgeport, Conn. Filed July 12, 1968.

**PROFLEX**

For Urethane in the Piece (Int. Cl. 17).  
First use June 21, 1968.

SN 303,121. Ulano Products Company, Inc., Brooklyn, N.Y. Filed July 19, 1968.

**7-11**

For Hand-Cut Plastic Film for Use in Making Stencils for Screen Printing (Int. Cl. 16).  
First use in or about 1954.

**Class 2—Receptacles**

SN 235,783. Keystone Casing Supply, Inc., Carnegie, Pa. Filed Jan. 4, 1966.

**JETNET**

For Tubular Netted Elastic Fabric Casing for Meat and Meat Products (Int. Cl. 22).  
First use June 16, 1965.

SN 278,488. Gulf States Paper Corporation, Tuscaloosa, Ala. Filed Aug. 17, 1967.

**E-Z OPENER**

Owner of Reg. Nos. 227,085, 735,109, and others.  
For Folded Paperboard Cartons (Int. Cl. 16).  
First use July 17, 1967.

SN 289,111. National Biscuit Company, New York, N.Y. Filed Jan. 18, 1968.

**EASY TAB**

Applicant disclaims any exclusive right to the word "Tab," apart from the mark as shown.  
For Flap Incorporated as Part of a Paper Box To Minimize Tearing the Package When Opening (Int. Cl. 16).  
First use June 27, 1966.

SN 293,846. Owens-Illinois, Inc., Toledo, Ohio. Filed Mar. 21, 1968.

**RAINBOW BOARD**

Applicant disclaims the word "Board" apart from the mark as shown.  
For Shipping Containers Formed From Corrugated Board (Int. Cl. 16).  
First use Feb. 27, 1968.

SN 296,966. Interstabella A.G., Graubunden, Switzerland. Filed Apr. 30, 1968.



Owner of Swiss Reg. No. 222,466, dated Jan. 9, 1967.  
For Barrels and Bottles Made of Plastic (Int. Cls. 20 and 21).

SN 298,325. Ex-Cell-O Corporation, Detroit, Mich. Filed May 16, 1968.

**XLO-PAK**

For Paper Bottles and Paper Cartons, and Their Related Parts (Int. Cl. 16).  
First use on or about Oct. 1, 1967.

SN 300,168. Brown Company, New York, N.Y. Filed June 11, 1968.



Owner of Reg. No. 824,064.  
For Paperboard Plates, Cups, and Baking Cups (Int. Cl. 21).  
First use on or about Apr. 1, 1966.

SN 300,428. Consolidated Papers, Inc., Wisconsin Rapids, Wis. Filed June 14, 1968.

**COMCORE**

For Paperboard Tubes or Cores (Int. Cl. 16).  
First use March 1967.

SN 303,097. Craft Corporation, Long Island City, N.Y. Filed July 19, 1968.

**CART-ALL**

For Paper Shopping Bags and Other Paper Bags (Int. Cl. 16).  
First use Apr. 29, 1965.

SN 303,570. J. Cheln & Company, Burlington, N.J. Filed July 25, 1968.

**TWEAKIES**

For Wastebaskets, Bread Boxes, Canisters, Pantry Food Containers, Tissue Boxes, and Hampers (Int. Cls. 20 and 21).  
First use Dec. 27, 1967.

**Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks**

SN 295,950. J. C. Penney Company, New York, N.Y. Filed Apr. 18, 1968.

**FLEXSIDE**

For Luggage (Int. Cl. 18).  
First use April 1963.

SN 296,092. Atlantic Products Corporation, Trenton, N.J. Filed Apr. 22, 1968.

**TUDOR**

For Hand Luggage (Int. Cl. 18).  
First use July 25, 1967.

**Class 5—Adhesives**

SN 280,760. William Max Bullock, d.b.a. Spectape, Bluffton, S.C. Filed Sept. 20, 1967.

**SPECTAPE**

For Pressure Sensitive Adhesive Tape (Int. Cl. 17).  
First use Sept. 1, 1967.

**Class 6—Chemicals and Chemical Compositions**

SN 274,217. Kewanee Oil Company, d.b.a. The Harshaw Chemical Company, Cleveland, Ohio. Filed June 19, 1967.

**DC-700**

For Chromium Electroplating Baths and Chemical Addition Agents for Use in Chromium Electroplating Baths (Int. Cl. 1).  
First use Apr. 17, 1967.

SN 274,716. Dacar Chemical Products Company, Pittsburgh, Pa. Filed June 26, 1967.

**DAX-KOTE**

For Rust-Proofing and Corrosion-Preventing Compounds (Int. Cl. 2).  
First use Nov. 30, 1966.

SN 275,249. Charles H. Elbreder, d.b.a. Credo Company, Fenton, Mo. Filed July 3, 1967.

**CREDO-CLAVE**

For Make-Up Water Additive for Use in Autoclaves To Prevent Corrosion and Rust During Pressure Steam Sterilization (Int. Cl. 2).  
First use Jan. 31, 1967.

SN 278,593. Givaudan Corporation, Clifton, N.J. Filed Aug. 18, 1967.

**FIXOLIDE**

For Aromatic Chemical for Use in the Manufacture of Perfumes, Soaps, and Cosmetics (Int. Cl. 1).  
First use June 23, 1967.

SN 278,806. Magnaflex Corporation, Chicago, Ill. Filed Aug. 22, 1967.

**ALLTEMP**

For Calibrated Ceramic Coatings To Be Used in Stress Analysis, and Thinners Therefor (Int. Cl. 1).  
First use December 1955.

SN 279,392. Michael P. Glime, d.b.a. Sedco, Royal Oak, Mich. Filed Aug. 30, 1967.

**STA-CLOR 97**

For Swimming Pool Chlorine (Int. Cl. 5).  
First use May 10, 1965.

SN 280,046. Givaudan Corporation, Clifton, N.J. Filed Sept. 11, 1967.

**VERSALIDE**

Owner of Reg. No. 633,303.  
For Polycyclic (Synthetic) Musk Used in the Manufacture of Perfumes, Soaps, and Cosmetics (Int. Cl. 1).  
First use Feb. 10, 1955.

SN 281,372. Givaudan Corporation, Clifton, N.J. Filed Sept. 28, 1967.

**GETONAL**

For Aromatic Chemical and Perfume Composition for Use in the Manufacture of Perfumes, Soaps, and Cosmetics (Int. Cl. 1).  
First use June 14, 1967.



SN 283,437. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. Filed Oct. 26, 1967.

## FOLIMAT

Owner of German Reg. No. 783,909, dated May 3, 1962. For Systemic Acaricide and Insecticide for Agricultural Use (Int. Cl. 5).

SN 286,025. The Nitragin Company, Inc., Milwaukee, Wis. Filed Dec. 1, 1967.

## NITRA-COAT

For Protective and Sticking Agent for Use With Inoculants for Legume Seeds (Int. Cl. 1).  
First use Dec. 9, 1958.

SN 286,414. Calgon Corporation, Pittsburgh, Pa. Filed Dec. 7, 1967.

## BUROSIL

For Phosphate-Silicate Boiler Compound for Use in Steam Low Pressure Boilers To Prevent the Formation of Boiler Scale (Int. Cl. 1).  
First use Sept. 20, 1944.

SN 286,701. Milchem Incorporated, Houston, Tex. Filed Dec. 11, 1967.

## CARBO-GEL

For Chemical Additive for Drilling Mud—Namely, an Organophilic Polymer Having Utility as a Suspending Agent for Oil-Base Muds (Int. Cl. 1).  
First use Nov. 7, 1967.

SN 291,463. MacAndrews & Forbes Company, Camden, N.J. Filed Feb. 19, 1968.



Owner of Reg. Nos. 84,018 and 612,290. For Licorice Extract and Derivatives Thereof for General Use in the Industrial Arts (Int. Cl. 1).  
First use June 10, 1967.

SN 296,617. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Apr. 26, 1968.

## B.U.N.-TEL

For Diagnostic Reagents for Laboratory Use in Determining Blood Urea Nitrogen (Int. Cl. 1).  
First use Apr. 12, 1968.

## Class 7—Cordage

SN 295,240. Lauren Manufacturing Company, Cuyahoga Falls, Ohio. Filed Apr. 9, 1968.

## PYTHON

For Resilient Roping and Strapping, Capable of Maintaining Constant Tension Under Load (Int. Cl. 22).  
First use May 10, 1967.

## Class 9—Explosives, Firearms, Equipments, and Projectiles

SN 263,857. Ute Mountain Supply Company, Grand Junction, Colo. Filed Feb. 2, 1967.

## METAL MATCH

For Stick of Metal for Use in Igniting Campfires and the Like (Int. Cl. 11).  
First use Jan. 10, 1967.

SN 299,699. Saunders-Roe & Nuclear Enterprises Limited, Yeovil, Somerset, England. Filed June 4, 1968.

## TRILUX

Owner of British Reg. No. 912,314, dated July 21, 1967. For Sights for Firearms and Guns (Int. Cl. 13).

SN 302,608. Firearms Import & Export Corp., Miami, Fla. Filed July 12, 1968.



For Hand Gun (Int. Cl. 13).  
First use Mar. 2, 1967.

## Class 10—Fertilizers

SN 270,503. Occidental Petroleum Corporation, Los Angeles, Calif. Filed May 2, 1967.

## BEST-TABS

Owner of Reg. Nos. 736,988, 792,777, and others. For Fertilizers for House Plants and Plants Grown in Contained Areas (Int. Cl. 1).  
First use on or about Feb. 25, 1966.

SN 272,059. Hudson Lumber Company, San Leandro, Calif. Filed May 22, 1967.



The drawing is lined for the color green. For Soil Additive (Int. Cl. 1).  
First use Mar. 22, 1967.

SN 280,198. AG Marketing Corporation, West Lafayette, Ind. Filed Sept. 13, 1967.

## MULTRAPLEX

For Fertilizer Supplements (Int. Cl. 1).  
First use Aug. 12, 1967.

## Class 12—Construction Materials

SN 266,602. U.S. Plywood-Champion Papers Inc., New York, N.Y. Filed Mar. 13, 1967.

## HEATHERWOOD

For Wood, Lumber, and Plywood Products, i.e., Decorative and Utility Hardboards for Use in the Construction, Building, and Furniture Fields (Int. Cl. 19).  
First use on or about Feb. 16, 1967.

SN 270,921. Intercon Research, Incorporated, Indianapolis, Ind. Filed May 8, 1967.



For Masonry Walls and Partitions—Namely, Blocks and Blinders for Constructing Said Walls and Partitions (Int. Cl. 19).  
First use June 1, 1966.

SN 278,807. Kyowa Gas Chemical Industry Co., Ltd., Chuo-ku, Tokyo, Japan, assignee of Marubeni-Iida (America), Inc., Los Angeles, Calif. Filed Aug. 22, 1967.

## KYOWALITE

For Methyl Methacrylate Sheets for Use as Panels in Interior Building Construction, Sign Boards, Lighting Fixtures, and Displays (Int. Cl. 19).  
First use Aug. 4, 1967; in commerce Aug. 4, 1967.

SN 280,316. Harsco Corporation, Wormleysburg, Pa. Filed Sept. 14, 1967.



For Solid Ceramic Pipe (Int. Cl. 19).  
First use Aug. 15, 1967.

SN 291,405. L. E. Johnson Products, Inc., Elkhart, Ind. Filed Feb. 19, 1968.



The mark is lined for shading only. For Pocket Door Frames (Int. Cl. 19).  
First use Sept. 30, 1964.

## Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 247,937. Albert Lins, Zurich, Switzerland. Filed June 13, 1966.



Owner of Swiss Reg. No. 187,094, dated July 4, 1961. For Sanitary and Plumbing Equipment, Especially Temperature-Controlled Mixing Valves for Hot and Cold Water, Filter Inserts for Use With Such Mixing Valves, and Seals for Such Mixing Valves; Temperature-Controlled Safety Valves for Pressurized Vessels, Especially Boilers; and Temperature-Controlled Radiator Valves—Namely, Automatic Regulators for the Radiators of Central Heating Systems (Int. Cl. 9).

SN 272,745. Bernard E. Powers, Fitchburg, Mass. Filed May 31, 1967.

## COPPER CORNER

Applicant disclaims the word "Copper" apart from the mark as shown. For Household, Hardware and Decorative Articles—Namely, Bottles, Vases, Jugs, and Trays (Int. Cl. 21).  
First use Jan. 23, 1967.

SN 277,829. Fujiwara Manufacturing Co., Ltd., Ota-ku, Tokyo, Japan. Filed Aug. 8, 1967.

## TLV

Owner of Japanese Reg. No. 459,875, dated Feb. 10, 1955; and U.S. Reg. No. 821,457. For Steam Traps (Int. Cl. 7).

SN 278,594. The Hale Company, Tulsa, Okla. Filed Aug. 18, 1967.

## RING-SEAL

For Seats for Butterfly Valves (Int. Cl. 6).  
First use Dec. 4, 1963.

SN 283,530. JU-EL Products, Inc., Rockford, Ill. Filed Oct. 27, 1967.

## INSERT-A-MOLD

For Gelatin Molds With Center Inserts (Int. Cl. 21).  
First use Sept. 12, 1967.

SN 283,901. Kalthoff, Incorporated, Knoxville, Tenn. Filed Nov. 1, 1967.



The drawing is lined for the color yellow. For Portable Sanitary Toilet (Int. Cl. 11).  
First use Jan. 1, 1967.



SN 236,805. Barton Products Corporation, West Bend, Wis. Filed Dec. 13, 1967.

**midbar**

The drawing is lined for the color green.  
For Custom Made Screw Machine Products (Int. Cl. 6).  
First use Oct. 13, 1967; May 5, 1967, in a different form.

SN 291,202. Standard Screw Company, Hartford, Conn. Filed Feb. 15, 1968.

**MOENIQUE**

Owner of Reg. Nos. 615,077 and 797,877.  
For Plumbing Mixtures (Int. Cl. 6).  
First use Jan. 12, 1968.

SN 292,063. American Standard Inc., New York, N.Y. Filed Feb. 28, 1968.

**ACCENT**

For Toilet Seats, Covers and Hinges (Int. Cl. 11).  
First use on or about July 1, 1967.

SN 292,066. American Standard Inc., New York, N.Y. Filed Feb. 28, 1968.

**SCEPTER**

For Toilet Seats, Covers and Hinges (Int. Cl. 11).  
First use on or about July 1, 1967.

SN 292,333. Ace-Sycamore, Inc., Sycamore, Ill. Filed Mar. 4, 1968.

**SCREW PLUGS**

Owner of Reg. No. 746,767.  
For Screw Anchors (Int. Cl. 6).  
First use Sept. 13, 1960.

SN 304,038. Du Pont of Canada Limited, Montreal, Quebec, Canada. Filed Aug. 1, 1968.

**SCLAIR**

For Pipe, Tubing, Lines and Conduit, and Fittings Therefor, Made Wholly or in Part of Synthetic Resinous Plastic Material (Int. Cl. 17).  
First use Jan. 8, 1968; in commerce Jan. 8, 1968.

## Class 14—Metals and Metal Castings and Forgings

SN 274,737. Sulzer Brothers Limited, Winterthur, Switzerland. Filed May 22, 1967.

**PROTASUL**

Priority claimed under Sec. 44(d) on Swiss Reg. No. 222,379, dated Dec. 22, 1966.  
For Corrosion Resistant Alloys for Use in Implants and Artificial Limbs (Int. Cl. 6).

SN 283,983. Chemalloy Company, Inc., Philadelphia, Pa. Filed Nov. 2, 1967.

**TI-LOY**

For Scrap Metal Composed Primarily of Titanium for Use in the Manufacture of Steel and Ferro Alloys (Int. Cl. 6).  
First use June 1964.

SN 293,329. Union Carbide Corporation, New York, N.Y. Filed Mar. 14, 1968.

**CHROMSOL**

For Ferrochrome Alloy for Addition to Molten Metal (Int. Cl. 6).  
First use on or about Feb. 21, 1968.

SN 303,379. Foote Mineral Co., Exton, Pa. Filed July 23, 1968.

**MINI-PIGS**

For Low Silicon Ferrosilicon Alloy for Use in Production of Cast Iron and Steel Products (Int. Cl. 6).  
First use July 5, 1968.

## Class 15—Oils and Greases

SN 147,205. Humble Oil & Refining Company, Houston, Tex. Filed June 19, 1962.

**ENCOLUBE**

Owner of Reg. No. 712,759.  
For Refined, Semirefined and Unrefined Oils Made From Petroleum, Both With and Without Admixture of Animal, Vegetable or Mineral Substances, for Illuminating, Burning, Power, Fuel, and Lubricating Purposes, and Lubricating Greases (Int. Cl. 4).  
First use at least Nov. 1, 1961.

SN 282,967. Adam Cook's Sons, Inc., Linden, N.J. Filed Oct. 20, 1967.



The drawing is lined for the color orange.  
For Lubricating Oils and Greases and Metal Working Lubricants (Int. Cl. 4).  
First use Oct. 1, 1960.

SN 285,660. Hallmark Cards, Incorporated, d.b.a. Ambassador Cards, Kansas City, Mo. Filed Nov. 27, 1967.



The word "Candles" is disclaimed apart from the mark as shown.  
For Candles (Int. Cl. 4).  
First use Nov. 9, 1967.

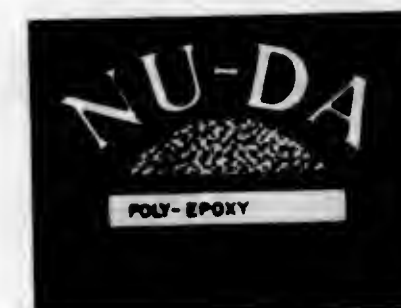
## Class 16—Protective and Decorative Coatings

SN 272,766. Waterlac Finish Company, Inc., Danvers, Mass. Filed May 31, 1967.

**SNAPDRI**

For Enamel Paint (Int. Cl. 2).  
First use October 1966.

SN 279,396. Indianapolis Paint and Color Co., Indianapolis, Ind. Filed Aug. 30, 1967.



No claim is made to exclusive rights in the words "Good Goods" except as used in the environment depicted in the drawing. The drawing is lined for the colors yellow and red.  
Owner of Reg. Nos. 613,418, 613,772, and 625,617.  
For Protective and/or Decorative Coating Materials, Each Consisting of an Epoxy Resin and a Liquid Vehicle Offered in Separate Containers and To Be Mixed Just Prior to Application (Int. Cl. 2).  
First use Apr. 10, 1957.

SN 280,283. West Chemical Products, Inc., Long Island City, N.Y. Filed Sept. 13, 1967.



Owner of Reg. Nos. 555,422 and 571,926.  
For Preservative in the Nature of a Varnish for Wood, Tile, Linoleum, and Magnesite Floors; and Varnish-Like Preparation for Finishing and Treating Floors (Int. Cl. 2).  
First use Feb. 13, 1967.

SN 287,074. Kelley Technical Coatings, Inc., Louisville, Ky. Filed Dec. 18, 1967.

**ZERON**

For Swimming Pool Coatings (Int. Cl. 2).  
First use Nov. 23, 1960.

SN 287,082. Benjamin Moore & Co., New York, N.Y. Filed Dec. 18, 1967.

**UTILAC**

Owner of Reg. No. 223,984.  
For Lacquers, Paint Enamels, and Varnish Enamels (Int. Cl. 2).  
First use on or about Aug. 31, 1926.

## Class 17—Tobacco Products

SN 257,089. Rothmans of Pall Mall Ltd., Zurich, Switzerland. Filed Oct. 24, 1966.

**ROTHMANS ROYAL**

Owner of Swiss Reg. No. 216,301, dated Feb. 15, 1966; and U.S. Reg. Nos. 578,697 and 763,783.  
For Cigarettes (Int. Cl. 34).

SN 279,882. Valor Tobacco Company Inc., Zurich, Switzerland. Filed Sept. 7, 1967.

**VALOR**

Owner of Swiss Reg. No. 175,818, dated May 19, 1959.  
For Cigarettes; Tobacco for Pipes and Cigars; and Filters for Cigarettes (Int. Cl. 34).

SN 279,883. Valor Tobacco Company Inc., Zurich, Switzerland. Filed Sept. 7, 1967.

**SILIMAGNUM**

Owner of Swiss Reg. No. 223,391, dated Feb. 28, 1967.  
For Cigarettes; Tobacco for Pipes and Cigars; and Filters for Cigarettes (Int. Cl. 34).

SN 281,142. Valor Tobacco Company Inc., Zurich, Switzerland. Filed Sept. 25, 1967.

**GALLANT**

Owner of Swiss Reg. No. 169,926, dated Apr. 11, 1958.  
For Cigarettes; Tobacco for Pipes and Cigars; and Filters for Cigarettes (Int. Cl. 34).

SN 301,323. The American Tobacco Company, New York, N.Y. Filed June 25, 1968.

**DOUBLE EIGHT**

For Cigarettes (Int. Cl. 34).  
First use June 18, 1968.

SN 303,478. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 24, 1968.



For Chewing Tobacco (Int. Cl. 34).  
First use at least as early as July 1, 1919.

SN 303,479. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 24, 1968.



For Chewing Tobacco (Int. Cl. 34).  
First use at least as early as Feb. 20, 1901.

SN 303,480. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 24, 1968.



For Chewing Tobacco (Int. Cl. 34).  
First use at least as early as July 1, 1919.



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OFFICIAL GAZETTE

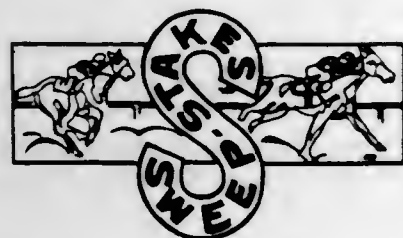
NOVEMBER 12, 1968

SN 303,481. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 24, 1968.

**SCHNAPPS**

For Chewing Tobacco (Int. Cl. 34).  
First use at least as early as July 20, 1895.

SN 303,484. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 24, 1968.



For Chewing Tobacco (Int. Cl. 34).  
First use at least as early as Dec. 21, 1901.

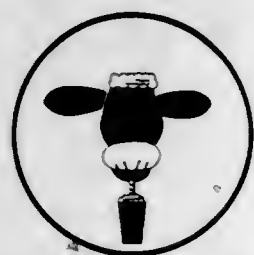
SN 303,486. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed July 24, 1968.

**OUR ADVERTISER**

For Smoking Tobacco (Int. Cl. 34).  
First use at least as early as June 5, 1896.

**Class 18—Medicines and Pharmaceutical Preparations**

SN 290,168. W. R. Grace & Co., New York, N.Y. Filed Feb. 2, 1968.



For Medicated Food Supplement for Fattening Beef Cattle (Int. Cl. 5).  
First use June 21, 1967.

SN 291,153. Hoffmann-La Roche Inc., Nutley, N.J. Filed Feb. 15, 1968.

**ROFENAID**

For Veterinary Antibacterial and Antiprotozoal Agent (Int. Cl. 5).  
First use Feb. 8, 1968.

SN 291,204. Sternco Industries, Inc., Harrison, N.J. Filed Feb. 15, 1968.

**MYCINATE**

For Medications To Control Bacterial and Fungal Infections in Tropical Aquarium Fish (Int. Cl. 5).  
First use Jan. 10, 1968.

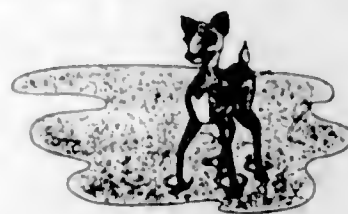
SN 292,348. Colgate-Palmolive Company, New York, N.Y. Filed Mar. 4, 1968.

**MAGNAVESS**

For Laxative (Int. Cl. 5).  
First use Jan. 30, 1968.

**Class 19—Vehicles**

SN 268,394. Fawn Corporation, Howe, Ind. Filed Apr. 5, 1967.



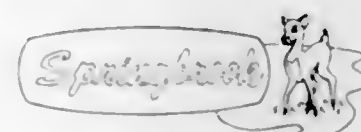
For Travel Trailers, Camping Trailers, Camper Bodies for Pick Up Trucks, Mobile Homes, and Truck Tractors (Int. Cl. 12).  
First use May 1966.

SN 268,395. Fawn Corporation, Howe, Ind. Filed Apr. 5, 1967.

**LITTLE DEER**

For Travel Trailers, Camping Trailers, Camper Bodies for Pick Up Trucks, Mobile Homes, and Truck Tractors (Int. Cl. 12).  
First use September 1966.

SN 268,396. Fawn Corporation, Howe, Ind. Filed Apr. 5, 1967.



For Travel Trailers, Camping Trailers, Camper Bodies for Pick Up Trucks, Mobile Homes, and Truck Tractors (Int. Cl. 12).  
First use October 1966.

SN 282,989. The Dayton Steel Foundry Company, Dayton, Ohio. Filed Oct. 20, 1967.

**TRI-LITE**

For Spring Suspensions for Semi-Trailers and the Like, and Parts Thereof (Int. Cl. 12).  
First use Aug. 2, 1967.

SN 283,741. Velocidad, Inc., d.b.a. Fiberfab, Santa Clara, Calif. Filed Oct. 30, 1967.

**THE JAMAICAN**

For Automobiles and Automobile Bodies (Int. Cl. 12).  
First use Oct. 18, 1967.

SN 286,488. LeRoy R. Anderson, d.b.a. The Kar-Du Cart Company, West Chicago, Ill. Filed Dec. 8, 1967.

**RAKE N' ROLL**

For Folding Leaf Cart (Int. Cl. 12).  
First use Aug. 24, 1967.

SN 295,031. Industrial Shipping Company Limited, Mahoney Bay, Nova Scotia, Canada. Filed Apr. 5, 1968.

**BLUEJACKET**

For Sailboats (Int. Cl. 12).  
First use June 30, 1967; in commerce Oct. 11, 1967.

NOVEMBER 12, 1968

U. S. PATENT OFFICE

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SN 295,960. Schwinn Bicycle Company, Chicago, Ill. Filed Apr. 18, 1968.

**"APPLE KRATE"**

For Bicycles (Int. Cl. 12).  
First use Mar. 8, 1968.

SN 295,961. Schwinn Bicycle Company, Chicago, Ill. Filed Apr. 18, 1968.

**"LEMON PEELER"**

For Bicycles (Int. Cl. 12).  
First use Mar. 8, 1968.

**Class 20—Linoleum and Oiled Cloth**

SN 291,039. Congoleum-Nairn Inc., Kearny, N.J. Filed Feb. 14, 1968.

**MONTEBELLO**

For Plastic Coverings of the Solid Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs and Tiles (Int. Cls. 19 and 27).  
First use Jan. 31, 1968.

SN 291,040. Congoleum-Nairn Inc., Kearny, N.J. Filed Feb. 14, 1968.

**PALISADE**

For Plastic Coverings of the Solid Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs and Tiles (Int. Cls. 19 and 27).  
First use Jan. 31, 1968.

SN 291,041. Congoleum-Nairn Inc., Kearny, N.J. Filed Feb. 14, 1968.

**PATINA**

For Plastic Coverings of the Solid Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs and Tiles (Int. Cls. 19 and 27).  
First use Jan. 31, 1968.

SN 291,042. Congoleum-Nairn Inc., Kearny, N.J. Filed Feb. 14, 1968.

**TOWN & COUNTRY**

For Plastic Coverings of the Solid Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs and Tiles (Int. Cls. 19 and 27).  
First use Jan. 31, 1968.

SN 291,044. Congoleum-Nairn Inc., Kearny, N.J. Filed Feb. 14, 1968.

**NAVARA**

For Plastic Coverings of the Solid Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs and Tiles (Int. Cls. 19 and 27).  
First use Jan. 31, 1968.

**KID-CUSHIONED**

For Plastic Coverings of the Solid Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs and Tiles (Int. Cls. 19 and 27).  
First use Jan. 31, 1968.

SN 291,046. Congoleum-Nairn Inc., Kearny, N.J. Filed Feb. 14, 1968.

**KID-PROOF**

For Plastic Coverings of the Solid Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs and Tiles (Int. Cls. 19 and 27).  
First use Jan. 31, 1968.

**Class 21—Electrical Apparatus, Machines, and Supplies**

SN 262,885. Picker Corporation, White Plains, N.Y., by change of name from Picker X-Ray Corporation, White Plains, N.Y. Filed Jan. 19, 1967.

**THIN-BRITE**

For Illuminator for Radiographs (Int. Cl. 9).  
First use Nov. 9, 1966.

SN 271,006. Zenith Radio Corporation, Chicago, Ill. Filed May 8, 1967.

**ZENITH**

Owner of Reg. Nos. 164,341, 828,809, and others.  
For Multiple Capacitor Units; Integrated Circuits; and Antenna Rotors and Controls Therefor and Parts Thereof (Int. Cl. 9).  
First use at least as early as February 1949.

SN 274,823. Motorola, Inc., Franklin Park, Ill. Filed June 26, 1967.

**MOTRAN**

Owner of Reg. No. 706,237.  
For Radio Receiving Apparatus and Radio Transmitting Apparatus Used for Two-Way Voice Communication for Mobile and Fixed Station Installations (Int. Cl. 9).  
First use in or about September 1964.

SN 275,453. North and Judd Manufacturing Company, New Britain, Conn. Filed July 6, 1967.



Applicant disclaims the words "Division of North & Judd" and "Witch-Cuttington."  
For Ignition Switches, Blower Switches, Horn Switches, and Toggle Switches (Int. Cl. 9).  
First use on or before Apr. 5, 1955.



SN 279,058. Fedtro, Inc., Rockville Centre, N.Y. Filed Aug. 25, 1967.

## EXTEND-O-CABLE

Owner of Reg. Nos. 845,808 and 855,476.  
For Telephone Extension Cords (Int. Cl. 9).  
First use Aug. 10, 1967.

SN 279,581. Superior Continental Corporation, Hickory, N.C., by change of name from Superior Cable Corporation, Hickory, N.C. Filed Sept. 1, 1967.

## WATER-BLOC

For Low Loss Flooding Compound Applied to Electrical Aerial Drop Wires, Communications Wire and Cable, and Insulated Electrical Cable (Int. Cl. 9).  
First use June 25, 1965.

SN 283,238. Electro Scientific Industries, Inc., Portland, Oreg. Filed Oct. 24, 1967.

## KELVIN KLIPS

Applicant makes no claim to exclusive rights in the word "Klips." Owner of Reg. No. 734,342.  
For Multiple Connector for Making Two Separate Connections to Each Junction of a Two-Junction Impedance Element (Int. Cl. 9).  
First use Aug. 17, 1960.

SN 283,239. Electro Scientific Industries, Inc., Portland, Oreg. Filed Oct. 24, 1967.

## KELVIN KLAMPS

Applicant makes no claim to exclusive rights in the word "Klamps." Owner of Reg. No. 734,341.  
For Multiple Connector for Making Two Separate Connections to Each Junction of a Two-Junction Impedance Element (Int. Cl. 9).  
First use Aug. 22, 1960.

SN 283,265. Mulberry Metal Products, Inc., Union, N.J. Filed Oct. 24, 1967.



The mark comprises the stylized letters "MM," one of which is superimposed over the other.  
For Electrical Outlet Boxes and Covers, and Weatherproof Covers Therefor (Int. Cl. 9).  
First use 1962.

SN 285,055. Pacific Handy Cutter, Inc., South El Monte, Calif. Filed Nov. 16, 1967.

## PACIFIC HANDY FLARE

Applicant disclaims the words "Handy Flare" when used apart from the mark as shown. Owner of Reg. No. 716,434.  
For Battery Operated Flashing Lights (Int. Cl. 9).  
First use Apr. 13, 1967.

SN 288,451. Sanders Associates, Inc., Nashua, N.H. Filed Jan. 9, 1968.



For Antennas, Printed Circuit Boards, Oscillators, Switches, and Video Detectors (Int. Cl. 9).  
First use May 31, 1967.

SN 291,255. Emerson Electric Co., St. Louis, Mo. Filed Feb. 18, 1968.

## COLLEGIATE

For Commercial Fluorescent Lighting Fixtures (Int. Cl. 11).  
First use Jan. 18, 1968.

SN 292,332. Vernitron Corporation, New York, N.Y. Filed Mar. 4, 1968.

## ENUNCIATOR

For Electromechanical Readout Devices for Converting Electrical Signals Into Visual Messages in the Form of Symbols, Such as a Number, Color, or Word (Int. Cl. 9).  
First use June 30, 1967.

SN 295,467. Motorola, Inc., Franklin Park, Ill. Filed May 17, 1968.

## QUASAR

For Television Receivers (Int. Cl. 9).  
First use Nov. 2, 1967.  
Subj. to Intf. with SN 291,184.

SN 303,579. Pedco, Inc., West Newton, Mass. Filed July 25, 1968.

## STOP THIEF!

For Automobile Theft Alarms (Int. Cl. 9).  
First use June 1966.

SN 304,861. General Aviation Electronics, Inc., Indianapolis, Ind. Filed Aug. 12, 1968.



For Aviation Electronics Equipment—Namely, Radios Used in Navigation and Communication, and Microphones (Int. Cl. 9).  
First use at least as early as Feb. 9, 1968.

## Class 22—Games, Toys, and Sporting Goods

SN 274,347. Rempel Mfg. Co., Inc., West Point, Miss. Filed June 20, 1967.

## GERONIMO

For Equine Figures Adapted To Be Ridden by Children (Int. Cl. 28).  
First use Apr. 7, 1967.

SN 280,695. Constantine W. Colburn, d.b.a. Con Surfboards, Santa Monica, Calif. Filed Sept. 19, 1967.

## CONTROL

For Non-Slip Surfboard Coating for Better Foot Gripping Quality (Int. Cl. 28).  
First use Mar. 25, 1967.

SN 291,026. Colt's Inc., Hartford, Conn. Filed Feb. 14, 1968.  
Owner of Reg. No. 795,431.

## PYTHON

For Toy Guns, Pistols, Rifles, and Holster Sets (Int. Cl. 28).  
First use January 1968.

SN 291,027. Colt's Inc., Hartford, Conn. Filed Feb. 14, 1968. Owner of Reg. No. 834,948.

## DIAMONDBACK

For Toy Guns, Pistols, Rifles, and Holster Sets (Int. Cl. 28).  
First use January 1968.

SN 291,028. Colt's Inc., Hartford, Conn. Filed Feb. 14, 1968. Owner of Reg. No. 406,461.

## COMMANDER

For Toy Guns, Pistols, Rifles, and Holster Sets (Int. Cl. 28).  
First use January 1968.

SN 291,031. Colt's Inc., Hartford, Conn. Filed Feb. 14, 1968. Owner of Reg. No. 264,898.

## THE WOODSMAN

For Toy Guns, Pistols, Rifles, and Holster Sets (Int. Cl. 28).  
First use January 1968.

SN 292,611. David L. Pransky & Sons, Philadelphia, Pa. Filed Mar. 6, 1968.

## PRO-FASHION

Owner of Reg. Nos. 770,878 and 795,603.  
For Golf Bags, Golf Clubs, and Golf Balls (Int. Cl. 28).  
First use July 5, 1965.

SN 292,856. Mattel, Inc., Hawthorne, Calif. Filed Mar. 11, 1968.

## KIDDLE

Owner of Reg. Nos. 814,385 and 842,799.  
For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).  
First use Feb. 1, 1968.

SN 303,644. Mattel, Inc., Hawthorne, Calif. Filed July 26, 1968.

## ANIMIDDLE KIDDLES

Owner of Reg. Nos. 814,385, 842,798, and others.  
For Dolls, Doll Clothing, and Doll Accessories, Including Dolls in Animal Costumes (Int. Cl. 28).  
First use June 19, 1968.

SN 303,646. Mattel, Inc., Hawthorne, Calif. Filed July 26, 1968.

## DANCY

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).  
First use June 19, 1968.

## Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 245,280. American Home Products Corporation, New York, N.Y. Filed May 10, 1966.

## GIFT 'EM WITH A GADGET

For Tongs, Peelers, Can Openers, Whips, Can Piercers and Bottle Openers; Pizza Cutters, Bottle Stoppers, Melon Ballers, Pastry Crimpers, and Food Baster (Int. Cls. 8 and 21).  
First use on or about Jan. 10, 1966.



Owner of French Reg. No. 478,808, dated Mar. 6, 1959 (Seine); Natl. Inst. No. 122,032.  
For Roller-Towel Dispensing Cabinets for Cloth Towels (Int. Cl. 21).

SN 271,969. Slater Steel Industries Limited, d.b.a. N. Slater Company, Hamilton, Ontario, Canada. Filed May 19, 1967.

## SLAPAC

Priority claimed under Sec. 44(d) on Canadian application filed Dec. 30, 1966; Reg. No. 157,485, dated July 5, 1968.  
For Impact Dampers—Namely, Devices for the Suppression and Dampening of Vibration in Aerially Suspended Wire Cables (Int. Cl. 7).

SN 271,970. Slater Steel Industries Limited, d.b.a. N. Slater Company, Hamilton, Ontario, Canada. Filed May 19, 1967.



Priority claimed under Sec. 44(d) on Canadian application filed Dec. 30, 1966; Reg. No. 157,486, dated July 5, 1968.  
For Impact Dampers—Namely, Devices for the Suppression and Dampening of Vibration in Aerially Suspended Wire Cables (Int. Cl. 7).

SN 271,999. Align-Rite, Incorporated, San Francisco, Calif. Filed May 22, 1967.



For Automotive Frame and Unit Body Straightening Machines and Attachments (Int. Cl. 7).  
First use December 1959.

SN 273,506. Donald F. Kroener, Palo Alto, Calif. Filed June 9, 1967.

## über

For Hand Tool Holder (Int. Cl. 8).  
First use May 23, 1967.

SN 279,037. American Home Products Corporation, New York, N.Y. Filed Aug. 25, 1967.

## TEAK ISLE

For Kitchen Tools—Namely, Spoons, Turners, Servers, Spatulas, Ladles, Vegetable Mashers, Forks, and Strainers (Int. Cls. 8 and 21).  
First use on or about Feb. 1, 1967.



SN 283,086. Robert Bailey & Associates, Inc., Des Plaines, Ill. Filed Oct. 23, 1967.

## MOTOR VALET

Applicant disclaims the word "Motor" as a part of the mark for purposes of registration only and not in any derogation of any common law rights it may have therein.

For Coin-Operated and Manually Controlled Automatic Car Wash Installation, and Parts Thereof (Int. Cl. 7).  
First use Oct. 15, 1967.

SN 283,758. Atlas Supply Company, Springfield, N.J. Filed Oct. 31, 1967.

# ATLAS

Owner of Reg. Nos. 595,677, 651,901, 773,356, and others.  
For Motor Vehicle Power Washer (Int. Cl. 7).  
First use Aug. 11, 1967.

SN 284,038. Roof Manufacturing Company, Pontiac, Ill. Filed Dec. 1, 1967.



The word "Mowers" is disclaimed apart from the mark as shown.  
For Riding Lawn Mowers (Int. Cl. 7).  
First use on or before Sept. 1, 1967.

SN 284,509. Continental Manufacturing Co., St. Louis, Mo. Filed Dec. 8, 1967.



For Mop Wringers and Combination Mop Buckets and Wringers (Int. Cl. 7).  
First use Nov. 1, 1967.

SN 287,551. Harry I. Hansen, d.b.a. Nordic Saw and Tool Manufacturers, Turlock, Calif. Filed Dec. 26, 1967.

## NORDIC

For Saws, Saw Blades and Attachments; and Wood Working Tools—Namely, Bits, Shapers, Planers, and Routers (Int. Cls. 7 and 8).  
First use on or about Apr. 22, 1963.

SN 292,013. Poor & Company, Chicago, Ill. Filed Feb. 27, 1968.

## KENSINITE

Owner of Reg. No. 242,308.  
For Concaves for Gyratory Crushers, Jaw Plates for Jaw Crushers, Conveying Chain, Elevator Buckets, Pulverizer Hammers, Gears, Pinions, Sprockets, Rollers, Power-Shovel Parts, Dipper Teeth, Traction Devices for Power Shovels, Links for the Trackways for Self-Laying-Track Tractors, Ball and Rod Mill Wearing Parts (Int. Cl. 7).  
First use Jan. 5, 1927.

SN 292,979. Thimmonier & Cie, Lyon, France. Filed Mar. 11, 1968.

## SAC-UP

For Sewing Machines (Int. Cl. 7).  
First use 1953; in commerce March 1955.

SN 293,367. Eli Lilly and Company, Indianapolis, Ind. Filed Mar. 15, 1968.

## SHOW 'N TELL

For Lawn Spreaders (Int. Cl. 7).  
First use Dec. 4, 1967.

SN 294,459. Gatto Machinery Development Corporation, Farmingdale, N.Y. Filed Mar. 29, 1968.

## CAT-A-CUTTER

Owner of Reg. No. 822,790.  
For Plastics Extrusion Handling Machinery (Int. Cl. 7).  
First use May 8, 1962.

SN 294,507. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Mar. 29, 1968.

## HEARTH & HOME

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).  
First use Feb. 15, 1968.

SN 294,614. Gatto Machinery Development Corporation, Farmingdale, N.Y. Filed Apr. 1, 1968.



Owner of Reg. No. 822,790.  
For Plastics Extrusion Handling Machinery (Int. Cl. 7).  
First use May 8, 1962.

SN 294,729. Elm Industry Company, Limited, Katsushikaku, Tokyo, Japan. Filed Apr. 2, 1968.

## ELM

For Pencil Sharpeners, Manual and Electrical (Int. Cl. 16).  
First use April 1959; in commerce October 1963.

SN 296,435. Litton Business Systems, Inc., New York, N.Y. Filed Apr. 24, 1968.

## JETSTAR

For Typewriters (Int. Cl. 16).  
First use Mar. 28, 1968.

SN 296,436. Litton Business Systems, Inc., New York, N.Y. Filed Apr. 24, 1968.

# Tiara

For Typewriters (Int. Cl. 16).  
First use Mar. 29, 1968.

SN 296,568. O & R Engines, Inc., Los Angeles, Calif. Filed Apr. 25, 1968.

## ORLINE

For Engines, and Engine-Operated Equipment—Namely, Engine-Operated Portable Hedge Trimmers, Engine-Operated Portable Brush Cutters, Engine-Operated Portable Chain Saws, and Engine Power Kits for Bicycles (Int. Cls. 7 and 12).  
First use on or about Nov. 15, 1966, on engines and engine-power kits for bicycles.

SN 298,295. Universal American Corporation, Springfield, Mass. Filed May 16, 1968.

## VAN-O-LUXE

For Degreasing and Cleaning Tanks for Engines, Machine Parts, and the Like (Int. Cl. 7).  
First use Oct. 16, 1967.

SN 299,281. Moline Tool Company, Moline, Ill. Filed May 29, 1968.

## HOLE HOG

For Machine Tools—Namely, Boring and Drilling Machines (Int. Cl. 7).  
First use on or before July 1, 1910.

SN 301,005. Auto Laundry Equipment Sales Company, Northbrook, Ill. Filed June 21, 1968.

## PERFECTO

For Mechanical Car Washing Apparatus and Parts Thereof (Int. Cl. 7).  
First use August 1962.

SN 303,378. Eversharp, Inc., Milford, Conn. Filed July 23, 1968.

## THE PROTECTOR

For Safety Razors, Safety Razor Blades, and Dispensers Thereof (Int. Cl. 8).  
First use July 16, 1968.

SN 303,879. Wencor, Inc., Miami, Fla. Filed July 30, 1968.

## ORFIT

For Hand Tools for the Installation of O-Ring Seals (Int. Cl. 8).  
First use Oct. 7, 1965.

SN 304,181. Autocase Corporation, Richmond, Va. Filed Aug. 2, 1968.

## AUTOCASE

For Packaging Machinery (Int. Cl. 7).  
First use at least as early as Aug. 10, 1966.

## Class 24—Laundry Appliances and Machines

SN 286,452. W. D. Taylor, Oakwood, Tex. Filed Dec. 7, 1967.



For Stand for Holding Irons (Int. Cl. 21).  
First use Nov. 1, 1967.

## Class 26—Measuring and Scientific Appliances

SN 250,766. Ponder & Best, Hollywood, Calif. Filed July 21, 1966.

## MIRROR-MATIC

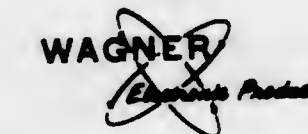
For Light Meter Built Into Cameras (Int. Cl. 9).  
First use on or about Mar. 1, 1966.

SN 268,565. American Contractors, Inc., Mohnton, Pa. Filed Apr. 7, 1967.



Applicant disclaims the representation of an abrasive wheel apart from the mark as shown.  
For Electronic Sensing Device Responsive to Depth of Cut for Maintaining Constant Peripheral Speed of an Abrasive Wheel (Int. Cl. 9).  
First use May 19, 1966.

SN 270,019. Delmer W. Wagner, d.b.a. Wagner Electronic Products, Terrebonne, Oreg. Filed Apr. 25, 1967.



The words "Electronic Products" are disclaimed apart from the mark as shown.  
For Electronic Moisture Detector (Int. Cl. 9).  
First use February 1966.

SN 278,337. Wisconsin Electrical Manufacturing Company, Inc., New Berlin, Wis. Filed Aug. 15, 1967.

## WEM

The mark comprises the stylized letters "WEM."  
For Automation Control Systems, Including Devices for Measuring, Recording, and Indicating Physical Quantities Such as Material Amounts in Product Batch Systems and the Like (Int. Cl. 9).  
First use May 17, 1967.

SN 283,248. Geoscience Incorporated, Cambridge, Mass. Filed Oct. 24, 1967.

## GEOLOK

For Phase Lock Induced Polarization Receiver for Measuring the Amplitude of an Input Signal, for Use in Geophysical Exploration, and Components Associated Therewith (Int. Cl. 9).  
First use July 10, 1967.

SN 284,326. Sig Fred Stempel, New York, N.Y. Filed Nov. 7, 1967.

## OPTIMEX

For Ophthalmic Prescription Lenses (Int. Cl. 9).  
First use June 8, 1966.



SN 285,987. Brittain Industries, Inc., Torrance, Calif. Filed Dec. 1, 1967.

## DUO-MATIC

For Aircraft Yaw and Roll Control System Utilizing Gyroscopic and Servo Mechanisms (Int. Cl. 9).  
First use Oct. 31, 1967.

SN 287,771. Textron, Inc., Belmont, Calif. Filed Dec. 28, 1967.

## SEARCH

For Electronic Testing and Indicating Unit Designed To Test the Mechanical and Electrical Systems and Components of Diesel Locomotives (Int. Cl. 9).  
First use Dec. 2, 1964.

SN 290,374. Air Reduction Company, Incorporated, New York, N.Y. Filed Feb. 8, 1968.

## SNUGSIDE

For Protective Goggles (Int. Cl. 9).  
First use Dec. 28, 1967.

SN 290,898. Shoup Registration Systems International, Inc., West Chester, Pa. Filed Feb. 12, 1968.

## FOTOFY

For Cameras (Int. Cl. 9).  
First use on or about Apr. 1, 1967.

SN 291,069. Hach Chemical Company (Delaware corporation), Ames, Iowa, assignee of Hach Chemical Company (Iowa corporation), Ames, Iowa. Filed Feb. 14, 1968.

## COLIVER

For Coliform Bacteria Test Kits, Comprising Test Containers or Tubes Equipped With Presumptive and Confirmatory Reagent Preparations (Int. Cl. 9).  
First use November 1960.

SN 291,377. Fujitsu Limited, Kawasaki, Japan. Filed Feb. 19, 1968.

## FANUC

Owner of Japanese Reg. No. 547,823, dated Feb. 5, 1960.  
For Numerical Control Systems for Programming and Automatically Controlling Machine Tools (Int. Cl. 9).

SN 291,378. Fujitsu Limited, Kawasaki, Japan. Filed Feb. 19, 1968.

## FACOM

Owner of Japanese Reg. No. 472,365, dated Oct. 27, 1955.  
For Electronic Computers and Data Processing Equipment, Components Thereof and Parts Thereof; and Associated Equipment—Namely, Magnetic Tape Units, Memory Storage Devices, Line Printers, Card Sorters, Readers and Punchers, Tape Readers and Punchers, Optical Character Readers and Terminal Writers Used With Electronic Computers, Electronic Switching Systems Used in Data Exchange and Processing Systems and Devices (Int. Cl. 9).

SN 291,741. Hach Chemical Company (Delaware corporation), Ames, Iowa, assignee of Hach Chemical Company (Iowa corporation), Ames, Iowa. Filed Feb. 23, 1968.

## FALLING STREAM

For Turbidimeters (Int. Cl. 9).  
First use September 1962.

SN 291,774. Renault International, Ltd., Fitchburg, Mass. Filed Feb. 23, 1968.

## BOUTIQUE

For Sunglasses (Int. Cl. 9).  
First use in or about November 1967.

SN 292,041. Pyro-Serv Instruments, Inc., North Arlington, N.J. Filed Dec. 11, 1967.

## TRUE-CHECK

For Slide Wire Potentiometer (Int. Cl. 9).  
First use October 1967.

SN 292,635. Tiffen Optical Co., Roslyn Heights, N.Y. Filed Mar. 6, 1968.

## HCE

Owner of Reg. No. 435,846.  
For Lens Shades, Photographic Cameras, and Parts Thereof (Int. Cl. 9).  
First use about June 1930.

SN 293,066. F. E. White Co., Inc., New York, N.Y. Filed Mar. 12, 1968.

## OPTI-CRAFT

For Microscope (Int. Cl. 9).  
First use Oct. 25, 1967.

SN 294,424. Trifari, Krussman & Fishel, Inc., New York, N.Y. Filed Mar. 28, 1968.



Owner of Reg. Nos. 357,174, 736,387, and others.  
For Sunglasses, Including Carrying Pouches Therefor (Int. Cl. 9).  
First use Mar. 6, 1968; Dec. 20, 1937, as to the mark "Trifari."

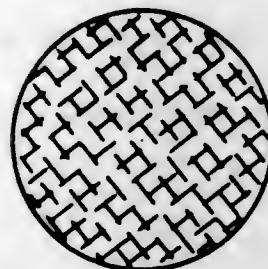
SN 304,644. American Parts Company, Inc., Houston, Tex. Filed Aug. 8, 1968.

## VAL-U-TEST

For Automotive Tune-Up Equipment—Namely, Combination Dwell Meters and Tachometers; Ignition Testers; Combination Alternator, Generator and Regulator Testers; Ohmmeters; and Power Timing Lights (Int. Cl. 9).  
First use June 7, 1968.

## Class 28 — Jewelry and Precious-Metal Ware

SN 290,350. The Traub Company, Detroit, Mich. Filed Feb. 5, 1968.



The drawing is lined for the color orange.  
For Fine Jewelry (Int. Cl. 14).  
First use Jan. 2, 1968.

SN 296,471. Textron Inc., Providence, R.I. Filed Apr. 24, 1968.

## ROMANTICS

Owner of Reg. Nos. 731,529 and 850,994.  
For Bracelets, Including Watch Bracelets (Int. Cl. 14).  
First use Apr. 10, 1968.

## Class 29 — Brooms, Brushes, and Dusters

SN 303,866. Montclair Imports Inc., Westbury, N.Y. Filed July 30, 1968.

## CLAIRMONT

Owner of Reg. No. 830,573.  
For Brushes for the Hair (Int. Cl. 21).  
First use July 15, 1968.

## Class 30 — Crockery, Earthenware, and Porcelain

SN 301,877. Hellsberg's Diamond Shops, Inc., Kansas City, Mo. Filed July 3, 1968.



Owner of Reg. No. 852,718.  
For Dinnerware Produced From China, Porcelain, and the Like (Int. Cl. 21).  
First use Apr. 11, 1968.

## Class 31 — Filters and Refrigerators

SN 276,484. Sternco Industries, Inc., Harrison, N.J. Filed July 20, 1967.

## SPE-DEE-FLO

For Filters for Home Aquarium Tanks (Int. Cl. 11).  
First use Dec. 6, 1966.

SN 285,649. Chattanooga Pharmacal Co., Chattanooga, Tenn. Filed Nov. 27, 1967.



Owner of Reg. Nos. 675,045 and 781,161.  
For Electrically Operated Chilling Cabinets for Cooling Therapeutic Compresses (Int. Cl. 11).  
First use Mar. 15, 1963.

SN 290,706. Amicon Corporation, Lexington, Mass. Filed Feb. 9, 1968.



For Filter Membranes Used in Dialysis, Reverse-Osmosis and Ultrafiltration and Like Processes (Int. Cl. 11).  
First use Apr. 17, 1967.

## Class 32 — Furniture and Upholstery

SN 273,606. Classic Furniture Inc., Fort Smith, Ark. Filed June 12, 1967.



For Wood-Grained Plastic Occasional Furniture and Wood-Grained Plastic Paneling for Occasional Furniture (Int. Cl. 20).  
First use at least as early as Jan. 27, 1967.

SN 274,647. Peerless Pressed Metal Corp., Watertown, Mass. Filed June 22, 1967.



For Swingable Seats for Counter Use (Int. Cl. 20).  
First use January 1952.

SN 291,623. Merillat Woodworking Company, Adrian, Mich. Filed Feb. 21, 1968.

## PRESTIQUE

For Plastic Material Formed in the Shape of a Finished Product, e.g., a Cabinet Door or a Drawer Front (Int. Cl. 20).  
First use Apr. 28, 1967.

SN 295,645. Jordan Marsh Company, Boston, Mass. Filed Apr. 15, 1968.



"Lady Jordan" is a fanciful expression and does not identify any known individual. Owner of Reg. No. 360,268.  
For Mattresses (Int. Cl. 20).  
First use Aug. 27, 1962.  
Subj. to Intf. with SN 284,883.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 245,964. Radio Frequency Company, Inc., Medfield, Mass. Filed May 18, 1966.

## RFC

For High Frequency Induction Furnaces and Components Thereof—Namely, High Frequency Generators and Water Recirculators (Int. Cls. 9 and 11).  
First use at least as early as 1950.



SN 263,354. Correct Air Corporation, Willoughby, Ohio. Filed Jan. 26, 1967.



The word "Conditioner" is disclaimed apart from the mark as shown.  
For Industrial Air Conditioners (Int. Cl. 11).  
First use Dec. 28, 1959.

SN 272,283. Liquid Carbonic Corporation, Chicago, Ill. Filed May 24, 1967.



For Welding Wire (Int. Cl. 6).  
First use Dec. 5, 1966.

SN 283,917. Motor Wheel Corporation, Lansing, Mich. Filed Nov. 1, 1967.



For Ranges, Cooking Stoves, and Range Hoods for Use in Mobile Homes (Int. Cl. 11).  
First use May 16, 1967.

SN 285,437. The Majestic Company, Inc., Huntington, Ind. Filed Nov. 22, 1967.

### MONTICELLO

For Prefabricated Electric Fireplaces for Domestic Use (Int. Cl. 11).  
First use Nov. 6, 1967.

SN 286,312. AB Hakanassons Industrier, Amal, Sweden. Filed Dec. 6, 1967.

### ECETT

Owner of Swedish Reg. No. 117,685, dated Sept. 30, 1966.  
For Incinerator Toilets With Electrical Combustion Chambers (Int. Cl. 11).

SN 290,590. Dura-Vent Corporation of California, Redwood City, Calif. Filed Feb. 8, 1968.

### FRANCISCAN

For Prefabricated Gas Log Fireplace (Int. Cl. 11).  
First use Jan. 26, 1967.

SN 291,249. Charles C. Clausen, Jr., San Ardo, Calif. Filed Feb. 16, 1968.

### THE CUB PIT

Applicant disclaims the word "Pit" apart from the mark as shown, reserving all common law rights therein.  
For Barbecue Cooking Grills (Int. Cl. 11).  
First use Sept. 21, 1966.

SN 292,813. Preway Inc., Wisconsin Rapids, Wis. Filed Mar. 8, 1968.

### AIRBELT

For Humidifiers (Int. Cl. 11).  
First use Feb. 12, 1968.

SN 292,986. Vitreous Steel Products Company, Cleveland, Ohio. Filed Mar. 11, 1968.

### VITREO

Owner of Reg. Nos. 190,584, 555,006, and 795,036.  
For Gas Cooking Ranges (Int. Cl. 11).  
First use at least as early as Feb. 13, 1968.

SN 293,181. United Dryer Corporation of America, Iberia, Ohio. Filed Mar. 13, 1968.

### UNI-DRY

For Grain Dryers (Int. Cl. 11).  
First use May 13, 1967.

SN 293,217. Air Reduction Company, Incorporated, New York, N.Y. Filed Mar. 14, 1968.

### CODE-ARC

For Arc Welding Electrodes (Int. Cl. 9).  
First use May 3, 1967.

SN 293,346. Belson Manufacturing Company, Inc., North Aurora, Ill. Filed Mar. 15, 1968.

### CHAR-WOOD

For Camp Stoves and Grills (Int. Cl. 11).  
First use Apr. 15, 1959.

SN 293,529. King Refrigerator Corporation, Glendale, N.Y. Filed Mar. 18, 1968.

### MINI-KITCHEN

For Household Range, Sink, and Refrigerator Combinations (Int. Cl. 11).  
First use Dec. 14, 1967.

SN 293,727. Loran L. Laughlin, Salt Lake City, Utah. Filed Mar. 20, 1968.

### COIN-A-COOK

For Coin-Operated Gas Grills (Int. Cl. 11).  
First use Feb. 20, 1968.

### Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 293,119. The Gates Rubber Company, Denver, Colo. Filed Mar. 13, 1968.

### Flexogen

For Hose Manufactured Substantially From Elastomeric Material Which May Be Reinforced for Material Conveyancing (Int. Cl. 17).  
First use May 22, 1967.

SN 295,360. Mobat Tire & Rubber Co., Inc., Livermore, Calif. Filed Apr. 10, 1968.

### MOBAT

For Rubber Vehicle Tires (Int. Cl. 12).  
First use Sept. 22, 1966.

SN 296,606. Zenith Radio Corporation, Chicago, Ill. Filed Apr. 25, 1968.

### ZENITH

For Drive Belts and Gaskets of Rubber and of Other Materials (Int. Cls. 7 and 17).  
First use at least as early as 1942.

SN 301,301. Amerace Corporation, New York, N.Y. Filed June 25, 1968.

### AMERACE

For Rubber and Plastic Hoses and Non-Metallic Tires (Int. Cls. 12 and 17).  
First use at least as early as September 1966.

SN 304,637. The Toyo Rubber Industry Co., Ltd., Nishi-ku, Osaka, Japan. Filed Aug. 8, 1968.

### UNISAFE

Owner of Japanese Reg. No. 773,335, dated Mar. 8, 1968.  
For Tires (Int. Cl. 12).

### Class 36 — Musical Instruments and Supplies

SN 267,244. Rene Grinan, d.b.a. R.G.G. Records, Hoboken, N.J. Filed Mar. 21, 1967.



Applicant disclaims the words "Recording International" apart from the mark as shown.  
For Phonograph Records (Int. Cl. 9).  
First use Oct. 30, 1966.

SN 283,891. Rice P. Hager, d.b.a. Kay-Y Enterprises, Los Angeles, Calif. Filed Nov. 1, 1967.



Applicant disclaims the word "Enterprises" apart from the mark as shown.  
For Phonograph Records (Int. Cl. 9).  
First use October 1953.

SN 289,012. Dampits, Inc., New York, N.Y. Filed Jan. 17, 1968.

### DAMPIT

For Small Humidifiers To Be Placed Inside of Musical Instruments (Int. Cl. 15).  
First use Feb. 1, 1967.

SN 304,281. The Fred Gretsch Company, Inc., Brooklyn, N.Y. Filed Aug. 5, 1968.

### BLACKHAWK

For Guitars (Int. Cl. 15).  
First use July 22, 1968.

SN 304,545. Gulbransen Company, Melrose Park, Ill. Filed Aug. 7, 1968.

### BREMEN

For Pianos (Int. Cl. 15).  
First use on or about Apr. 24, 1968.

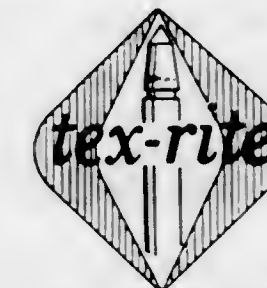
### Class 37 — Paper and Stationery

SN 270,224. Carco, Incorporated, Detroit, Mich. Filed Apr. 28, 1967.

### CARCO

For Marking Devices—Namely, Brush Pens and Other Pens With Bristle or Felt Nibs (Int. Cl. 16).  
First use before January 1946.

SN 270,225. Carco, Incorporated, d.b.a. Tex-Rite Products Co., Detroit, Mich. Filed Apr. 28, 1967.



The drawing is lined for the color red. Owner of Reg. No. 429,849.  
For Marking Devices—Namely, Brush Pens and Other Pens With Bristle or Felt Nibs (Int. Cl. 16).  
First use before Apr. 1, 1965.

SN 271,616. P. H. Glatfelter Company, Spring Grove, Pa. Filed May 16, 1967.

### OLD FORGE VELVETPRINT

The word "Velvetprint" is disclaimed apart from the mark as shown. Owner of Reg. No. 690,914.  
For Book, Drawing, Music, Lithographic, and Coated Papers (Int. Cl. 16).  
First use May 3, 1967.

SN 271,617. P. H. Glatfelter Company, Spring Grove, Pa. Filed May 16, 1967.

### OLD FORGE VELVETLITH

Owner of Reg. No. 690,914.  
For Book, Drawing, Music, Lithographic, and Coated Papers (Int. Cl. 16).  
First use Dec. 13, 1966.

SN 273,885. Freeman & Gossage, Inc., San Francisco, Calif. Filed June 14, 1967.

### INTRINSICS

Owner of Reg. No. 825,328.  
For Gift Wrapping Paper, Clipboards, and File Folders (Int. Cl. 16).  
First use about Feb. 1, 1965.



SN 286,449. U.S. Plywood-Champion Papers Inc., Hamilton, Ohio. Filed Dec. 1, 1967.

## CHAMFOLD

Owner of Reg. No. 574,352.  
For Printing Papers—Namely, Envelope Papers (Int. Cl. 16).  
First use Jan. 3, 1961.

SN 287,002. British Pens Limited, Smethwick, Birmingham, England. Filed Dec. 15, 1967.

## PEDIGREE

Owner of U.S. Reg. No. 131,502.  
For Pens and Pencils (Int. Cl. 16).  
First use Jan. 18, 1919; in commerce May 25, 1920.

SN 288,217. Janssen Products Company, Charlottesville, Va. Filed Jan. 5, 1968.

## DATASTRIP

For Record Keeping Systems—Namely, Record Forms, Record Form Holders, and Binders (Int. Cl. 16).  
First use July 13, 1967.

SN 301,599. Wyomissing Corporation, Reading, Pa. Filed June 28, 1968.

## Talvex

For Adhesive Face Stocks—Namely, Paper to Which an Adhesive Can Be Applied (Int. Cl. 16).  
First use June 13, 1968.

SN 302,673. Deering Milliken, Inc., New York, N.Y. Filed July 15, 1968.

*Visi-rol*

Owner of Reg. No. 848,200.  
For Heat Shrinkable Polyethylene Film for Use in Wrapping Containers (Int. Cl. 16).  
First use on or about June 24, 1968.

## Class 38—Prints and Publications

SN 273,886. Gamco Industries, Inc., d.b.a. Creative Visuals, Big Spring, Tex. Filed June 14, 1967.



For Projection Transparencies Used for Educational and Instructional Purposes With an Overhead Projector (Int. Cl. 16).  
First use Mar. 1, 1967.

SN 277,645. Fabri-Tek Incorporated, Minneapolis, Minn. Filed Aug. 7, 1967.

## FABRI-TEK

For Technical Manuals, Instruction Manuals, Text Books, and Newsletters (Int. Cl. 16).  
First use on or about Dec. 4, 1966.

SN 277,969. Clio Press, Santa Barbara, Calif. Filed Aug. 10, 1967.



For Books and Periodical Publications Such as Bibliographies, Indexes, Bulletins, Abstracts, Monographs, and Occasional Papers in the Field of History, Political Science, Library Science, and the Social Sciences (Int. Cl. 16).  
First use Feb. 2, 1964.

SN 280,694. Chilton Company, Philadelphia, Pa. Filed Sept. 19, 1967.

## DISTRIBUTION

Owner of Reg. Nos. 424,711 and 797,505.  
For Periodical Publication in the Nature of a Business or Trade Magazine (Int. Cl. 16).  
First use May 13, 1967.

SN 282,038. American Institute of Certified Public Accountants, New York, N.Y. Filed Oct. 9, 1967.

## AICPA

Owner of Reg. Nos. 724,330, 726,823, and 728,667.  
For Books and Pamphlets on Technical Subjects of Interest to the Accounting Profession (Int. Cl. 16).  
First use September 1961.

SN 284,501. Clyde Lee Priest, d.b.a. Educational Systems Publishing Company, Newport Beach, Calif. Filed Nov. 9, 1967.



Applicant disclaims the design of the world apart from the mark as shown.  
For Pre-Recorded Magnetic Tape Used for Educational Instruction (Int. Cl. 9).  
First use Nov. 2, 1963.

SN 289,203. The Miller Publishing Company, Minneapolis, Minn. Filed Jan. 19, 1968.

## DAIRY INDUSTRIES PREVIEW

For Annual Trade Magazine Consisting of Product and Service Information and Inquiry Cards (Int. Cl. 16).  
First use Dec. 1, 1962.

SN 289,732. Tower Press, Inc., Danvers, Mass. Filed Jan. 26, 1968.

## WOMEN'S COMPANION

For Bimonthly Magazine (Int. Cl. 16).  
First use in or about August 1964.

SN 290,260. Conal, Inc., Lansing, Mich. Filed Feb. 5, 1968.

## THE INSIDE STRAIGHT

For Periodical Publication in the Nature of a Newsletter (Int. Cl. 16).  
First use at least as early as Nov. 26, 1967.

SN 291,730. Shure Brothers Incorporated, Evanston, Ill. Filed Feb. 23, 1968.

## SOUND SCENE

For Newsletter (Int. Cl. 16).  
First use Jan. 31, 1968.

SN 292,108. Kennedy Sinclair, Inc., Montclair, N.J. Filed Feb. 28, 1968.

## YOUR MONEY AND YOUR FUTURE

For Booklets Prepared Periodically for Distribution by Others (Int. Cl. 16).  
First use Feb. 15, 1968.

SN 299,185. Lancer Books, Inc., New York, N.Y. Filed May 28, 1968.

## MAGNUM

For Paperback Books (Int. Cl. 16).  
First use Nov. 24, 1967.

## Class 39—Clothing

SN 296,217. U.S. Industries, Inc., New York, N.Y. Filed Apr. 22, 1968.

## SWITCH-A-LEG

For Hosiery and Underwear (Int. Cl. 25).  
First use Mar. 7, 1968.

SN 303,135. Bayard Shirt Corporation, New York, N.Y. Filed July 19, 1968.

## BANTRY BAY

For Ladies' and Girls' Shirts and Dresses (Int. Cl. 25).  
First use July 12, 1968.

## Class 40—Fancy Goods, Furnishings, and Notions

SN 288,346. Transia Ltd., New York, N.Y. Filed Apr. 4, 1967.

## MAJESTY

For Eyelashes (Int. Cl. 26).  
First use Mar. 29, 1966.  
Subj. to Intf. with SN 280,078.

SN 273,311. Sackner Products, Inc., Grand Rapids, Mich. Filed June 7, 1967.

## HOT LINE

For Cord and Beading for Upholstery and Millinery (Int. Cl. 26).  
First use on or about Jan. 7, 1967.

SN 274,720. De Weese, Inc., Los Angeles, Calif. Filed June 26, 1967.

*De Weese  
De Seewers*

Owner of Reg. Nos. 588,476 and 832,564.  
For Breast Pads for Swimwear (Int. Cl. 26).  
First use Jan. 25, 1957.

## Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 289,242. Handler Textile Corp., New York, N.Y. Filed Jan. 22, 1968.

## HANKI-PANK

For Non-Woven Fabrics To Be Made Into Disposable Draperies, Dresses, Sport Clothes, Shirts, Underwear, and the Like (Int. Cl. 24).  
First use Sept. 14, 1967.

SN 291,106. Stretchnit, Inc., Allentown, Pa. Filed Feb. 14, 1968.

## STRESTER

For Stretch Fabrics for Men's, Women's, and Children's Bathing Suits, Sportswear, and the Like (Int. Cl. 24).  
First use Dec. 1, 1967.

SN 296,225. West Point-Pepperell, Inc., West Point, Ga. Filed Apr. 22, 1968.

## FLOOR-FAST

For Carpet Backing (Int. Cl. 27).  
First use Apr. 9, 1968.

SN 302,564. M. Fortunoff of Westbury Corp., Westbury, N.Y. Filed July 12, 1968.

## 2ND CHOICE

For Textile Rugs (Int. Cl. 27).  
First use on or about May 2, 1968.

## Class 43—Thread and Yarn

SN 295,957. Roselon Yarns, Inc., Philadelphia, Pa. Filed Apr. 18, 1968.

## MARVEL

Owner of Reg. No. 69,118.  
For Yarns (Int. Cl. 23).  
First use Apr. 15, 1968.



SN 298,318. Glen Raven Mills, Inc., Glen Raven, N.C. Filed Apr. 23, 1968.

**KRINKLON**

For Yarn of Natural or Synthetic Fibers or Combinations Thereof (Int. Cl. 23).  
First use Feb. 1, 1968.

**Class 44—Dental, Medical, and Surgical Appliances**

SN 240,051. Warren Jewett, Orange, Conn. Filed Dec. 5, 1966.

**JECT-ETTE**

For Medical Instrument, in Particular, a Portable Unit for Infusing Intravenously and Otherwise Fluids and Liquids Into an Animal or Human Being, and a Battery Set Associated Therewith (Int. Cl. 10).  
First use July 2, 1966.

SN 273,843. H. W. Andersen Products, Inc., Oyster Bay, N.Y. Filed June 14, 1967.

**ANPROLENE**

Owner of Reg. No. 815,273.  
For Sterilization Apparatus and Parts Thereof, Comprising a Metal Container, a Cover Therefor, Plastic Liner Bags, Bag Closures, and Gas Dispensers (Int. Cl. 11).  
First use Apr. 30, 1965.

SN 281,293. Jacuzzi Research, Inc., Berkeley, Calif. Filed Sept. 27, 1967.



Owner of Reg. No. 807,314.  
For Hydrotherapy Equipment—Namely, Tubs, Pools, and Associated Items (Int. Cl. 10).  
First use on or about June 30, 1967.

SN 292,659. J. Sklar Mfg. Co., Inc., Long Island City, N.Y. Filed Mar. 7, 1968.



Applicant disclaims the words "A" and "Product" apart from the mark as shown, and without waiving common law rights therein. Owner of Reg. No. 649,405.  
For Surgical Instruments, and Pressure and Suction Apparatus (Int. Cl. 10).  
First use at least as early as 1953.

SN 295,602. Abbott Laboratories, North Chicago, Ill. Filed Apr. 15, 1968.

**TETRASORB**

For Diagnostic Laboratory Test Kit for Measuring Serum Thyroxine (Int. Cl. 9).  
First use Mar. 14, 1965.

SN 295,859. Surgitube Products Corporation, Bronx, N.Y. Filed Apr. 17, 1968.

**JET SPEED**

For Tubular Gauze Bandages, in Particular, Bandages Enclosing Body Members (Int. Cl. 5).  
First use Apr. 25, 1962.

SN 303,230. Riegel Textile Corporation, New York, N.Y. Filed July 22, 1968.

**FLOCEL**

For Cellulosic Fibrous Materials, Sold as a Component for Sanitary Napkins (Int. Cl. 5).  
First use May 20, 1968.

**Class 45—Soft Drinks and Carbonated Waters**

SN 282,772. C & M Distributors, Jersey City, N.J. Filed Oct. 18, 1967.



Applicant disclaims the representation of the map of Puerto Rico and the term "Cola Champagne" apart from the mark as shown. The word "Isla" means "Island."  
For Cola Flavored Carbonated Soft Drinks (Int. Cl. 32).  
First use Aug. 2, 1967.

**Class 46—Foods and Ingredients of Foods**

SN 255,287. Allen Baron, d.b.a. Abco Laboratories, Walnut Creek, Calif. Filed Sept. 28, 1966.



For Seasonings Which Include One or More Members of the Group Comprising Spices, Herbs, and Dried Vegetables; Binders; Spices and Spice Blends; Food Colors; Tenderizers; Flavorings Which Include One or More Members of the Group Comprising Extractives of Spices and Herbs, Monosodium Glutamate, Hydrolyzed Vegetable Protein, Salt, and Sugar; Curing and Pickling Compounds; Phosphates; Food Preservatives; Emulsifiers; Food Antioxidants; Soup and Gravy Bases; Food Gelatin Compounds; and Sauces for Meats, Fish, and Vegetables (Int. Cls. 1 and 30).  
First use December 1965.

SN 257,481. General Mills, Inc., Minneapolis, Minn. Filed Oct. 28, 1966.

**"ARISE"**

Owner of Reg. No. 793,741.  
For Liquid Breakfast Drink Intended To Substitute for the Usual Breakfast Meal (Int. Cl. 29).  
First use July 26, 1966.

SN 262,106. American Dairy Queen Corporation, Minneapolis, Minn. Filed Jan. 9, 1967.



For Coffee, Tea, and Hot Chocolate (Int. Cl. 30).  
First use Jan. 15, 1964.

SN 281,871. M. De Rosa, Inc., Mount Vernon, N.Y. Filed Oct. 5, 1967.

**POPE**

Owner of Reg. Nos. 282,636 and 286,431.  
For Canned Vegetables—Namely, Tomatoes, Peas, Beans, Zucchini, and Escarole; Canned Tomato Paste, Tomato Puree, Soups, Clam Sauce, Lobster Sauce, Shrimp Sauce, Sauce Italiano, Consisting of Tomato Sauce Blended With Spices and Garlic, Olives, and Flavored Bread Crumbs; Canned and Bottled Edible Vegetable Oils; Bottled Eggplant, Vinegar, and Peppers (Int. Cls. 29 and 30).  
First use July 1, 1914.

SN 284,118. John Wagner & Sons, Inc., Ivyland, Pa. Filed Nov. 3, 1967.



Owner of Reg. Nos. 605,922, 833,756, and others.  
For Candy (Int. Cl. 30).  
First use Sept. 1, 1966.

SN 284,632. Dolphin Seafoods, Inc., Cleveland, Ohio. Filed Nov. 13, 1967.



The words "Dolphin" and "Seafoods" are disclaimed apart from the mark as shown.  
For Frozen Breaded Fish Fillets (Int. Cl. 29).  
First use on or about Oct. 3, 1967.

SN 284,877. John Lecroy & Son, Inc., Camden, N.J. Filed Nov. 13, 1967.

**LPM**

For Specially Seasoned Black Pepper (Int. Cl. 30).  
First use on or about Oct. 4, 1967.

SN 284,902. Gaymont Laboratories, Inc., Chicago, Ill. Filed Nov. 15, 1967.



Owner of Reg. No. 630,203.  
For Powder for Making Imitation Milk and Liquid Imitation Milk (Int. Cl. 29).  
First use Sept. 12, 1967; prior to 1947 as to the mark "Gaymont's."

SN 286,016. Lakeland Grocery Co., Minneapolis, Minn. Filed Dec. 1, 1967.



Owner of Reg. No. 827,265.  
For Oleomargarine and Fresh Eggs (Int. Cl. 29).  
First use Sept. 12, 1966.

SN 288,218. Johanna Farms, Inc., Flemington, N.J. Filed Jan. 5, 1968.

**COUNTRY COUSIN**

For Imitation Milk (Int. Cl. 29).  
First use Nov. 22, 1967.

SN 288,514. Hartz Mountain Products Corp., New York, N.Y. Filed Jan. 10, 1968.

**HAMSTER KISSES**

"Hamster" is disclaimed apart from the mark as shown.  
Owner of Reg. Nos. 581,090 and 840,937.  
For Hamster Confections (Int. Cl. 31).  
First use Oct. 2, 1964.

SN 291,091. Oswald Boelcke, d.b.a. Leckermaelchen, Luebeck-Schlutup, Germany. Filed Feb. 14, 1968.

**MR. HERRING**

The word "Herring" is disclaimed apart from the mark as shown.  
For Canned Fish (Int. Cl. 29).  
First use Aug. 15, 1967; in commerce Jan. 4, 1968.

SN 292,015. Ralston Purina Company, St. Louis, Mo. Filed Feb. 27, 1968.

**DYNA MAN**

For Breakfast Cereal Product (Int. Cl. 30).  
First use Jan. 29, 1968.



SN 292,769. Dofo, a.m.b.a. (Danake Ostemejeriers Faelles-salg og Osteeksport), Haderslev, Denmark. Filed Mar. 8, 1968.

**DOFINO**

Owner of U.S. Reg. No. 730,502.  
For Dairy Products—Namely, Cheese, Processed Cheese, and Cheese Spreads (Int. Cl. 29).  
First use in or about October 1960; in commerce in or about February 1965.

SN 293,157. Malone & Hyde, Inc., d.b.a. Giant Foods of America, Memphis, Tenn. Filed Mar. 13, 1968.



No claim is made to the words "Good Food Always" apart from the mark as shown.

For Bakery Products—Namely, Rolls, Buns, and Sliced Bread; Potato Chips; Meat Products—Namely, Sliced Bacon, Mild and Hot Country Sausage, and All Meat Wieners; Dairy Products—Namely, Homogenized Sweet Milk, Buttermilk, Ice Milk, Ice Cream; and Fresh Eggs (Int. Cls. 29 and 30).  
First use Nov. 16, 1966.

SN 293,299. Purity Mills Inc., Dixon, Ill. Filed Mar. 14, 1968.

**KRISPOP**

For Unpopped Popcorn (Int. Cl. 31).  
First use October 1957.

SN 298,149. The Pillsbury Company, Minneapolis, Minn. Filed May 14, 1968.



Owner of Reg. No. 662,329.  
For Low Calorie Table Sugar Replacement (Int. Cl. 1).  
First use at least as early as Jan. 29, 1968.  
Subj. to Intf. with SN 294,077.

SN 298,409. Beatrice Foods Co., Chicago, Ill. Filed May 17, 1968.

**MEADOW GOLD**

Owner of Reg. No. 583,470 and others.  
For Pizza (Int. Cl. 30).  
First use Mar. 4, 1968.

SN 303,022. Ralston Purina Company, St. Louis, Mo. Filed July 18, 1968.

**GHOSTY'S**

For Dry Breakfast Cereal (Int. Cl. 30).  
First use Jan. 29, 1968.

SN 303,473. General Mills, Inc., Minneapolis, Minn. Filed July 24, 1968.

**REVIEW**

For Ready To Eat Breakfast Cereal (Int. Cl. 30).  
First use on or prior to July 3, 1967.

SN 303,580. C. V. Ranching & Son, d.b.a. C. V. Ranching, Bakersfield, Calif. Filed July 25, 1968.



For Fresh Vegetables (Int. Cl. 31).  
First use May 6, 1968.

SN 303,642. Draper Foods, Inc., Milford, Del. Filed July 26, 1968.

**SUMMER GARDEN**

For Canned Vegetables (Int. Cl. 29).  
First use June 26, 1950.

**Class 47—Wines**

SN 294,454. Baron Philippe de Rothschild S.A., Pauillac, Gironde, France. Filed Mar. 29, 1968.

**LE GRAND BARON**

For Wines (Int. Cl. 33).  
First use Dec. 19, 1967; in commerce Dec. 19, 1967.

**Class 48—Malt Beverages and Liquors**

SN 300,539. Jos. Schlitz Brewing Company, d.b.a. Hawaii Brewing Co., Milwaukee, Wis. Filed June 17, 1968.

**PRIMO**

Owner of Reg. No. 616,321.  
For Beer (Int. Cl. 32).  
First use in 1897.

**Class 50—Merchandise Not Otherwise Classified**

SN 281,507. Won-Door Corporation, Salt Lake City, Utah. Filed Sept. 29, 1967.



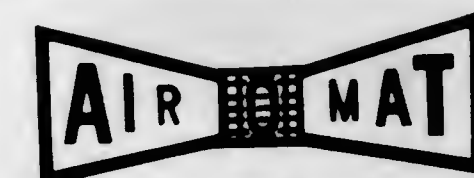
The representation of the chalk board is disclaimed apart from the mark as shown.  
For Chalk Boards (Int. Cl. 16).  
First use Apr. 1, 1967.

SN 284,389. National Cone Co., St. Louis, Mo. Filed Nov. 8, 1967.

**SUNNY SIPPERS**

For Drinking Straws (Plastic Drinking Tubes) (Int. Cl. 20).  
First use Mar. 7, 1966.

SN 289,064. The Airomat Corp., Fort Wayne, Ind. Filed Jan. 18, 1968.



For Floor Mats of Interlocked Strips of Rubber-Like Material (Int. Cl. 27).  
First use Oct. 26, 1966.

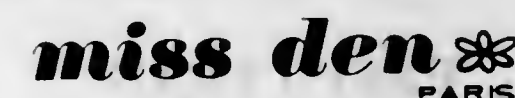
SN 293,525. Jifasteners Limited, Brampton, Ontario, Canada. Filed Mar. 18, 1968.

**JIF**

For Bag Closures Which Consist of Resilient Plastic Tags Split on One Side (Int. Cl. 20).  
First use Jan. 22, 1968; in commerce Jan. 22, 1968.

**Class 51—Cosmetics and Toilet Preparations**

SN 258,795. Etablissements Lardenois, Hermes, Oise, France. Filed Nov. 16, 1966.



The word "Paris" is disclaimed apart from the mark as shown.

For Perfumes; Cosmetics—Namely, Cosmetic Preparations for the Eyes, for the Nails, for the Lips, for the Face, Cosmetic Hand and Face Creams and Lotions, Before and After Shaving Preparations, Dentifrices, Toilet Waters, Body Deodorants, Sun Tan Preparations for Solar Protection, Hair Coloring and Hair Lighteners, Brilliantines for the Hair, Hair Waving Preparations and Hair Lotions, and Depilatories (Int. Cls. 3 and 5).  
First use Apr. 30, 1965; in commerce June 25, 1965.

SN 288,520. Johnson Publishing Company, Inc., Chicago, Ill. Filed Jan. 10, 1968.

**LUXURY CREME PRESS**

Applicant disclaims the words "Creme Press" apart from the mark as shown, and without prejudice to any common law rights therein.  
For Hair Pressing Cream (Int. Cl. 3).  
First use May 3, 1966.

SN 289,089. Hyman Eventoff, d.b.a. Bathbee Company, and Bathbee Prod. Co., Long Island City, N.Y. Filed Jan. 18, 1968.

**BATHBEE**

Owner of Reg. No. 852,907.  
For Bubble Bath and Cologne (Int. Cl. 3).  
First use August 1967.

SN 290,929. Ana Maria, Inc., Beverly Hills, Calif. Filed Feb. 13, 1968.



No claim is made to the words "Fabulosa Tonica" apart from the mark. The words "Fabulosa Tonica" mean "fabulous tonic." The name "Ana Maria" does not identify a living person known to applicant.  
For Facial Cleansing, Toning, and Moisturizing Creams (Int. Cl. 3).  
First use on or about Apr. 27, 1967.

SN 291,959. Bishop Industries Inc., Union, N.J. Filed Feb. 27, 1968.

**PLUS WHITE PLUS**

Owner of Reg. Nos. 743,556 and 829,906.  
For Dentifrices (Int. Cl. 3).  
First use Jan. 31, 1968.

SN 294,452. Avon Products, Inc., New York, N.Y. Filed Mar. 29, 1968.

**THERMASOL**

For Shaving Foam (Int. Cl. 3).  
First use Mar. 12, 1968.

SN 294,497. Helene Curtis Industries, Inc., Chicago, Ill. Filed Mar. 29, 1968.

**HANG UPS**

For Cologne (Int. Cl. 3).  
First use on or about Mar. 8, 1968.

SN 299,723. Carter-Wallace, Inc., New York, N.Y. Filed June 5, 1968.

**CARTER'S LITTLE MOUTH SPRAY**

Applicant disclaims any exclusive rights to the words "Little Mouth Spray" apart from the mark as shown. Owner of Reg. Nos. 791,594, 838,227, and others.  
For Mouthwash and Breath Freshener (Int. Cl. 3).  
First use Apr. 30, 1968.



SN 300,216. The J. B. Williams Company, Inc., New York, N.Y. Filed June 11, 1968.

**GURU**

For Cologne and After Shave Preparation (Int. Cl. 3).  
First use June 7, 1968.  
Subj. to Intf. with SN 300,682.

SN 300,682. John H. Breck, Inc., Wayne, N.J. Filed June 18, 1968.

**GURU**

For Hair Dressing Preparation (Int. Cl. 3).  
First use May 7, 1968.  
Subj. to Intf. with SN 300,216.

SN 301,387. Menley & James Laboratories, Ltd., Philadelphia, Pa. Filed June 26, 1968.

**LOVE'S**

For Liquid Make-Up (Int. Cl. 3).  
First use June 13, 1968.

SN 302,210. The Bali Company, Inc., New York, N.Y. Filed July 8, 1968.

**BALI**

Owner of Reg. No. 330,932.  
For Bath Oils, Body Creams, Colognes, and Talcum Powders (Int. Cl. 3).  
First use May 22, 1935, on talcum powder.

SN 302,895. Helena Rubinstein, Inc., New York, N.Y. Filed July 17, 1968.

**SHEER TINT**

Applicant disclaims the word "Tint" apart from the mark as shown.  
For Make Up Stick and Eye Shadow (Int. Cl. 3).  
First use Mar. 14, 1968.

**Class 52 — Detergents and Soaps**

SN 271,525. Sandoz, Inc., Hanover, N.J. Filed May 15, 1967.



Owner of Reg. Nos. 300,570 and 819,339.  
For Detergents and Soaps for Industrial Use (Int. Cl. 3).  
First use as early as 1930.

SN 271,526. Sandoz, Inc., Hanover, N.J. Filed May 15, 1967.



Owner of Reg. Nos. 300,570, 819,339, and others.  
For Detergents and Soaps for Industrial Use (Int. Cl. 3).  
First use as early as 1930.

SN 271,527. Sandoz, Inc., Hanover, N.J. Filed May 15, 1967.

**SANDOZ**

Owner of Reg. Nos. 300,570, 672,433, and others.  
For Detergents and Soaps for Industrial Use (Int. Cl. 3).  
First use as early as 1930.

SN 279,040. Armour and Company, Chicago, Ill. Filed Aug. 25, 1967.

**KON TEAKI**

For Bath and Toilet Soap (Int. Cl. 3).  
First use on or prior to May 6, 1967.

SN 279,808. Colgate-Palmolive Company, New York, N.Y. Filed Sept. 7, 1967.



The mark is lined for the colors grey, yellow, blue and green. The words "Heavy Duty," "Laundry Detergent," and "Germproofs in Cold Water" are disclaimed apart from the mark as shown. Owner of Reg. No. 756,538.  
For Laundry Detergent (Int. Cl. 3).  
First use August 1967.

SN 289,841. Standard International Corporation, Andover, Mass. Filed Jan. 29, 1968.



Owner of Reg. Nos. 343,957, 724,604, and others.  
For General Purpose Liquid Household Cleaner and Disinfectant (Int. Cl. 3).  
First use Dec. 27, 1967.

SN 303,380. Glamorene Products Corporation, Clifton, N.J. Filed July 23, 1968.

**PREP-CLEAN**

For Spot Remover (Int. Cl. 3).  
First use June 14, 1968.

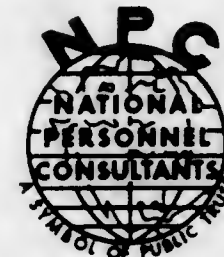
SN 304,650. Colgate-Palmolive Company, New York, N.Y. Filed Aug. 8, 1968.

**21 1/2**

For Hair Shampoo (Int. Cl. 3).  
First use May 15, 1968.

**SERVICE MARKS****Class 100 — Miscellaneous**

SN 271,953. National Personnel Consultants, Detroit, Mich. Filed May 19, 1967.



The words "Personnel Consultants" and "A Symbol of Public Trust" are disclaimed apart from the mark as shown. Owner of Reg. No. 854,374.

For Association Services—Namely, Consultation Services to and Exchange of Business Information and Ideas Between Member Employment Agencies (Int. Cl. 42).  
First use January 1953.

SN 249,689. Charles G. Lavin, d.b.a. The Video-Audio Co., Alexandria, Va. Filed July 6, 1966.



For General Research and Advice and Consultation Services (Int. Cl. 42).  
First use Jan. 1, 1967.

SN 260,487. Sales and Marketing Executives-International, Inc., New York, N.Y. Filed Dec. 2, 1966.



The words "Top 20 Award for Excellence in Marketing" is disclaimed apart from the mark without waiver of any common law rights thereto.

For Association Services—Namely, Promoting Excellence in Marketing by Selecting the Best Examples in This Field (Int. Cl. 42).  
First use during March 1966.

SN 266,578. Philatelic Research Society, Oakland, Calif. Filed Mar. 13, 1967.

**PHILATELIC RESEARCH SOCIETY**

For Association Services to Members and Others Relating to Philatelic Matters—Namely, Conducting Seminars, Publishing Books and Papers, and Maintaining and Operating a Library (Int. Cl. 42).  
First use February 1953.

SN 270,510. Occidental Petroleum Corporation, Los Angeles, Calif. Filed May 2, 1967.



For Supplying a Preserving Atmosphere for Containers for Perishable Products (Int. Cl. 42).  
First use on or about Feb. 1, 1966.

SN 276,082. American Motor Inns of Daytona Beach, Inc., Ormond Beach, Fla. Filed July 17, 1967.

**THE FAMILY TABLE**

For Restaurant Services (Int. Cl. 42).  
First use Feb. 21, 1967.

SN 281,890. Holiday Inns of America, Inc., Memphis, Tenn. Filed Oct. 5, 1967.



Owner of Reg. Nos. 592,539, 742,490, and others.  
For Motel and Restaurant Services (Int. Cl. 42).  
First use as early as 1957.

SN 283,592. William L. Wise, Mountain View, Calif. Filed Oct. 27, 1967.



The mark consists of the letters "WIC."  
For Electrical Consulting Engineering in the Fields of Instrumentation and Controls (Int. Cl. 42).  
First use Aug. 22, 1967.

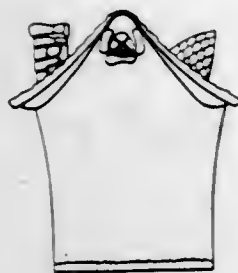
SN 284,936. Mix, Inc., New York, N.Y. Filed Nov. 15, 1967.

**MIX**

For Social Club Services—Namely, Providing Single Young People With the Opportunity To Meet Similarly Inclined Persons (Int. Cl. 42).  
First use on or about May 31, 1966.



SN 287,418. Chock Full O'Nuts Corporation, New York, N.Y. SN 294,353. International Material Management Society, Washington, D.C. Filed Mar. 28, 1968.



For Restaurant Services (Int. Cl. 42).  
First use at least as early as 1938.

SN 289,620. Seventeen Eighty Nine, Inc., Washington, D.C.  
Filed Jan. 25, 1968.

1789

For Restaurant Services (Int. Cl. 42).  
First use July 24, 1962.

SN 289,621. Seventeen Eighty Nine, Inc., Washington, D.C.  
Filed Jan. 25, 1968.

SEVENTEEN EIGHTY NINE

For Restaurant Services (Int. Cl. 42).  
First use July 24, 1962.

SN 289,622. Seventeen Eighty Nine, Inc., Washington, D.C.  
Filed Jan. 25, 1968.

'89 EAST

For Restaurant Services (Int. Cl. 42).  
First use Nov. 2, 1967.

SN 289,623. Seventeen Eighty Nine, Inc., Washington, D.C.  
Filed Jan. 25, 1968.

WICKETS

For Restaurant Services (Int. Cl. 42).  
First use Sept. 24, 1963.

SN 289,624. Seventeen Eighty Nine, Inc., Washington, D.C.  
Filed Jan. 25, 1968.

TOMBS

For Restaurant Services (Int. Cl. 42).  
First use July 24, 1962.

SN 289,625. Seventeen Eighty Nine, Inc., Washington, D.C.  
Filed Jan. 25, 1968.



For Restaurant Services (Int. Cl. 42).  
First use July 24, 1962.



For Association Services—Namely, Services To Coordinate and Promote the Advancement of the Art and Science, Theory and Practice of Material Management Principles and Techniques—Namely, Arranging National Conferences, Arranging Research at the University Level, Arranging Monthly Technical Meetings, Promoting Tours of Industrial Plants, Arranging Contacts With Management Personnel, Dissemination of Publications of a Technical and Material Management Nature, Arranging for the Publication of Technical Ideas and Papers, Providing a Technical Information Service. (Int. Cl. 42).

First use Feb. 1, 1966.

SN 294,945. Le Garage, Inc., Washington, D.C. Filed Apr. 4, 1968.

THE GARAGE

For Restaurant Services (Int. Cl. 42).  
First use Nov. 21, 1967.

SN 295,880. The Deerwood Club, Inc., Jacksonville, Fla.  
Filed Apr. 18, 1968.

DRUMMER BOY

For Development and Operation of Community Facilities for Private Residential Community (Int. Cl. 42).  
First use November 1960.

SN 295,882. The Deerwood Club, Inc., Jacksonville, Fla.  
Filed Apr. 18, 1968.



For Development and Operation of Community Facilities for Private Residential Community (Int. Cl. 42).  
First use January 1963, November 1960, as to "Deerwood."

SN 295,814. Drummer Boy, Inc., Topeka, Kans. Filed Apr. 17, 1968.

DEERWOOD

Owner of Reg. No. 526,082.  
For Restaurant Services (Int. Cl. 42).  
First use Sept. 10, 1962.

SN 295,815. Drummer Boy, Inc., Topeka, Kans. Filed Apr. 17, 1968. SN 268,734. Hancock Bank, Gulfport, Miss. Filed Apr. 10, 1967.



The drawing is lined for gray or silver, brown, red and blue, but color is not claimed as a feature of the mark. Owner of Reg. No. 526,082.  
For Restaurant Services (Int. Cl. 42).  
First use Sept. 10, 1962.

SN 296,237. Milros Sans Souci, Inc., Miami, Fla. Filed Apr. 23, 1968.

CRAZY HORSE CABARET

No claim of exclusive right is made to "Cabaret" for the services recited.  
For Cabaret Services (Int. Cl. 42).  
First use Dec. 24, 1967.

Class 101—Advertising and Business

SN 303,752. Safeway Stores, Incorporated, Oakland, Calif.  
Filed July 29, 1968.

SAFEWAY INTERNATIONAL

Owner of Reg. Nos. 721,716 and 836,562.  
For Retail Grocery Services (Int. Cl. 35).  
First use Oct. 29, 1964.

Class 102—Insurance and Financial

SN 268,423. Fund American Investment Management Company, San Francisco, Calif., by change of name from North American Securities Company, San Francisco, Calif. Filed Apr. 5, 1967.



The drawing consists of a rendering of the Golden Gate Bridge of San Francisco, California.  
For Managing Investment Funds for Others (Int. Cl. 36).  
First use about Aug. 15, 1964.



Applicant disclaims the phrase "The Only Bank You'll Ever Need."  
For General Banking Services (Int. Cl. 36).  
First use May 23, 1966.

SN 271,612. Ford Motor Company, Dearborn, Mich. Filed May 16, 1967.



No claim of exclusive right is made to "Credit Company" for the services recited. Owner of Reg. Nos. 688,493 and 735,457.  
For Services Performed in Financing and Arranging for the Wholesale Financing of the Sale of Goods (Int. Cl. 36).  
First use Aug. 20, 1959.

SN 282,894. Easton National Bank and Trust Company, Easton, Pa. Filed Oct. 19, 1967.

INSTAMATIC CHECK-CREDIT

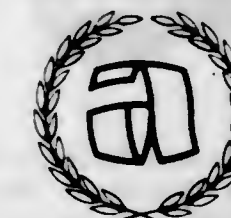
No claim is made to the words "Check-Credit" except in combination with the mark as shown.  
For Banking Service Establishing a Revolving Loan Plan for Checking Account Customers To Draw Personal Checks for Part of an Established Loan Reserve by Use of Deposit Orders Directing the Bank to Automatically Transfer Funds from the Loan Account to the Checking Account of the Depositors (Int. Cl. 36).  
First use Sept. 18, 1967.

SN 287,369. Lord, Abbett & Co., New York, N.Y. Filed Dec. 21, 1967.



For Investment Advisory and Underwriting Services (Int. Cl. 36).  
First use Dec. 4, 1967.

SN 300,885. Albert & Company Security Corporation, Croton-on-Hudson, N.Y. Filed June 20, 1968.



For Insurance Agency Services (Int. Cl. 36).  
First use April 1965.



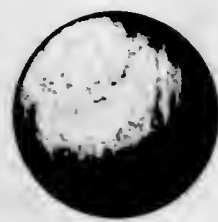
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OFFICIAL GAZETTE

NOVEMBER 12, 1968

**Class 103 — Construction and Repair**

SN 253,616. Atlantic Richfield Company, Philadelphia, Pa. Filed Sept. 1, 1966.



The drawing is lined for red. Owner of Reg. No. 780,051. For Automobile Service Station Services (Int. Cl. 37). First use May 15, 1962.

SN 273,677. Midas, Inc., Chicago, Ill. Filed July 10, 1967.

**MIDAS TRANSMISSIONS**

Applicant claims the exclusive right to the use of the word "Transmissions" as a part of its mark, but not otherwise. Owner of Reg. Nos. 820,322, 803,614, and others. For Inspection, Adjustment, Repair and Installation of Automotive Transmissions and Parts Thereof (Int. Cl. 37). First use on or about July 25, 1966.

SN 285,340. Midas, Inc., Chicago, Ill. Filed Nov. 21, 1967.

**MIDAS CAR CARE CENTER**

Applicant claims the exclusive right to the use of the words "Car Care Center" as a part of its mark, but not otherwise. Owner of Reg. Nos. 820,322, 803,614, and others.

For Adjusting of Brakes of Automobile Vehicles; Adjustment of Automotive Engines and Inspection and Installation of Parts Thereof—Commonly Called Engine Tune-Ups; Inspection, Repair, Rotation and Installation of Automobile Tires; Alignment and Balancing of Automobile Vehicle Wheels; Diagnosis of Automobile Malfunctions; Inspection and Installation of Automotive Exhaust Systems and Parts Thereof; Automotive Brake Systems and Parts Thereof; Automotive Batteries and Electrical Systems and Parts Thereof; Automotive Transmissions and Parts Thereof; Positive Crankcase Ventilation Valves and Systems Used in Internal Combustion Engines for Eliminating Crankcase Emissions and Parts Thereof; Front End Parts, Seat Belts and Accompanying Accessories; and Charging and Re-Charging Automobile Batteries (Int. Cl. 37). First use on or about June 7, 1967.

SN 288,289. American Uniform Company, Cleveland, Tenn. Filed Jan. 8, 1968.



Applicant disclaims the word "Service" apart from the mark as shown. Owner of Reg. Nos. 337,545 and 772,503. For Services in the Rental, Delivery and Periodic Pick-Up and Laundering and Treating of Mops, Dust Cloths and Dirt Retaining Rugs (Int. Cl. 37). First use in about 1961.

SN 292,656. International Gas Lite, Inc., Philadelphia, Pa. Filed Mar. 7, 1968.



Applicant disclaims "Gas Lite" apart from the mark as shown.

For Installation and Maintenance of Gas-Operated Illuminating Apparatus (Int. Cl. 37). First use Sept. 1, 1965.

**Class 104 — Communication**

SN 287,686. Visual Information Systems, Inc., New York, N.Y. Filed Dec. 27, 1967.

**VISCASING**

For Closed Circuit Television Communication Service (Int. Cl. 38). First use Aug. 1, 1967.

**Class 105 — Transportation and Storage**

SN 257,837. Europe By Car, Inc., New York, N.Y. Filed Nov. 3, 1966.

**WELCOME CENTERS**

The word "Centers" is disclaimed apart from the mark as a whole.

For Arranging for the Rental and Sale of Automobiles to Its Customers While Traveling in Foreign Countries; and Arranging for the Guiding and Entertainment of Its Customers in the Foreign Countries (Int. Cl. 39). First use on or about Oct. 1, 1966.

SN 266,503. Canadian Freightways Limited, Calgary, Alberta, Canada. Filed Mar. 13, 1967.

**CANADIAN FREIGHTWAYS**

The word "Canadian" is disclaimed apart from the mark as shown.

For Transporting the Goods of Others by Motor Truck, and Arranging for the Transport of Goods by Rail, Ship, and Aircraft (Int. Cl. 39).

First use at least as early as September 1947; in commerce at least as early as September 1947.

SN 266,730. Canadian Freightways Limited, Calgary, Alberta, Canada. Filed Mar. 15, 1967.



The word "Canadian" is disclaimed apart from the mark as shown.

For Transporting the Goods of Others by Motor Truck, and Arranging for the Transport of Goods by Rail, Ship, and Aircraft (Int. Cl. 39).

First use January 1960; in commerce January 1960.

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**Class 106 — Material Treatment**

SN 271,623. International Plastics, Inc., Miami, Fla. Filed May 16, 1967.



For Making Molds to Order for Customer Demands and Casting in Plastic Material in Said Molds Specific Objects Made According to Specifications Furnished by Customers (Int. Cl. 40). First use Aug. 22, 1961.

**Class 107 — Education and Entertainment**

SN 280,573. Alvis Edgar Owens, Jr., d.b.a. Buck Owens, Bakersfield, Calif. Filed Dec. 12, 1966.

**BUCKAROOS**

For Entertainment Services Rendered by a Vocal and Instrumental Group (Int. Cl. 41). First use March 1962.

SN 278,266. Lewis Di Leo, d.b.a. Lew Di Leo, Philadelphia, Pa. Filed June 7, 1967.

**PHILADELPHIA JESTERS**

The word "Philadelphia" is disclaimed when used apart from the mark as shown.

For Entertainment Services in the Nature of Basketball Exhibitions Performed in Various States of the United States, Some of Which Are Broadcast Through the Medium of Television (Int. Cl. 41). First use Dec. 2, 1966.

SN 277,377. Patterson International Corporation, Cincinnati, Ohio. Filed Aug. 2, 1967.



For Operating Tournaments of Miniaturized Coin-Operated Soccer Games (Int. Cl. 41). First use December 1962.

SN 289,110. Arthur Murray Inc., New York, N.Y. Filed Jan. 18, 1968.

**DANCE-O-RAMA**

For Conducting Dance Competitions (Int. Cl. 41). First use November 1964.

**COLLECTIVE MEMBERSHIP MARKS****Class 200**

SN 276,851. National Restaurant Association, Chicago, Ill. Filed July 26, 1967.



For Indicating Membership in Applicant Association. First use Mar. 13, 1919.

TM 856 O.G.—4



For Indicating Membership in Applicant. First use Nov. 1, 1965.



# TRADEMARK REGISTRATIONS ISSUED

## PRINCIPAL REGISTER

### Class 1—Raw or Partly Prepared Materials

- 859,875. LECTROQUILT AND DESIGN. Philmont Manufacturing Company. SN 262,439. Pub. 8-27-68. Filed 1-12-67.  
 859,876. FOAMART. Adhesive Products Corporation. SN 277,907. Pub. 8-27-68. Filed S.R. 8-10-67; Am. P.R. 6-28-68.  
 859,877. NYLATRON. The Polymer Corporation. SN 279,430. Pub. 8-27-68. Filed 8-31-67.  
 859,878. CHEVRON DESIGN. Standard Oil Company of California. SN 286,189. Pub. 8-27-68. Filed 12-4-67.  
 859,879. KANEBO. Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd. SN 296,542. Pub. 8-27-68. Filed 4-25-68.  
 859,880. AMETEK AND DESIGN. Ametek, Inc. SN 297,126. Pub. 8-27-68. Filed 5-2-68.

### Class 2—Receptacles

- 859,881. TEMP MASTER. McCrory Corporation. MULTIPLE CLASS (Classes 2 and 21). SN 154,907. Pub. 8-9-66. Filed 10-10-62.  
 859,882. FAMILY-SERV. Nibot Corporation. SN 233,728. Pub. 8-27-68. Filed 12-1-65.  
 859,883. STOR-WEL. Baxter Associates, Inc., assignee of Kenneth William Baxter. MULTIPLE CLASS (Classes 2 and 22). SN 251,369. Pub. 8-27-68. Filed 8-1-66.  
 859,884. MATRAY. Hedwin Corporation. SN 266,330. Pub. 8-27-68. Filed 3-9-67.  
 859,885. PRESSPACK. Silver Industries, Inc. SN 276,480. Pub. 8-27-68. Filed 7-20-67.  
 859,886. CADDY-CAB. Roy C. Martin, d.b.a. Saturn Sales Company. SN 277,562. Pub. 8-27-68. Filed 8-4-67.  
 859,887. SATEEN. Tee-Pak, Inc. SN 278,618. Pub. 8-27-68. Filed 8-19-67.  
 859,888. CORIA. Tee-Pak, Inc. SN 278,747. Pub. 8-27-68. Filed 8-21-67.  
 859,889. SUPERNAL. Oppenheimer Casing Company. SN 278,905. Pub. 8-27-68. Filed 8-23-67.  
 859,890. KOLLMEX. Kollmor Chemicals. SN 281,586. Pub. 8-27-68. Filed 10-2-67.  
 859,891. CHICK CRADLE. International Paper Company. SN 286,149. Pub. 8-27-68. Filed 12-4-67.  
 859,892. SPRAY-N-GO-GO. Rodi Mfg., Inc. SN 288,352. Pub. 8-27-68. Filed 1-8-68.  
 859,893. MISCELLANEOUS DESIGN. The Reddy Company, Inc. SN 288,981. Pub. 7-16-68. Filed 1-16-68.  
 859,894. MEDI-GARD. Medical Plastics Corporation of America. SN 289,560. Pub. 8-27-68. Filed 1-25-68.  
 859,895. TOP-NOTCH. Packaging Corporation of America. SN 294,358. Pub. 8-27-68. Filed 3-28-68.  
 859,896. TIDY SACK. Hudson Pulp & Paper Corp. SN 294,735. Pub. 8-27-68. Filed 4-2-68.  
 859,897. MINIFIL. Betty Martin, Inc. SN 296,179. Pub. 8-27-68. Filed 4-22-68.  
 859,898. REDI-KWIK. Wagner Folding Box Corp. SN 296,465. Pub. 8-27-68. Filed 4-23-68.  
 859,899. COLLECTOR'S ITEM. Don Kracke, d.b.a. Rickie Tickle Sticks. SN 296,695. Pub. 8-27-68. Filed 4-26-68.  
 859,900. PERF-O-TAINER. Niagara Foam Products, Inc. SN 296,861. Pub. 8-27-68. Filed 4-29-68.  
 859,901. GEOMETRIX. Electrix, Inc. SN 297,545. Pub. 8-27-68. Filed 5-7-68.

### Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

- 859,902. LA RONDE. Master Appliances, Inc. SN 269,438. Pub. 8-27-68. Filed 4-18-67.

### Class 5—Adhesives

- 859,903. BEACON AND DESIGN. Lowell Bearing Company. MULTIPLE CLASS (Classes 5 and 23). SN 222,092. Pub. 10-4-66. Filed 6-28-65.  
 859,904. GLU-BOY. Wilhold Glues, Inc. SN 298,296. Pub. 8-27-68. Filed 5-16-68.

### Class 6—Chemicals and Chemical Compositions

- 859,905. DI-PIP. Reilly Tar & Chemical Corporation. SN 273,309. Pub. 8-27-68. Filed 6-7-67.  
 859,906. MERMAC. Mermac Distributors of Oregon. SN 275,283. Pub. 8-27-68. Filed 7-3-67.  
 859,907. E-Z MELT. Epic Chemicals, Inc. SN 276,113. Pub. 8-27-68. Filed 7-17-67.  
 859,908. DETRON-D. Detrex Chemical Industries, Inc. SN 277,894. Pub. 8-27-68. Filed 8-9-67.  
 859,909. DAP-TEST. Denver Chemical Manufacturing Company, assignee of The Denver Chemical Manufacturing Company, d.b.a. Wampole Laboratories. SN 282,688. Pub. 8-27-68. Filed 10-17-67.  
 859,910. STERNCO AND DESIGN. Sternco Industries, Inc. MULTIPLE CLASS (Classes 6, 26, and 46). SN 283,485. Pub. 8-27-68. Filed 10-27-67.  
 859,911. VISCONTRAN. Dehydag Deutsche Hydrierwerke G.m.b.H. SN 283,776. Pub. 8-27-68. Filed 10-31-67.  
 859,912. TEXA MID. Dehydag Deutsche Hydrierwerke G.m.b.H. SN 283,778. Pub. 8-27-68. Filed 10-31-67.  
 859,913. DEHYDAZOL. Dehydag Deutsche Hydrierwerke G.m.b.H. SN 283,779. Pub. 8-27-68. Filed 10-31-67.  
 859,914. TRIANGLE. Stauffer Chemical Company. SN 285,073. Pub. 8-27-68. Filed 11-16-67.  
 859,915. F-1000. Armour Pharmaceutical Company, d.b.a. Rehels Chemical Co. SN 285,183. Pub. 8-27-68. Filed 11-20-67.  
 859,916. F-2000. Armour Pharmaceutical Company, d.b.a. Rehels Chemical Co. SN 285,184. Pub. 8-27-68. Filed 11-20-67.  
 859,917. F-2200. Armour Pharmaceutical Company, d.b.a. Rehels Chemical Co. SN 285,185. Pub. 8-27-68. Filed 11-20-67.  
 859,918. F-5000. Armour Pharmaceutical Company, d.b.a. Rehels Chemical Co. SN 285,186. Pub. 8-27-68. Filed 11-20-67.  
 859,919. F-MA 11. Armour Pharmaceutical Company, d.b.a. Rehels Chemical Co. SN 285,187. Pub. 8-27-68. Filed 11-20-67.  
 859,920. STERNCO AND DESIGN. Sternco Industries, Inc. MULTIPLE CLASS (Classes 6, 18, 21, 31, 46, and 50). SN 292,151. Pub. 8-27-68. Filed 2-29-68.  
 859,921. MISCELLANEOUS DESIGN. King Kullen Grocery Co., Inc. MULTIPLE CLASS (Classes 6, 9, 18, 29, 37, 46, 48, 51, and 52). SN 294,550. Pub. 8-27-68. Filed 4-1-68.

NOVEMBER 12, 1968

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- 859,922. AHEAD. E. I. du Pont de Nemours and Company. SN 298,895. Pub. 8-27-68. Filed 5-23-68.  
 859,923. GLUCODINE. Uni-Tech Chemical Manufacturing Company. SN 298,907. Pub. 8-27-68. Filed 5-23-68.  
 859,924. LANNATE. E. I. du Pont de Nemours and Company. SN 298,992. Pub. 8-27-68. Filed 5-24-68.

### Class 7—Cordage

- 859,925. WINMORE. Frank W. Winne & Son Incorporated. SN 298,908. Pub. 8-27-68. Filed 5-23-68.  
 859,926. WHITE STAG AND DESIGN. Eugene Magidson, d.b.a. White Stag Meerschaum Co. SN 255,835. Pub. 6-20-67. Filed 9-28-66.

### Class 8—Smokers' Articles, Not Including Tobacco Products

- 859,927. PIPE BY LEE. Arlington Briar Pipe Corp. SN 292,754. Pub. 8-27-68. Filed 3-8-68.

### Class 9—Explosives, Firearms, Equipments, and Projectiles

- 859,921. (See Class 6 for this trademark.)

### Class 10—Fertilizers

- 859,928. R BRAND. Lindauer & Company. SN 281,379. Pub. 8-27-68. Filed 9-20-67.  
 859,929. CROP POWER. D. C. Jorgensen & Sons, Inc. SN 294,058. Pub. 8-27-68. Filed 8-25-68.  
 859,930. PERMALENE. Mississippi Chemical Corporation. SN 297,578. Pub. 8-27-68. Filed 5-7-68.  
 859,931. PERMA-PELLET. Mississippi Chemical Corporation. SN 297,579. Pub. 8-27-68. Filed 5-7-68.  
 859,932. PERMA-GRAN. Mississippi Chemical Corporation. SN 297,580. Pub. 8-27-68. Filed 5-7-68.  
 859,933. PERMA-PRILL. Mississippi Chemical Corporation. SN 297,581. Pub. 8-27-68. Filed 5-7-68.

### Class 11—Inks and Inking Materials

- 859,934. ROYTYPE 101. Litton Business Systems, Inc. SN 280,791. Pub. 8-27-68. Filed 9-20-67.  
 859,935. B AND DESIGN. Burroughs Corporation. SN 288,673. Pub. 8-27-68. Filed 1-12-68.

### Class 12—Construction Materials

- 859,936. BEAUTY TRIM. Kenton Industries, d.b.a. Home Equipment Mfg. Company. SN 286,893. Pub. 8-27-68. Filed 3-16-67.  
 859,937. CAREYTEMP. Philip Carey Corporation, by change of name from The Philip Carey Manufacturing Company. SN 280,249. Pub. 8-27-68. Filed 9-13-67.  
 859,938. SP AND DESIGN. The Standard Products Company. MULTIPLE CLASS (Classes 12, 19, and 35). SN 283,596. Pub. 8-27-68. Filed 10-30-67.

### Class 13—Hardware and Plumbing and Steam-Fitting Supplies

- 859,940. CMP AND DESIGN. Consolidated Metal Products, Inc. SN 255,875. Pub. 10-3-67. Filed 10-6-66.  
 859,941. PLA-BORDER. Lance Construction Supplies Inc. SN 273,507. Pub. 8-27-68. Filed 6-9-67.  
 859,942. ARRO AND DESIGN. Mid-Continent Manufacturing Co. SN 275,951. Pub. 8-27-68. Filed 7-13-67.  
 859,943. SOLUTAP. Hays Manufacturing Company. SN 276,134. Pub. 8-27-68. Filed 7-17-67.  
 859,944. SMC AND DESIGN. Saegertown Manufacturing Corporation. SN 279,959. Pub. 8-27-68. Filed 9-8-67.  
 859,945. ALUTOR. Treffleries Leon Bekaert, P.V.B.A. SN 282,639. Pub. 8-27-68. Filed 10-16-67.  
 859,946. STEINEN DYNA-COIN. Wm. Steinen Mfg. Co. SN 283,467. Pub. 8-27-68. Filed 10-26-67.  
 859,947. SECUR-A-TACH. Dennison Manufacturing Company. SN 284,628. Pub. 8-27-68. Filed 11-13-67.  
 859,948. FLEXPAND. Thermo Tech Inc. SN 284,757. Pub. 8-27-68. Filed 11-13-67.  
 859,949. UMP AND DESIGN. Universal Metal Products, Inc. SN 284,953. Pub. 8-27-68. Filed 11-15-67.  
 859,950. SOCIETY AND DESIGN. Regal Ware, Inc. MULTIPLE CLASS (Classes 13 and 21). SN 295,557. Pub. 8-27-68. Filed 4-12-68.  
 859,951. DURABLE SWINGER. National Distillers and Chemical Corporation. SN 298,993. Pub. 8-27-68. Filed 5-24-68.

### Class 14—Metals and Metal Castings and Forgings

- 859,952. SPECTRUM 21. Alcan Aluminum Corporation. SN 275,423. Pub. 8-27-68. Filed 7-6-67.  
 859,953. USAMET. American Gage & Machine Company. SN 286,621. Pub. 8-27-68. Filed 12-11-67.

### Class 15—Oils and Greases

- 859,954. KEYCAST. Kerns United Corporation, assignee of Keystone Lubricating Company. SN 163,872. Pub. 8-27-68. Filed 2-25-63.  
 859,955. KNOCK-DOWN. Farmers Regional Cooperative. SN 293,982. Pub. 8-27-68. Filed 3-25-68.

### Class 16—Protective and Decorative Coatings

- 859,956. ARMA-GLAS. Armstrong Paint & Varnish Works, Inc. SN 259,389. Pub. 8-27-68. Filed 11-25-66.  
 859,957. PERMA LASTIC. The Firestone Tire & Rubber Company. SN 288,607. Pub. 8-27-68. Filed 1-11-68.

### Class 17—Tobacco Products

- 859,958. FLOR DE MONTEGO. Samuel B. Jacobs. SN 293,728. Pub. 8-27-68. Filed 3-20-68.



## Class 18—Medicines and Pharmaceutical Preparations

- 859,920. (See Class 6 for this trademark.)  
 859,921. (See Class 6 for this trademark.)  
 859,959. BOVADINE. Lazarus Laboratories, Inc. SN 269,326. Pub. 8-27-68. Filed 4-17-67.  
 859,960. K MART AND DESIGN. S. S. Kresge Company. SN 284,093. Pub. 8-27-68. Filed 11-3-67.  
 859,961. DORPAP. The Wander Company. SN 284,119. Pub. 8-27-68. Filed 11-3-67.  
 859,962. DORSPEC. The Wander Company. SN 284,121. Pub. 8-27-68. Filed 11-3-67.  
 859,963. FLEXICIL. Bristol-Myers Company. SN 297,961. Pub. 8-27-68. Filed 5-13-68.

## Class 19—Vehicles

- 859,938. (See Class 6 for this trademark.)  
 859,964. TIGER TANK AND DESIGN. Tankraft Products Corp. SN 207,673. Pub. 11-2-65. Filed 12-7-64.  
 859,965. UNITAINER. Horville-McKinnon Limited. SN 262,704. Pub. 8-27-68. Filed 1-17-67.  
 859,966. GATEWAY AND DESIGN. Robert E. Blair, d.b.a. Gateway Industries. SN 274,943. Pub. 8-27-68. Filed 6-29-67.  
 859,967. PLY-PAK EQUIPPED. William D. Miller. SN 275,284. Pub. 8-27-68. Filed 7-3-67.  
 859,968. BIG 12. Harris and Thrush Manufacturing Company. MULTIPLE CLASS (Classes 19 and 23). SN 281,743. Pub. 8-27-68. Filed 10-4-67.  
 859,969. LONGHORN. General Motors Corporation. SN 285,016. Pub. 8-27-68. Filed 11-16-67.  
 859,970. WANDERER. Fireball Trailer Mfg., Inc. SN 287,162. Pub. 8-27-68. Filed 12-18-67.

## Class 20—Linoleum and Oiled Cloth

- 859,971. VICRTEXURES. L. E. Carpenter & Company. SN 297,382. Pub. 8-27-68. Filed 5-6-68.

## Class 21—Electrical Apparatus, Machines, and Supplies

- 859,881. (See Class 2 for this trademark.)  
 859,920. (See Class 6 for this trademark.)  
 859,950. (See Class 13 for this trademark.)  
 859,972. ELECTRI-FLEX. Electri-Flex Company, by change of name from Electrifix Co. SN 252,253. Pub. 8-27-68. Filed 8-12-66.  
 859,973. OMNY-BUS. Methode Electronics, Inc. SN 263,098. Pub. 8-27-68. Filed 1-23-67.  
 859,974. SWITCHLITE AND DESIGN. Fuse Indicator Corporation. SN 266,873. Pub. 8-27-68. Filed 3-16-67.  
 859,975. SPRAGUE. Sprague Electric Company. MULTIPLE CLASS (Classes 21 and 26). SN 268,108. Pub. 8-27-68. Filed 3-31-67.  
 859,976. POPAMP. F. W. Reynolds Limited. SN 271,726. Pub. 8-27-68. Filed 5-17-67.  
 859,977. STA-PAK. Allis-Chalmers Manufacturing Company. SN 272,147. Pub. 8-27-68. Filed 5-23-67.

- 859,978. ELECTRAC. Kirsch Company. SN 275,380. Pub. 8-27-68. Filed 7-5-67.  
 859,979. LIFE CELL AND DESIGN. Waldom Electronics, Incorporated. SN 277,397. Pub. 8-27-68. Filed 8-2-67.  
 859,980. EDS. Superior Continental Corporation, by change of name from Superior Cable Corporation. SN 277,727. Pub. 8-27-68. Filed 8-7-67.  
 859,981. EDS AND DESIGN. Superior Continental Corporation, by change of name from Superior Cable Corporation. SN 278,251. Pub. 8-27-68. Filed 8-14-67.  
 859,982. SILVERCAP. Del Electronics Corp. SN 278,671. Pub. 8-27-68. Filed 8-21-67.  
 859,983. MILLIFILM. Dahlberg Electronics, Inc. SN 279,055. Pub. 8-27-68. Filed 8-25-67.  
 859,984. COLORPEAK. Jerrold Electronics Corporation. SN 280,782. Pub. 8-27-68. Filed 9-20-67.  
 859,985. RAYMOND. The Raymond Corporation. SN 282,925. Pub. 8-27-68. Filed 10-19-67.  
 859,986. POST A WARM WELCOME. The Ruby Lighting Corporation. SN 283,577. Pub. 8-27-68. Filed 10-27-67.  
 859,987. MINI BOXER. IMC Magnetics Corp. SN 284,372. Pub. 8-27-68. Filed 11-8-67.  
 859,988. ENGINEETROL. W & H Service Co. SN 285,774. Pub. 8-27-68. Filed 11-28-67.  
 859,989. VERNISWITCH. The Perkin-Elmer Corporation. SN 286,170. Pub. 8-27-68. Filed 12-4-67.  
 859,990. SERENITY. Lighting Products, Inc. SN 286,540. Pub. 8-27-68. Filed 12-8-67.  
 859,991. CLASONIC. Clarion Shoji Co., Ltd. (U.S.A.). SN 286,810. Pub. 8-27-68. Filed 12-13-67.  
 859,992. FLAMETHROWER. Grant Industries Incorporated. SN 287,517. Pub. 8-27-68. Filed 12-29-67.  
 859,993. KILOCAP. High Vacuum Electronics, Inc. SN 293,138. Pub. 8-27-68. Filed 3-13-68.  
 859,994. PICOCLAREED. C. P. Clare & Company. SN 297,169. Pub. 8-27-68. Filed 5-2-68.  
 859,995. CCR. Century Lighting, Inc. SN 298,499. Pub. 8-27-68. Filed 5-20-68.

## Class 22—Games, Toys, and Sporting Goods

- 859,996. SPUFO AND DESIGN. The Saturn Corporation. SN 268,228. Pub. 8-27-68. Filed 4-3-67.  
 859,997. SWIM JET. Wymar P.V.B.A. SN 270,095. Pub. 8-27-68. Filed 4-26-67.  
 859,998. VOWEL OWL. Anne C. Delaney. SN 276,544. Pub. 8-27-68. Filed 7-21-67.  
 859,999. SNUG-EZE. Mervyn Watts Osler. MULTIPLE CLASS (Classes 22, 37, and 42). SN 276,598. Pub. 8-27-68. Filed 7-24-67.  
 860,000. OK AND DESIGN. OK Fishing Tackle Company. SN 280,455. Pub. 8-27-68. Filed 9-15-67.  
 860,001. OK AND DESIGN. OK Fishing Tackle Company. SN 280,456. Pub. 8-27-68. Filed 9-15-67.  
 860,002. CUSTOM BY LA VERNE. La Verne Mfg. Co. SN 283,257. Pub. 8-27-68. Filed 10-24-67.  
 860,003. SKIPSY DOODLE. Blazon, Inc. SN 286,499. Pub. 8-27-68. Filed 12-8-67.  
 860,004. SURE SHOT. World Famous Sales, Inc. SN 288,249. Pub. 8-27-68. Filed 1-5-68.  
 860,005. MYSTIC DIALS. Parker Brothers, Inc., assignee of Harriette Wright Rogers. SN 292,863. Pub. 8-27-68. Filed 3-11-68.  
 860,006. FISH FOR IT. Angelo A. Bullara, d.b.a. Bullara Enterprises Co. SN 293,429. Pub. 8-27-68. Filed 3-18-68.  
 860,007. BITTY-BLANKS. Wham-O Mfg. Co. SN 294,791. Pub. 8-27-68. Filed 4-3-68.  
 860,008. TANOTIZED. York, Feather & Down Corp. MULTIPLE CLASS (Classes 22, 32, and 39). SN 295,462. Pub. 8-27-68. Filed 4-12-68.

- 860,009. MERRY. Merry Manufacturing Company. SN 297,341. Pub. 8-27-68. Filed 5-6-68.  
 860,010. VENT AIR IT BREATHE AND DESIGN. ABC Industries, Inc. SN 298,891. Pub. 8-27-68. Filed 5-23-68.  
 860,011. DYNA MITE. Eldon Industries, Inc. SN 299,407. Pub. 8-27-68. Filed 5-31-68.

## Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

- 859,903. (See Class 5 for this trademark.)  
 859,968. (See Class 19 for this trademark.)  
 860,012. DIAL. Dial Products, Inc. SN 253,856. Pub. 8-27-68. Filed 9-6-66.  
 860,013. MISSOURI-ROGERS. Missouri-Rogers Corporation. SN 259,618. Pub. 8-27-68. Filed 11-25-66.  
 860,014. CALANDRETTE. Job. Kleinfewers Söhne. SN 261,305. Pub. 8-27-68. Filed 12-22-66.  
 860,015. ASHLAND BE LINE AND DESIGN. Midland Manufacturing Company, Inc. SN 263,191. Pub. 8-27-68. Filed 1-24-67.  
 860,016. COOK-EASE. Utica Cutlery Company. SN 264,621. Pub. 8-27-68. Filed 2-18-67.  
 860,017. ROCKLAND. Rockland, Inc. SN 264,684. Pub. 8-27-68. Filed 2-14-67.  
 860,018. STAR DELUXE. White Sewing Machine Company. SN 267,463. Pub. 8-27-68. Filed 3-23-67.  
 860,019. TOPPER CUB. Wyandotte Chemicals Corporation. SN 267,570. Pub. 8-27-68. Filed 3-24-67.  
 860,020. SILTMASTER. Pioneer Centrifuging Company. SN 269,785. Pub. 8-27-68. Filed 4-21-67.  
 860,021. SANDMASTER. Pioneer Centrifuging Company. SN 269,786. Pub. 8-27-68. Filed 4-21-67.  
 860,022. MISCELLANEOUS DESIGN. Pioneer Centrifuging Company. SN 269,788. Pub. 8-27-68. Filed 4-21-67.  
 860,023. COMBIBLOC AND DESIGN. B. Thies, Inhaber B. Thies & Söhne. SN 270,168. Pub. 8-27-68. Filed 4-27-67.  
 860,024. UNILLOY. United Engineering Manufacturing Company. SN 276,054. Pub. 8-27-68. Filed 7-14-67.  
 860,025. S DESIGN. Sta-Rite Industries, Inc. SN 279,111. Pub. 8-27-68. Filed 8-25-67.  
 860,026. WORLDWIDE AND DESIGN. Lemco Industries, Inc., assignee of Lemco Products, Inc. SN 279,400. Pub. 8-27-68. Filed 8-30-67.  
 860,027. BILGE KING. Crowell Designs, Inc. SN 280,802. Pub. 8-27-68. Filed 9-14-67.  
 860,028. HTC. Hydra-Tool Company, Inc. SN 282,587. Pub. 8-27-68. Filed 10-16-67.  
 860,029. MACK-HEMP. E. W. Bliss Company. SN 285,198. Pub. 8-27-68. Filed 11-20-67.  
 860,030. TOOLIGN AND DESIGN. Day/ton Progress Corp. SN 286,104. Pub. 8-27-68. Filed 12-4-67.  
 860,031. MACMILLIN. MacMillin Hydraulic Engineering Corporation. SN 287,035. Pub. 8-27-68. Filed 12-15-67.  
 860,032. AUTOVATION. Lincoln Manufacturing Co., Inc. SN 287,304. Pub. 8-27-68. Filed 12-20-67.  
 860,033. KARPET KWEEN. Multi-Clean Products, Incorporated. SN 287,373. Pub. 8-27-68. Filed 12-21-67.  
 860,034. SHIRLEY. The Cotton Silk and Man-Made Fibres Research Association. SN 287,422. Pub. 8-27-68. Filed 12-22-67.  
 860,035. SPOTWHEEL. Lockwood Technical, Inc. SN 288,831. Pub. 8-27-68. Filed 1-15-68.  
 860,036. OSTER. John Oster Manufacturing Co. SN 297,330. Pub. 8-27-68. Filed 5-10-68.  
 860,037. SKF. SKF Industries, Inc. SN 298,294. Pub. 8-27-68. Filed 5-16-68.  
 860,038. SMITITE. J. K. Smit & Sons, Inc. SN 298,386. Pub. 8-27-68. Filed 5-17-68.

## Class 26—Measuring and Scientific Appliances

- 859,910. (See Class 6 for this trademark.)  
 859,975. (See Class 21 for this trademark.)  
 860,039. TF AND DESIGN. Albert Lins. SN 247,938. Pub. 8-27-68. Filed 6-13-66.  
 860,040. SPECTROPHOR. Bausch & Lomb Incorporated. SN 249,938. Pub. 8-27-68. Filed 7-11-66.  
 860,041. METROHM. Edgcombe Peebles Limited. SN 255,075. Pub. 8-27-68. Filed 9-26-66.  
 860,042. ORBIS. American Machine & Foundry Company. SN 260,005. Pub. 8-27-68. Filed 12-5-66.  
 860,043. SCI AND DESIGN. Solidstate Controls, Inc. SN 269,359. Pub. 8-27-68. Filed 4-17-67.  
 860,044. GRAD-LINE. Grad-Line, Inc. SN 270,242. Pub. 8-27-68. Filed 4-28-67.  
 860,045. CLEANOMETER. Ametek, Inc. SN 272,000. Pub. 8-27-68. Filed 5-22-67.  
 860,046. FLO SIG. Motomco, Inc. SN 272,514. Pub. 8-27-68. Filed 5-26-67.  
 860,047. DIGIGRAPHIC. Control Data Corporation. SN 272,920. Pub. 8-27-68. Filed 6-2-67.  
 860,048. SAMCINE. Samuelson Film Service Limited. SN 274,094. Pub. 8-27-68. Filed 6-16-67.  
 860,049. A THINISTOR. Victory Engineering Corporation. SN 279,588. Pub. 8-27-68. Filed 9-1-67.  
 860,050. UNIVERSAL-CHEK. Collins Microstat Company, Inc. SN 282,440. Pub. 8-27-68. Filed 10-13-67.  
 860,051. VIP. Calma Company. SN 285,720. Pub. 8-27-68. Filed 11-28-67.  
 860,052. XACTAPE. Claud S. Gordon Company. SN 286,129. Pub. 8-27-68. Filed 12-4-67.  
 860,053. ZYLOWARE. Zylo Ware Corporation. SN 286,297. Pub. 8-27-68. Filed 12-5-67.  
 860,054. SIMULATED DIAL FACE ENCLOSING CAPITAL LETTERS RE. Richard E. Oswald, d.b.a. Reotemp Instrument Company. SN 287,314. Pub. 8-27-68. Filed 12-20-67.  
 860,055. REOTEMP. Richard E. Oswald, d.b.a. Reotemp Instrument Company. SN 287,315. Pub. 8-27-68. Filed 12-20-67.  
 860,056. TRI-FILMATIC. Honeywell Inc. SN 287,362. Pub. 8-27-68. Filed 12-21-67.  
 860,057. DUAL-FILMATIC. Honeywell Inc. SN 287,363. Pub. 8-27-68. Filed 12-21-67.  
 860,058. INTER ACOUSTICS AND DESIGN. Precision Acoustics Corporation. SN 287,580. Pub. 8-27-68. Filed 12-26-67.  
 860,059. ANALON. Keuffel & Esser Company. SN 287,743. Pub. 8-27-68. Filed 12-26-67.

## Class 27—Horological Instruments

- 860,060. WESTMINSTER. Westminster Watch Co., Inc. SN 276,489. Pub. 8-27-68. Filed 7-20-67.  
 860,061. JACQUES MONNAT. Palmer Sales Corporation. SN 289,419. Pub. 8-27-68. Filed 1-23-68.  
 860,062. PANASONIC. Matsushita Electric Industrial Co., Ltd. SN 289,598. Pub. 8-27-68. Filed 1-25-68.  
 860,063. ANDES. Moskovits & Gluck, Inc. SN 289,710. Pub. 8-27-68. Filed 1-26-68.  
 860,064. AMERICAN STANDARD. Bulova Watch Company, Inc. SN 289,771. Pub. 8-27-68. Filed 1-29-68.

## Class 28—Jewelry and Precious-Metal Ware

- 860,065. BEER BOBS. Julia Lee Drake. SN 273,749. Pub. 8-27-68. Filed 6-13-67.



860,066. QUEEN OF DIAMONDS. Textron Inc. SN 288,985. Pub. 8-27-68. Filed 1-16-68.  
 860,067. GLOMP. Barry A. Squires. SN 289,039. Pub. 8-27-68. Filed 1-17-68.  
 860,068. LSC. Lou Shred Corporation. SN 289,133. Pub. 8-27-68. Filed 1-18-68.  
 860,069. PADETTE. Lasko Strap Company, Inc. SN 297,506. Pub. 8-27-68. Filed 5-7-68.

### Class 29 — Brooms, Brushes, and Dusters

859,921. (See Class 6 for this trademark.)  
 860,070. MASON PEARSON. Mason Pearson Brothers. SN 288,964. Pub. 8-27-68. Filed 1-16-68.

### Class 30 — Crockery, Earthenware, and Porcelain

860,071. PARAGON. Paragon China Limited. SN 284,833. Pub. 8-27-68. Filed 11-14-67.

### Class 31 — Filters and Refrigerators

859,920. (See Class 6 for this trademark.)

### Class 32 — Furniture and Upholstery

859,883. (See Class 2 for this trademark.)  
 860,008. (See Class 22 for this trademark.)  
 860,072. MARK IV. Purofied Down Products Corp. SN 224,045. Pub. 2-22-68. Filed 7-30-65.  
 860,073. DECOWEAVE. Jencraft Mfg. Co. SN 270,386. Pub. 8-27-68. Filed 5-1-67.  
 860,074. GIBALTAR. Jencraft Mfg. Co. SN 270,388. Pub. 8-27-68. Filed 5-1-67.  
 860,075. METRO WIRE. Metropolitan Wire Goods Corporation. SN 276,336. Pub. 8-27-68. Filed 7-19-67.

### Class 33 — Glassware

860,076. LEFTON. Geo. Zoltan Lefton Co. SN 266,165. Pub. 8-27-68. Filed 3-7-67.

### Class 34 — Heating, Lighting, and Ventilating Apparatus

860,077. WE "CARE" FOR RAILROADS. Durox Equipment Company. SN 252,251. Pub. 8-27-68. Filed 8-12-66.  
 860,078. Hydro-Squeegee. Lear Siegler, Inc. SN 259,124. Pub. 8-27-68. Filed 11-21-66.  
 860,079. TANTA-CLAD. Fansteel Inc., by change of name from Fansteel Metallurgical Corporation. SN 261,826. Pub. 7-2-68. Filed 1-3-67.  
 860,080. HOWDEN-APCO. The Air Preheater Company, Inc. SN 287,127. Pub. 8-27-68. Filed 12-18-67.  
 860,081. COLONY HOUSE. Broan Mfg. Co., Inc. SN 287,272. Pub. 8-27-68. Filed 12-20-67.  
 860,082. L AND DESIGN. Lindberg Corporation. SN 287,655. Pub. 8-27-68. Filed 12-27-67.

860,083. MALIBU. Sunbeam Corporation. SN 287,680. Pub. 8-27-68. Filed 12-27-67.

### Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

859,938. (See Class 12 for this trademark.)  
 860,084. CONTAINER (DESIGN). Fre-Mar Industries, Inc. SN 214,636. Pub. 8-27-68. Filed 3-22-65.  
 860,085. MISCELLANEOUS DESIGN. C. E. Conover & Co., Inc. SN 277,542. Pub. 8-27-68. Filed 8-4-67.  
 860,086. G800. The Goodyear Tire & Rubber Company. SN 288,305. Pub. 8-27-68. Filed 1-8-68.  
 860,087. HI-MILER T/T. The Goodyear Tire & Rubber Company. SN 288,306. Pub. 8-27-68. Filed 1-8-68.  
 860,088. DUAL S-90. The General Tire & Rubber Company. SN 288,808. Pub. 8-27-68. Filed 1-15-68.  
 860,089. POW-R-TOW. Pow-R-Tow, Inc. SN 290,410. Pub. 8-27-68. Filed 2-6-68.

### Class 36 — Musical Instruments and Supplies

860,090. CORITO. Federico Rlojas. SN 263,227. Pub. 8-27-68. Filed 1-17-67.  
 860,091. RED DRAGON. General Music Strings Limited. SN 263,560. Pub. 8-27-68. Filed 1-30-67.  
 860,092. NOVAPAK. Roy J. Maler Corporation. SN 265,428. Pub. 8-27-68. Filed 2-24-67.  
 860,093. MELLOTRON. Mellotronics Limited. SN 268,319. Pub. 8-27-68. Filed 4-4-67.  
 860,094. EMPIRE. Empire Scientific Corporation. SN 272,819. Pub. 8-27-68. Filed 6-1-67.  
 860,095. TRUMP. C. Bruno & Son, Incorporated. SN 276,306. Pub. 8-27-68. Filed 7-19-67.  
 860,096. VLR. Schafer Electronics. SN 278,317. Pub. 8-27-68. Filed 8-15-67.  
 860,097. WHITE WHALE AND DESIGN. White Whale Record Co., Inc. SN 279,014. Pub. 8-27-68. Filed 8-24-67.  
 860,098. VINCENT. Vincent Chiarelli, d.b.a. Vincent Record Company. SN 280,765. Pub. 8-27-68. Filed 9-20-67.  
 860,099. DELLWOOD. Dellwood Music Co., Inc., d.b.a. Dellwood Records. SN 281,043. Pub. 8-27-68. Filed 9-25-67.  
 860,100. ORSONIC AND DESIGN. Leo Orso, d.b.a. Orsonic Recording Services. SN 289,029. Pub. 8-27-68. Filed 1-17-68.  
 860,101. SPOKEN ARTS SA AND DESIGN. Spoken Arts, Inc. SN 290,413. Pub. 8-27-68. Filed 2-6-68.  
 860,102. THE SPOKEN CLASS AND DESIGN. The Spoken Class, Inc. SN 291,333. Pub. 8-27-68. Filed 2-19-68.

### Class 37 — Paper and Stationery

859,921. (See Class 6 for this trademark.)  
 859,999. (See Class 22 for this trademark.)  
 860,103. BIO-CHEK 80. Calgon Corporation (Delaware corporation), assignee of Calgon Corporation (Pennsylvania corporation). SN 239,718. Pub. 8-27-68. Filed 2-28-66.  
 860,104. MISCELLANEOUS DESIGN. Hammermill Paper Company, Strathmore Paper Company Division. SN 269,989. Pub. 8-27-68. Filed 4-25-67.  
 860,105. MISCELLANEOUS DESIGN. Sales Tools, Inc. SN 279,862. Pub. 8-27-68. Filed 9-7-67.  
 860,106. ROTUNDA. Georgia-Pacific Corporation. SN 283,247. Pub. 8-27-68. Filed 10-24-67.  
 860,107. EASY-DIP. Capitol Brush Co., d.b.a. Enterprise Wallcoverings. SN 284,990. Pub. 8-27-68. Filed 11-16-67.

860,108. SEAL-A-MATIC. The Sangamon Company. SN 288,868. Pub. 8-27-68. Filed 1-15-68.  
 860,109. PLASTI RACE. Eberhard Faber Inc. SN 289,885. Pub. 8-27-68. Filed 1-30-68.  
 860,110. HOPPER GO PAC AND DESIGN. Georgia-Pacific Corporation. SN 290,166. Pub. 8-27-68. Filed 2-2-68.  
 860,111. CAMERATA XII. Nationwide Papers Incorporated. SN 290,314. Pub. 8-27-68. Filed 2-5-68.  
 860,112. MODAVATION PAPETERIES. Fox River Paper Corporation. SN 293,080. Pub. 8-27-68. Filed 3-13-68.  
 860,113. CONSO-COLOR. Consolidated Packaging Corporation. SN 294,816. Pub. 8-27-68. Filed 4-3-68.

### Class 38 — Prints and Publications

860,114. PLANAFLEX. John W. Jenkins, d.b.a. Planaflex Company. MULTIPLE CLASS (Classes 38 and 101). SN 249,539. Pub. 8-27-68. Filed 7-5-66.  
 860,115. COOKBOX. C. Henderson & Associates, Inc. SN 262,423. Pub. 8-27-68. Filed 1-12-67.  
 860,116. ICI. Imperial Chemical Industries Limited. SN 267,156. Pub. 8-27-68. Filed 3-20-67.  
 860,117. ICI AND DESIGN. Imperial Chemical Industries Limited. SN 267,157. Pub. 8-27-68. Filed 3-20-67.  
 860,118. THE MAGAZINE OF HISTORY. American Heritage Publishing Co., Inc. SN 269,615. Pub. 8-27-68. Filed 4-20-67.  
 860,119. AEP PAPERBACK PROGRAMS. Xerox Corporation. SN 270,637. Pub. 8-27-68. Filed 5-3-67.  
 860,120. A MAGAZINE OF THE ARTS. American Heritage Publishing Co., Inc. SN 273,729. Pub. 8-27-68. Filed 6-13-67.  
 860,121. CARAVEL DESIGN. American Heritage Publishing Co., Inc. SN 273,730. Pub. 8-27-68. Filed 6-13-68.  
 860,122. TECH/TRONICS. Mills Music, Inc. SN 274,334. Pub. 8-27-68. Filed 6-20-67.  
 860,123. FANSTEEL METALLURGY. Fansteel Inc., by change of name from Fansteel Metallurgical Corporation. SN 275,041. Pub. 7-9-68. Filed 6-29-67.  
 860,124. ATTENDANCE BUILDERS. Joe B. Herring, d.b.a. Herring Printing Co. SN 275,374. Pub. 8-27-68. Filed 7-5-67.  
 860,125. MY WEEKLY READER SUMMER SURPRISE. Xerox Corporation. SN 275,717. Pub. 8-27-68. Filed 7-10-67.  
 860,126. MISCELLANEOUS DESIGN. Artemis Verlags Aktiengesellschaft. SN 277,336. Pub. 8-27-68. Filed 8-2-67.  
 860,127. SUNSHINE. The Henry F. Henrichs Publications, Inc. SN 278,435. Pub. 8-27-68. Filed 8-16-67.  
 860,128. INSIGHT ON THE NEWS. Independent Research and Publishing Association, Inc. SN 278,966. Pub. 8-27-68. Filed 8-24-67.  
 860,129. BEC'N CALL. Martin Marietta Corporation. SN 279,403. Pub. 8-27-68. Filed 8-30-67.  
 860,130. TOURMAP. Marjorie D. Ingalls, d.b.a. Tourmap Company. SN 279,739. Pub. 8-27-68. Filed 9-6-67.  
 860,131. NF AND DESIGN. The Nutrition Foundation, Inc. SN 280,088. Pub. 8-27-68. Filed 9-11-67.  
 860,132. BTC AND DESIGN. Maco Publishing Co., Inc. SN 281,207. Pub. 8-27-68. Filed 9-26-67.  
 860,133. ALIVE AND DESIGN. Mennonite Broadcasts, Incorporated. SN 287,226. Pub. 8-27-68. Filed 12-19-67.  
 860,134. SBS COLOPHON. Scholastic Magazines, Inc. SN 289,035. Pub. 8-27-68. Filed 1-17-68.  
 860,135. SBS AND DESIGN. Scholastic Magazines, Inc. SN 289,036. Pub. 8-27-68. Filed 1-17-68.  
 860,136. HORSE & RIDER. Gallant Publishing Company, Inc. SN 294,350. Pub. 8-27-68. Filed 3-28-68.  
 860,137. CHILDREN'S PLAYMATE. Children's Playmate Magazine Inc. SN 296,401. Pub. 8-27-68. Filed 4-24-68.

860,138. TRAVELODGER INTERNATIONAL AND DESIGN. The Travelodge Corporation. SN 296,623. Pub. 8-27-68. Filed 4-28-68.

### Class 39 — Clothing

860,008. (See Class 22 for this trademark.)  
 860,139. MOONDREAM. Gramplan Textiles Limited. SN 253,431. Pub. 8-27-68. Filed 8-30-66.  
 860,140. "GRIDIRONS." The Fleischer Shoe Company. SN 261,654. Pub. 8-27-68. Filed 12-29-66.  
 860,141. THE SQUASHABLES. Bobbie Brooks, Incorporated. SN 263,446. Pub. 8-27-68. Filed 1-27-67.  
 860,142. TRU-GRIP. Dial Shoe Company, Inc. SN 268,385. Pub. 8-27-68. Filed 4-5-67.  
 860,143. ELASTI-BELLA. Triumph International Aktiengesellschaft. SN 268,442. Pub. 8-27-68. Filed 4-5-67.  
 860,144. GALANTES. The Servus Rubber Company. SN 270,288. Pub. 8-27-68. Filed 4-28-67.  
 860,145. MINIGARTER. Sarong, Inc. SN 270,815. Pub. 8-27-68. Filed 5-5-67.  
 860,146. HER TERN. Tern-Consulate Limited. SN 270,821. Pub. 8-27-68. Filed 5-5-67.  
 860,147. TY LORRAN. Ty Lorrain Inc. SN 270,985. Pub. 8-27-68. Filed 5-8-67.  
 860,148. SCISSOR FASHIONS BY SALLY GEE. Sally Gee, Inc. SN 271,524. Pub. 8-27-68. Filed 5-15-67.  
 860,149. C. H. BAKER. A. S. Beck Shoe Corporation. SN 271,909. Pub. 8-27-68. Filed 5-19-67.  
 860,150. GLAMOUR-KNIT. Central Knitwear, Inc. SN 272,695. Pub. 8-27-68. Filed 5-31-67.  
 860,151. HARTSVILLE AND DESIGN. Ellen Hart, Inc. SN 274,739. Pub. 8-27-68. Filed 6-26-67.  
 860,152. WINDJAMMER. United States Purchasing Exchange. SN 276,772. Pub. 8-27-68. Filed 7-25-67.  
 860,153. TOPPICKERS. The Hall Mark Shirt Company Limited. SN 280,416. Pub. 8-27-68. Filed 9-15-67.  
 860,154. DOROTHEE BIS. Elle Jacobson. SN 280,952. Pub. 8-27-68. Filed 9-22-67.  
 860,155. MISCELLANEOUS DESIGN. Capezio, Inc. SN 281,030. Pub. 8-27-68. Filed 9-25-67.  
 860,156. WASH ME. Bayard Shirt Corp. SN 281,169. Pub. 8-27-68. Filed 9-26-67.  
 860,157. CLAUDE LERINS. S.A. Mid-Textile. SN 281,817. Pub. 8-27-68. Filed 9-27-67.  
 860,158. TOM THUMB AND DESIGN. Sam Margulies, d.b.a. Tom Thumb Shoe Company. SN 281,380. Pub. 8-27-68. Filed 9-28-67.  
 860,159. LINCOLN CENTER. Mayflower Dress Co. SN 281,602. Pub. 8-27-68. Filed 10-2-67.  
 860,160. BERNASETA. McGregor-Doniger Inc. SN 281,805. Pub. 8-27-68. Filed 10-4-67.  
 860,161. LANKY-SCARF. Glensader Corporation. SN 282,573. Pub. 8-27-68. Filed 10-16-67.  
 860,162. SSK AND DESIGN. S. S. Kresge Company. SN 282,905. Pub. 8-27-68. Filed 10-19-67.  
 860,163. KISLAV CO-EDS. Buscarlet Glove Co., Inc. SN 282,976. Pub. 8-27-68. Filed 10-20-67.  
 860,164. LANHAM CLOTHES AND DESIGN. Standard International Corporation. SN 283,169. Pub. 8-27-68. Filed 10-23-67.  
 860,165. VAN MALI. Phillips-Van Heusen Corporation. SN 283,587. Pub. 8-27-68. Filed 10-27-67.  
 860,166. TINY TEAM. W. G. Inc. SN 284,058. Pub. 8-27-68. Filed 11-2-67.  
 860,167. GOLF CIRCUIT. Eddy Bros. Co., Inc. SN 285,405. Pub. 8-27-68. Filed 11-22-67.  
 860,168. "THE PHYLLIS LOOK." Phyllis Sportswear, Inc. SN 285,572. Pub. 8-27-68. Filed 11-24-67.  
 860,169. HISPACOR AND DESIGN. El Corte Ingles, S.A. SN 285,654. Pub. 8-27-68. Filed 11-27-67.



- 860,170. SHOETIQUE. Mercantile Stores Company, Inc. SN 285,702. Pub. 8-27-68. Filed 11-28-67.
- 860,171. AQUATOSS. Originals Incorporated. SN 285,705. Pub. 8-27-68. Filed 11-28-67.
- 860,172. BABY DEER SHOES ETC. AND DESIGN. Trim-foot Company. SN 287,189. Pub. 8-27-68. Filed 12-18-67.
- 860,173. RAMON DIEGO. Wohl Shoe Company. SN 287,978. Pub. 8-27-68. Filed 1-2-68.
- 860,174. PANTI-MANIA. Hanes Corporation. SN 288,310. Pub. 8-27-68. Filed 1-8-68.
- 860,175. PANTI-MONIUM. Hanes Corporation. SN 288,311. Pub. 8-27-68. Filed 1-8-68.
- 860,176. MISCELLANEOUS DESIGN. Alps Sportswear Mfg. Co., Inc. SN 288,867. Pub. 8-27-68. Filed 1-12-68.
- 860,177. LA PATTI. St. Louis Shoe Corporation. SN 288,865. Pub. 8-27-68. Filed 1-15-68.
- 860,178. FUN CITY. Ferdinand Nusbaum. SN 289,523. Pub. 8-27-68. Filed 1-24-68.
- 860,179. PEER AND DESIGN. Peerless Robes & Sportswear, Inc. SN 289,527. Pub. 8-27-68. Filed 1-24-68.
- 860,180. PEDIBUMPERS. J. C. Penney Company. SN 289,713. Pub. 8-27-68. Filed 1-26-68.
- 860,181. HEEL HUGGERS. Dunn and McCarthy, Inc. SN 289,791. Pub. 8-27-68. Filed 1-29-68.
- 860,182. DITHER. Puritan Fashions Corporation. SN 290,013. Pub. 8-27-68. Filed 1-31-68.
- 860,183. MEDIEVAL HELMET (DESIGN). Neiman-Marcus Company. SN 290,315. Pub. 8-27-68. Filed 2-5-68.
- 860,184. SPIRIT-ESSE. J. P. Stevens & Co., Inc. SN 290,765. Pub. 8-27-68. Filed 2-9-68.
- 860,185. SPIRIT-EEN. J. P. Stevens & Co., Inc. SN 290,766. Pub. 8-27-68. Filed 2-9-68.
- 860,186. IRISH KINGS AND DESIGN. Wynn, Inc. SN 290,926. Pub. 8-27-68. Filed 2-12-68.
- 860,187. DIVA. S.p.A. Diva-Fabbrica Cravatte e Tessuti per Cravatte. SN 291,195. Pub. 8-27-68. Filed 2-15-68.
- 860,188. ACTOSTRETCH. E-Z Mills, Inc. SN 292,153. Pub. 8-27-68. Filed 2-29-68.
- 860,189. ACTOFIT. E-Z Mills, Inc. SN 292,154. Pub. 8-27-68. Filed 2-29-68.
- 860,190. LADY PEP. Arwa Feinstrumpfwerke Hans Thierfelder. SN 292,541. Pub. 8-27-68. Filed 3-6-68.
- 860,191. DURASORB. Parke, Davis & Company. SN 294,147. Pub. 8-27-68. Filed 3-26-68.
- 860,192. BOOGALOOS. Melville Shoe Corporation. SN 294,356. Pub. 8-27-68. Filed 3-28-68.
- 860,193. REVELRY. Infants Socks, Inc. SN 295,032. Pub. 8-27-68. Filed 4-5-68.
- 860,194. WILKINSON'S AND DESIGN. Wilkinson's Inc. of St. Louis. SN 296,284. Pub. 8-27-68. Filed 4-23-68.
- 860,195. WILKINSON'S AND DESIGN. Wilkinson's Inc. of St. Louis. SN 296,285. Pub. 8-27-68. Filed 4-23-68.
- 860,196. BAGGIES. Blue Bell, Inc. SN 298,084. Pub. 8-27-68. Filed 5-14-68.
- 860,197. 88K AND DESIGN. S. S. Kresge Company. SN 298,607. Pub. 8-27-68. Filed 5-20-68.
- 860,198. KOMAR. Charles Komar & Sons, Inc. SN 298,673. Pub. 8-27-68. Filed 5-21-68.
- 860,199. GETAWAYS. Melville Shoe Corporation. SN 298,776. Pub. 8-27-68. Filed 5-22-68.

### Class 40—Fancy Goods, Furnishings, and Notions

- 860,200. MINI-STREAK. Gasa Hair Products. SN 277,493. Pub. 8-27-68. Filed 3-4-67.
- 860,201. CHAPELLI. Bishop Industries Inc. SN 290,946. Pub. 8-27-68. Filed 2-13-68.
- 860,202. KISSCADE. Fashion Tress, Inc. SN 297,250. Pub. 8-27-68. Filed 5-3-68.

### Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

- 859,999. (See Class 22 for this trademark.)
- 860,203. ROMATCH. Ross-Matthal Corporation. MULTIPLE CLASS (Classes 42 and 50). SN 264,446. Pub. 8-27-68. Filed 2-10-67.
- 860,204. WOVEN WIND. Kenneth Erwin Harmon. SN 285,833. Pub. 8-27-68. Filed 11-29-67.
- 860,205. FLOTAIN. Albany Felt Company. SN 289,758. Pub. 8-27-68. Filed 1-29-68.
- 860,206. ERINPRESS. William Ewart & Son, New York, Ltd. SN 289,794. Pub. 8-27-68. Filed 1-20-68.
- 860,207. TASTEMAKER. J. P. Stevens & Co., Inc. SN 290,028. Pub. 8-27-68. Filed 1-31-68.
- 860,208. BO-PAC. Mary Kushnir and Hilda Kushnir. SN 290,179. Pub. 8-27-68. Filed 2-2-68.
- 860,209. BO-KEEP. Mary Kushnir and Hilda Kushnir. SN 290,180. Pub. 8-27-68. Filed 2-2-68.
- 860,210. DINAMEAU. Fieldcrest Mills, Inc. SN 290,594. Pub. 8-27-68. Filed 2-8-68.
- 860,211. CAMERA CRAFTED. Photogramica, Inc. SN 290,643. Pub. 8-27-68. Filed 2-8-68.
- 860,212. AMETEK AND DESIGN. Ametek, Inc. SN 297,133. Pub. 8-27-68. Filed 5-2-68.
- 860,213. ONE HUNDRED (100) TRIPPER. B. E. Williams. SN 298,390. Pub. 8-27-68. Filed 5-17-68.
- 860,214. EVERLON. Heldenberg Textile Fabrics Co., Inc. SN 298,511. Pub. 8-27-68. Filed 5-20-68.

### Class 44—Dental, Medical, and Surgical Appliances

- 860,215. SCANECTA CROWNS. Scanla Dentalmaterial Aktiebolag. SN 276,694. Pub. 8-27-68. Filed 7-24-67.
- 860,216. TURBOBRUSH. Products Design and Development Co. SN 279,585. Pub. 8-27-68. Filed 9-1-67.
- 860,217. DAVIS+GECK AND DESIGN. American Cyanamid Company. MULTIPLE CLASS (Classes 44 and 51). SN 282,159. Pub. 8-27-68. Filed 10-10-67.
- 860,218. EXERTONE. George H. Stafford, d.b.a. Exertone Products. SN 284,402. Pub. 8-27-68. Filed 11-8-67.
- 860,219. SOUND SENTRY. H. E. Douglass Engineering Sales Co. SN 285,315. Pub. 8-27-68. Filed 11-21-67.
- 860,220. ANDERSEN. H. W. Andersen Products, Inc. SN 285,710. Pub. 8-27-68. Filed 11-28-67.
- 860,221. BLUE RIBBON BRAND AND DESIGN. American Hygienic Co. SN 287,625. Pub. 8-27-68. Filed 12-27-67.
- 860,222. COSMEVO. Cosmevo Surgical & Orthopedic Corp. SN 287,727. Pub. 8-27-68. Filed 12-28-67.
- 860,223. FROSTY-STEEMY. Prak-T-Kal Corporation. SN 287,761. Pub. 8-27-68. Filed 12-28-67.
- 860,224. MONOPLEX. American Optical Corporation. SN 289,068. Pub. 8-27-68. Filed 1-18-68.
- 860,225. LITTLE GENI (DESIGN). Aamed, Inc. SN 294,432. Pub. 8-27-68. Filed 3-29-68.
- 860,226. FLIGHT. American Home Products Corporation. SN 297,496. Pub. 8-27-68. Filed 5-7-68.
- 860,227. U-MID. Thomas J. Mahon, Inc. SN 298,088. Pub. 8-27-68. Filed 5-14-68.

### Class 45—Soft Drinks and Carbonated Waters

- 860,228. DON THE BEACHCOMBER. Don the Beachcomber, assignee of Vita-Pakt Citrus Products Co. SN 259,868. Pub. 8-27-68. Filed 12-1-66.

- 860,229. VERY CHERRY COLA. Feigenson, Incorporated, d.b.a. Faygo Beverage Company. SN 287,412. Pub. 8-27-68. Filed 3-23-67.

### Class 46—Foods and Ingredients of Foods

- 859,910. (See Class 6 for this trademark.)
- 859,920. (See Class 6 for this trademark.)
- 859,921. (See Class 6 for this trademark.)
- 860,230. BLACK SQUARE WITH COLORED TOP AND BOTTOM BORDERS (DESIGN). Waples-Platter Company. SN 250,791. Pub. 8-27-68. Filed 7-21-66.
- 860,231. MISCELLANEOUS DESIGN. Sambo's, Inc. SN 269,111. Pub. 8-27-68. Filed 4-13-67.
- 860,232. SAMBO'S. Sambo's, Inc. SN 269,112. Pub. 8-27-68. Filed 4-13-67.
- 860,233. FLORA MIR ETC. AND DESIGN. Flora Mir Candy Corporation. SN 269,307. Pub. 8-27-68. Filed 4-17-67.
- 860,234. WATOX. Wallace & Tiernan Inc. SN 270,302. Pub. 8-27-68. Filed 4-28-67.
- 860,235. AWREY AND DESIGN. Awrey Bakeries, Incorporated. SN 270,746. Pub. 8-27-68. Filed 5-5-67.
- 860,236. WONDER FLAKES. Sterno Industries, Inc., assignee of Hartz Mountain Products Corp. SN 272,832. Pub. 6-4-68. Filed 6-1-67.
- 860,237. AWREY. Awrey Bakeries, Incorporated. SN 276,083. Pub. 8-27-68. Filed 7-17-67.
- 860,238. SP SWINSON PRODUCTS. A. H. Robins Company, Incorporated. SN 276,354. Pub. 8-27-68. Filed 7-19-67.
- 860,239. FLEUR DE LIS AND DESIGN. Bissinger's, Inc. SN 276,527. Pub. 8-27-68. Filed 7-21-67.
- 860,240. CONCERTINAS AND DESIGN. Lamb-Weston, Inc. SN 281,901. Pub. 8-27-68. Filed 10-5-67.
- 860,241. PEPPER'S PRIDE. H & H Poultry Company, Inc. SN 282,578. Pub. 8-27-68. Filed 10-16-67.
- 860,242. DU-CEL. A. Duda & Sons Cooperative Association. SN 284,634. Pub. 8-27-68. Filed 11-13-67.
- 860,243. PICKLES ARE A MEAL'S BEST FRIEND! W. B. Roddenberry Co., Inc. SN 284,838. Pub. 8-27-68. Filed 11-14-67.
- 860,244. CHURCH SOCIAL. Carnation Company. SN 285,993. Pub. 8-27-68. Filed 12-1-67.
- 860,245. CHECKERBOARD. Ralston Purina Company. SN 286,280. Pub. 8-27-68. Filed 12-5-67.
- 860,246. CORONET. H. P. Hood & Sons, Inc., d.b.a. H. P. Hood & Sons. SN 287,294. Pub. 8-27-68. Filed 12-20-67.
- 860,247. TRUE-SLICE. Marshall Farms. SN 287,870. Pub. 8-27-68. Filed 12-21-67.
- 860,248. SIR TOM. East Coast Fruit Company. SN 287,811. Pub. 8-27-68. Filed 12-29-67.
- 860,249. ACADEMY. Clovis Citrus Company. SN 289,483. Pub. 8-27-68. Filed 1-24-68.
- 860,250. HARLAN RANCH. Clovis Citrus Company. SN 289,484. Pub. 8-27-68. Filed 1-24-68.
- 860,251. OCEAN SPRAY. Ocean Spray Cranberries, Inc. SN 290,188. Pub. 8-27-68. Filed 2-2-68.
- 860,252. FANCY FRUIT FARMS. M. Polaner & Son, Inc. SN 291,470. Pub. 8-27-68. Filed 2-20-68.
- 860,253. SUGARDALE. Sugardale Foods, Inc. SN 294,686. Pub. 8-27-68. Filed 4-1-68.
- 860,254. JACK FROST AND DESIGN. The National Sugar Refining Company. SN 294,963. Pub. 8-27-68. Filed 4-4-68.
- 860,255. STAREA. W. R. Grace & Co. SN 295,138. Pub. 8-27-68. Filed 4-8-68.
- 860,256. NUTS-A-POPPIN'. Laura Lee Candies, Inc. SN 299,069. Pub. 8-27-68. Filed 5-27-68.
- 860,257. HAPPY TOM AND DESIGN. Thomas P. Vujovich. SN 299,187. Pub. 8-27-68. Filed 5-28-68.
- 860,258. AGRI-FLO. Morton International, Inc. SN 299,409. Pub. 8-27-68. Filed 5-31-68.
- 860,259. BUENA VISTA. Santiago Ranch. SN 299,410. Pub. 8-27-68. Filed 5-31-68.
- 860,260. SANTIAGA. Santiago Ranch. SN 299,411. Pub. 8-27-68. Filed 5-31-68.

### Class 47—Wines

- 860,261. BAUDELAIRE. Schenley Distillers, Inc., d.b.a. Roma Wine Company. SN 289,338. Pub. 8-27-68. Filed 1-22-68.
- 860,262. ROGER LOUIS. Roger Louis Myers, d.b.a. Roger Louis & Co. SN 290,637. Pub. 8-27-68. Filed 2-8-68.
- 860,263. COMTE LA FOND AND DESIGN. De Ladoucette Freres. SN 293,023. Pub. 8-27-68. Filed 3-12-68.

### Class 48—Malt Beverages and Liquors

- 859,921. (See Class 6 for this trademark.)
- 860,264. ASPEN GOLD. Tivoli Brewing Company. SN 288,889. Pub. 8-27-68. Filed 1-15-68.
- 860,265. VAIL. Jos. Schlitz Brewing Company. SN 295,407. Pub. 8-27-68. Filed 4-11-68.

### Class 49—Distilled Alcoholic Liquors

- 860,266. SAMBUCA ROMANA. H. Stone & Co., Ltd., assignee of Ditta Pace-Gipsa-Giacomo Pace Societa in Accomandita Semplice. SN 264,148. Pub. 8-27-68. Filed 2-7-67.
- 860,267. EL GRITO. Trojan Distributing Co., Inc., d.b.a. Mexican Import Co. SN 278,750. Pub. 8-27-68. Filed 8-21-67.
- 860,268. MOSKOV. Bohemian Distributing Company, d.b.a. Serge Ritzki & Co. SN 278,781. Pub. 8-27-68. Filed 8-22-67.
- 860,269. SOLERA RESERVADA AND DESIGN. John Joseph G. Randazzo, d.b.a. Plessis Import Company and Antonio Alcantara y Cia. SN 282,003. Pub. 8-27-68. Filed 10-6-67.
- 860,270. THE COLDSTREAM GUARD. Continental Distilling Corporation, d.b.a. Continental Distilling Co. SN 282,985. Pub. 8-27-68. Filed 10-20-67.
- 860,271. SOUTHERN SOUR MASH. Stitzel-Weller Distillery. SN 284,512. Pub. 8-27-68. Filed 11-9-67.
- 860,272. HALLER'S 7/11. W. A. Haller Corporation. SN 284,907. Pub. 8-27-68. Filed 11-15-67.
- 860,273. XL AND DESIGN. Schenley Distillers, Inc., d.b.a. Schenly Distillers. SN 286,449. Pub. 8-27-68. Filed 12-7-67.

### Class 50—Merchandise Not Otherwise Classified

- 860,274. CRYSTALIN. Corham Artificial Flower Co. SN 264,391. Pub. 8-27-68. Filed 2-10-67.
- 860,275. NOTHING. Charles G. Malin, d.b.a. Charles Malin Company. SN 264,750. Pub. 8-27-68. Filed 2-15-67.
- 860,276. UNIVERSAL KAR-STOP. A. H. Krueger, Inc. SN 282,376. Pub. 8-27-68. Filed 10-12-67.
- 860,277. TIZIANO GALLI. Murray Finkelstein, d.b.a. J. Finkelstein & Son. SN 282,998. Pub. 8-27-68. Filed 10-20-67.
- 860,278. CONTROLA. Quill Products, Inc. SN 288,846. Pub. 8-27-68. Filed 1-8-68.
- 860,279. ASTRO PLATES. Litho Chemical & Supply Co., Inc. SN 290,805. Pub. 8-27-68. Filed 2-5-68.

### Class 51—Cosmetics and Toilet Preparations

- 859,920. (See Class 6 for this trademark.)
- 859,921. (See Class 6 for this trademark.)
- 860,203. (See Class 42 for this trademark.)
- 860,217. (See Class 44 for this trademark.)



- 860,280. M MAYER AND DESIGN. Mayer Laboratories, Inc. SN 249,547. Pub. 8-27-68. Filed 7-5-66.
- 860,281. ZOBLAK. Maria Luisa Marques de Romero. SN 267,735. Pub. 8-27-68. Filed 3-28-67.
- 860,282. MINI-SHADER. Yardley of London, Inc. SN 273,146. Pub. 8-27-68. Filed 6-5-67.
- 860,283. FRESH HANDS. Fresh Hands Corporation. SN 277,553. Pub. 8-27-68. Filed 8-4-67.
- 860,284. BLACK BELT. Chas. Pfizer & Co., Inc. SN 286,171. Pub. 8-27-68. Filed 12-4-67.
- 860,285. MR. JOHN. Mr. John, Inc. SN 286,831. Pub. 8-27-68. Filed 12-13-67.
- 860,286. LOVE LACE. John H. Breck, Inc. SN 286,900. Pub. 8-27-68. Filed 12-14-67.
- 860,287. STAY FAIR. Avon Products, Inc. SN 287,134. Pub. 8-27-68. Filed 12-18-67.
- 860,288. GET SET. Alberto-Culver Company. MULTIPLE CLASS (Classes 51 and 52). SN 293,426. Pub. 8-27-68. Filed 3-18-68.
- 860,289. ANY SHAPE. The Gillette Company, d.b.a. The Toul Company. SN 296,921. Pub. 8-27-68. Filed 4-30-68.
- 860,290. TOMAC. American Hospital Supply Corporation SN 260,916. Pub. 3-12-68. Filed 12-16-66.

### Class 52 — Detergents and Soaps

- 859,921. (See Class 6 for this trademark.)
- 860,288. (See Class 51 for this trademark.)
- 860,291. SUEDE-CRAFTER. Leathercraft Products Corp. SN 277,466. Pub. 8-27-68. Filed 8-3-67.
- 860,292. SEAGRASS. Avon Products, Inc. SN 288,587. Pub. 8-27-68. Filed 1-11-68.
- 860,293. FRECKLES 'N' FRILLS. Avon Products, Inc. SN 288,589. Pub. 8-27-68. Filed 1-11-68.
- 860,294. FLOWER GIRL. Avon Products, Inc. SN 288,591. Pub. 8-27-68. Filed 1-11-68.
- 860,295. DOLL HOUSE. Avon Products, Inc. SN 288,593. Pub. 8-27-68. Filed 1-11-68.
- 860,296. BIO GLIST. Kevin Products, Inc. SN 288,960. Pub. 8-27-68. Filed 1-16-68.
- 860,297. DISCOVERY. General Foods Corporation. SN 289,586. Pub. 8-27-68. Filed 1-25-68.
- 860,298. SOAR. General Foods Corporation. SN 289,587. Pub. 8-27-68. Filed 1-25-68.
- 860,299. SOFTRIL. Colgate-Palmolive Company. SN 298,894. Pub. 8-27-68. Filed 5-23-68.

### Service Marks

### Class 100 — Miscellaneous

- 860,300. A MEAL A MINUTE. B/G Foods, Inc. SN 220,900. Pub. 6-13-67. Filed 6-11-65.
- 860,301. NATHANS AND DESIGN. Nathan's Famous, Inc. SN 261,155. Pub. 8-27-68. Filed 12-20-66.
- 860,302. MR. STEAK AND DESIGN. Mr. Steak, Inc. SN 270,936. Pub. 8-27-68. Filed 5-8-67.
- 860,303. NIC. National Interfraternity Conference, Inc. SN 274,536. Pub. 8-27-68. Filed 6-22-67.
- 860,304. NIC INTERFRATERNITY AND DESIGN. National Interfraternity Conference, Inc. SN 274,537. Pub. 8-27-68. Filed 6-22-67.
- 860,305. INVENTA. Inventa, A.G. für Forschung und Patentverwertung. SN 275,054. Pub. 8-27-68. Filed 6-29-67.
- 860,306. PICKWICK. Fast Foods, Incorporated. SN 282,277. Pub. 8-27-68. Filed 10-11-67.
- 860,307. SERVE. American Scholarship Association, Inc. SN 290,213. Pub. 8-27-68. Filed 2-5-68.

- 860,308. AMERICANA NURSING CENTER AND DESIGN. Americana Nursing Centers, Inc. SN 291,545. Pub. 8-27-68. Filed 2-21-68.
- 860,309. MIS. Arrington Liggins Dixon. SN 294,880. Pub. 8-27-68. Filed 4-4-68.
- 860,310. MISCELLANEOUS DESIGN. Ready Rent-All Systems Inc. SN 295,410. Pub. 8-27-68. Filed 4-11-68.
- 860,311. BEEF 'N BIRD AND DESIGN. Hotel Corporation of America. SN 299,068. Pub. 8-27-68. Filed 5-27-68.

### Class 101 — Advertising and Business

- 860,114. (See Class 38 for this trademark.)
- 860,312. U AND I AND DESIGN. Lag Drug Company, Inc. SN 225,231. Pub. 8-27-68. Filed 7-28-65.
- 860,313. OPERATION NOAH'S ARK. Harold J. Heneman. SN 235,667. Pub. 7-11-67. Filed 1-3-66.
- 860,314. KEPNER TREGOE AND DESIGN. Kepner-Tregoe and Associates, Inc. SN 245,275. Pub. 8-27-68. Filed 5-10-66.
- 860,315. PET RANCHES. Pet Ranches of America, Inc. SN 245,611. Pub. 8-27-68. Filed 5-13-66.
- 860,316. DIAL-A-STATION. Columbia Broadcasting System, Inc. SN 251,597. Pub. 8-27-68. Filed 8-8-66.
- 860,317. MICROLOG. Microlog Information Systems Inc., assignee of Robert S. Edwards, Jr., d.b.a. Microlog Information Systems. SN 274,420. Pub. 8-27-68. Filed 6-21-67.
- 860,318. APA AND DESIGN. American Products Agency, Inc. SN 280,002. Pub. 8-27-68. Filed 9-11-67.
- 860,319. SERVING THE NEED TO KNOW. International Textbook Company. MULTIPLE CLASS (Classes 101, 106, and 107). SN 281,745. Pub. 8-27-68. Filed 10-4-67.
- 860,320. THOROFARE. Thorofare Markets Inc. SN 285,867. Pub. 8-27-68. Filed 11-29-67.
- 860,321. FLAME KISSED. Jacoby & Company. SN 285,873. Pub. 8-27-68. Filed 10-30-67.
- 860,322. PACESETTER EAST. Pacesetter East, Inc. SN 286,169. Pub. 8-27-68. Filed 12-4-67.
- 860,323. SPENCER GIFTS AND DESIGN. Spencer Gifts, Inc. SN 289,062. Pub. 8-27-68. Filed 1-18-68.
- 860,324. CARDINAL FOOD STORES. Consolidated Foods Corporation. SN 290,219. Pub. 8-27-68. Filed 2-5-68.
- 860,325. MELDISCO. Melville Shoe Corporation. SN 295,706. Pub. 8-27-68. Filed 4-16-68.
- 860,326. INTEXT. International Textbook Company. MULTIPLE CLASS (Classes 101, 106, and 107). SN 298,890. Pub. 8-27-68. Filed 5-23-68.

### Class 102 — Insurance and Financial

- 860,327. ECONOCROP. Farmers Cooperative Mutual Insurance Association. SN 268,949. Pub. 8-27-68. Filed 4-12-67.
- 860,328. CC AND GLOBE DESIGN. Georgia International Life Insurance Company. SN 284,812. Pub. 8-27-68. Filed 11-14-67.
- 860,329. EXPRESS CHEQUES. American Express Company. SN 286,314. Pub. 8-27-68. Filed 12-6-67.

### Class 103 — Construction and Repair

- 860,330. AAMCO AND DESIGN. Aamco Automatic Transmissions, Inc. SN 287,709. Pub. 8-27-68. Filed 12-28-67.

### Class 104 — Communication

- 860,331. WU WESTERN UNION AND DESIGN. The Western Union Telegraph Company. SN 240,224. Pub. 8-27-68. Filed 3-4-66.

### Class 106 — Material Treatment

- 860,319. (See Class 101 for this trademark.)
- 860,326. (See Class 101 for this trademark.)
- 860,332. DELA-KLEEN. Cold Spring Bleachery. SN 288,425. Pub. 8-27-68. Filed 1-9-68.

- 860,333. LEAP. Ladies of Loretto, SN 243,882. Pub. 8-27-68. Filed 4-20-66.
- 860,334. REINA CHRISTINA. Copinvest A.G. SN 266,002. Pub. 8-27-68. Filed 3-6-67.

### Collective Membership Mark

### Class 107 — Education and Entertainment

- 860,319. (See Class 101 for this trademark.)
- 860,326. (See Class 101 for this trademark.)

### Class 200

- 860,335. MISCELLANEOUS DESIGN. Theta Phi Alpha Fraternity. SN 281,832. Pub. 8-27-68. Filed 10-4-67.

## SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

### Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

- 860,336. Samsonite Corporation, Denver, Colo. SN 275,874. Filed P.R. 7-12-67; Am. S.R. 8-21-68.

### Class 16 — Protective and Decorative Coatings

- 860,339. Arthur C. Mangels Industries, Inc., Philadelphia, Pa. SN 286,436. Filed 12-7-67.

## CHANNEL-GARD

For Frames Forming a Part of Luggage (Int. Cl. 18).  
First use June 1, 1967.

### Class 5 — Adhesives

- 860,337. Carolina Company, Inc., d.b.a. The Carolina Soap & Candle Makers, Southern Pines, N.C. SN 282,978. Filed P.R. 10-20-67; Am. S.R. 9-5-68.

## CANDLETTES

For Sealing Wax (Int. Cl. 16).  
First use on or about June 28, 1967.

### Class 12 — Construction Materials

- 860,338. Idaho Concrete Pipe Co., Inc., Nampa, Idaho. SN 280,420. Filed P.R. 9-15-67; Am. S.R. 8-27-68.

# Snap Lock

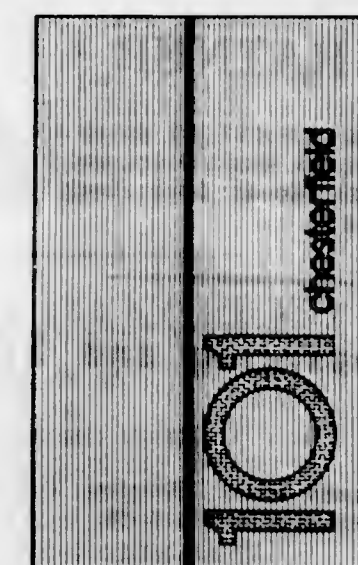
For Rubber Gasket Concrete Pipe for Use in Sewers, Irrigation and Drainage Pipe Lines (Int. Cl. 19).  
First use Mar. 17, 1967.



The drawing is lined for the color gold.  
For Foundation Color Paints, Antique Glaze and Protective Coatings Sold as a Three-Step Kit for Use in Antiquing Furniture (Int. Cl. 2).  
First use Jan. 7, 1965.

### Class 17 — Tobacco Products

- 860,340. Liggett & Myers Incorporated, New York, N.Y., by merger from Liggett & Myers Tobacco Company, New York, N.Y. SN 277,056. Filed P.R. 7-28-67; Am. S.R. 7-22-68.



The drawing is lined for the colors red and gold.  
For Cigarettes (Int. Cl. 34).  
First use July 14, 1967.



**Class 19—Vehicles**

860,341. Kawasaki Aircraft Co., Ltd., Kobe, Japan. SN 280,599. Filed 9-18-67.

**SUPERLUBE**

For Lubrication Systems Sold as a Component of Motorcycles (Int. Cl. 12).  
First use November 1965.

**Class 21—Electrical Apparatus, Machines, and Supplies**

860,342. Alarmtronics Engineering, Inc., Newton, Mass. SN 272,337. Filed P.R. 5-25-67; Am. S.R. 7-5-68.

**DETECTALARM**

For Electronic Audio Detection Systems Indicating an Alarm Condition Consisting of Sound Detection Means, Cancellation Sensitivity Controls, Reset Controls, Input Sensors, Key Switch and Time Clock Tamper Switches, Emergency Battery Sources, Alarm Relays, Input Units, and Parts Thereof (Int. Cl. 9).  
First use at least as early as Apr. 24, 1967.

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

860,343. G. W. Murphy Industries, Inc., Houston, Tex., by change of name from Reed Roller Bit Company, Houston, Tex. SN 240,955. Filed P.R. 3-14-66; Am. S.R. 5-6-68.

**NUTTWISTER**

For Pneumatic Tools (Int. Cl. 7).  
First use on or about Oct. 28, 1965.

**Class 25—Locks and Safes**

860,344. Ratner Safe Company Limited, London, England. SN 244,943. Filed P.R. 5-31-66; Am. S.R. 11-9-67.

**RATNER**

Owner of British Reg. No. 97,191, dated Apr. 12, 1890.  
For Metal Safes, Vaults, Vault Doors, and Grilles and Grille Gates for the Preceding Goods; Locks, Lock Parts, Keys, and Dead Boxes (Int. Cl. 6).

**Class 26—Measuring and Scientific Appliances**

860,345. W. H. Curtin & Co., Houston, Tex. SN 257,036. Filed P.R. 10-24-66; Am. S.R. 9-5-68.

**TRIPL-TEMP**

For Thermometers (Int. Cl. 9).  
First use at least as early as May 16, 1966.

860,346. Robert W. Thomson, d.b.a. Colorado Sportsman Center, Woodbine, N.J. SN 264,114. Filed P.R. 2-6-67; Am. S.R. 7-24-68.

**COLORADO DOUBLE DOT**

For Telescopic Sights Used With Sporting Rifles for Hunting (Int. Cl. 13).  
First use June 1964.

**Class 31—Filters and Refrigerators**

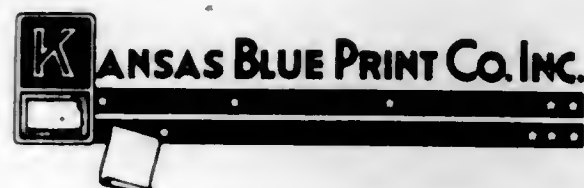
860,347. Supreme Foods, Inc., d.b.a. Displaymor Manufacturing Company, Los Angeles, Calif. SN 279,690. Filed P.R. 9-5-67; Am. S.R. 8-26-68.

**DISPLAYMOR**

For Refrigerated Display Cases for Food Products (Int. Cl. 11).  
First use July 2, 1967.

**Class 37—Paper and Stationery**

860,348. Eugene Dietzgen Co., Chicago, Ill. SN 253,639. Filed P.R. 9-1-66; Am. S.R. 5-17-68.



The lining on the mark indicates features of the mark and the drawing is not lined for color.  
For Business and Legal Forms (Int. Cl. 16).  
First use Jan. 3, 1956; in or about 1928 in a different form.

**Class 44—Dental, Medical, and Surgical Appliances**

860,349. "Automatic" Sprinkler Corporation of America, Cleveland, Ohio, assignee of Scott Aviation Corporation, Lancaster, N.Y. SN 244,926. Filed P.R. 5-4-66; Am. S.R. 8-28-68.

**PIDDLE-PAK**

For Disposable Urine Containers for Human Use (Int. Cl. 5).  
First use June 8, 1965.

**Service Mark****Class 104—Communication**

860,350. Video Projects Co., Inc., Jamaica, N.Y. SN 275,967. Filed P.R. 7-13-67; Am. S.R. 8-7-68.

**VIDEO TAPE PATROL**

For Supervising, Controlling and Operating Closed Circuit Television Systems for Race Tracks for the Purpose of Immediately Determining the Accurate Outcome of Racing Events (Int. Cl. 38).  
First use Dec. 15, 1958.

**TRADEMARK REGISTRATIONS RENEWED**

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|--|--|
| 31,506. ALLENBURY'S. Cl. 18 (Int. Cl. 5). 5-3-1898.  | 501,494. KARNAK. Cl. 12 (Int. Cl. 19). 8-10-48.  |
| 32,490. "CINDERELLA SHOE" AND DESIGN. Cl. 39 (Int. Cl. 25). 2-14-1899.                       | 501,992. REVERE. Cl. 26 (Int. Cl. 9). 9-7-48.  |
| 69,318. RENGO. Cl. 39 (Int. Cl. 25). 6-2-08.   | 502,064. MCNESS DAIRY KING. Cl. 6 (Int. Cl. 5). 9-14-48.                                       |
| 70,853. PEAR'S SOAP. Cl. 52 (Int. Cl. 3). 10-13-08.  | 502,106. FORMATEX. Cl. 16 (Int. Cl. 2). 9-14-48.   |
| 71,143. VARSITY. Cl. 37 (Int. Cl. 16). 11-3-08.  | 502,111. LEE OF CONSHOHOCKEN. Cl. 35 (Int. Cl. 12). 9-14-48.                                   |
| 241,629. GREEN CIRCLE OR BAND ON A CIRCULAR ERASER (DESIGN). Cl. 37 (Int. Cl. 16). 5-1-28.   | 502,112. LEE. Cl. 35 (Int. Cl. 12). 9-14-48.   |
| 242,107. REPRESENTATION OF PENCILS WITH CRACKLED SURFACE. Cl. 37 (Int. Cl. 16). 5-15-28.     | 502,159. ADAPT AIR. Cl. 34 (Int. Cl. 11). 9-14-48.   |
| 243,753. "EDITOR & PUBLISHER" ETC. AND DESIGN. Cl. 38 (Int. Cl. 16). 6-26-28.                | 502,276. SQUEEZ SLEEVE. Cl. 21 (Int. Cl. 9). 9-21-48.  |
| 244,395. FLIGONE. Cl. 6 (Int. Cl. 5). 7-17-28.   | 502,356. KELLY SPRINGFIELD. Cl. 35 (Int. Cl. 12). 9-21-48.                                     |
| 245,110. MARVELTONE. Cl. 37 (Int. Cl. 16). 8-7-28.   | 502,380. HAVILAND. Cl. 51 (Int. Cl. 3). 9-21-48.   |
| 245,572. BAX. Cl. 51 (Int. Cl. 8). 8-14-28.  | 502,399. FRIGIDAIRE. Cl. 24 (Int. Cl. 7). 9-21-48.   |
| 245,747. FLEXI-CARTON. Cl. 2 (Int. Cl. 16). 8-21-28.   | 502,501. HI SPRED. Cl. 6 (Int. Cl. 1). 9-28-48.  |
| 246,190. SUPERMAG. Cl. 6 (Int. Cl. 5). 9-4-28.   | 502,509. AIR CORE. Cl. 35 (Int. Cl. 12). 9-28-48.  |
| 246,211. HAHNE & CO. Cl. 39 (Int. Cl. 25). 9-4-28.   | 502,579. A AMERITEX. Cl. 42 (Int. Cl. 24). 9-28-48.  |
| 246,237. SPEEDY. Cl. 23 (Int. Cl. 8). 9-4-28.  | 502,708. KNL. Cl. 18 (Int. Cl. 5). 10-5-48.  |
| 246,504. DAROL. Cl. 18 (Int. Cl. 5). 9-11-28.  | 503,017. STAKMORE ARISTOCRATS OF FOLDING FURNITURE AND DESIGN. Cl. 32 (Int. Cl. 20). 10-19-48. |
| 246,510. "GLADIATOR" AND DESIGN. Cl. 39 (Int. Cl. 25). 9-11-28.                              | 503,213. PENGUIN AND DESIGN. Cl. 7 (Int. Cl. 22). 10-19-48.                                    |
| 246,572. DELCO-REMY. Cl. 21 (Int. Cl. 12). 9-11-28.  | 503,427. STIEFEL'S. Cl. 52 (Int. Cl. 3). 10-26-48.   |
| 246,577. MAYA. Cl. 51 (Int. Cl. 5). 9-11-28.   | 503,861. STITT. Cl. 21 (Int. Cl. 7). 11-16-48.   |
| 246,581. PINEHURST. Cl. 39 (Int. Cl. 25). 9-11-28.   | 503,974. BOXER AND DESIGN. Cl. 52 (Int. Cl. 3). 11-16-48.                                      |
| 246,591. "UNEEDA BAKERS" ETC. AND REPRESENTATION OF A COOKIE. Cl. 46 (Int. Cl. 30). 9-11-28. | 504,039. KANT-SLIP. Cl. 35 (Int. Cl. 12). 11-16-48.  |
| 246,657. FEMINETTE. Cl. 39 (Int. Cl. 25). 9-11-28.   | 504,049. FORT HOWARD. Cl. 46 (Int. Cl. 29). 11-23-48.  |
| 246,668. TIME THE WEEKLY NEWSMAGAZINE. Cl. 38 (Int. Cl. 16). 9-18-28.                        | 504,286. STURDEHANDLES AND DESIGN. Cl. 23 (Int. Cl. 8). 11-30-48.                              |
| 247,156. MICKEY MOUSE. Cl. 26 (Int. Cl. 9). 9-18-28.   | 504,287. STURDETOOLS. Cl. 23 (Int. Cl. 8). 11-30-48.   |
| 248,993. KENTUCKY. Cl. 42 (Int. Cl. 24). 11-6-28.  | 504,375. LEE OF CONSHOHOCKEN. Cl. 5 (Int. Cl. 1). 11-30-48.                                    |
| 249,366. CALOPHEN. Cl. 18 (Int. Cl. 5). 11-13-28.  | 504,667. NAVAJO. Cl. 16 (Int. Cl. 2). 12-7-48.   |
| 251,573. SWORD. Cl. 46 (Int. Cl. 29). 1-15-29.   | 505,251. GARDENIA. Cl. 28 (Int. Cls. 8 and 14). 12-28-48.                                      |
| 252,377. GALVEX. Cl. 16 (Int. Cl. 2). 2-5-29.  | 505,254. BOYE. Cl. 35 (Int. Cl. 7). 12-28-48.  |
| 253,532. PELRO. Cl. 35 (Int. Cl. 17). 2-26-29.   | 505,460. PICK. Cl. 19 (Int. Cl. 12). 1-4-49.   |
| 440,278. RAM AND SHIELD DESIGN. Cl. 39 (Int. Cl. 25). 8-24-48.                               | 505,582. NUTONE. Cl. 21 (Int. Cl. 9). 1-11-49.   |
| 440,468. AIRCO. Cl. 13 (Int. Cl. 6). 9-7-48.   | 505,734. STRATFORD PLATE. Cl. 28 (Int. Cl. 8). 1-18-49.  |
| 440,534. HIPPOHYDE. Cl. 50 (Int. Cl. 18). 9-14-48.   | 505,749. WEDDING BELLS. Cl. 28 (Int. Cls. 8 and 14). 1-18-49.                                  |
| 440,578. SAFTIVAC. Cl. 6 (Int. Cl. 5). 9-14-48.  | 505,948. BROADCAST. Cl. 46 (Int. Cl. 29). 1-25-49.   |
| 440,627. MYCOZITE. Cl. 16 (Int. Cl. 2). 9-14-48.   | 506,000. F IN A TRIANGLE. Cl. 13 (Int. Cl. 6). 1-25-49.  |
| 440,661. GP. Cl. 21 (Int. Cl. 9). 9-14-48.   | 506,001. FAIRBANKS. Cl. 13 (Int. Cl. 6). 1-25-49.  |
| 440,742. ZENITH. Cl. 21 (Int. Cl. 9). 9-21-48.   | 506,012. SPHERO. Cl. 13 (Int. Cl. 6). 1-25-49.   |
| 441,045. HYPERTUSSIS. Cl. 18 (Int. Cl. 5). 10-19-48.   | 506,046. AVON. Cl. 52 (Int. Cl. 3). 1-25-49.   |
| 441,111. PROLYSAMIN. Cl. 18 (Int. Cl. 5). 10-19-48.  | 506,074. TOMAHAWK. Cl. 1 (Int. Cl. 18). 1-25-49.   |
| 441,112. PROHYDRAMIN. Cl. 18 (Int. Cl. 5). 10-19-48.   | 506,080. GOLD BOND AND DESIGN. Cl. 38 (Int. Cl. 16). 1-25-49.                                  |
| 441,251. RED GOLD. Cl. 51 (Int. Cl. 3). 11-9-48.   | 506,085. GRAFARC. Cl. 21 (Int. Cl. 9). 1-25-49.  |
| 441,540. CORDESSA. Cl. 42 (Int. Cl. 24). 12-7-48.  | 506,090. PARK LANE. Cl. 11 (Int. Cl. 16). 1-25-49.   |
| 441,638. SUN RAY AND DESIGN. Cl. 51 (Int. Cl. 3). 12-21-48.                                  | 506,218. DUNBARTON. Cl. 7 (Int. Cl. 22). 2-1-49.   |
| 441,656. PORTAL. Cl. 46 (Int. Cl. 29). 12-21-48.   | 506,405. REPRESENTATION OF AN EAGLE. (Cl. 16 (Int. Cl. 2). 2-8-49.                             |
| 441,682. PLYSTONE ETC. AND DESIGN. Cl. 12 (Int. Cl. 19). 12-28-48.                           | 506,426. KRALAC. Cl. 1 (Int. Cl. 1). 2-8-49.   |
| 441,876. THEPHORIN. Cl. 18 (Int. Cl. 5). 1-18-49.  | 506,514. FEATURE LOCK. Cl. 28 (Int. Cl. 14). 2-8-49.   |
| 500,476. AHCOVAT. Cl. 6 (Int. Cl. 2). 6-1-48.  | 506,515. GALVOPAK. Cl. 21 (Int. Cl. 9). 2-8-49.  |
| 501,491. KARNAK. Cl. 12 (Int. Cl. 19). 8-10-48.  | 506,569. HEP. Cl. 6 (Int. Cl. 5). 2-8-49.  |
| 501,492. KARNAK. Cl. 12 (Int. Cl. 19). 8-10-48.  | 506,621. PACO AND CIRCLE. Cl. 18 (Int. Cl. 5). 2-15-49.  |
| 501,493. KARNAK. Cl. 12 (Int. Cl. 19). 8-10-48.  | 506,829. FLORITA. Cl. 46 (Int. Cl. 31). 2-22-49.   |
|  | 506,956. OLD CLASSIC. Cl. 49 (Int. Cl. 33). 2-22-49.   |
|  | 507,012. UNITED EFFORT. Cl. 38 (Int. Cl. 16). 2-22-49.   |

**TRADEMARK REGISTRATIONS CANCELED****Section 8**

The following registrations issued Sept. 25, 1962

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|--|---|
| 738,082. GRUSS AN COBURG. Cl. 1.                 | 738,107. REEMA. Cl. 12.                     |
| 738,083. NATIONAL AND DESIGN. Cl. 1.             | 738,110. STB. Cl. 12.                       |
| 738,086. NEOSOF. Cl. 1.                          | 738,116. STEELBORD. Cl. 12.                 |
| 738,081. BLISS ROCKWOOD AND DESIGN. Cl. 6.       | 738,118. METAL-K. Cl. 12.                   |
| 738,094. COR. Cl. 6.                             | 738,122. NUMOLD. Cl. 12.                    |
| 738,096. IMPERIAL. Cl. 9.                        | 738,128. BLISS ROCKWOOD AND DESIGN. Cl. 13. |
| 738,100. MIRACLE ORGA-VITE. Cl. 10.              | 738,134. HELPING HANDS. Cl. 13.             |
| 738,106. DESIGN OF FIRE TOWER AND TREES. Cl. 12. | 738,136. LAWN-O-MATIC. Cl. 13.              |
|  | 738,137. TUFFALOY. Cl. 14.                  |
|  | 738,140. TRI-MARK. Cl. 16.                  |
|  | 738,142. BOND 'N FILL. Cl. 16.              |
|  | 738,149. THEOPHEDRINE. Cl. 18.              |



738,150. VI-TRAL. Cl. 18.  
 738,151. ON THE SQUARE AND DESIGN. Cl. 18.  
 738,155. ANTI-RHEA. Cl. 18.  
 738,170. TURBOZIP. Cl. 21.  
 738,175. KAR-TROL AND DESIGN. Cl. 21.  
 738,184. CURB/TEL. Cl. 21.  
 738,189. MICRAM. Cl. 21.  
 738,191. GLO-NITE. Cl. 21.  
 738,194. BLUE EAGLE. Cl. 22.  
 738,195. FOUR SEASONS. Cl. 22.  
 738,199. BIBLE QUOTTO. Cl. 22.  
 738,200. COLOR WHIRLS AND DESIGN. Cl. 22.  
 738,201. NUTRI-BANK. Cl. 22.  
 738,210. BASKET RAKE AND DESIGN. Cl. 23.  
 738,213. BLUE WIZARD. Cl. 23.  
 738,215. COLEDRIX. Cl. 23.  
 738,220. GUPPY. Cl. 23.  
 738,224. JET. Cl. 26.  
 738,234. MISSILE. Cl. 38.  
 738,240. PORTRAIT OF LITTLE BOY TIPPING HIS HAT. Cl. 37.  
 738,241. PORTRAIT REPRESENTATION OF A BOY. Cl. 37.  
 738,242. PORTRAIT REPRESENTATION OF A BOY. Cl. 37.  
 738,243. ECONO. Cl. 37.  
 738,244. PERFECTYPE. Cl. 37.  
 738,247. HITCHCOCK'S WOOD WORKING DIRECTORY. Cl. 38.  
 738,248. NORTHERN VIRGINIA SUN SHOPPING NEWS. Cl. 38.  
 738,249. OVERSEAS. Cl. 38.  
 738,251. CITY DELUXE AND DESIGN. Cl. 39.  
 738,252. WALDEN. Cl. 39.  
 738,253. WALDEN CLASSICS. Cl. 39.  
 738,254. WUNDERSHORT. Cl. 39.  
 738,255. "QUEEN-SIZE." Cl. 39.  
 738,257. JONES POCKETTEE. Cl. 39.  
 738,259. WIS-TOGS. Cl. 39.  
 738,259. PACKERLAND. Cl. 39.  
 738,262. CONDOTTI. Cl. 39.  
 738,264. STEVENS S FINE FABRICS MADE IN AMERICA SINCE 1813 AND DESIGN. Cl. 39.  
 738,265. KOOKSVILLE. Cl. 39.  
 738,268. LADY BLANCHE AND DESIGN. Cl. 39.  
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 738,369. AIR DE FRANCE. Cl. 51.  
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588,832. C-P CO AND DESIGN. Cl. 44. 4-20-54.  
 801,591. SORCERER'S APPRENTICE. Cl. 51. 1-4-66.  
 809,740. SSS-T: TIDY TILE AND DESIGN. Cl. 52. 6-7-66.

## TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

243,731. DEVIL'S AND DESIGN. Cl. 6. 6-26-28. Sely S. Sellman, doing business as Devil Laboratories Company. Dome Chemical Corporation, Cincinnati, Ohio. Amended: In the statement, column 1, lines 17 through 21 are deleted, and the drawing is amended to appear:

## DEVIL'S



250,036. JELL-O. Cl. 46. 11-27-28. Postum Company, Incorporated. General Foods Corporation, New York, N.Y. Amended to appear:

## JELL-O

503,547. HOLLYWOOD. Cl. 42. 10-26-48. Clorox Corporation, Cincinnati, Ohio. Corrected: In the statement, column 1, line 2, "Ohio" should be deleted and Maryland should be inserted.



732,755. UNION LABEL ETC. AND DESIGN. Cl. 38. 6-12-62. Stove Mounters' International Union of North

America. Stove, Furnace & Allied Appliance Workers' International Union of N.A., St. Louis, Mo. Amended to appear:



733,960. UNION LABEL ETC. AND DESIGN. Cl. B. 7-3-62. Stove Mounters' International Union of North America. Stove, Furnace & Allied Appliance Workers' International Union of N.A., St. Louis, Mo. Amended to appear:



742,499. THE WHITE GLOVE MOVERS AND DESIGN. Cl. 105. 12-18-62. OK Van & Storage, Inc., doing business as OK Van & Storage, El Paso, Tex. Amended to appear:



THE WHITE GLOVE MOVERS /

745,878. LADY PLEETWAY AND DESIGN. Cl. 39. 2-26-63. Stadium Manufacturing Co. Inc., New York, N.Y. Corrected: In the statement, column 1, line 1, "New York" should be deleted and Maryland should be inserted.

766,432. ROOSTER. Cl. 39. 3-10-64. Eloesser-Heynemann Company, San Francisco, Calif. Amended as follows: In the statement, column 2, line 2, after "outer" work is inserted.

781,021. THE MIDWEST PURCHASING AGENT. Cl. 38. 12-1-64. The Purchasing Agents Association of Cleveland, Inc. Purchasing Management Association of Cleveland, Inc., Cleveland, Ohio. Amended to appear:

## MIDWEST PURCHASING

809,465. AMEROX. Cl. 12. 6-7-66. Bolen International, Inc., Chicago, Ill. Amended: In the statement, column 2, line 2, "interior and/or" is deleted.

849,169. SPARKLE. Cl. 103. 5-14-68. Sparkle Cleansers & Launderers, Inc., doing business as Sparkle Cleansers, Inc., Brookline, Mass. Corrected: In the statement, column 1, before line 1, Sparkle Cleansers & Launderers, Inc., doing business as should be inserted.

## TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

431,659. ALFOL. Cl. 12. Reflectal Corporation. 7-29-47. New Cert. Sec. 7(c) to Alfoll Inc., Charlotte, N.C.

533,187. DRYFOL. Cl. 12. Reflectal Corporation. 11-7-50. New Cert. Sec. 7(c) to Alfoll Inc., Charlotte, N.C.

649,972. REFLECTAL. Cl. 12. Reflectal Corporation. 8-13-57. New Cert. Sec. 7(c) to Alfoll Inc., Charlotte, N.C.

758,689. SHEWER TAP. Cl. 13. Engineer's Investment Com-

pany, Inc. 10-22-63. New Cert. Sec. 7(c) to Union Tank Car Company, Chicago, Ill.

829,238. DEMI PERM. Cl. 51. Samuel Bonat & Bro., Inc. 5-23-67. New Cert. Sec. 7(c) to The Gillette Company, Boston, Mass.

854,850. BABY SOFT. Cl. 52. Dusharme Products, Inc. 8-13-68. New Cert. Sec. 7(c) to J. Strickland & Co., Memphis, Tenn.



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Aamco Automatic Transmissions, Inc., King of Prussia, Pa. 860,330, pub. 8-27-68. Cl. 103.  
Aamed, Inc., Forest Park, Ill. 860,225, pub. 8-27-68. Cl. 44.  
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Albany Felt Co., Albany, N.Y. 860,205, pub. 8-27-68. Cl. 42.  
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Alps Sportswear Mfg. Co., Inc., Lawrence, Mass. 860,176, pub. 8-27-68. Cl. 39.  
Amanus Products Co., Inc., Denver, Colo. 738,375, canc. Cl. 52.  
Amboy Warehouse, Inc., Perth Amboy, N.J. 738,268, canc. Cl. 39.  
American Can Co., New York, N.Y. 738,106, canc. Cl. 12.  
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American Fork & Hoe Co., The, to True Temper Corp., Cleveland, Ohio. 504,286-7, ren. 11-12-68. Cl. 28.  
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Armstrong Paint & Varnish Works, Inc., Chicago, Ill. 859,956, pub. 8-27-68. Cl. 16.  
Arnold, Hoffman & Co. Inc., Providence, R.I., to I.C.I./Organics Inc., Stamford, Conn. 500,476, ren. 11-12-68. Cl. 8.  
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Awrey Bakeries, Inc., Detroit, Mich. 860,237, pub. 8-27-68. Cl. 46.  
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Brooks, Bobbie, Inc., Cleveland, Ohio. 860,141, pub. 8-27-68. Cl. 39.  
Bruno, C., & Son, Inc., New York, N.Y. 860,095, pub. 8-27-68. Cl. 36.



Bullara, Angelo A., d.b.a. Bullara Enterprises Co., Los Angeles, Calif. 860,006, pub. 8-27-68. Cl. 22.  
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Burrhoughs Corp., Detroit, Mich. 859,935, pub. 8-27-68. Cl. 11.  
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Calgon Corp., from Calgon Corp., Pittsburgh, Pa. 860,103, pub. 8-27-68. Cl. 37.  
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Carey, Philip, Mfg. Co., The: See—  
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Chicago Paints, Inc., Chicago, Ill. 504,667, ren. 11-12-68. Cl. 16.  
Children's Playmate Magazine Inc., Cleveland, Ohio, 860,137, pub. 8-27-68. Cl. 38.  
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Clovis Citrus Co., Clovis, Calif. 860,249-50, pub. 8-27-68. Cl. 46.  
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Detrex Chemical Industries, Inc., Detroit, Mich. 859,908, pub. 8-27-68. Cl. 6.  
Dial Products, Inc., Phoenix, Ariz. 860,012, pub. 8-27-68. Cl. 23.  
Dial Shoe Co., Inc., Philadelphia, Pa. 860,142, pub. 8-27-68. Cl. 39.  
Disetgen, Eugene, Co., Chicago, Ill. 860,348. Cl. 37.  
Disney, Walt, Productions: See—  
Disney, Walter E.  
Disney, Walter E., Hollywood, to Walt Disney Productions, Burbank, Calif. 247,156, ren. 11-12-68. Cl. 26.  
Displaymor Mfg. Co.: See—  
Supreme Foods, Inc.  
Ditta Pace-Gipsa-Giacomo Pace Societa In Accomandita Semplice: See—  
Stone, H., & Co., Ltd.  
Divi-Fabbrica Cravatte e Tessuti per Cravatte, S.p.A., Milan, Italy, 860,187, pub. 8-27-68. Cl. 39.  
Dixon, Arrington L., Washington, D.C. 860,309, pub. 8-27-68. Cl. 100.  
Don The Beachcomber, Los Angeles, from Vita-Pakt Citrus Products Co., Covina, Calif. 860,228, pub. 8-27-68. Cl. 45.  
Douglass, H. E., Engineering Sales Co., Burbank, Calif. 860,218, pub. 8-27-68. Cl. 44.  
Dow Chemical Co., The, Midland, Mich. 506,515, ren. 11-12-68. Cl. 21.  
Drake, Julia L., High Point, N.C. 860,065, pub. 8-27-68. Cl. 28.  
Du Barry of Hollywood, Inc., Los Angeles, Calif. 738,255, canc. Cl. 39.  
Duda, A., & Sons Cooperative Association, Oviedo, Fla. 860,242, pub. 8-27-68. Cl. 46.  
Dunn & McCarthy, Inc., Auburn, N.Y. 860,181, pub. 8-27-68. Cl. 39.  
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 859,922, pub. 8-27-68. Cl. 6.  
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 859,924, pub. 8-27-68. Cl. 6.  
Durox Equipment Co., Cleveland, Ohio, 860,077, pub. 8-27-68. Cl. 34.  
Dusharme Products, Inc., to J. Strickland & Co., Memphis, Tenn. 854,850, new cert. Cl. 52.  
E-Z Mills, Inc., New York, N.Y. 860,188-9, pub. 8-27-68. Cl. 39.  
East Coast Fruit Co., Jacksonville, Fla. 860,248, pub. 8-27-68. Cl. 46.  
Eatoughs Ltd., Earl Shilton, England, 738,286, canc. Cl. 39.  
Eberhard Faber Inc., Wilkes-Barre, Pa. 860,109, pub. 8-27-68. Cl. 37.  
Eddy Bros. Co., Inc., Los Angeles, Calif. 860,167, pub. 8-27-68. Cl. 39.  
Edgumbe Peebles Ltd., London, England, 860,041, pub. 8-27-68. Cl. 26.  
Editor & Publisher Co., The, New York, N.Y. 243,753, ren. 11-12-68. Cl. 38.  
Edler, Earline L., d.b.a. Missile Song Co., Buffalo, N.Y. 738,239, canc. Cl. 36.  
Edwards, Robert S., Jr.: See—  
Microlog Information Systems Inc.

Eggert, Herbert und Renate, Coburg, Germany, 788,062, canc. Cl. 1.  
El Corte Ingles, S.A., Madrid, Spain, 860,169, pub. 8-27-68. Cl. 39.  
Eldon Industries, Inc., Hawthorne, Calif. 860,011, pub. 8-27-68. Cl. 22.  
Electriflex Co.: See—  
Electri-Flex Co.  
Electri-Flex Co., from Electriflex Co., Roselle, Ill. 859,972, pub. 8-27-68. Cl. 21.  
Electrix, Inc., Port Chester, N.Y. 859,901, pub. 8-27-68. Cl. 2.  
Eloesser-Heymann Co., San Francisco, Calif. 766,432. Am. 7(d). Cl. 39.  
Emer-Check Plan, Inc., The, Poplar Bluff, Mo. 738,401-2, canc. Cl. 102.  
Empire Scientific Corp., Garden City, N.Y. 860,094, pub. 8-27-68. Cl. 36.  
Engineer's Investment Co., Inc., to Union Tank Car Co., Chicago, Ill. 758,689, new cert. Cl. 13.  
Enterprise Wallcoverings: See—  
Capitol Brush Co.  
Epic Chemicals, Inc., Brooklyn, N.Y. 859,907, pub. 8-27-68. Cl. 6.  
Erie Register Corp., to Erie Technological Products, Inc., Erie, Pa. 440,601, ren. 11-12-68. Cl. 21.  
Erie Technological Products, Inc.: See—  
Erie Register Corp.  
Ewart, William, & Son, New York, N.Y. 860,206, pub. 8-27-68. Cl. 42.  
Excelator Underwear, Inc., New York, N.Y. 738,254, canc. Cl. 39.  
Exertone Products: See—  
Stafford, George H.  
Fairbanks Co., The, Binghamton, N.Y. 506,000-1, ren. 11-12-68. Cl. 13.  
Fairbanks Co., The, Binghamton, N.Y. 506,012, ren. 11-12-68. Cl. 13.  
Fansteel Inc., from Fansteel Metallurgical Corp., North Chicago, Ill. 860,079, pub. 7-2-68. Cl. 34.  
Fansteel Inc., from Fansteel Metallurgical Corp., North Chicago, Ill. 860,123, pub. 7-9-68. Cl. 38.  
Fansteel Metallurgical Corp.: See—  
Fansteel Inc.  
Farah Mfg. Co., Inc., El Paso, Tex. 738,282-3, canc. Cl. 39.  
Farmers Cooperative Mutual Insurance Association, Minneapolis, Minn. 860,327, pub. 8-27-68. Cl. 102.  
Farmers Regional Cooperative, Fort Dodge, Iowa, 859,955, pub. 8-27-68. Cl. 15.  
Fashion Treas, Inc., Miami Beach, Fla. 860,202, pub. 8-27-68. Cl. 40.  
Fast Chemical Products Corp., Yonkers, N.Y. 809,740, canc. Cl. 52.  
Fast Foods, Inc., Houston, Tex. 860,306, pub. 8-27-68. Cl. 100.  
Faygo Beverage Co.: See—  
Feigenson, Inc.  
Feature Ring Co., Inc., New York, N.Y. 506,514, ren. 11-12-68. Cl. 25.  
Feigenson, Inc., d.b.a. Faygo Beverage Co., Detroit, Mich. 860,229, pub. 8-27-68. Cl. 45.  
Feinberg & Sunberg, Inc., asor. to James McCreery & Co., to Associated Dry Goods Corp., New York, N.Y. 246,657, ren. 11-12-68. Cl. 39.  
Fieldcrest Mills, Inc., Eden, N.C. 860,210, pub. 8-27-68. Cl. 42.  
Finkelstein, J., & Son: See—  
Finkelstein, Murray.  
Finkelstein, Murray, d.b.a. J. Finkelstein & Son, New York, N.Y. 860,277, pub. 8-27-68. Cl. 50.  
Fireball Trailer Mfg., Inc., San Fernando, Calif. 859,970, pub. 8-27-68. Cl. 18.  
Firestone Tire & Rubber Co., The, Akron, Ohio, 859,957, pub. 8-27-68. Cl. 16.  
Fleischer Shoe Co., The, Canton, Ohio, 860,140, pub. 8-27-68. Cl. 39.  
Flightplan, Inc., New York, N.Y. 738,397, canc. Cl. 102.  
Flora Mir Candy Corp., Brooklyn, N.Y. 860,233, pub. 8-27-68. Cl. 46.  
Foremost-McKesson, Inc.: See—  
McKesson & Robbins, Inc.  
Fox Kartway Track, Inc., Janesville, Wis. 738,381, canc. Cl. 100.  
Fox River Paper Corp., Appleton, Wis. 860,112, pub. 8-27-68. Cl. 37.  
Frees-Ette Corp., Chamblee, Ga. 738,184, canc. Cl. 21.  
Fre-Mar Industries, Inc., East Butler, Pa. 860,084, pub. 8-27-68. Cl. 35.  
Fresh Hands Corp., Spirit Lake, Iowa, 860,283, pub. 8-27-68. Cl. 51.  
Furst-McNess Co., Freeport, Ill. 502,064, ren. 11-12-68. Cl. 6.  
Fuse Indicator Corp., Rockville, Md. 859,974, pub. 8-27-68. Cl. 21.  
Gallant Publishing Co., Inc., Covina, Calif. 860,136, pub. 8-27-68. Cl. 38.  
Gamewell Co., The, Newton, Mass. 738,081, canc. Cl. 6.  
Gamewell Co., The, Newton, Mass. 738,128, canc. Cl. 13.  
Gateway Industries: See—  
Blair, Robert E.  
Gaza Hair Products, Clarksburg, W. Va. 860,200, pub. 8-27-68. Cl. 40.  
General Foods Corp., White Plains, N.Y. 860,297-8, pub. 8-27-68. Cl. 52.  
General Motors Corp.: See—  
Delco-Remy Corp.  
General Motors Corp., Detroit, Mich. 502,399, ren. 11-12-68. Cl. 24.  
General Motors Corp., Detroit, Mich. 859,969, pub. 8-27-68. Cl. 19.  
General Music Strings Ltd., Pontypridd, Wales, 860,091, pub. 8-27-68. Cl. 36.  
General Tire & Rubber Co., The, Akron, Ohio, 860,088, pub. 8-27-68. Cl. 35.  
Georgia International Life Insurance Co., Atlanta, Ga. 860,328, pub. 8-27-68. Cl. 102.  
Georgia-Pacific Corp., Portland, Oreg. 860,106, pub. 8-27-68. Cl. 37.  
Georgia-Pacific Corp., Portland, Oreg. 860,110, pub. 8-27-68. Cl. 37.  
Gibson, C. D., & Son, Philadelphia, Pa., to S. Goldberg & Co., Inc., Hackensack, N.J. 32,490, ren. 11-12-68. Cl. 39.  
Gillette Co., The: See—  
Bonat, Samuel, & Bro., Inc.  
Gillette Co., The, d.b.a. The Tont Co., Boston, Mass. 860,289, pub. 8-27-68. Cl. 51.  
Glaxo-Allenburys (Canada) Ltd.: See—  
Allen & Hanburys, Ltd.  
Glensider Corp., New York, N.Y. 860,161, pub. 8-27-68. Cl. 39.  
Gold Bond Stamp Co., to Premium Service Corp., Minneapolis, Minn. 506,080, ren. 11-12-68. Cl. 38.  
Goldberg, S., & Co. Inc.: See—  
Gibson, C. D., & Son.  
Goodyear Tire & Rubber Co., The, Akron, Ohio, 860,086-7, pub. 8-27-68. Cl. 35.  
Gordon, Claud S., Co., Richmond, Ill. 860,052, pub. 8-27-68. Cl. 26.  
Grace, W. R., & Co., New York, N.Y. 860,253, pub. 8-27-68. Cl. 46.  
Grad-Line, Inc., Woodinville, Wash. 860,044, pub. 8-27-68. Cl. 26.  
Gramplan Textiles Ltd., Glasgow, Scotland, 860,139, pub. 8-27-68. Cl. 39.  
Grand Union Co., The, East Paterson, N.J. 738,330-1, canc. Cl. 46.  
Grant Industries Inc., Los Angeles, Calif. 859,992, pub. 8-27-68. Cl. 21.  
Green Bay Canning Corp., Green Bay, Wis. 504,049, ren. 11-12-68. Cl. 46.  
Green Bay Outerwear Co., Inc., from Green Bay Specialty Co., Green Bay, Wis. 738,259, canc. Cl. 39.  
Green Bay Specialty Co.: See—  
Green Bay Outerwear Co., Inc.  
Greene, Tweed & Co., New York, N.Y., to Greene, Tweed & Co., Inc., North Wales, Pa. 253,532, ren. 11-12-68. Cl. 35.  
Greene, Tweed & Co., Inc.: See—  
Greene, Tweed & Co.  
H & H Poultry Co., Inc., Selbyville, Del. 860,241, pub. 8-27-68. Cl. 46.  
Hahne & Co., Newark, N.J., to Associated Dry Goods Corp., New York, N.Y. 246,211, ren. 11-12-68. Cl. 39.  
Hall Mark Shirt Co. Ltd., The, London, England, 860,153, pub. 8-27-68. Cl. 39.  
Haller, W. A., Corp., Philadelphia, Pa. 860,272, pub. 8-27-68. Cl. 49.  
Hallmark Shirt Co., Inc., The, New York, N.Y. 738,237, canc. Cl. 39.  
Hammermill Paper Co., Strathmore Paper Co. Division, West Springfield, Mass. 860,104, pub. 8-27-68. Cl. 37.  
Hanes Corp., Winston-Salem, N.C. 860,174-5, pub. 8-27-68. Cl. 39.  
Harmon, Kenneth E., Palm Bay, Fla. 860,204, pub. 8-27-68. Cl. 42.  
Harris & Thrush Mfg. Co., Lubbock, Tex. 859,968, pub. 8-27-68. Multiple Class (Classes 19 and 23).  
Harris Trust & Savings Bank, Chicago, Ill. 738,400, canc. Cl. 102.  
Hart, Ellen, Inc., New York, N.Y. 860,151, pub. 8-27-68. Cl. 39.  
Hartz Mountain Products Corp.: See—  
Sternco Industries, Inc.  
Haviland Laboratories, Inc., New York, N.Y. 502,880, ren. 11-12-68. Cl. 51.  
Hawaiian Fern-Wood, Ltd., Hilo, Hawaii, 738,432, canc. Cl. 39.  
Hays Mfg. Co., Erie, Pa. 859,943, pub. 8-27-68. Cl. 13.  
Hedwin Corp., New York, N.Y. 859,884, pub. 8-27-68. Cl. 2.  
Heldenberg Textile Fabrics Co., Inc., New York, N.Y. 860,214, pub. 8-27-68. Cl. 42.  
Henderson, C., & Associates, Inc., New York, N.Y. 860,115, pub. 8-27-68. Cl. 38.  
Heneman, Harold J., Wichita, Kans. 860,318, pub. 7-11-67. Cl. 101.  
Henrichs, Henry F., Publications, Inc., The, Litchfield, Ill. 860,127, pub. 8-27-68. Cl. 38.  
Herring, Joe R., d.b.a. Herring Printing Co., Kerrville, Tex. 860,124, pub. 8-27-68. Cl. 38.  
Herring Printing Co.: See—  
Herring, Joe R.  
High Standard Mfg. Corp., The, Hamden, Conn. 738,096, canc. Cl. 9.  
High Vacuum Electronics, Inc., South Pasadena, Calif. 859,993, pub. 8-27-68. Cl. 21.  
Hitchcock Publishing Co., Wheaton, Ill. 738,247, canc. Cl. 38.  
Hoffmann-La Roche Inc., Nutley, N.J. 441,876, ren. 11-12-68. Cl. 18.  
Home Equipment Mfg. Co.: See—  
Kenton Industries.  
Honeywell Inc., Minneapolis, Minn. 860,056-7, pub. 8-27-68. Cl. 26.  
Hood, H. P., & Sons: See—  
Hood, H. P., & Sons, Inc.  
Hood, H. P., & Sons, Inc., d.b.a. H. P. Hood & Sons, Boston, Mass. 860,246, pub. 8-27-68. Cl. 46.  
Horville-McKinnon Ltd., Sidcup, Kent, England, 859,965, pub. 8-27-68. Cl. 19.



Hotel Corp. of America, Boston, Mass. 860,311, pub. 8-27-68. Cl. 100.  
Household Products Co.: See—  
Simons, George W., Corp.  
Huddersfield Fine Worsteds, Ltd., Huddersfield, England. 440,278, ren. 11-12-68. Cl. 39.  
Hudnut, Richard, Morris Plains, N.J. 441,251, ren. 11-12-68. Cl. 51.  
Hudson Pulp & Paper Corp., New York, N.Y. 859,896, pub. 8-27-68. Cl. 2.  
Hydra Tool Co., Inc., Topeka, Kans. 860,028, pub. 8-27-68. Cl. 23.  
I.C.I./Organics/Inc.: See—  
Arnold, Hoffman & Co. Inc.  
IMC Magnetics Corp., Westbury, N.Y. 859,987, pub. 8-27-68. Cl. 11.  
Idaho Concrete Pipe Co., Inc., Nampa, Idaho. 860,338, Cl. 12.  
Illinois Meat Co., to John Morrell & Co., Chicago, Ill. 505,948, ren. 11-12-68. Cl. 46.  
Imperial Chemical Industries Ltd., London, England. 860,118-17, pub. 8-27-68. Cl. 38.  
Independent Research & Publishing Association, Inc., Miami, Fla. 860,128, pub. 8-27-68. Cl. 38.  
Indian Head, Inc.: See—  
Linen Tread Co., Inc., The.  
Industrial Chemical Cleaner Co.: See—  
Meeker, O. W.  
Industrial Chemical Cleaner Inc.: See—  
Meeker, O. W.  
Infante Socks, Inc., Reading, Pa. 860,193, pub. 8-27-68. Cl. 59.  
Ingalls, Marjorie D., d.b.a. Tourmap Co., Seattle, Wash. 860,130, pub. 8-27-68. Cl. 38.  
Insley Mfg. Corp., Indianapolis, Ind. 738,210, can. Cl. 23.  
Institute of International Education, Inc., New York, N.Y. 738,249, can. Cl. 38.  
International Paint Co., Inc.: See—  
International Paint & Compositions Co., Ltd., The.  
International Paint & Compositions Co., Ltd., The, London, England, to International Paint Co., Inc., New York, N.Y. 252,377, ren. 11-12-68. Cl. 16.  
International Paper Co., New York, N.Y. 859,891, pub. 8-27-68. Cl. 2.  
International Silver Co., The, Meriden, Conn. 505,251, ren. 11-12-68. Cl. 28.  
International Silver Co., The, Meriden, Conn. 505,734, ren. 11-12-68. Cl. 28.  
International Silver Co., The, Meriden, Conn. 505,749, ren. 11-12-68. Cl. 28.  
International Textbook Co., Scranton, Pa. 860,319, pub. 8-27-68. Multiple Class (Classes 101 and 106).  
International Textbook Co., Scranton, Pa. 860,326, pub. 8-27-68. Multiple Class (Classes 101, 106, and 107).  
Inventa, A.G. für Forschung und Patentverwertung, Zurich, Switzerland. 860,305, pub. 8-27-68. Cl. 100.  
Jacob, Samuel B., Hoboken, N.J. 859,958, pub. 8-27-68. Cl. 17.  
Jacobson, Elle, Paris, France. 860,154, pub. 8-27-68. Cl. 39.  
Jacoby & Co., Detroit, Mich. 860,321, pub. 8-27-68. Cl. 101.  
Ja-Tone, Inc., Livingston, N.J. 738,356, can. Cl. 51.  
Jencraft Mfg. Co., New York, N.Y. 860,073-4, pub. 8-27-68. Cl. 52.  
Jenkins, John W., d.b.a. Planaflex Co., New York, N.Y. 860,114, pub. 8-27-68. Multiple Class (Classes 38 and 101).  
Jenkins, Paul W., d.b.a. Capital Plastics, Canton, Ohio. 738,228, can. Cl. 26.  
Jerrold Electronics Corp., Philadelphia, Pa. 859,984, pub. 8-27-68. Cl. 21.  
Johns-Manville Corp., New York, N.Y. 738,116, can. Cl. 12.  
Johns-Manville Corp., New York, N.Y. 738,118, can. Cl. 12.  
Johnson & Johnson, New Brunswick, N.J. 738,298, can. Cl. 44.  
Johnson Rubber Co., The, Middlefield, Ohio. 738,066, can. Cl. 4.  
Jones Knitting Corp., New York, N.Y. 738,257, can. Cl. 39.  
Jorgensen, D. C., & Sons, Inc., St. Ansgar, Iowa. 859,929, pub. 8-27-68. Cl. 10.  
Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd., Osaka, Japan. 859,879, pub. 8-27-68. Cl. 11.  
Kanegafuchi Spinning Co., Ltd.: See—  
Kanegafuchi Boseki Kabushiki Kaisha.  
Karnak Chemical Corp.: See—  
Lewis Asphalt Engineering Corp.  
Kar-Trol Signal Co., Inc., Houston, Tex. 738,178, can. Cl. 21.  
Kawasaki Aircraft Co., Ltd., Kobe, Japan. 860,341, Cl. 19.  
Kelly-Springfield Tire Co., The, Cumberland, Md. 502,356, ren. 11-12-68. Cl. 35.  
Kelly-Springfield Tire Co., The, Cumberland, Md. 502,509, ren. 11-12-68. Cl. 35.  
Kelly-Springfield Tire Co., The, Cumberland, Md. 504,039, ren. 11-12-68. Cl. 35.  
Kenton Industries, d.b.a. Home Equipment Mfg. Co., Stanton, Calif. 859,936, pub. 8-27-68. Cl. 12.  
Kepner-Tregoe and Associates, Inc., Princeton, N.J. 860,314, pub. 8-27-68. Cl. 101.  
Kerns United Corp., Philadelphia, Pa., from Keystone Lubricating Co., Calumet City, Ill. 859,934, pub. 8-27-68. Cl. 15.  
Keuffel & Esser Co., Hoboken, N.J. 860,059, pub. 8-27-68. Cl. 26.  
Kevin Products, Inc., Arlington, Mass. 860,296, pub. 8-27-68. Cl. 52.  
King, Kullen, Grocery Co., Inc., Westbury, N.Y. 859,921, pub. 8-27-68. Multiple Class (Classes 6, 9, 18, 29, 37, 46, 48, 51, and 52).

Keystone Lubricating Co.: See—  
Kerns United Corp.  
Kirsch Co., Sturgis, Mich. 859,978, pub. 8-27-68. Cl. 21.  
Klein, S., Dept. Stores, Inc., from S. Klein Prescriptions, Inc., New York, N.Y. 738,151, can. Cl. 18.  
Klein, S., Prescriptions, Inc.: See—  
Klein, S., Dept. Stores, Inc.  
Kleinweifers, Joh., Sohne, Krefeld, Germany. 860,014, pub. 8-27-68. Cl. 23.  
Kollmor Chemicals, Chicago, Ill. 859,890, pub. 8-27-68. Cl. 2.  
Komar, Charles, & Sons, Inc., South Amboy, N.J. 860,198, pub. 8-27-68. Cl. 39.  
Kracke, Don, d.b.a. Rickie Tickle Sticks, Long Beach, Calif. 859,899, pub. 8-27-68. Cl. 2.  
Kresge, S. S., Co., Detroit, Mich. 859,960, pub. 8-27-68. Cl. 18.  
Kresge, S. S., Co., Detroit, Mich. 860,162, pub. 8-27-68. Cl. 39.  
Kresge, S. S., Co., Detroit, Mich. 860,197, pub. 8-27-68. Cl. 39.  
Krueger, A. H., Inc., Milwaukee, Wis. 860,276, pub. 8-27-68. Cl. 50.  
Kushnir, Mary, and Hilda Kushnir, Pueblo, Colo. 860,208-9, pub. 8-27-68. Cl. 42.  
La Belle, Jacques S., Reseda, Calif. 738,309, can. Cl. 46.  
Ladies of Loretto, Chicago, Ill. 860,333, pub. 8-27-68. Cl. 107.  
Lag Drug Co., Inc., Chicago, Ill. 860,312, pub. 8-27-68. Cl. 101.  
Lamb-Weston, Inc., Portland, Ore. 860,240, pub. 8-27-68. Cl. 46.  
Lance Construction Supplies Inc., Chicago, Ill. 859,941, pub. 8-27-68. Cl. 13.  
Langhaus, Morris, d.b.a. Sun Ray Hair Preparations Co., New York, to Sun-Ray Hair Preparations Co., Bronx, N.Y. 441,638, ren. 11-12-68. Cl. 51.  
Lasko Strap Co., Inc., New York, N.Y. 860,069, pub. 8-27-68. Cl. 24.  
La Verne Mfg. Co., Gardena, Calif. 860,002, pub. 8-27-68. Cl. 22.  
Lazarus Laboratories, Inc., Long Island City, N.Y. 859,959, pub. 8-27-68. Cl. 18.  
Lear, Siegler, Inc., Santa Monica, Calif. 860,078, pub. 8-27-68. Cl. 34.  
Leathercraft Products Corp., New York, N.Y. 860,291, pub. 8-27-68. Cl. 52.  
Lee Development & Construction Co., Inc., Mobile, Ala. 738,409, can. Cl. 103.  
Lee, Laura, Candies, Inc., Miami, Fla. 860,256, pub. 8-27-68. Cl. 46.  
Lee Rubber & Tire Corp., to Lee Tire & Rubber Co., Conshohocken, Pa. 502,111-12, ren. 11-12-68. Cl. 35.  
Lee Rubber & Tire Corp., to Lee Tire & Rubber Co., Conshohocken, Pa. 504,375, ren. 11-12-68. Cl. 5.  
Lee Tire & Rubber Co.: See—  
Lee Rubber & Tire Corp.  
Leffton, Geo. Zoltan, Co., Chicago, Ill. 860,076, pub. 8-27-68. Cl. 33.  
Lehmann, Archer & Lane Ltd., Essex, England. 738,213, can. Cl. 23.  
Lemos Co., West Hollywood, Fla. 738,299, can. Cl. 44.  
Lemco Industries, Inc., from Lemco Products, Inc., Bedford, Ohio. 860,026, pub. 8-27-68. Cl. 23.  
Lemco Products, Inc.: See—  
Lemco Industries, Inc.  
Lentheric: See—  
Curtis Helene Industries, Inc.  
Leverant, Bernard G., Hartford, Conn. 738,336, can. Cl. 47.  
Leverant, Bernard G., Hartford, Conn. 738,338, can. Cl. 49.  
Lewis Asphalt Engineering Corp., New York, N.Y. 501,491-4, ren. 11-12-68. Cl. 12.  
Liggett & Myers Inc., from Liggett & Myers Tobacco Co., New York, N.Y. 860,340, Cl. 17.  
Liggett & Myers Tobacco Co.: See—  
Liggett & Myers Inc.  
Lighting Products, Inc., Highland Park, Ill. 859,990, pub. 8-27-68. Cl. 21.  
Lincoln Mfg. Co., Inc., Fort Wayne, Ind. 860,032, pub. 8-27-68. Cl. 23.  
Lindauer & Co., San Francisco, Calif. 859,928, pub. 8-27-68. Cl. 10.  
Lindberg Corp., Chicago, Ill. 860,082, pub. 8-27-68. Cl. 34.  
Linen Tread Co., Inc., The, to Indian Head, Inc., New York, N.Y. 506,218, ren. 11-12-68. Cl. 7.  
Lion Match Co., Inc., Long Island City, N.Y. 738,394, can. Cl. 101.  
Lins, Albert, Zurich, Switzerland. 860,039, pub. 8-27-68. Cl. 26.  
Litho Chemical & Supply Co., Inc., Lynbrook, N.Y. 860,279, pub. 8-27-68. Cl. 50.  
Litton Business Systems, Inc.: See—  
Royal Typewriter Co., Inc.  
Litton Business Systems, Inc., New York, N.Y. 859,984, pub. 8-27-68. Cl. 11.  
Lockwood Technical, Inc., Sandy City, Calif. 860,035, pub. 8-27-68. Cl. 23.  
Lorran, Ty, Inc., Farmingdale, N.Y. 860,147, pub. 8-27-68. Cl. 39.  
Lowell Bearing Co., Chicago, Ill. 859,903, pub. 10-4-66. Multiple Class (Classes 5 and 23).  
Ludlow Corp.: See—  
Marvellum Co., The.  
Luminous Ceilings, Inc., Chicago, Ill. 859,939, pub. 8-27-68. Cl. 12.  
MacMillan Hydraulic Engineering Corp., Skokie, Ill. 860,031, pub. 8-27-68. Cl. 28.

Maco Publishing Co., Inc., New York, N.Y. 860,182, pub. 8-27-68. Cl. 38.  
Magidson, Eugene, d.b.a. White Stag Meerschaum Co., New York, N.Y. 859,920, pub. 8-20-67. Cl. 8.  
Mahon, Thomas J., Inc., Englewood Cliffs, N.J. 860,227, pub. 8-27-68. Cl. 44.  
Maier, Roy J., Corp., Sun Valley, Calif. 860,092, pub. 8-27-68. Cl. 38.  
Mallin, Charles, Co.: See—  
Mallin, Charles G.  
Mallin, Charles G., d.b.a. Charles Mallin Co., Cleveland, Ohio. 860,275, pub. 8-27-68. Cl. 50.  
Mangels, Arthur C., Industries, Inc., Philadelphia, Pa. 860,339, Cl. 16.  
Margulies, Sam, d.b.a. Tom Thumb Shoe Co., Baltimore, Md. 860,158, pub. 8-27-68. Cl. 39.  
Marques de Romero, Maria L., Juarez, Mexico. 860,281, pub. 8-27-68. Cl. 51.  
Marshall Farms, Detroit, Mich. 860,247, pub. 8-27-68. Cl. 46.  
Martin, Betty, Inc., Beverly Hills, Calif. 859,897, pub. 8-27-68. Cl. 2.  
Martin-Marietta Corp., New York, N.Y. 860,129, pub. 8-27-68. Cl. 38.  
Martin, Roy C., d.b.a. Saturn Sales Co., Boston, Mass. 859,886, pub. 8-27-68. Cl. 2.  
Marvellum Co., The, Holyoke to Ludlow Corp., Needham Heights, Mass. 245,110, ren. 11-12-68. Cl. 37.  
Master Appliances, Inc., Marion, Ind. 859,902, pub. 8-27-68. Cl. 3.  
Masury-Columbia Co.: See—  
Masury-Young Co.  
Masury-Young Co., Charlestown, Mass., to Masury-Columbia Co., Melrose Park, Ill. 440,627, ren. 11-12-68. Cl. 16.  
Matsushita Electric Industrial Co., Ltd., Osaka Prefecture, Japan. 860,062, pub. 8-27-68. Cl. 27.  
Mayer Laboratories, Inc., San Rafael, Calif. 860,280, pub. 8-27-68. Cl. 51.  
Mayflower Dress Co., New York, N.Y. 860,159, pub. 8-27-68. Cl. 39.  
McCrory Corp., New York, N.Y. 859,881, pub. 8-9-66. Multiple Class (Classes 2 and 21).  
McGregor-Doniger Inc., New York, N.Y. 860,160, pub. 8-27-68. Cl. 39.  
McKesson & Robbins, Inc., Bridgeport, Conn., to Foremost-McKesson, Inc., New York, N.Y. 245,572, ren. 11-12-68. Cl. 51.  
McKesson & Robbins, Inc., Bridgeport, Conn., to Foremost-McKesson, Inc., New York, N.Y. 246,190, ren. 11-12-68. Cl. 6.  
McKesson & Robbins, Inc., Bridgeport, Conn., to Foremost-McKesson, Inc., New York, N.Y. 246,504, ren. 11-12-68. Cl. 18.  
McKesson & Robbins, Inc., Bridgeport, Conn., to Foremost-McKesson, Inc., New York, N.Y. 246,577, ren. 11-12-68. Cl. 51.  
Medical Plastics Corp. of America, Greensboro, N.C. 859,894, pub. 8-27-68. Cl. 2.  
Meeker, O. W., d.b.a. Industrial Chemical Cleaner Co., to Industrial Chemical Cleaner Inc., Houston, Tex. 503,974, ren. 11-12-68. Cl. 52.  
Mellotronics Ltd., London, England. 860,093, pub. 8-27-68. Cl. 36.  
Melville Shoe Corp., New York, N.Y. 860,192, pub. 8-27-68. Cl. 39.  
Melville Shoe Corp., New York, N.Y. 860,199, pub. 8-27-68. Cl. 39.  
Melville Shoe Corp., New York, N.Y. 860,825, pub. 8-27-68. Cl. 101.  
Mennonite Broadcasts, Inc., Harrisonburg, Va. 860,133, pub. 8-27-68. Cl. 38.  
Mercantile Stores Co., Inc., New York, N.Y. 860,170, pub. 8-27-68. Cl. 39.  
Mermac Distributors of Oregon, Salem, Ore. 859,906, pub. 8-27-68. Cl. 6.  
Merry Mfg. Co., Cincinnati, Ohio. 860,009, pub. 8-27-68. Cl. 22.  
Methode Electronics, Inc., Chicago, Ill. 859,973, pub. 8-27-68. Cl. 21.  
Metropolitan Wire Goods Corp., Wilkes-Barre, Pa. 860,075, pub. 8-27-68. Cl. 32.  
Mexican Import Co.: See—  
Trojan Distributing Co., Inc.  
Microlog Information Systems: See—  
Microlog Information Systems Inc., from R. S. Edwards, Jr., d.b.a. Microlog Information Systems, Ann Arbor, Mich. 860,817, pub. 8-27-68. Cl. 101.  
Mid-Continent Mfg. Co., Columbus, Ohio. 859,942, pub. 8-27-68. Cl. 18.  
Midland Mfg. Co., Inc., Memphis, Tenn. 860,015, pub. 8-27-68. Cl. 23.  
Miller, William D., Portland, Ore. 859,967, pub. 8-27-68. Cl. 19.  
Mills Music, Inc., New York, N.Y. 860,122, pub. 8-27-68. Cl. 38.  
Minnesota Mining & Mfg. Co.: See—  
Revere Camera Co.  
Missile Song Co.: See—  
Edler, Earline L.  
Mississippi Chemical Corp., Yazoo City, Miss. 859,930-3, pub. 8-27-68. Cl. 10.  
Missouri-Rogers Corp., Joplin, Mo. 860,013, pub. 8-27-68. Cl. 23.  
Mr. John, Inc., New York, N.Y. 860,285, pub. 8-27-68. Cl. 51.  
Mr. Steak, Inc., Denver, Colo. 860,302, pub. 8-27-68. Cl. 100.  
Moore, Maynard H., Jr., Inc., Stoneham, Mass. 440,534, ren. 11-12-68. Cl. 50.

Montgomery Ward & Co., Inc., Chicago, Ill. 738,284, can. Cl. 38.  
Morrell, John, & Co.: See—  
Illinois Meat Co.  
Morton International, Inc., Chicago, Ill. 860,258, pub. 8-27-68. Cl. 46.  
Moskowitz & Gluck, Inc., New York, N.Y. 860,063, pub. 8-27-68. Cl. 27.  
Motomco, Inc., Clark, N.J. 860,046, pub. 8-27-68. Cl. 26.  
Multi-Clean Products, Inc., St. Paul, Minn. 860,033, pub. 8-27-68. Cl. 23.  
Murphy, G. W., Industries, Inc., from Reed Roller Bit Co., Houston, Tex. 860,343, Cl. 23.  
Myers, Roger L., d.b.a. Roger Louis & Co., Bordeaux, France. 860,262, pub. 8-27-68. Cl. 47.  
Nadler Sportswear Co., New York, N.Y. 738,276, can. Cl. 39.  
Nash De Camp Co., Visalia, Calif. 506,829, ren. 11-12-68. Cl. 46.  
Nathan's Famous, Inc., Conley Island, N.Y. 860,301, pub. 8-27-68. Cl. 100.  
National Bellas Hess Co., Inc., New York, N.Y., to National Bellas Hess, Inc., North Kansas City, Mo. 246,510, ren. 11-12-68. Cl. 39.  
National Bellas Hess, Inc.: See—  
National Bellas Hess Co., Inc.  
National Biscuit Co., New York, N.Y. 246,591, ren. 11-12-68. Cl. 46.  
National Clean Mart Corp., Denver, Colo. 738,408, can. Cl. 103.  
National Distillers & Chemical Corp., New York, N.Y. 859,951, pub. 8-27-68. Cl. 13.  
National Interfraternity Conference, Inc., New York, N.Y. 860,303-4, pub. 8-27-68. Cl. 100.  
National Lutheran Council, The, New York, N.Y. 738,415, can. Cl. 107.  
National Press Co., Inc., North Chicago, Ill. 738,243, can. Cl. 37.  
National Sports Co.: See—  
Canvas Products Corp.  
National Sugar Refining Co., The, New York, N.Y. 860,254, pub. 8-27-68. Cl. 46.  
Nationwide Papers Inc., Hamilton, Ohio. 860,111, pub. 8-27-68. Cl. 37.  
Neiman-Marcus Co., Dallas, Tex. 860,183, pub. 8-27-68. Cl. 39.  
Niagara Foam Products, Inc., Mount Clemens, Mich. 859,900, pub. 8-27-68. Cl. 2.  
Nivot Corp., Chicago, Ill. 859,882, pub. 8-27-68. Cl. 2.  
Nobrega, Frank B., d.b.a. Central Chemical Co., to Central Chemical Co., Kansas City, Mo. 244,395, ren. 11-12-68. Cl. 6.  
Norman, Merle, Cosmetics, Inc., Los Angeles, Calif. 801,591, can. Cl. 51.  
Northern Virginia Sun, The: See—  
Orrington-Evanston Co.  
Nusbaum, Ferdinand, New York, N.Y. 860,178, pub. 8-27-68. Cl. 39.  
Nutone, Inc., Chicago, Ill., to Scovill Mfg. Co., Waterbury, Conn. 505,582, ren. 11-12-68. Cl. 21.  
Nutrition Foundation, Inc., The, New York, N.Y. 860,131, pub. 8-27-68. Cl. 38.  
OK Fishing Tackle Co., Tulsa, Okla. 860,000-1, pub. 8-27-68. Cl. 22.  
OK Van & Storage, Inc., d.b.a. OK Van & Storage, El Paso, Tex. 742,499, Am. 7(d), Cl. 105.  
O'Brien Corp., The, South Bend, Ind. 506,405, ren. 11-12-68. Cl. 18.  
Oca Spray Cranberries, Inc., Hanson, Mass. 860,251, pub. 8-27-68. Cl. 46.  
Old Stanley Distillery Co., Owensboro, Ky. 738,344, can. Cl. 49.  
Oppenheimer Casing Co., Chicago, Ill. 859,889, pub. 8-27-68. Cl. 2.  
Organic Growth Products Co., Farmingdale, N.J. 738,100, can. Cl. 10.  
Originals Inc., New York, N.Y. 860,171, pub. 8-27-68. Cl. 39.  
Orrington-Evanston Co., d.b.a. The Northern Virginia Sun, Arlington, Va. 738,248, can. Cl. 38.  
Orso, Leo, d.b.a. Orsonic Recording Services, Washington, D.C. 860,100, pub. 8-27-68. Cl. 36.  
Orsonic Recording Services: See—  
Orso, Leo.  
Oshkosh B'Gosh, Inc., Oshkosh, Wis. 738,271, can. Cl. 39.  
Oster, John, Mfg. Co., Milwaukee, Wis. 860,036, pub. 8-27-68. Cl. 23.  
Oswald, Richard E., d.b.a. Reotemp Instrument Co., Van Nuys, Calif. 860,054-5, pub. 8-27-68. Cl. 26.  
Oxnard Frozen Foods Cooperative: See—  
Ventura Farms Frozen Foods, Inc.  
Oxley, Mervyn W., Champaign, Ill. 859,999, pub. 8-27-68. Multiple Class (Classes 22, 37, and 42).  
Pacesetter East, Inc., Milford, Conn. 860,322, pub. 8-27-68. Cl. 101.  
Packaging Corp. of America, Evanston, Ill. 859,895, pub. 8-27-68. Cl. 2.  
Palmer Sales Corp., New York, N.Y. 860,061, pub. 8-27-68. Cl. 27.  
Paragon China Ltd., Longton, Stoke-On-Trent, England. 860,071, pub. 8-27-68. Cl. 80.  
Parke, Davis & Co., Detroit, Mich. 860,191, pub. 8-27-68. Cl. 39.  
Parker Bros., Inc., Salem, Mass., from H. W. Rogers, Jackson, Miss. 860,005, pub. 8-27-68. Cl. 22.  
Paulucci, Jeno F., Duluth, Minn. 738,388, can. Cl. 100.  
Pears, A. & F., Ltd., London, England. 70,853, ren. 11-12-68. Cl. 52.



Pearson, Mason, Bros., London, England. 860,070, pub. 8-27-68, Cl. 29.  
 Peerless Robes & Sportswear, Inc., Waterville, Maine. 860,179, pub. 8-27-68, Cl. 39.  
 Pengad Companies, Inc., The, Bayonne, N.J. 738,199, can. Cl. 22.  
 Penney, J. C., Co., New York, N.Y. 860,180, pub. 8-27-68, Cl. 39.  
 Perkin-Elmer Corp., The, Norwalk, Conn. 859,989, pub. 8-27-68, Cl. 21.  
 Perry-Sherwood Corp., New York, N.Y. 738,244, can. Cl. 37.  
 Personal Home Products, Inc., Hicksville, N.Y. 738,155, can. Cl. 18.  
 Pet Ranches of America, Inc., St. Louis, Mo. 860,315, pub. 8-27-68, Cl. 101.  
 Pfister, Chas., & Co., Inc., New York, N.Y. 860,284, pub. 8-27-68, Cl. 51.  
 Phelan-Faust Paint Mfg. Co., St. Louis, Mo. 502,106, ren. 11-12-68, Cl. 16.  
 Phillips-Van Heusen Corp., New York, N.Y. 860,165, pub. 8-27-68, Cl. 39.  
 Philmont Mfg. Co., Englewood, N.J. 859,875, pub. 8-27-68, Cl. 1.  
 Photogramics, Inc., Chicago, Ill. 860,211, pub. 8-27-68, Cl. 42.  
 Phyllis Sportswear, Inc., New York, N.Y. 860,168, pub. 8-27-68, Cl. 39.  
 Pick Automotive Corp.: See—  
 Pick Mfg. Co.  
 Pick Mfg. Co., to Pick Automotive Corp., West Bend, Wis. 506,460, ren. 11-12-68, Cl. 19.  
 Pinehurst Hat Corp.: See—  
 Bloomfield, J. Co., Inc.  
 Pioneer Centrifuging Co., Ltd., Houston, Tex. 860,020-2, pub. 8-27-68, Cl. 23.  
 Planflex Co.: See—  
 Jenkins, John W.  
 Plescia Import Co.: See—  
 Randazzo, John J. G.  
 Plystone Co.: See—  
 Shelton, Carl M.  
 Polaner, M., & Son, Inc., Newark, N.J. 860,252, pub. 8-27-68, Cl. 46.  
 Polymer Corp., The, Reading, Pa. 859,877, pub. 8-27-68, Cl. 1.  
 Postum Co., Inc., to General Foods Corp., New York, N.Y. 250,035, Am. 7(d), Cl. 46.  
 Pow-R-Tow, Inc., Hewlett, N.Y. 860,089, pub. 8-27-68, Cl. 35.  
 Pratt-T-Kal Corp., Elizabeth, N.J. 860,223, pub. 8-27-68, Cl. 44.  
 Precision Acoustics Corp., New York, N.Y. 860,058, pub. 8-27-68, Cl. 26.  
 Premium Service Corp.: See—  
 Gold Bond Stamp Co.  
 Products Design & Development Co., West Palm Beach, Fla. 860,216, pub. 8-27-68, Cl. 44.  
 Publicker Industries, Inc., Philadelphia, Pa. 506,621, ren. 11-12-68, Cl. 18.  
 Purchasing Agents Association of Cleveland, Inc., to Purchasing Management Association of Cleveland, Inc., Cleveland, Ohio. 781,021, Am. 7(d), Cl. 38.  
 Puritan Fashions Corp., New York, N.Y. 860,182, pub. 8-27-68, Cl. 39.  
 Purified Down Products Corp., New York, N.Y. 860,072, pub. 2-22-68, Cl. 32.  
 Quill Products, Inc., La Habra, Calif. 860,278, pub. 8-27-68, Cl. 50.  
 Ralston Purina Co., St. Louis, Mo. 860,245, pub. 8-27-68, Cl. 46.  
 Randazzo, John J. G., d.b.a. Plescia Import Co., and Antonio Alcantara y Cia, Clayton, Mo. 860,269, pub. 8-27-68, Cl. 49.  
 Ratner Safe Co. Ltd., London, England. 860,344, Cl. 25.  
 Raymond Corp., The, Greene, N.Y. 859,985, pub. 8-27-68, Cl. 21.  
 Ready Rent-All Systems Inc., Boston, Mass. 860,310, pub. 8-27-68, Cl. 100.  
 Reddy Co., Inc., The, Montpelier, Vt. 859,893, pub. 7-16-68, Cl. 2.  
 Reed Roller Bit Co.: See—  
 Murphy, G. W., Industries, Inc.  
 Reema Construction Ltd., London, England. 738,107, can. Cl. 12.  
 Reflectal Corp., to Alfal Inc., Charlotte, N.C. 431,689, new cert. Cl. 12.  
 Reflectal Corp., to Alfal Inc., Charlotte, N.C. 533,187, new cert. Cl. 12.  
 Reflectal Corp., to Alfal Inc., Charlotte, N.C. 649,972, new cert. Cl. 12.  
 Regal Ware, Inc., Kewaskum, Wis. 859,950, pub. 8-27-68, Multiple Class (Classes 13 and 21).  
 Rebels Chemical Co.: See—  
 Armour Pharmaceutical Co.  
 Reilly Tar & Chemical Corp., Indianapolis, Ind. 859,905, pub. 8-27-68, Cl. 6.  
 Reliable Electric Co., Franklin Park, Ill. 502,276, ren. 11-12-68, Cl. 21.  
 Reotemp Instrument Co.: See—  
 Oswald, Richard E.  
 Restaurant Systems of Oregon, Ltd., Salem, Oreg. 738,389, can. Cl. 100.  
 Revere Camera Co., Chicago, Ill., to Minnesota Mining & Mfg. Co., St. Paul, Minn. 501,992, ren. 11-12-68, Cl. 26.  
 Reynolds, F. W., Ltd., Berrylands, Surbiton, Surrey, England. 859,976, pub. 8-27-68, Cl. 21.  
 Rickie Tickle Sticks: See—  
 Kracke, Don.  
 Riojas, Federico, Mexico City, Mexico. 860,090, pub. 8-27-68, Cl. 36.  
 Ritzi, Serge, & Co.: See—  
 Bohemian Distributing Co.

Rival Mfg. Co., Kansas City, Mo. 738,136, can. Cl. 13.  
 Robins, A. H., Co., Inc., Richmond, Va. 860,238, pub. 8-27-68, Cl. 46.  
 Rockland, Inc., Winter Garden, Fla. 860,017, pub. 8-27-68, Cl. 23.  
 Roddenberry, W. B., Co., Inc., Cairo, Ga. 860,243, pub. 8-27-68, Cl. 46.  
 Rodi Mfg. Inc., Santa Cruz, Calif. 859,892, pub. 8-27-68, Cl. 2.  
 Roger Louis & Co.: See—  
 Myers, Roger L.  
 Rogers, Harriette W.: See—  
 Parker Brothers, Inc.  
 Rohlf, Donald F., Rye, N.Y. 738,198, can. Cl. 22.  
 Roma Wine Co.: See—  
 Schenley Distillers, Inc.  
 Ross-Matthal Corp., Baltimore, Md. 860,203, pub. 8-27-68, Multiple Class (Classes 42 and 50).  
 Royal Typewriter Co., Inc., to Litton Business Systems, Inc., New York, N.Y. 506,090, ren. 11-12-68, Cl. 11.  
 Ruby Lighting Corp., The, New York, N.Y. 859,986, pub. 8-27-68, Cl. 21.  
 Rueping, Fred, Leather Co., Fond Du Lac, Wis. 506,074, ren. 11-12-68, Cl. 1.  
 S.A. Midi-Textile, Nîmes, France. 860,157, pub. 8-27-68, Cl. 39.  
 SKF Industries, Inc., Philadelphia, Pa. 860,037, pub. 8-27-68, Cl. 23.  
 Saegertown Mfg. Corp., Saegertown, Pa. 859,944, pub. 8-27-68, Cl. 13.  
 St. Louis Shoe Corp., St. Louis, Mo. 860,177, pub. 8-27-68, Cl. 39.  
 Sales Tools, Inc., Chicago, Ill. 860,105, pub. 8-27-68, Cl. 37.  
 Sally Gee, Inc., New York, N.Y. 860,148, pub. 8-27-68, Cl. 39.  
 Sambo's, Inc., Santa Barbara, Calif. 860,231-2, pub. 8-27-68, Cl. 46.  
 Samsonite Corp., Denver, Colo. 860,336, Cl. 3.  
 Samuelson Film Service Ltd., London, England. 860,048, pub. 8-27-68, Cl. 26.  
 Sanco Finance Co., Inc., The, Oklahoma City, Okla. 738,405, can. Cl. 102.  
 Sangamon Co., The, Taylorville, Ill. 860,108, pub. 8-27-68, Cl. 37.  
 Santiaga Ranch, Bakersfield, Calif. 860,259-60, pub. 8-27-68, Cl. 46.  
 Sarong, Inc., Dover, Del. 860,145, pub. 8-27-68, Cl. 39.  
 Saskatchewan Timber Board, Saskatchewan, Canada. 738,110, can. Cl. 12.  
 Saturn Corp., The, Denver, Colo. 859,996, pub. 8-27-68, Cl. 22.  
 Saturn Sales Co.: See—  
 Martin, Roy C.  
 Scanla Dentalmaterial Aktiebolag, Hagersten, Sweden. 860,215, pub. 8-27-68, Cl. 44.  
 Schacht Associates, Inc., New York, N.Y. 738,122, can. Cl. 12.  
 Schaefer Electronics, Chatsworth, Calif. 860,096, pub. 8-27-68, Cl. 36.  
 Schenley Distillers: See—  
 Schenley Distillers, Inc.  
 Schenley Distillers, Inc., d.b.a. Roma Wine Co., New York, N.Y. 860,261, pub. 8-27-68, Cl. 47.  
 Schenley Distillers, Inc., d.b.a. Schenley Distillers, New York, N.Y. 860,273, pub. 8-27-68, Cl. 49.  
 Schiltz, Jos., Brewing Co., Milwaukee, Wis. 860,265, pub. 8-27-68, Cl. 45.  
 Scholastic Magazines, Inc., New York, N.Y. 860,134-5, pub. 8-27-68, Cl. 38.  
 Scott Aviation Corp.: See—  
 "Automatic" Sprinkler Corp. of America.  
 Seovill Mfg. Co.: See—  
 Nutone, Inc.  
 Sears, Roebuck & Co., Chicago, Ill. 738,292, can. Cl. 42.  
 Seligman, Sely S., d.b.a. Devil Laboratories Co., to Dome Chemical Corp., Cincinnati, Ohio. 243,731, Am. 7(d), Cl. 6.  
 Servus Rubber Co., The, Rock Island, Ill. 860,144, pub. 8-27-68, Cl. 39.  
 Shelton, Carl M., d.b.a. Plystone Co., Columbia, S.C. 441,682, ren. 11-12-68, Cl. 12.  
 Shelton, Thomas E., Birmingham, Ala. 738,201, can. Cl. 22.  
 Shred, Lou, Corp., New York, N.Y. 860,068, pub. 8-27-68, Cl. 28.  
 Silver Industries, Inc., Norwich, Conn. 859,885, pub. 8-27-68, Cl. 2.  
 Simmons, George W., Corp., New York, N.Y., to Household Products Co., Evanston, Ill. 251,873, ren. 11-12-68, Cl. 46.  
 Smit, J. H. & Sons, Inc., Murray Hill, N.J. 860,038, pub. 8-27-68, Cl. 23.  
 Solidstate Controls, Inc., Columbus, Ohio. 860,043, pub. 8-27-68, Cl. 26.  
 Sparkle Cleansers & Launderers, Inc., d.b.a. Sparkle Cleansers, Inc., Brookline, Mass. 849,169, cor. Cl. 103.  
 Spencer Gifts, Inc., Atlantic City, N.J. 860,323, pub. 8-27-68, Cl. 101.  
 Spoken Arts, Inc., New Rochelle, N.Y. 860,101, pub. 8-27-68, Cl. 36.  
 Spoken Class, Inc., The, New York, N.Y. 860,102, pub. 8-27-68, Cl. 36.  
 Sprague Electric Co., North Adams, Mass. 859,975, pub. 8-27-68, Multiple Class (Classes 21 and 26).  
 Squires, Barry A., Oakland, Calif. 860,067, pub. 8-27-68, Cl. 28.  
 Stacks, Irving, d.b.a. Beacon Pharmacal Co., Boston, Mass. 738,370, can. Cl. 51.  
 Stadium Mfg. Co., Inc., New York, N.Y. 745,878, cor. Cl. 39.

Stafford, George H., d.b.a. Exertone Products, Santa Monica, Calif. 860,218, pub. 8-27-68, Cl. 44.  
 Stakmore Co., Inc., New York, N.Y. 503,017, ren. 11-12-68, Cl. 32.  
 Standard International Corp., Andover, Mass. 860,164, pub. 8-27-68, Cl. 39.  
 Standard Oil Co. of California, San Francisco, Calif. 859,878, pub. 8-27-68, Cl. 1.  
 Standard Products Co., The, Cleveland, Ohio. 859,938, pub. 8-27-68, Multiple Class (Classes 12, 19, and 35).  
 Sta-Rite Industries, Inc., Delavan, Wis. 860,025, pub. 8-27-68, Cl. 23.  
 Stauffer Chemical Co., San Francisco, Calif., to Stauffer Chemical Co., New York, N.Y. 502,501, ren. 11-12-68, Cl. 6.  
 Stauffer Chemical Co., New York, N.Y. 859,914, pub. 8-27-68, Cl. 6.  
 Steinen, Wm., Mfg. Co., Parsippany, N.J. 859,946, pub. 8-27-68, Cl. 13.  
 Stern, Russell, Associates, Inc., Buffalo, N.Y. 738,252-3, can. Cl. 39.  
 Sterneo Industries, Inc., Harrison, N.J. 859,910, pub. 8-27-68, Multiple Class (Classes 6, 26, and 46).  
 Sterneo Industries, Inc., Harrison, N.J. 859,920, pub. 8-27-68, Multiple Class (Classes 6, 21, 31, 46, and 50).  
 Sterneo Industries, Inc., Harrison, N.J., from Hartz Mountain Products Corp., New York, N.Y. 860,236, pub. 6-4-68, Cl. 46.  
 Stern-Lebach Corp., Andover, Mass. 738,275, can. Cl. 39.  
 Stevens, J. P., & Co., Inc., New York, N.Y. 738,264, can. Cl. 39.  
 Stevens, J. P., & Co., Inc., New York, N.Y. 860,184-5, pub. 8-27-68, Cl. 39.  
 Stevens, J. P., & Co., Inc., New York, N.Y. 860,207, pub. 8-27-68, Cl. 42.  
 Stiefel Laboratories, Inc.: See—  
 Stiefel Medicinal Soap Co., Inc.  
 Stiefel Medicinal Soap Co., Inc., Preston Hollow, to Stiefel Laboratories, Inc., Oak Hill, N.Y. 503,427, ren. 11-12-68, Cl. 52.  
 Stitzel-Weller Distillery, Louisville, Ky. 860,271, pub. 8-27-68, Cl. 49.  
 Stitt Ignition Co., to Stitt Spark Plug Co., Columbus, Ohio. 503,861, ren. 11-12-68, Cl. 21.  
 Stitt Spark Plug Co.: See—  
 Stitt Ignition Co.  
 Stone, H., & Co., Ltd., Millburn, N.J., from Ditta Pace-Gipsa-Giacomo Pace Societa In Accomandita Semplice, Rome, Italy. 860,266, pub. 8-27-68, Cl. 49.  
 Stove Mounters' International Union of North America, to Stove, Furnace & Allied Appliance Workers' International Union of North America, St. Louis, Mo. 732,754-5, Am. 7(d), Cl. 38.  
 Stove Mounters' International Union of North America, to Stove, Furnace & Allied Appliance Workers' International Union of North America, St. Louis, Mo. 733,960, Am. 7(d), Cl. B.  
 Strickland, J., & Co.: See—  
 Dusharme Products, Inc.  
 Strong Electric Corp., The, Toledo, Ohio. 506,085, ren. 11-12-68, Cl. 21.  
 Stuart, C. H., & Co., Inc., Newark, N.Y. 738,367, can. Cl. 51.  
 Success Science Research Service: See—  
 Wilken, George W.  
 Sugardale Foods, Inc., Canton, Ohio. 860,253, pub. 8-27-68, Cl. 46.  
 Sunbeam Corp., Chicago, Ill. 860,083, pub. 8-27-68, Cl. 34.  
 Sun-Glo Packers, Inc., Bixby, Miss. 738,302, can. Cl. 45.  
 Sun-Ray Hair Preparations Co.: See—  
 Langhaus, Morris.  
 Superior Cable Corp.: See—  
 Superior Continental Corp., from Superior Cable Corp., Hickory, N.C. 859,980-1, pub. 8-27-68, Cl. 21.  
 Supreme Foods, Inc., d.b.a. Displaymor Mfg. Co., Los Angeles, Calif. 860,347, Cl. 31.  
 Tackett, Maryann, d.b.a. "B" Beautiful Beauty Products, Chicago, Ill. 738,368, can. Cl. 51.  
 Tankraft Products Corp., Kansas City, Mo. 859,904, pub. 11-2-65, Cl. 19.  
 Tee-Pak, Inc., Chicago, Ill. 859,887-8, pub. 8-27-68, Cl. 2.  
 Tern-Consulate Ltd., London, England. 860,146, pub. 8-27-68, Cl. 39.  
 Textron Inc., Providence, R.I. 860,066, pub. 8-27-68, Cl. 28.  
 Thermo Tech Inc., Denver, Colo. 859,948, pub. 8-27-68, Cl. 13.  
 Theta Phi Alpha Fraternity, Cincinnati, Ohio. 860,335, pub. 8-27-68, Cl. 200.  
 Thies, B., Inhaber B. Thies & Sohne, Westphalia, Germany. 860,023, pub. 8-27-68, Cl. 23.  
 Thomson, Robert W., d.b.a. Colorado Sportsman Center, Woodbine, N.J. 860,346, Cl. 26.  
 Thorofare Markets Inc., Murrysville, Pa. 860,320, pub. 8-27-68, Cl. 101.  
 Time, Inc., New York, N.Y. 246,868, ren. 11-12-68, Cl. 38.  
 Tivoli Brewing Co., Denver, Colo. 860,264, pub. 8-27-68, Cl. 48.  
 Tom Thumb Shoe Co.: See—  
 Margulies, Sam.  
 Toni Co., The: See—  
 Gillette Co., The.  
 Tourmap Co.: See—  
 Ingalls, Marjorie D.  
 Travelodge Corp., The, El Cajon, Calif. 860,138, pub. 8-27-68, Cl. 38.  
 Trefferies Leon Bekaert, P.V.B.A., Zvevegem, Belgium. 859,945, pub. 8-27-68, Cl. 13.  
 Tri-Chem, Inc., West Orange, N.J. 738,140, can. Cl. 16.  
 Trimfoot Co., St. Louis, Mo. 860,172, pub. 8-27-68, Cl. 39.

Triumph International Aktiengesellschaft, Munich, Germany. 860,143, pub. 8-27-68, Cl. 39.  
 Trojan Distributing Co., Inc., d.b.a. Mexican Import Co., Los Angeles, Calif. 860,267, pub. 8-27-68, Cl. 49.  
 True Temper Corp.: See—  
 American Fork & Hoe Co., The.  
 Union Carbide Corp., New York, N.Y. 738,063, can. Cl. 1.  
 Union Fork & Hoe Co., The, Columbus, Ohio. 246,287, ren. 11-12-68, Cl. 28.  
 Union Tank Car Co.: See—  
 Engineer's Investment Co., Inc.  
 Uniroyal, Inc.: See—  
 U.S. Rubber Co.  
 Uni-Tech Chemical Mfg. Co., Sun Valley, Calif. 859,923, pub. 8-27-68, Cl. 6.  
 United Engineering & Foundry Co., Pittsburgh, Pa. 507,012, ren. 11-12-68, Cl. 38.  
 United Engineering Mfg. Co., Covina, Calif. 860,024, pub. 8-27-68, Cl. 23.  
 United Merchants & Manufacturers, Inc.: See—  
 Cohn-Hall-Max Co.  
 United States Purchasing Exchange, North Hollywood, Calif. 860,152, pub. 8-27-68, Cl. 39.  
 U.S. Rubber Co., to Uniroyal, Inc., New York, N.Y. 506,426, ren. 11-12-68, Cl. 1.  
 U.S. Tackle Corp., Boston, Mass. 738,194, can. Cl. 22.  
 Universal Metal Products, Inc., Wickliffe, Ohio. 859,949, pub. 8-27-68, Cl. 13.  
 Upjohn Co., The, to The Upjohn Co., Kalamazoo, Mich. 249,366, ren. 11-12-68, Cl. 18.  
 Upjohn Co., The, to The Upjohn Co., Kalamazoo, Mich. 441,111-12, ren. 11-12-68, Cl. 18.  
 Utica Cutlery Co., Utica, N.Y. 860,016, pub. 8-27-68, Cl. 23.  
 Ventura Farms Frozen Foods, Inc., to Oxnard Frozen Foods Cooperative, Oxnard, Calif. 441,656, ren. 11-12-68, Cl. 46.  
 Venus Esterbrook Corp.: See—  
 American Lead Pencil Co.  
 Victory Engineering Corp., Springfield, N.J. 860,049, pub. 8-27-68, Cl. 26.  
 Video Projects Co., Inc., Jamaica, N.Y. 860,350, Cl. 104.  
 Vincent Record Co.: See—  
 Chiarelli, Vincent.  
 Vita-Pakt Citrus Products Co.: See—  
 Don The Beachcomber.  
 Vujovich, Thomas P., Oxnard, Calif. 860,257, pub. 8-27-68, Cl. 46.  
 W.G. Inc., Beaumont, Tex. 860,166, pub. 8-27-68, Cl. 39.  
 W & H Service Co., Alhambra, Calif. 859,988, pub. 8-27-68, Cl. 21.  
 Wagner Folding Box Corp., Buffalo, N.Y. 859,898, pub. 8-27-68, Cl. 2.  
 Waldom Electronics, Inc., Chicago, Ill. 859,979, pub. 8-27-68, Cl. 21.  
 Wallace, Gladys, Minneapolis, Minn. 738,269, can. Cl. 39.  
 Wallace & Tiernan Inc., East Orange, N.J. 860,234, pub. 8-27-68, Cl. 46.  
 Wampole Laboratories: See—  
 Denver Chemical Mfg. Co.  
 Wander Co., The, Lincoln, Nebr. 859,961-2, pub. 8-27-68, Cl. 18.  
 Wiles-Platter Co., Fort Worth, Tex. 860,230, pub. 8-27-68, Cl. 46.  
 Westab Inc.: See—  
 Blair, J. C., Co.  
 Western Motor Underwriters, Inc., Seattle, Wash. 738,398, can. Cl. 102.  
 Western Union Telegraph Co., The, New York, N.Y. 860,331, pub. 8-27-68, Cl. 104.  
 Westminster Watch Co., Inc., New York, N.Y. 860,060, pub. 8-27-68, Cl. 27.  
 Wham-O Mfg. Co., San Gabriel, Calif. 860,007, pub. 8-27-68, Cl. 22.  
 White Sewing Machine Co., Cleveland, Ohio. 860,018, pub. 8-27-68, Cl. 23.  
 White Stag Meerschaum Co.: See—  
 Marldon, Eugene.  
 White Whale Record Co., Inc., Los Angeles, Calif. 860,097, pub. 8-27-68, Cl. 36.  
 Wilhold Glues, Inc., Santa Fe Springs, Calif. 859,904, pub. 8-27-68, Cl. 5.  
 Wilken, George W., d.b.a. Success Science Research Service, Saratoga, Calif. 738,417, can. Cl. 107.  
 Wilkinson's Inc. of St. Louis, St. Louis, Mo. 860,194-5, pub. 8-27-68, Cl. 39.  
 Williams, B. E., La Grange Park, Ill. 860,213, pub. 8-27-68, Cl. 42.  
 Winne, Frank W., & Son Inc., Philadelphia, Pa. 859,925, pub. 8-27-68, Cl. 7.  
 Wohl Shoe Co., St. Louis, Mo. 860,173, pub. 8-27-68, Cl. 39.  
 World Famous Sales, Inc., Chicago, Ill. 860,004, pub. 8-27-68, Cl. 22.  
 Wyandotte Chemicals Corp., Wyandotte, Mich. 860,019, pub. 8-27-68, Cl. 23.  
 Wymer, P. V. B. A., Izegem, Belgium. 859,997, pub. 8-27-68, Cl. 22.  
 Wynn, Inc., Knoxville, Tenn. 860,186, pub. 8-27-68, Cl. 39.  
 Xerox Corp., Rochester, N.Y. 860,119, pub. 8-27-68, Cl. 38.  
 Xerox Corp., Rochester, N.Y. 860,125, pub. 8-27-68, Cl. 38.  
 Yacht Safety Bureau Inc., New York, N.Y. 738,421, can. Cl. 4.  
 Yardley of London, Inc., Totowa, N.J. 860,282, pub. 8-27-68, Cl. 51.  
 York Feather & Down Corp., Brooklyn, N.Y. 860,008, pub. 8-27-68, Multiple Class (Classes 22, 32, and 39).  
 Zenith Radio: See—  
 Zenith Radio Corp.  
 Zenith Radio Corp., to Zenith Radio, Chicago, Ill. 440,742, ren. 11-12-68, Cl. 21.  
 Zylow Ware Corp., Long Island City, N.Y. 860,053, pub. 8-27-68, Cl. 26.



PATENTS  
NOTICES

Board of Appeals Decisions Rendered in the Month of  
August 1968

Examiner affirmed .....	146
Examiner affirmed in part .....	18
Examiner reversed .....	41
Total .....	205

Disclaimers and Dedications

3,069,187.—*Bernard Cahn*, New York, N.Y. GAME BOARDS. Patent dated Dec. 18, 1962. Disclaimer and dedication filed June 5, 1968, by the assignee, *Affiliated Hospital Products, Inc.*

Hereby disclaims and dedicates to the Public the entire term of said patent.

3,372,185.—*William L. Hergenrother*, Akron, Ohio. MANGANOUS BENZOATE AS AN ESTER INTERCHANGE CATALYST. Patent dated Mar. 5, 1968. Disclaimer and dedication filed June 28, 1968, by the assignee, *The Firestone Tire & Rubber Company*.

Hereby disclaims and dedicates to the Public the entire term of said patent.

Dedications

Reissue No. 24,918.—*Lindley E. Mills*, Kalamazoo, Mich. DISPENSING PACKAGE AND METHOD. Reissue patent dated Jan. 3, 1961. Dedication filed June 26, 1968, by the inventor.

Hereby dedicates said patent to the Public.

2,575,354.—*Lindley E. Mills*, Kalamazoo, Mich. FLEXIBLE MEASURING TAPE AND CASE THEREFOR. Patent dated Nov. 20, 1951. Dedication filed June 26, 1968, by the inventor.

Hereby dedicates said patent to the Public.

2,618,510.—*Lindley E. Mills*, Kalamazoo, Mich. FLUID PROPORTIONING APPARATUS. Patent dated Nov. 18, 1952. Dedication filed June 26, 1968, by the inventor.

Hereby dedicates said patent to the Public.

2,624,120.—*Lindley E. Mills*, Kalamazoo, Mich. MEASURING DEVICE. Patent dated Jan. 6, 1953. Dedication filed June 26, 1968, by the inventor.

Hereby dedicates said patent to the Public.

New Applications Received During August 1968

Patents .....	7445
Designs .....	371
Plant Patents .....	6
Reissues .....	27
Total .....	7849

2,638,760.—*Lindley E. Mills*, Kalamazoo, Mich. METHOD OF REFRIGERATION USING CONJUGATE SOLUTIONS. Patent dated May 19, 1953. Dedication filed June 26, 1968, by the inventor.

Hereby dedicates said patent to the Public.

2,963,875.—*Lindley E. Mills*, Kalamazoo, Mich. HEAT PUMP. Patent dated Dec. 13, 1960. Dedication filed June 26, 1968, by the inventor.

Hereby dedicates said patent to the Public.

3,128,019.—*Lindley E. Mills*, Kalamazoo County, Mich. PORTABLE BEVERAGE DISPENSER. Patent dated Apr. 7, 1964. Dedication filed June 26, 1968, by the inventor.

Hereby dedicates said patent to the Public.

3,185,623.—*Fred Smith, Wayzata, and Edmund F. Graham*, St. Paul, Minn. PRESERVATION OF ANIMAL SEMEN. Patent dated May 25, 1965. Dedication filed June 5, 1968, by the assignee, *The Regents of the University of Minnesota*.

Hereby dedicates to the Public the entire term of said patent.

3,200,991.—*Lindley E. Mills*, Kalamazoo, Mich. BEVERAGE DISPENSER. Patent dated Aug. 17, 1965. Dedication filed June 26, 1968, by the inventor.

Hereby dedicates said patent to the Public.

3,214,061.—*Lindley E. Mills*, Kalamazoo, Mich. DISPENSER FOR CARBONATED BEVERAGES. Patent dated Oct. 26, 1965. Dedication filed June 26, 1968, by the inventor.

Hereby dedicates said patent to the Public.

Disclaimers

2,931,314.—*Robert W. Erikson and William Ray Kiefer*, Rockford, Ill. AIR PURGING APPARATUS FOR PUMPS. Patent dated Apr. 5, 1960. Disclaimer filed June 5, 1968, by the assignee, *Sundstrand Corporation*.

Hereby enters this disclaimer to claims 4 and 5 of said patent.

2,993,664.—*Ross C. Alderson*, Minneapolis, Minn., and *Benjamin Carpenter*, Lake Forest, Ill., deceased, by *Walter T. Fisher*, Chicago, Ill. AUTOMATIC INSTRUMENT LAND-

Issue—November 19, 1968

Patents .....	1250—No. 3,411,156 to No. 3,412,405, incl.
Designs .....	68—No. 212,731 to No. 212,798, incl.
Total .....	1318



ING SYSTEMS FOR AIR-BORNE CRAFT. Patent dated July 25, 1961. Disclaimer filed June 6, 1968, by the assignee, Honeywell Inc.

Hereby enters this disclaimer to claims 6, 11, 12, 13, 14, 15, 16 and 18 of said patent.

2,993,865.—Benjamin Carpenter, Lake Forest, Ill., deceased, by Eleanor Bradley Carpenter and Benjamin Carpenter, Jr., Lake Forest, and Walter T. Fisher, Winnetka, Ill., as trustees. AUTOMATIC INSTRUMENT LANDING SYSTEMS FOR AIR-BORNE CRAFT. Patent dated July 25, 1961. Disclaimer filed June 6, 1968, by the assignee, Honeywell Inc.

Hereby enters this disclaimer to claims 1, 2, 4, 5, 6, 8, 9, 10 of said patent.

3,119,691.—Varnum D. Ludington, Greenwich, Conn., Robert F. Schara, Battle Creek, Mich., and Raymond E. Mahlie, Scituate, Mass. NOVEL FARINACEOUS ANIMAL FOOD. Patent dated Jan. 28, 1964. Disclaimer filed June 17, 1968, by the assignee, General Foods Corporation.

Hereby enters this disclaimer to claim 13 of said patent.

3,232,839.—Klaus Kieslich, Ulrich Kerb, and Gerhard Raspe, Berlin-Charlottenburg, Germany. Δ<sup>14</sup>-16a-METHYL STEROIDS. Patent Dated Feb. 1, 1966. Disclaimer filed June 4, 1968, by the assignee, Schering AG.

Hereby enters this disclaimer to claims 10 and 11 of said patent.

3,243,653.—Alan B. Blackburn, Troy, Ohio. ELECTRONIC VOLTAGE DETECTION AND PROTECTION DEVICE. Patent dated Mar. 29, 1966. Disclaimer filed June 11, 1968, by the assignee, Hobart Brothers Company.

Hereby enters this disclaimer to claims 3, 4 and 5 of said patent.

3,300,996.—Theodore Atwood, Sparta, N.J. VARIABLE CAPACITY REFRIGERATION SYSTEM. Patent dated Jan. 31, 1967. Disclaimer filed June 20, 1968, by the assignee, Allied Chemical Corporation.

Hereby enters this disclaimer to claims 1, 2, 7, 8, 9 and 10 of said patent.

3,306,825.—Robert Cowan Shuman, Janesville, and Francis John Meinhardt, Edgerton, Wis. BALL POINT WRITING INSTRUMENTS. Patent dated Feb. 14, 1967. Disclaimer filed June 20, 1968, by the assignee, The Parker Pen Company.

Hereby enters this disclaimer to claims 1, 2, 3 and 4 of said patent.

3,375,388.—Edward Emanuel Sheldon, New York, N.Y. VACUUM TUBES PROVIDED WITH LIGHT CONDUCTING MEMBERS AND WITH A SCREEN OF A HIGH PHOTOELECTRIC SENSITIVITY. Patent dated Mar. 26, 1968. Disclaimer filed June 17, 1968, by the inventor.

Hereby enters this disclaimer to claim 17 of said patent.

#### Patents Available for Licensing or Sale

2,948,903. NECK REST FOR HAIR SHAMPOO BOWLS. Mary K. Glimmer, 4150 85 SE., Mercer, Wash., 98040.

3,266,653. KITCHEN UTENSILS. Arthur F. Gauthier, 705 Waverly Place, Melbourne, Fla., 32901.

3,279,010. CORD LENGTH VARYING DEVICE. Peter A. Mianchuk, 79 Stone St., Oshawa, Ontario, Canada.

3,369,831. COVER STRIP ON EXPANSION AND CONTRACTOR JOINTS. J. R. McKinnle, 3211 McManus Ave., Los Angeles, Calif., 90034.

3,384,093. HANGING FILING CARD CABINETS. Eduardo Hegedus. Correspondence to: Ernest G. Montague, 127 E. 42nd St., New York, N.Y., 10017.

3,384,363. FIXING MECHANISM. Franz Arnold. Correspondence to: Woodhams, Blanchard and Flynn, 2026 Rambling Road, Kalamazoo, Mich., 49001.

3,389,998. FERMENTATION PROCESS FOR PRODUCING ALCOHOLIC BEVERAGES FROM MICROALGAE. Jorgen Jorgensen, Malquette, Venezuela. Correspondence to: Burns, Doane, Benedict, Swecker & Mathis, 815 Connecticut Ave. NW., Washington, D.C., 20006.

3,397,935. LIQUID CUP AND CONTAINER ASSEMBLY USABLE AS A BINOCULAR TELESCOPE. Michitoshi Natsume, Tokyo, Japan. Correspondence to: Sughrue, Rothwell, Mion, Zinn & McPeak, Munsey Building, Washington, D.C., 20004.

3,399,583. LOCKING TWEEZERS. Gordon Lance Hall, Box 72, Pomfret, Conn., 06258.

The following 3 patents are offered by: Frank Rando, 59 Irving Ave., Brooklyn, N.Y., 10037.

D. 203,769. COMBINATION TOOL.

D. 208,068. COMBINATION TOOL.

2,902,781. SHOE INSOLES.

The following 3 patents are offered by: Robert L. Karr, 1915 Winslow Ave., Terre Haute, Ind.

3,314,147. SAFETY RAZOR WITH ADJUSTABLE GUARD.

3,391,458. SAFETY RAZOR WITH ADJUSTABLE GUARDS.

3,382,586. SAFETY RAZOR WITH ADJUSTABLE GUARDS.

Radio Corporation of America offers to grant non-exclusive licenses on reasonable terms and conditions under the following 19 patents.

Inquiries respecting licenses under these patents should be addressed to: Radio Corporation of America, Staff Vice President, Domestic Licensing, 30 Rockefeller Plaza, New York, N.Y., 10020.

3,400,215. VOICED SOUND FUNDAMENTAL FREQUENCY DETECTOR.

3,400,308. METALLIC CONTACTS FOR SEMICONDUCTOR DEVICES.

3,400,325. VOLTAGE REGULATOR INCLUDING TRANSIENT REDUCING MEANS.

3,400,016. METHOD OF COATING SUPERCONDUCTING NIOBIUM TIN WITH LATTICE DEFECTS.

3,400,455. METHOD OF MAKING A LAMINATED FERRITE MEMORY.

3,400,647. HIGH-SPEED SHUTTER USING A MAGNETOSTRICTIVE TRANSDUCER.

3,401,349. WIDE BAND FREQUENCY AMPLIFIER.

3,401,781. PRINTER EMPLOYING PARALLEL PRINTER BARS, AND IMPROVED MOUNTING MEANS THEREFOR.

3,402,300. RADIATION SENSITIVE OPTICAL LOGIC ELEMENT USING PHOTOCHROMIC LAYERS.

3,402,303. LEVEL SENSITIVE SWITCHING CIRCUIT UTILIZING A ZENER DIODE FOR DETERMINING SWITCHING POINTS AND SWITCHING SENSITIVITY.

3,402,307. MOTORS AND GENERATORS EMPLOYING SUPERCONDUCTORS.

3,402,318. TELEVISION DEFLECTION CIRCUIT WITH COMPENSATION FOR VOLTAGE SUPPLY VARIATIONS.

3,402,319. TELEVISION DEFLECTION CIRCUIT WITH TEMPERATURE COMPENSATION.

3,402,320. TELEVISION DEFLECTION CIRCUIT.

3,402,400. NONDESTRUCTIVE READOUT OF CRYOELECTRIC MEMORIES.

3,402,403. ROTATING HEAD AND DISC MAGNETIC RECORDING SYSTEM.

3,403,266. CLOCK-PULSE STEERING GATE ARRANGEMENT FOR FLIP-FLOP EMPLOYING ISOLATED GATE CONTROLLED CHARGING CAPACITOR.

3,403,267. FLIP-FLOP EMPLOYING THREE INTERCONNECTED MAJORITY-MINORITY LOGIC GATES.

3,403,354. LINEAR FREQUENCY MODULATION SYSTEM INCLUDING AN OSCILLATING TRANSISTOR, AN INTERNAL CAPACITY OF WHICH IS VARIED IN ACCORDANCE WITH A MODULATING SIGNAL.

General Electric Company is prepared to grant non-exclusive licenses under the following 46 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patent may be addressed to: Patent Counsel, Specialty Control Department, General Electric Company, Waynesboro, Va.

3,394,325. FOUR POLE MICROMINIATURE RELAY.

Applications for licensing under the following patent may be addressed to: Patent Counsel, Contractor Equipment Division, General Electric Company, 1285 Boston Ave., Bldg. 21ES, Bridgeport, Conn., 06602.

3,395,378. SUPPORTING AND CONNECTING HANGER ASSEMBLY FOR POWER UTILIZATION DEVICES FOR PLUG-IN TYPE ELECTRICAL BUSWAYS.

Applications for licensing under the following 2 patents may be addressed to: Patent Counsel, Wire and Cable Department, Construction Materials Division, General Electric Company, 1285 Boston Ave., Bldg. 23EE, Bridgeport, Conn., 06602.

3,380,304. REMOTE STATION FOR ORCENOGRAPHIC DATA SENSING.

3,396,357. TEMPERATURE SENSING CABLE AND METHOD FOR MAKING SAME.

Applications for license under the following 2 patents may be addressed to: Division Patent Counsel, Missile and Space Division, General Electric Company, P.O. Box 8555, Philadelphia, Pa., 19101.

3,334,965. PROCESS FOR PRODUCING ALUMINA WHISKERS.

3,389,951. DIFFUSE REFLECTOR INCORPORATING WIRE MESH STRUCTURE.

Applications for licensing under the following 3 patents may be addressed to: General Electric Company, Patent Counsel, Housewares Division, 1285 Boston Ave., Bridgeport, Conn., 06602.

3,292,064. FREQUENCY REGULATED CHRONOMETER.

2,963,569. WATERTIGHT SEAL FOR COOKING VESSEL HEATING ELEMENT.

3,086,448. TILTABLE COOKING UTENSIL.

Applications for licensing under the following 8 patents may be addressed to: Patent Counsel, Heavy Military Electronics Department, General Electric Company, Legal Section, Building 1, Room 36, Court Street Plant, Syracuse, N.Y., 13201.

2,974,296. ELECTROMECHANICAL TRANSDUCERS.

3,140,489. FREQUENCY MODULATED PULSE RADAR SYSTEM.

3,155,912. AUTOMATIC GATING CIRCUIT.

3,206,686. DELAY-TIME CONTROLLER EMPLOYING OUTPUT OF COMPARED DELAYED AND UNDELAYED REFERENCE SIGNAL AS DELAY-LINE CORRECTION SIGNAL.

3,213,450. UNDESIRE SIGNAL CANCELLER.

3,258,767. APPARATUS FOR PRODUCING SONIC VIBRATIONS AT X-BAND MICROWAVE FREQUENCIES AND HIGHER.

3,260,969. APPARATUS FOR PRODUCING SONIC VIBRATIONS AT X-BAND MICROWAVE FREQUENCIES AND HIGHER.

3,327,232. REFLECTIONLESS INPUT RESONANT LASER-AMPLIFIER.

Applications for license under the following 9 patents may be addressed to: General Electric Company, Patent Counsel, Silicone Products Department, Chemical and Medical Division, Waterford, N.Y., 12188.

2,902,506. METHYLDIHALOGENOSILANE PREPARATION.

2,992,263. DICYCLOHEXYLTETRAHYDROXYDISILOXANE.

3,179,679. PROCESS FOR PREPARING HALOGENATED ORGANOSILOXANES.

3,197,319. ORGANOPOLYSILOXANE COMPOSITIONS.

3,239,550. CYCLIC POLYSILOXANES.

3,239,551. CYCLIC SILOXANES.

3,304,250. ORGANOPOLYSILOXANE GREASES.

3,324,058. METHOD FOR PRODUCING ORGANOPOLYSILOXANES.

3,362,976. METHOD FOR MAKING ORGANOSILICON HYDRIDES.

Applications for license under the following 20 patents may be addressed to: Patent Counsel, Appliance and Television, General Electric Company, Appliance Park, Louisville, Ky., 40225.

2,962,684. SHEATHED ELECTRIC HEATING UNITS AND METHODS OF MAKING THE SAME.

3,105,633. ROTARY COMPRESSOR INJECTION COOLING ARRANGEMENT.

3,109,297. ROTARY COMPRESSOR INJECTION COOLING ARRANGEMENT.

3,111,820. ROTARY COMPRESSOR INJECTION COOLING ARRANGEMENT.

3,191,403. HERMETICALLY SEALED MULTIPLE COMPRESSOR UNIT.

3,210,958. HEAT PUMP COMPRISING ROTARY COMPRESSOR INCLUDING INJECTION COOLING ARRANGEMENT.

3,257,630. WASHING MACHINE.

3,257,950. FLUID PUMP DIVERTER.

3,367,316. OVEN FOR CLOSED DOOR BROILING.

3,371,861. BUILT-IN COOKING APPLIANCE WITH SIDE TRIMMING MEMBERS.

3,379,189. FORCED CONVECTION OVEN.

3,381,453. AIR-HANDLING DEVICE WITH REGENERATIVE FILTER MEDIUM.

3,384,735. SURFACE HEATING DEVICE.

3,384,736. SURFACE HEATING DEVICE.

3,385,284. COOKING APPLIANCE WITH ADJUSTABLE CONTROL HOUSING.

3,392,720. ACCESSORY TRIM MEANS FOR DOMESTIC APPLIANCE.

3,397,551. TEMPERATURE CONTROL MEANS FOR REFRIGERATION.

3,397,934. CABINET INCLUDING VERTICALLY ADJUSTABLE SHELF SUPPORTS.

3,399,464. CLOTHES DRYER.

3,399,693. FLUID DIVERTER CHECK VALVE.

#### Patents Withdrawn From Register

General Electric Company hereby withdraws the following patent from the Register of Patents Available for Licensing or Sale. The patent was listed as being available in the OFFICIAL GAZETTE as indicated below:

3,136,650. METHOD FOR COATING A SURFACE OF AN ARTICLE WITH A RESIN LAYER. Feb. 23, 1965.

The following patent is hereby withdrawn from the Register of Patents Available for Licensing or Sale. The patent was listed as being available in the OFFICIAL GAZETTE as indicated below:

3,204,865. TWO STAGE REFRIGERANT COMPRESSOR. Aug. 22, 1967.



# PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

## CONDITION OF PATENT APPLICATIONS AS OF NOVEMBER 4, 1968

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
* Denotes date of oldest application for each Operation.		
<b>CHEMICAL EXAMINING OPERATION</b>		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director..... Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7-01-66	1-27-64
GENERAL ORGANIC CHEMISTRY, GROUP 120—J. MARCUS, Director..... Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-07-66	*6-10-63
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—L. J. BERCOVITZ, Director..... Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	7-28-66	2-17-64
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBER- MAN, Director..... Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*2-23-66	6-17-63
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director..... Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	6-28-66	5-06-64
<b>ELECTRICAL EXAMINING OPERATION</b>		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director..... Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	8-17-66	4-01-64
SECURITY, GROUP 220—S. BOYD, Director..... Ordnance, Firearms and Ammunition; Radar; Underwater Signaling; Directional Radio; Torpedoes; Seismic Exploring; Radio-Active Batteries; Nuclear Reactors; Powder Metallurgy; Rocket Fuels; Radio-Active Material.	6-13-67	5-25-65
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Director..... Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*10-12-65	*10-23-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director..... Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	1-14-66	9-14-63
PHYSICS, GROUP 280—R. L. EVANS, Director..... Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	10-28-66	4-21-65
DESIGNS, GROUP 290—S. BOYD, Director..... Industrial Arts; Household, Personal and Fine Arts.	2-01-68	4-18-67
<b>MECHANICAL EXAMINING OPERATION</b>		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director..... Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	4-03-67	10-01-65
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director..... Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Wood- working; Tools; Cutlery; Jacks.	12-05-66	2-11-65
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Di- rector..... Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Ex- cavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Type- writers; Stationery; Information Dissemination.	12-12-66	9-21-64
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director..... Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	10-30-67	1-11-67
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director..... Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Struc- tures.	5-18-67	4-16-66
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director..... Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manu- facture; Sewing Machines; Winding and Reeling.	*6-01-66	*5-31-63
Total number of pending applications (excluding Designs).....		187,351
Total number of Design applications pending.....		2,618

Expiration of patents: The patents within the range of numbers indicated below expire during November 1968, except those which may have ex-  
pired earlier due to shortened terms under the provisions of Public Law 900, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law  
819, 80th Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their term curtailed by disclaimer under the provisions  
of 35 U.S.C. 253.

Numbers 2,573,674 to 2,576,908, inclusive

Patents.....  
Plant Patents.....

# DEFENSIVE PUBLICATIONS

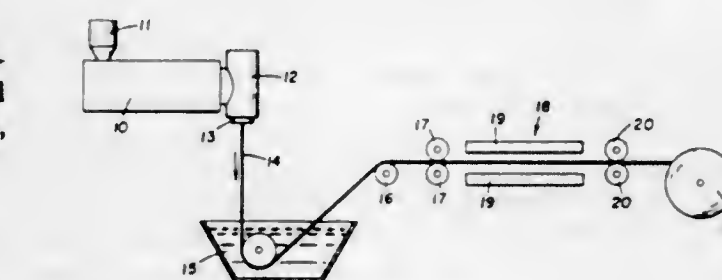
PUBLISHED NOVEMBER 19, 1968

Published at the request of the applicant or owner in accordance with Notice of Apr. 11, 1968, 849 O.G. 1221. The ab-  
stracts are identified by serial number of the applications and arranged in chronological order. The heading of each abstract  
of application published herein indicates the number of pages of specification, including claims and sheets of drawing con-  
tained in the application as originally filed. The files of these applications are available to the public for inspection and  
reproduction may be purchased for 30 cents a sheet.

Applications published under the Defensive Publication Program have not been examined as to the merits of alleged  
invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

647,220  
1-AMINO-2-(2'-HYDROXY-TRIMETH-  
YLOL-CYCLOHEXYLMETHOXY)-4-HY-  
DROXY-ANTHRAQUINONES  
Ralph R. Giles, % Tennessee Eastman Company,  
P.O. Box 511, Kingsport, Tenn. 37662  
Continuation-in-part of application Ser. No. 398,092,  
Sept. 21, 1964. This application June 19, 1967.  
Published Nov. 19, 1968

Class 260—380  
No Drawing. 5 Pages Specification  
Water-insoluble 1-amino-4-hydroxyanthraquinone com-  
pounds, substituted at the 2-position with a substituted  
methoxy group derived from a tetramethylolcyclohexanol,  
are useful as dyes for hydrophobic textile materials.



684,650  
SEALING COMPOSITION  
Bernard Michael Reges, Arbour Park, Newark, Del., as-  
signor to E. I. du Pont de Nemours and Company, Wil-  
mington, Del., a corporation of Delaware  
Continuation-in-part of application Ser. No. 459,926,  
May 28, 1965. This application Nov. 21, 1967.  
Published Nov. 19, 1968

Class 260—28.5  
No Drawing. 17 Pages Specification  
A sealing composition for highway and building joints  
comprising a mixture of (a) a chloroprene polymer (b)  
a coal tar pitch, and (c) at least one aliphatic amine cur-  
ing agent.

705,875  
ALUMINA CATALYSTS, PROCESS FOR THEIR  
PREPARATION AND THEIR USE TO DEHY-  
DROGENATE METHYL ISOBUTYRATE  
Edgar L. McDaniel and Howard S. Young, both %  
Tennessee Eastman Company, P.O. Box 511,  
Kingsport, Tenn. 37662  
Original application Aug. 16, 1965, Ser. No. 480,153.  
Divided and this application Jan. 2, 1968. Published  
Nov. 19, 1968

Class 260—486  
No Drawing. 10 Pages Specification  
Alumina catalysts useful in the dehydrogenation of  
methyl isobutyraldehyde to methyl methacrylate are pre-  
pared by pretreating activated alumina with a lower al-  
kane or alkene or a cycloalkane or cycloalkene at an ele-  
vated temperature, e.g., 500° C. to 700° C.

486,325  
GLOSSY SATIN-LIKE RIBBON AND METHOD  
FOR ITS PRODUCTION  
Warner D. Long, Kingsport, Tenn., assignor to Eastman  
Kodak Company, Rochester, N.Y., a corporation of  
New Jersey  
Filed Sept. 10, 1965. Published Nov. 19, 1968  
Class 161—168

1 Sheet Drawing. 3 Pages Specification  
A method of making a polymer ribbon having a uni-  
laterally oriented continuous phase and a discontinuous  
phase comprising a multitude of small void areas ran-  
domly dispersed throughout the ribbon. The ribbon is

characterized by a satiny sheen giving it the appearance  
of a multifilament ribbon. The method includes extrud-  
ing a mixture of polymer material containing a foaming  
agent, foaming the material while forming it into a rib-

bon and stretching the ribbon unilaterally in a ratio of  
4:1 to 15:1. Polymers which may be used in the method  
include polypropylene, polyethylene, polybutene, poly-  
styrene, polyvinyl chloride, polyurethanes, polyesters and  
polyamides and mixtures of such polymers.

579,188  
PREPARATION OF PURE POLYAMINO-  
TRIPHENYLCARBINOLS  
Ralph Crawford Seyler, Wilmington, Del., assignor to E. I.  
du Pont de Nemours and Company, Wilmington, Del.,  
a corporation of Delaware  
Filed Sept. 14, 1966. Published Nov. 19, 1968  
Class 260—393

No Drawing. 27 Pages Specification  
This invention relates to the preparation of pure poly-  
aminotriphenylcarbinols by the oxidation of leuco poly-  
aminotriphenylmethanes with chloranil, and more par-  
ticularly to an improved process for separating poly-  
aminotriphenylcarbinols from their combinations and  
mixtures with reduction products of chloranil. These car-  
binols are useful in the preparation of pure polyamino-  
triphenylmethane dyes.

671,196  
CYANOMETHYLIDENE AND VINYL SULFONYL  
ETHYL SUBSTITUTED BENZENES AND TETRA-  
HYDRO QUINOLINES  
James M. Straley, John I. Dale III, and Max A. Weaver,  
all % Tennessee Eastman Company, P.O. Box 511,  
Kingsport, Tenn. 37662  
Filed Sept. 28, 1967. Published Nov. 19, 1968  
Class 260—287

No Drawing. 20 Pages Specification  
Novel compounds containing a cyanomethylidene group  
and a vinylsulfonyl group attached to a phenylene  
or tetrahydroquinoline nucleus are useful as dyes for hy-  
drophobic textile materials imparting red-yellow shades.



677,016  
1. AMINO - 2 - ARYLSULFONYLOXYPHENOXY-  
4 - (HYDROXY, AMINO AND SUBSTITUTED  
AMINO)-ANTHRAQUINONES  
James M. Straley and Ralph R. Giles, both % Tennessee  
Eastman Company, P.O. Box 511, Kingsport, Tenn.  
37662

Filed Oct. 23, 1967. Published Nov. 19, 1968  
Class 260—372

No Drawing. 14 Pages Specification

Anthraquinone compounds prepared by reacting an arylsulfonyl halide and a 1-amino-4-amido (or -hydroxy)-2-hydroxyphenoxanthraquinone are useful as dyes for hydrophobic textile materials.

688,320  
PROCESS FOR PREPARING ACRYLIC ACID  
AND CATALYSTS THEREFOR

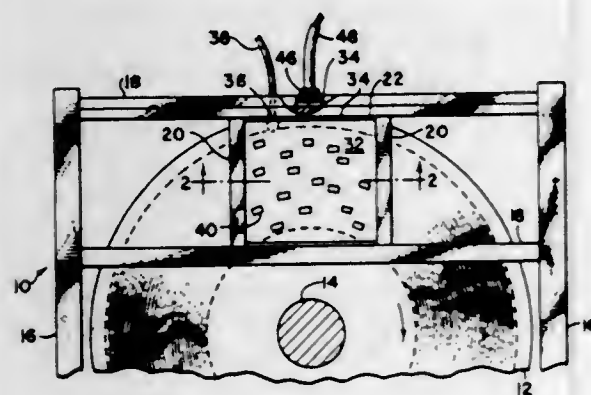
Edgar L. McDaniel and Howard S. Young, both %  
Tennessee Eastman Company, P.O. Box 511,  
Kingsport, Tenn. 37662

Filed Dec. 6, 1967. Published Nov. 19, 1968  
Class 260—533

No Drawing. 25 Pages Specification

Process for the oxidative conversion of propylene to acrylic acid comprising contacting a mixture of vaporized propylene and oxygen at a temperature from about 350° C. to about 550° C. with a novel catalyst comprising oxidized arsenic, oxidized molybdenum and at least one of oxidized zirconium and oxidized titanium. The catalysts may be supported, preferably on silica. Among the compounds from which the molybdenum component may be derived are heteropoly acids of molybdenum, or their ammonium salts, containing cerium, silicon, or chromium as the central atom. Acrylic acid may be subsequently converted to lower alkyl esters for use in the plastics industry.

693,982  
FLYING HEAD MOUNTING FOR ELECTRO-  
MAGNETIC DISC MEMORY FILES  
Clarence R. Linsley, 3144 Brookhill St.,  
La Crescenta, Calif. 91214  
Filed Dec. 27, 1967. Published Nov. 19, 1968  
Class 340—174.1  
1 Sheet Drawing. 10 Pages Specification



A unitary assembly for the multiple flying heads of a magnetic disc memory file. The read/write heads are affixed to a diaphragm forming a wall of a pneumatic cham-

ber which can be readily slipped into place and removed as a unit.

718,321  
ALKALINE EARTH SALTS OF 6-HYDROXYHEX-  
ANOIC ACID AS NOVEL FILM AND FIBER  
FORMING MATERIALS

Thomas Hassell Larkins, Jr., % Tennessee Eastman  
Company, P.O. Box 511, Kingsport, Tenn. 37662  
Filed Apr. 3, 1968. Published Nov. 19, 1968  
Class 260—535

No Drawing. 5 Pages Specification

Alkaline earth salts of 6-hydroxyhexanoic acid form water soluble films, fibers and shaped articles.

733,811  
ELECTRODEPOSITION OF PAINT ON  
SMALL PARTS

George E. F. Brewer, Novi, Mich., assignor to Ford  
Motor Company, Dearborn, Mich., a corporation  
of Delaware

Filed June 3, 1968. Published Nov. 19, 1968  
Class 204—181

No Drawing. 8 Pages Specification

An improved method for simultaneously electro-depositing upon a plurality of small, electrically conductive objects, e.g. screws, bolts, brackets, coil springs, etc., an electrically resistant film of paint. This method comprises providing electrical connection between such objects and the external circuit of the electrodeposition cell with disposable connector-conductors, e.g. steel wool, wire mesh, or expanded metal, i.e. sheet metal which has been slitted and forcibly extended in one or more planes. The disposable connector-conductors may serve as retaining means for supporting the objects to be painted while the latter are immersed in the coating bath or the latter may be independently supported.

733,814  
ELECTRODEPOSITION OF PAINT ON INNER  
SURFACES OF CONDUCTIVE ENCLOSURES  
George E. F. Brewer, Novi, and Gilbert L. Burnside and  
Gordon G. Strosberg, Oak Park, Mich., assignors to  
Ford Motor Company, Dearborn, Mich., a corporation  
of Delaware

Filed June 3, 1968. Published Nov. 19, 1968  
Class 204—181

No Drawing. 10 Pages Specification

An improved method for electrodepositing paint inside a substantially enclosed compartment is enhanced by control of perimeter-to-area ratio of apertures therein. When paint is electrodeposited upon an electrode immersed in the bath of an electrodeposition cell, the most difficult surfaces to coat are those electrically shielded from the opposing electrode. When the degree of shielding is sufficiently great to require the positioning of supplementary apertures to permit full coating, the area and depth of deposit upon the surrounding inner surfaces is increased by employing elongated, slit-like apertures having a high perimeter-to-area ratio, advantageously between about 12 and 50, preferably between about 15 and 25. The minimum width of the aperture is advantageously not substantially below about 0.05 inch, preferably not substantially below about 0.10 inch.

## DECISIONS IN PATENT AND TRADEMARK CASES

### U.S. Court of Customs and Patent Appeals

IN RE MARVIN W. SWAIM

No. 7955. Decided May 16, 1968

[55 CCPA—; 394 F.2d 1020; 157 USPQ 618]

#### 1. PATENTABILITY—OBVIOUSNESS—35 U.S.C. 103.

"We have carefully considered those arguments, the arguments of the Solicitor, and appellant's arguments as presented in his reply brief in view of the entire record, including the affidavit of Dyer, filed on behalf of the appellant. The contentions of the appellant, however, do not persuade us of reversible error in the Patent Office position that the differences between the claimed subject matter and the prior art are such that that subject matter as a whole was obvious to one of ordinary skill in the pertinent art at the time the invention was made. 35 U.S.C. 103. That legal conclusion of obviousness must be bottomed on a solid evidentiary base. See *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). Here, we think that the evidence of the prior art relied upon by the Patent Office, together with appellant's acknowledgments of the scope and content of the prior art, provides sufficient factual support for that conclusion."

#### 2. SAME—PARTICULAR SUBJECT MATTER—"MANUFACTURE OF TUBES."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Manufacture of Tubes" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 220,197.

AFFIRMED.

John H. Sutherland for appellant.

Joseph Schimmel (Jere W. Sears, of counsel) for the Commissioner of Patents.

Before WORLEY, Chief Judge, and Judges RICH, SMITH, ALMOND,  
and KIRKPATRICK<sup>1</sup>

SMITH, J., delivered the opinion of the court.

The sole issue involved in this appeal from the Patent Office Board of Appeal<sup>2</sup> is whether the subject matter claimed in appellant's application<sup>3</sup> would have been obvious in view of certain prior art<sup>4</sup> when tested by the statutory requirements of 35 U.S.C. 103. After careful consideration of all of appellant's assertions of error and supporting arguments, we affirm the decision of the Board.

The invention relates to the manufacture of wound tubes suitable for use as forms within which concrete may be poured, or as structural members which may be used in construction. Appellant explains that, when spirally wound paper tubes are used as forms within which concrete is poured, objectionable "tracks" of the spiral windings, like the grain of wooden forms, appear on the surface of the resulting concrete columns. Tedious finishing is thus required to provide the structure with a satisfactory final surface.

Appellant also explains that the use of spirally wound paper tubes requires that the resulting concrete columns be round in cross-section; it is thus an object of the claimed invention to provide an "out-

<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

<sup>2</sup> The board consisted of Messrs. Dracopoulos and Brewink, Examiners-in-Chief, and Reynolds, Acting Examiner-in-Chief.

<sup>3</sup> Serial No. 220,197, filed August 29, 1962 for "Manufacture of Tubes." Claims 1-3, 6, 7, and 21-25 are involved in this appeal.

<sup>4</sup> The references relied upon by the Patent Office are:

Webb, 1,512,729, Oct. 21, 1924.

Noyes, 1,675,376, July 3, 1928.

Copenhaver et al., 2,677,165, May 4, 1954.

Budd, 2,892,288, June 30, 1959.



of-round" wound form to produce a column with an acircular cross-section. Appellant adds that spirally wound tubes are weak in tension, regardless of whether the tension is applied by forces exerted longitudinally or circumferentially of the tube. He asserts that paper and paper-like materials have considerably greater tensile strength in the direction parallel to the length of the web than in the widthwise direction.

Appellant's solution to these problems resides in the concept of tubes made by convolutely winding an integral sheet of paper or paper-like material upon itself, preferably after the sheet has been impregnated with a hydrophobic plastic material such as sulfur. The tubes are convolutely wound on mandrels whose exterior configuration substantially corresponds to the interior configuration desired for the tube. Thus, the tube may be as long as the paper is wide and the problems previously discussed in relation to spirally wound tubes are said to be overcome.

Claims 1 and 22 are illustrative:

1. A tube for use as a concrete form comprising a convolutely wound sheet of paper-like material impregnated with hydrophobic thermoplastic material.

22. A form for molding concrete columns comprising a convolutely wound tube consisting of a plurality of convolutions of an integral sheet of paper-like material having a hydrophobic thermoplastic material sorbed by and set in situ between successive convolutions, said tube having an internal void which has flat sides corresponding dimensionally to the sides of the column to be molded, and said convolutions being in number such as to provide rigidity sufficient that said tube retains its shape when under load of wet concrete confined therewithin.

The Examiner stated that Webb, Noyes and Budd disclose sulfur impregnation of paper-like sheet material for strengthening, stiffening and waterproofing. He stated that Copenhagen discloses a spirally wound paper tube in casting concrete columns. He found it to be obvious under 35 U.S.C. 103 to provide Copenhagen's form of sulfur-impregnated paper or sulfur Board in view of the "secondary" references. He also stated that the dictionary definition of "convoluted" was broad enough to include a spirally wound tube. In the alternative, he made the following observation:

Should the Board be of the opinion that the spirally wound paper tube of Copenhagen et al. does not anticipate the convolutely wound paper tube recited in the claims, then the position of Examiner is that it is a matter of choice or design whether the tube is spirally or convolutely wound. \* \* \*

The Board affirmed the rejection for the reasons set forth by the Examiner with additional "further comment":<sup>5</sup>

While the prior art cited by the Examiner, namely Copenhagen et al., discloses a spirally wound tube rather than a convolutely wound tube for use as a concrete form, it is our opinion that since convolutely wound tubes are old as admitted by appellant in the insert made at the bottom of page 4 of the specification, [\*] \* \* it would be obvious to a person skilled in the art that a convolutely wound tube could be used as a concrete form \* \* \*

The appellant's arguments here may be summarized as follows: (1) the statement of the Board quoted above constitutes a reversal of the Examiner's rejection; (2) the rejection as affirmed by the Board is predicated upon a basis not raised by the Examiner; (3) the decision

<sup>5</sup> Appellant requested rehearing and reconsideration, urging that the Board held the claims to be unpatentable on grounds not involved in the appeal. The Board responded: \* \* \* we affirmed the rejection of the claims for reasons set forth by the Examiner and made additional comments. The fact that we considered the references in a slightly different manner in our comments does not constitute a new ground of rejection. \* \* \*

[\*] The "insert" was "refused entry" by the Patent Office, but the "per se antiquity of 'convolutely wound tubes' is admitted" by appellant in his brief.

of the Board results from a "hindsight" reconstruction after it had determined what appellant had done; (4) the cited art does not recognize the deficiencies which are overcome by the appellant nor does it suggest appellant's improvement; and (5) the Board exceeded its authority under Rule 196 by resorting to a ground of rejection other than those specified by the Examiner.

[1] We have carefully considered those arguments, the arguments of the Solicitor, and appellant's arguments as presented in his reply brief in view of the entire record, including the affidavit of Dyer, filed on behalf of the appellant. The contentions of the appellant, however, do not persuade us of reversible error in the Patent Office position that the differences between the claimed subject matter and the prior art are such that that subject matter as a whole was obvious to one of ordinary skill in the pertinent art at the time the invention was made. 35 U.S.C. 103. That legal conclusion of obviousness must be bottomed on a solid evidentiary base. See *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). Here, we think that the evidence of the prior art relied upon by the Patent Office, together with appellant's acknowledgments of the scope and content of the prior art, provides sufficient factual support for that conclusion.

[2] The decision of the Board is affirmed.

AFFIRMED.

KIRKPATRICK, J., took no part in this decision.

## U.S. Court of Customs and Patent Appeals

IN RE OLIVER C. ECKEL

No. 7820. Decided May 2, 1968

[55 CCPA —; 393 F.2d 848; 157 USPQ 415]

### 1. PATENTABILITY—DOUBLE PATENTING—"COLORABLE VARIATION"—*In re Robeson* CONSTRUED.

"It was not the intention of this court in *Robeson* to create a fourth category of inventions having no basis in the statutes. There are only three categories of inventions implicit in 35 U.S.C. 102 and 103, and there is neither justification nor need for a fourth. We used the term 'mere colorable variations of the same idea' in *Robeson* to mean that the same invention was being claimed in different language, or that insubstantial and immaterial limitations were being added to or dropped from the claims. The keystone of the colorable variation concept was that the same invention was being claimed although not in precisely the same language. It is apparent from the record of this case that our language in *Robeson* was sufficiently explicit on this point and that both the Patent Office and the bar have given broader interpretation to this phrase than was intended. The result has been that use of the phrase has more tended to obscure than to resolve the issues involved in terminal disclaimer cases. Since the resolution of these issues involves primarily a determination of whether the same invention is or is not being twice claimed, we consider that an analysis couched in terms of a 'colorable variation' is unnecessary and undesirable."

### 2. SAME—SAME—TERMINAL DISCLAIMER.

"The terminal disclaimer can have no effect where it is attempted to twice claim the same invention. *In re Knohl*, 55 CCPA —, 386 F.2d 476, 155 USPQ 586. But a terminal disclaimer will overcome a double patenting rejection where the appealed claim is an obvious variant of a patent claim but not obvious in view of the prior art. *In re Robeson*, supra. And such use of the terminal disclaimer is not prohibited by the mere fact that the claims are not mutually exclusive. *In re Braithwaite*, supra."



### 3. SAME—SAME—SAME—*In re Braithwaite* CONSTRUED.

"In that case [*In re Braithwaite*], the applicant had obtained a patent for the production of alkyl lead compounds from an alkyl-containing Grignard reagent and an alkyl halide. The claims covered use of different as well as the same alkyls in the two compounds, and certain broadening language in the specification indicated that the use of different alkyls was in contemplation of the inventor. However, the specification contained no explicit directions for producing such compounds, or examples of such compounds. Therefore, when the inventor filed a new application containing specific directions of how to make such compounds, we held that this was not the same invention as that previously claimed, and gave effect to the terminal disclaimer."

### 4. SAME—SAME—SAME.

"The . . . facts in this case are that the appellant obtained a patent disclosing only square tiles but containing claims which cover tiles of any configuration. Some broadening language in the specification supports a construction of the claims which would include shapes other than square, but there is no explicit disclosure of such a shape. The application now before us discloses and claims such shapes, in association with properly spaced tracks. We see no more reason to deny effect to the terminal disclaimer here than we did in *Braithwaite*."

APPEAL from the Patent Office. Serial No. 211,606.

REVERSED.

Harold E. Cole for appellant.

Joseph Schimmel (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before WORLEY, Chief Judge, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK<sup>1</sup>

ALMOND, J., delivered the opinion of the court.

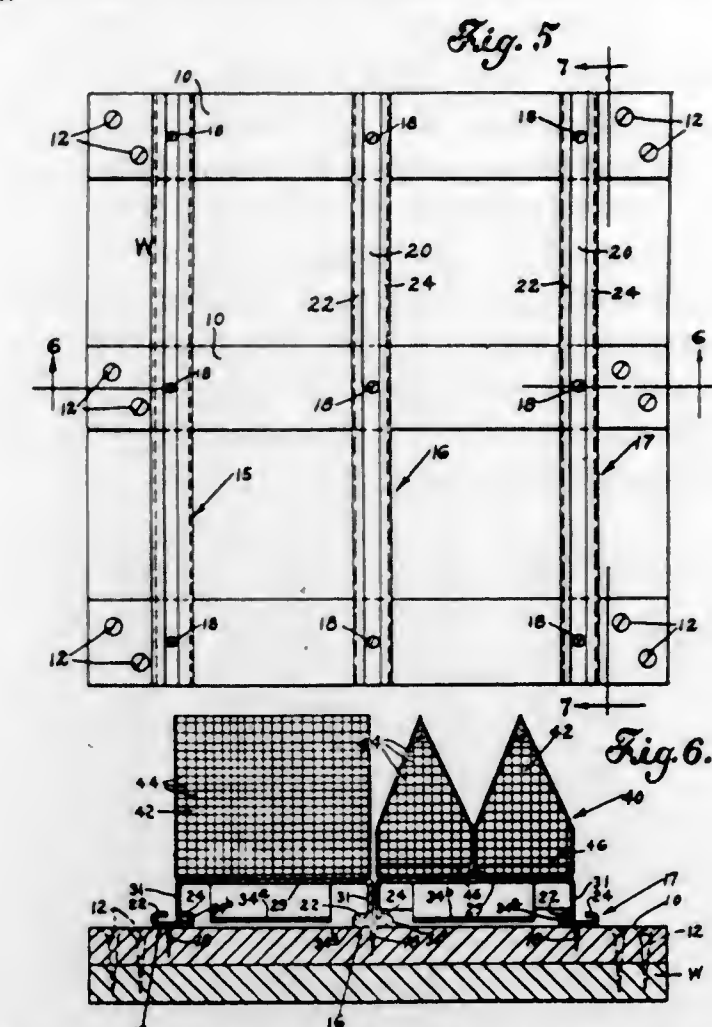
This is an appeal from the decision of the Board of Appeals affirming the rejection of the claims in appellant's application<sup>2</sup> on the ground of double patenting over the claims of appellant's patent,<sup>3</sup> despite the filing of a terminal disclaimer in the application.

To place the case in perspective with respect to the numerous other double patenting rejections appealed to this court of late, it is apparent from the letters of the Examiner and decision of the Board that they regard appellant to be claiming the same invention or a mere colorable variation thereof in his application claims as is defined by his patent claims. Appellant, on the other hand, is of the opinion that the description and claims of his patent are to a broad invention while the claims of his application are directed to a "specific structure" of a later invention not disclosed in the patent; and that, in view of a terminal disclaimer seasonably filed under 35 U.S.C. 253, the Board erred in failing to apply the decisions of this court in *In re Robeson*, 51 CCPA 1271, 331 F.2d 610, 141 USPQ 485; *In re Kaye*, 51 CCPA 1465, 332 F.2d 816, 141 USPQ 829; and *In re Bowers*, 53 CCPA 1590, 359 F.2d 886, 149 USPQ 570.

Eckel's own patent, No. 3,086,325, is the basis of the rejection. It is not prior art, having been copending with the application at bar. That patent discloses and claims assemblies of acoustical members to be attached to ceilings or walls. The members themselves are in the form of wedge-shaped elements of sound absorbing material mounted on supporting, track-engaging metal bases. The tracks are mounted in parallel positions on the walls and ceiling of a chamber to be acoustically treated, equally spaced apart, and the members can then be

<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.  
<sup>2</sup> Serial No. 211,606, filed July 23, 1962, for "Acoustical Members."  
<sup>3</sup> No. 3,086,325, issued April 23, 1963.

mounted thereon. FIGURES 5 and 6 of the patent drawings show the general idea.

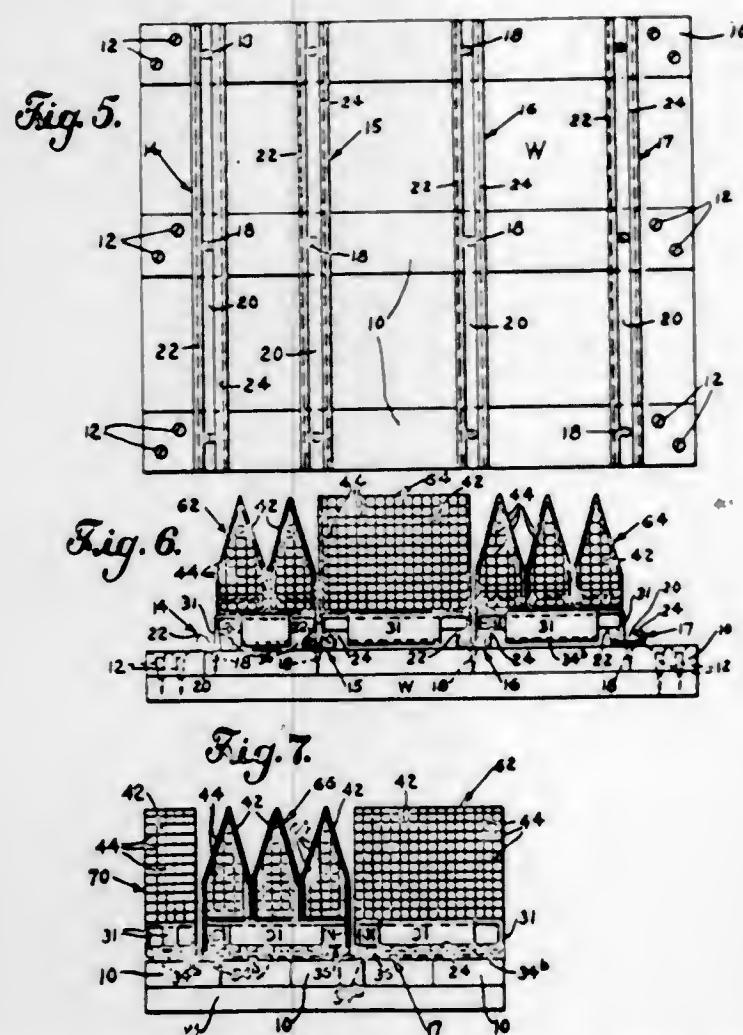


In FIG. 5 portions of three tracks 15, 16, 17 are shown carried on supports 10 fastened to the wall W by screws 12. In FIG. 6, two acoustical members 40 are seen. The one on the right is turned 90° from the one on the left so that one member is seen in front and the other in side elevation. The double wedge-shaped members are made of wire mesh 44 filled with glass wool 42 or like material. The joiner members, or attaching metal base portions, are 29, having four sides 31 with inwardly-turned flanges 34a, 34b which engage track flanges 22. The patent drawings disclose all tracks as equally spaced and all acoustical units as being of equal size and as being square. Being square, the acoustical units can be placed on the tracks in either of the positions shown in FIG. 6, i.e., rotated 90° from one another. The specification makes no mention of the shape of the units, and the word "square" does not appear in the patent. Certain claims, however, designate the joiner members, but not the acoustical members, as being of "substantially rectangular shape."

It will be understood that these acoustical members are used to line a room to make it into a nonsound-reflecting chamber, presumably for acoustical laboratory use. All four walls and the ceiling may thus be sound-proofed. It is clear that as many tracks as necessary will be secured to the flat surfaces to be treated and that they will all be equally spaced. In the patent disclosure, which is only one printed page, there are no variations or modifications of the single type of unit described, although the disclosure contains a more-or-less standard broadening clause: "The nature of the invention is such as to render it susceptible to various changes and modifications, and therefore, I am not to be limited to the construction disclosed by the drawings nor to the particular parts described in the specification; but am entitled to all such changes therefrom as fall within the scope of my claims."



Approximately a year and a half after filing the application for the issued patent, and while his application therefor was still pending, Eckel filed the application at bar containing added disclosure and including a sheet of new drawings. It is stated to be an object of this application to provide acoustical tiles of *different* sizes. The applicant, having noted that a great many rooms were of dimensions not equally divisible by standard tile widths, conceived the idea of supplying tiles of fractional widths to fill in the space remaining at the edge of a wall after the maximum number of full tiles had been mounted. Since these tiles are mounted on tracks, his idea also involved mounting of the end tracks at a proper distance from the previously mounted track to accommodate the fractional width tiles. FIGURES 5, 6 and 7 of the application illustrate this concept.



These figures are quite similar to the patent drawings, except that the left-hand track in FIG. 5 is spaced only two-thirds of the distance from the next nearest track as that track is from the next adjacent track. As shown in FIG. 6, this track spacing accommodates a tile 62 having a width two-thirds that of the standard tiles. Another embodiment is shown in FIG. 7, where a tile having only a one-third width is used. In other drawings of the application, various tiles are disclosed being of standard width in one direction but of various fractional widths in the other.

Only two claims have been brought before us on this appeal, both reciting an assembly of acoustical members with a support therefor. Claim 4 is reproduced below:

4. An assembly of acoustical members comprising a support having three tracks spaced apart different distances whereby there are relatively narrow and wide spaces between them, each said track having two inwardly extending retainer flanges spaced laterally apart, two sound absorbing devices each embodying a joiner one of which is of substantially oblong shape and the other is of substantially square shape, each said joiner having four right-angled side portions and four connector flanges extending angularly inward from said side

portions, any two of said connector flanges of said square-shape joiner that are oppositely disposed being of such size that they are receivable on, and overlapped by one each of the said retainer flanges of the two of said widely spaced tracks, and are slidable along said latter two retainer flanges, and two of said connector flanges of said oblong-shaped joiner that are oppositely disposed being of such size that they are receivable on and overlapped by said retainer flanges of the two of said narrowly spaced tracks and are slidable along said latter two retainer flanges.

Appealed claim 5 is similar to claim 4 but is broader in that the narrower or "oblong-shaped" joiner need have but one pair of normally extending side portions and associated connector flanges.

These claims were rejected for double patenting over claim 8 of appellant's patent. The patent claim is very similar in organization to the appealed claim 4 reproduced above. The patent claim is broader, however, in that it merely recites "three tracks spaced laterally apart" without requiring relatively narrow and wide spaces between them. Also, the patent claim does not require that the joiners be either oblong or square, but merely that they have "four right-angled side portions." The patent claim, therefore, completely dominates the appealed claims.\*

At the time the Examiner made his final rejection, no terminal disclaimer had been filed. The Examiner therefore quite properly made an "obviousness-type" double patenting rejection. He stated:

Claims 1-5 are rejected on the ground of double patenting over applicant's Patent No. 3,086,325, claims 1 and 2 over patent claim 4, claim 3 over patent claim 1 and claims 4 and 5 over patent claim 8 when considering the state of the art as seen in Woodbury.<sup>1</sup> Woodbury would render obvious making the recited rectangular acoustical members of patent claim 4 and the acoustical members of patent claim 1 of an oblong configuration. It is further considered obvious in view of Woodbury to make one of the two acoustical members recited in patent claim 8 with an oblong shape.

Appellant filed a terminal disclaimer and an appeal to the Board at the same time. In his answer, the Examiner considered the terminal disclaimer but felt that it should have no effect in this case:

Claims 1-5 are considered to be unpatentable on the ground of double patenting over appellant's Patent No. 3,086,325, instant claim 1 over patent claim 4, claim 2 over patent claim 5, claim 3 over patent claim 1 and claims 4 and 5 over patent claim 8 when considering the state of the art as seen in Woodbury. Claims 1-3 and claims 4 and 5 by their recitation of the limitation "oblong" are *merely colorable variations* of the invention set forth in the patent claims 4, 5, 1 and claim 8 respectively. *In re Siu* 105 USPQ 428. Judicial notice may be taken of the fact that square tiles and tiles having fractional widths thereof as well as tiles having multiple widths thereof are conventionally employed when covering most surfaces. A tile having a width which is some fraction of or a multiple of the width of a square tile is, of course, oblong in configuration. It is quite unlikely that the artisan could use the patented invention on a variety of surfaces without employing an oblong tile. Under these circumstances the formation of (1) the recited rectangular tiles of patent claims 4 and 5, (2) the acoustical members having no limitation as to their configuration in patent claim 1 and, (3) one of the two acoustical members set forth in patent claim 8, with an oblong shape constitutes *merely a colorable variation* of the same idea.

However, if, as was the case in *In re Robeson* 141 USPQ 486, the instant claims are considered to be directed to something more than a mere colorable variation of the patented invention, then the oblong tile variation is one which would be *obvious* to the artisan having ordinary skill in view of the state of the art as

\* It should be noted that patent claim 8 also contains the recitation "each said device embodying a sound absorbing member having a main body of sound absorbing material tapering in width toward the outside end, said body outside end of one said device extending at an angle to the body outside end of the other said device," which has no counterpart in the appealed claims. However, appellant's attorney stated in oral argument that he considered this recitation to be immaterial. The Solicitor agreed.  
<sup>1</sup> Patent 2,101,568, which shows porous fiber board blocks of either square or oblong shape for use in sound deadening construction.



seen in Woodbury and as reflected in virtually any tiled surface one may have observed.

In accordance with the decisions of *In re Robeson* 141 USPQ 486 and *In re Saul Kaye* 141 USPQ 829, appellant filed a terminal disclaimer executed February 23, 1965. The filing of the terminal disclaimer would appear to obviate any consideration of extension of monopoly against the instant claims if they reflect something more than a colorable variation of the patented device. It is the Examiner's position, as indicated supra, that the instant claims do not reflect anything more than a colorable variation of the patented device.

However, it is not apparent that the instant case comes under the *Robeson-Kaye* doctrine. In the memorandum submitted August 18, 1964, by the superintendent, Patent Examining Corps to the directors and group supervisors indicates that the Board of Appeals has established the following guideline: the *Robeson-Kaye* doctrine would not be extended to cover cases of the same inventor having two different species which are unpatentable over each other but patentable over the prior art where there were generic or overlapping claims in one or both cases.

The patented claims either recite the tiles as being "rectangular" or do not limit the configuration in any way, and are therefore, generic to all the instant claims. It would appear, in view of the guideline noted supra, that the filing of a terminal disclaimer does not relieve the instant claims of the holding of double patenting because applicant is not entitled to only generic claims in one case and species claims in a second case. It will be noted that the species of square tile was never specifically claimed in the patent as a distinct species. Consequently the patented claims are all generic to the two species, only one being specifically claimed in the present case. [Emphasis added.]

It is apparent that the Examiner asserted two clear grounds for refusing to give effect to the terminal disclaimer. He was of the opinion that changing a square tile to an oblong one was a mere colorable variation and thus specifically excluded from the *Robeson* doctrine. He also felt that the claims of the patent and those of the application had a genus-species relation and that a terminal disclaimer was ineffective in such a situation. The Examiner's reference to the obviousness of oblong tiles appears to be mere surplusage.

The Board arrived at the same two grounds as the Examiner, and expounded its understanding of the standards to be used in double patenting cases where a terminal disclaimer has been filed. The Board said:

From consideration of appellant's patent disclosure and claims and from consideration of the present disclosure and claims, it appears to us that the distinction as to using "oblong" units, as well as the distinction as to placing track elements in varied spacing, is no more than an outgrowth of the geometrical fact that room spaces to be covered by blocks or panels are seldom divisible into even multiples of the block or panel sizes. Even casual observation of acoustic tiled ceilings, paneled walls, or composition tiled floors renders it apparent that odd sized units are commonly needed to complete the coverage. The adjustment of furring strips or more sophisticated track anchor units to the spacing dictated by fractional sized finishing courses of such geometrical units does not appear to us to call upon the creative faculties of a worker in the art to such a degree as to warrant patent protection. Where comparison of such change to prior art is involved the patent statutes in 35 U.S.C. 103 give guidance that a patent can be refused when " \* \* the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art. \* \* \*"

Under double patenting practice the same tests have been applicable to decide what degree of novelty over what was previously claimed would support a second patent. Where the patents sought are to expire together and the second patent adds protection for a "colorable variation" of subject matter claimed in the first patent the *In re Robeson*, supra, decision appears to dictate a somewhat lesser standard of inventive contribution as acceptable for the support of a second patent associated with a terminal disclaimer.

In the present factual situation, we are convinced that the measure of difference between the claimed subject matter in the patent and the appealed claims is so meager as to fail to meet even this standard of inventive contribution. To grant a second patent to expire with the first patent would still involve decision that persons skilled in the art would be taxed to an extent to arrive at the concept apart from appellant's teaching. While this inventive creation does not have to come up to the threshold defined by obviousness in 35 U.S.C. 103, it appears to us that it still requires more of a contribution on appellant's part than is present in this case.

Apart from the decision as to what a "colorable variation" may mean under the *In re Robeson*, supra, decision the facts in this case are not such as to render that case controlling in that the claims of appellant's prior patent are clearly of a breadth to encompass the "oblong" blocks now recited in specific terms. Claim 8 of the patent as applied to appealed claims 4 and 5 is similarly so general as to encompass the placing of three rails in varied spacing and the association therewith of varied sound absorbing devices. Thus it appears that the purpose of affording coverage for a colorable variation of what was previously claimed discussed in the *In re Robeson*, supra, case is not present in this case.

The development of the Board's thoughts on the "colorable variation" subject appears to be as follows:

- (1) Where comparison to prior art is involved, 35 U.S.C. 103 sets forth an obviousness standard,
- (2) under double patenting practice the same test is applicable; but
- (3) when patents are sought to expire together, a lesser standard than obviousness is still required to be met, i.e. a "colorable variation";
- (4) the invention in this case is even less than the "colorable variation" required to support a second patent in a terminal disclaimer case.

This line of reasoning appears to provide four categories into which inventions may fall: Unobvious, Obvious, Colorable Variation, and Same Invention. This reasoning also appears to equate "colorable variations" with extreme obviousness.

[1] It was not the intention of this court in *Robeson* to create a fourth category of inventions having no basis in the statutes. There are only three categories of inventions implicit in 35 U.S.C. 102 and 103, and there is neither justification nor need for a fourth. We used the term "mere colorable variations of the same idea" in *Robeson* to mean that the same invention was being claimed in different language, or that insubstantial and immaterial limitations were being added to or dropped from the claims. The keystone of the colorable variation concept was that the same invention was being claimed although not in precisely the same language. It is apparent from the record of this case that our language in *Robeson* was not sufficiently explicit on this point and that both the Patent Office and the bar have given broader interpretation to this phrase than was intended. The result has been that use of the phrase has more tended to obscure than to resolve the issues involved in terminal disclaimer cases. Since the resolution of these issues involves primarily a determination of whether the same invention is or is not being twice claimed, we consider that an analysis couched in terms of a "colorable variation" is unnecessary and undesirable.

The Board, as well as the Examiner, was troubled by the so-called "overlap" of the claims of the patent and those of the application. The term "overlap," as we understand the use of it in this record, is a broad but somewhat ill-defined concept which may include genus-species relationships, domination of one claim by another, and perhaps other situations where claims are not explicitly mutually exclusive.



The Examiner felt that there was a genus-species relation in this case. The Board expressed its opinion that the patent claims "encompassed" the application claims, and in its decision on request for reconsideration explained its use of this term by stating:

Appellant's view that the only objection to a second patent on insignificantly different subject matter is "extension of monopoly," misses the point in our decision wherein we point out that two patents are sought having claims covering the same subject matter. Should such patents be issued and come under separate ownership, infringers would be subject to possible separate suits.

At the time the Board wrote its opinion, *In re Braithwaite*, 54 CCPA 1589, 379 F.2d 594, 154 USPQ 29, had not been decided. In that case we did not consider that the classification of claims as "generic" or "embracing" or "overlapping" was of any help in resolving the issues involved in terminal disclaimer cases. The employment of such tests, just as employment of the "colorable variation" language, seems to divert attention from the sole issue of importance in these double patenting-terminal disclaimer cases, i.e. whether the applicant is attempting to twice claim the same invention, or whether he is claiming different inventions.

[2] The terminal disclaimer can have no effect where it is attempted to twice claim the same invention. *In re Knohl*, 55 CCPA —, 386 F.2d 476, 155 USPQ 586. But a terminal disclaimer will overcome a double patenting rejection where the appealed claim is an obvious variant of a patent claim but not obvious in view of the prior art. *In re Robeson*, supra. And such use of the terminal disclaimer is not prohibited by the mere fact that the claims are not mutually exclusive. *In re Braithwaite*, supra.

Prior to these decisions, an inventor who discovered an obvious improvement on or obvious modification of an invention on which he had already filed a patent application could obtain patent protection specific to his new invention only by filing a new patent application disclosing both his original and his new invention, and abandoning his first application. This procedure would result in disclosure to the public of his original invention being delayed, perhaps for several years.

The decisions in the above cases, however, give the inventor a second choice. He may allow his first application to issue, and claim his new invention in a separate application having a terminal disclaimer. By this procedure, the inventor can obtain no claims which he would not have been entitled to under the previous practice. The decisions have, therefore, in no way enlarged the scope of patent protection available to the inventor. However, they do have the salutary effect of making public the inventor's original disclosure at an earlier date than would have been the case under previous practice. While we have explored the possible detrimental effects of this practice, we have found the usual arguments on this point to be lacking in substance. *In re Jentoft*, 55 CCPA —, — F.2d —, — USPQ —. We, therefore, feel that the use of terminal disclaimers in such cases results in a clear benefit to the public, but in no substantial offsetting detriment.

Turning to the present case, we find difficulty in distinguishing the situation here from that which was present in *Braithwaite*, supra.

[3] In that case, the applicant had obtained a patent for the production of alkyl lead compounds from an alkyl-containing Grignard reagent and an alkyl halide. The claims covered use of different as well as the same alkyls in the two compounds, and certain broadening lan-

guage in the specification indicated that the use of different alkyls was in contemplation of the inventor. However, the specification contained no explicit directions for producing such compounds, or examples of such compounds. Therefore, when the inventor filed a new application containing specific directions of how to make such compounds, we held that this was not the same invention as that previously claimed, and gave effect to the terminal disclaimer.

[4] The parallel facts in this case are that the appellant obtained a patent disclosing only square tiles but containing claims which cover tiles of any configuration. Some broadening language in the specification supports a construction of the claims which would include shapes other than square, but there is no explicit disclosure of such a shape. The application now before us discloses and claims such shapes, in association with properly spaced tracks. We see no more reason to deny effect to the terminal disclaimer here than we did in *Braithwaite*.

The effect of this holding, as that in *Braithwaite*, is that the inventor obtains no claims which he could not have had in a continuation-in-part application, yet his original invention was disclosed sooner and his patent term for both his original and his new invention will end sooner than would be the case if he had availed himself of the continuation-in-part procedure.

The decision of the Board of Appeals is, therefore, reversed.

REVERSED.

Worley, Chief Judge, dissents.

### U.S. Court of Customs and Patent Appeals

IN RE ALBERT M. ZALKIND

No. 7947. Decided April 4, 1968

[55 CCPA—; 391 F.2d 950; 157 USPQ 197]

#### 1. PATENTABILITY—COMBINING REFERENCES—DEVICE—OBVIOUSNESS—35 U.S.C. 103.

"The question here, \* \* \* seems to us to be whether the subject matter sought to be patented is obvious [over Boring in view of Wertz] under the conditions stated in 35 U.S.C. 103. It is, of course, not necessary to determine whether that which must be done to the device of Boring is likewise done by Wertz, or vice versa. We need to determine whether the claimed subject matter as a whole would have been obvious to one of ordinary skill in the art following the teachings of the prior art at the time the invention was made. See *In re Wesslau*, 53 CCPA 746, 353 F.2d 238, 147 USPQ 391 (1965). We think the Solicitor correctly points out that: 'The basis for combining the teachings of the references is the fact that both relate to cap firing devices as well as to an inertia operated hammer. \* \* \*'"

#### 2. SAME—PARTICULAR SUBJECT MATTER—"PAPER CAP EXPLODING NOVELTY TOY." The refusal of certain claims in an application entitled "Paper Cap Exploding Novelty Toy," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 227,331.

AFFIRMED.

Albert M. Zalkind, pro se.

Joseph Schimmel (Raymond E. Martin, of counsel) for the Commissioner of Patents.

Before RICH, Acting Chief Judge, and Judges SMITH, ALMOND, and KIRKPATRICK<sup>1</sup>

SMITH, J., delivered the opinion of the court.

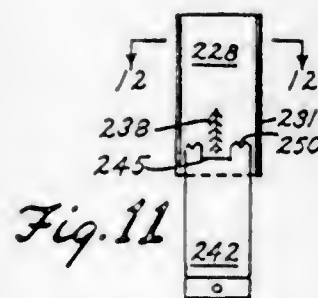
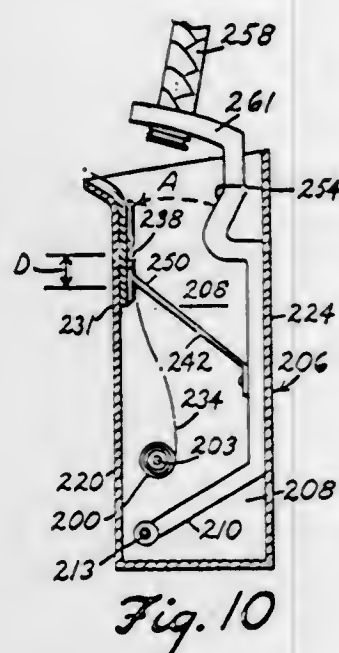
<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.



The dispositive issue in this appeal is whether appellant's claimed subject matter is obvious in view of the teachings of the references within the meaning of 35 U.S.C. 103.

This is an appeal from the decision of the Patent Office Board of Appeals,<sup>2</sup> adhered to upon reconsideration, affirming the Examiner's rejection of claims 3, 7, 31, 32 and 36 of appellant's application<sup>3</sup> as "unpatentable over" prior art.

The invention in issue relates to a cap-firing toy whip having a whip element attached to a handle. The handle contains what appellant terms as "inertia-operated" cap feed mechanism, a hammer, and an anvil. Those elements are arranged so that caps are automatically and successively fed sequentially one at a time from a roll to a position between the hammer and the anvil where each cap is successively exploded to provide a sound simulating the repetitive "cracks" of a snapping whip. The invention is better understood by reference to FIGS. 10 and 11.<sup>4</sup>



The casing handle 206 has a swinging arm 210 pivotally secured at post 213. It is apparent that a snapping motion of the handle will result in pivotal movement of the arm. The arm is provided with a bent portion which serves as a hammer 254 that coacts with an anvil 228 (FIG. 11) so that when a paper cap from roll 200 is interposed between the hammer and the anvil, it will be exploded by the impact. The arm 210 and whip element 258 carried by the arm have sufficient mass to flex a leaf spring 242 by what appellant terms "inertia effect." Leaf spring 242 is carried by the swinging arm 210 and is a flexible feed finger which engages and pushes the cap strip successively for a distance equal to the length of a cap each time the whip element is snapped. A series of barbs 238 prevents return motion of the cap strip. The burnt caps are discharged through a slot adjacent to the open top of the handle. The arm 210 itself may be given sufficient mass to operate the device. The whip element 258 need not be relied upon to add to the mass but could, in fact, be fixed to the handle rather than having a pivotal movement.

<sup>2</sup> The Board consisted of Messrs. Bailey and Brewrink, Examiners-in-Chief and Reynolds, Acting Examiner-in-Chief. Mr. Bailey wrote the opinion of the Board.  
<sup>3</sup> Serial No. 227,331, filed October 1, 1962, entitled "Paper Cap Exploding Novelty Toy." Claims 4-6, 9, 12, 13, 15-28, 30 and 35 stand allowed.  
<sup>4</sup> The application as filed contained many modifications. Appellant asserts that the claims on appeal are directed to FIGS. 10-13, 18-24b, and 25-28. From the record, it appears that the elected species is shown in FIGS. 21 and 22. We here discuss FIGS. 10 and 11 only to assist in understanding the invention claimed.

Claims 7 and 31 are representative of the appealed claims. They state:

7. A novelty toy having a handle, means carried by said handle for exploding a cap, said means comprising a movably mounted weight element actuable by a snapping movement of said handle, said handle having means for storing a cap strip therein, and means connected to said movably mounted element for effecting feed of said strip into position to be struck by said movable element.

31. A cap exploding toy comprising a handle and an anvil and a hammer supported thereby, an inertia operated means comprising a mass movable by snapping movement of said handle and being connected to actuate said hammer for striking a cap against said anvil, means for storing a strip of caps and a feeding means disposed to engage said strip and being connected to said inertia operated means for actuation thereby for effecting successive feeding of caps between said hammer and anvil.

The prior art relied upon is:

Wertz, 926,307, June 29, 1909.

Boring, 3,032,925, May 8, 1962.

Boring discloses a cap-firing whip having a handle which is hollow. The upper end of the handle is provided with a cap-receiving and firing anvil. A cap-firing hammer is slidably mounted in a hollow body portion. By properly manipulating the handle and whip element, the impact surface of the hammer is brought against the cap on the anvil, and the cap is exploded.

Wertz discloses a cane having an anvil, a hammer, a cap-feeding spring, a holding spring, and a roll of caps, all mounted within the cane. The hammer and springs are arranged for simultaneous reciprocatory movement by their mounting on a common support, which is itself reciprocable in the cane. Striking the cane against a supporting surface such as the ground or a floor forces the hammer to move upwardly and explode a cap on the anvil. A spring holds the strip of caps against upward movement when the hammer strikes the cap. Subsequent downward movement of the hammer under the influence of a return spring causes another spring to move downwardly, thus pulling the strip of caps in the same direction, and to position a new cap against the anvil in preparation for the next cycle.

In his answer, the Examiner stated:

Claims 3, 7, 31, 32 and 36 are deemed unpatentable under 35 U.S.C. 103 as defining nothing unobvious over Boring in view of Wertz. To provide the handle of Boring with a suitable space for storing a roll or strip of caps, and a feed finger connected to the hammer for movement synchronously therewith would be obvious to a person skilled in the toy making art, in view of the suggestion of Wertz. It is believed the mechanical changes necessary to effect such modification would require only ordinary mechanical skill.

The Board affirmed, adding the clarification that:

The Examiner has held that Wertz would make it obvious to use corresponding mechanism so that the hammer in Boring, due to its rectilinear motion, would cause automatic feed of caps successively from a roll.

Appellant challenges this holding on the ground that he is the first to provide for automatic feed of caps from a roll in a device in which the hammer is moved by a whip action. In his device the hammer does not move in a rectilinear sliding path. However, the claims are all so broad as to read upon a rectilinear sliding path.

Appellant's position here is that no reasonable basis exists for modifying or "combining these references, except as a matter of pure hindsight." He states in his brief:

At no point does the Board's decision set forth how Wertz and Boring could be combined to produce an automatically operating cap firing toy whip nor does the Examiner's answer \* \* \* give any explanation as to how Boring



could be modified in view of Wertz to produce the applicant's combination and effect, although the answer relies on Boring as the primary reference.

[1] The question here, however, seems to us to be whether the subject matter sought to be patented is obvious under the conditions stated in 35 U.S.C. 103. It is, of course, not necessary to determine whether that which must be done to the device of Boring is likewise done by Wertz, or vice versa. We need to determine whether the claimed subject matter as a whole would have been obvious to one of ordinary skill in the art following the teachings of the prior art at the time the invention was made. See *In re Wesslau*, 53 CCPA 746, 353 F.2d 238, 147 USPQ 391 (1965). We think the Solicitor correctly points out that:

The basis for combining the teachings of the references is the fact that both relate to cap firing devices as well as to an inertia operated hammer. \* \* \*

Appellant argues that the main distinction between the allowed claims and the claims on appeal resides in whether the "hammer and/or inertia means is pivotally mounted." He asserts that the "concept" of the invention is not the particular mode of movement of an inertia means, but rather resides in "the thought that an inertia means can be utilized for feeding and exploding caps." He adds that: \* \* \* In appellant's teaching a moving mass provides the mechanical energy that motivates both a hammer effect and a cap feed effect. How can that concept be "obvious" except as a matter of sheer hindsight?

Those arguments are not persuasive. We think that the delineation of the "concept" shown or not shown is not necessarily controlling in view of the statutory requirements.

Thus, reviewing such differences as may exist between the claimed subject matter and the combined teachings of the prior art, we conclude that that subject matter as a whole would have been obvious under the statutory prescription stated in section 103.

[2] Therefore, the decision of the Board is affirmed.  
AFFIRMED.

#### United States Court of Appeals District of Columbia Circuit

JOHN E. LINDBERG, JR., APPELLANT  
v.

EDWARD J. BRENNER, COMMISSIONER OF PATENTS, APPELLEE

No. 21,530. Decided July 23, 1968

[— U.S.App.D.C. —; — F.2d —; 158 USPQ 380]

#### 1. APPEAL TO THE BOARD OF APPEALS—COMPOSITION OF THE BOARD—35 U.S.C. 7.

"According to the statute [35 U.S.C. 7], the Commissioner of Patents, the assistant commissioners, and the examiners-in-chief comprise the Board of Appeals. Further, the Commissioner of Patents has statutory power to designate which three examiners-in-chief shall constitute any given panel. Moreover, he is not restricted to the fifteen examiners-in-chief. He may name himself or one or more of the assistant commissioners to a panel, for the language of the statute is explicit: 'The Commissioner, the assistant commissioners, and the examiners-in-chief shall constitute a Board of Appeals . . .'" [Emphasis added.]

#### 2. SAME—SAME—SAME.

"Against the background of the first paragraph, the second paragraph of § 7 assumes a meaning different from the one ascribed to it by appellant. If § 7 gives to the Commissioner of Patents the power that we understand it does, then it is difficult to read the restriction to 'one such primary examiner' more narrowly than does the Patent Office. If the Commissioner of Patents can place himself and/or the assistant commissioners on the Board of Appeals,

then he is not precluded from designating a temporary examiner-in-chief of a primary salary grade and another temporary examiner-in-chief of a salary grade higher than primary."

#### 3. STATUTE—STATUTORY CONSTRUCTION—LEGISLATIVE HISTORY.

"Thus we are faced with a situation where the two sections of the Code, on their face, plainly read in one direction and legislative history is claimed to indicate a divergent congressional intent. The legislative history, while in some respects favoring appellant, is not so definite and unequivocal as to cause us to demur from application of the meaning that one would, on balance, assign to the statute without consideration of the legislative history. While we believe the ultimate solution rests with Congress, it is for us to adjudge the present litigation as the law now reads. Congress has the power to change the section if it sees fit."

#### 4. SAME—SAME—SETTLED ADMINISTRATIVE INTERPRETATION ACCORDED GREAT WEIGHT.

"We believe that appellee properly invokes the rule set forth in, e.g. *Bate Refrigerating Co. v. Sulzberger*, 157 U.S. 1, 15 S.Ct. 508, 39 L.Ed. 601 (1894), that 'if there be reasonable ground for adopting either of two constructions; this court, without departing from sound principle, may well adopt that construction which is in harmony with the settled practice of the executive branch of the government . . . ' 157 at 34. When statutes are susceptible of different readings it is practically axiomatic that 'administrative interpretation, practice and usage is accorded great weight as an extrinsic aid in the interpretation of statutes by the courts.' 3 Sutherland, Statutory Construction, § 6605 (3d Ed. 1943); *Helvering v. Winmill*, 305 U.S. 79, 59 S.Ct. 45, 83 L.Ed. 52 (1938). Such deference is paid by the courts, especially when the construction placed upon a statute by the administrative agency is contemporaneous with its enactment; the practice is long standing; or the agency suggested the legislation subsequently enacted. The rationale for such decisions is thought to be a presumed congressional acquiescence."

APPEAL from the United States District Court for the District of Columbia.

AFFIRMED.

Mr. Jay M. Cantor and Mr. Robert E. Wickersham, for Appellant.  
Mr. Jack E. Armore, for Appellee.

Before BASTIAN, Senior Circuit Judge, and LEVENTHAL and  
ROBINSON, Circuit Judges

BASTIAN, Senior Circuit Judge.

This case reaches this court upon the appeal of a grant by the District Court of the Commissioner of Patent's motion for summary judgment. The facts are as follows:

Appellant Lindberg, on August 11, 1964, filed a patent application entitled "Nose-Cone Cooling of Space Vehicle," which was finally rejected on March 30, 1966, by a patent examiner as unpatentable over prior art. Appeal was taken to the Board of Appeals of the Patent Office on June 29, 1966, resulting in affirmance of the rejection. This decision was mailed to appellant on February 28, 1967. A petition for reconsideration was lodged on March 29, 1967, and on April 18, 1967, the Board adhered to its decision.

The Board of Appeals which considered appellant's appeal consisted of an examiner-in-chief and two acting examiners-in-chief, one of the latter being the Director of Patent Classification, in a salary grade corresponding to a primary examiner, and the other a Supervisory Patent Classifier, in a salary grade higher than that of a primary examiner. This composition of the Board of Appeals is the nub of this action.

On May 1, 1967, over two months after first learning of the constitution of the Board, appellant petitioned the Commissioner of Patents to quash the decision of the Board of Appeals and to recon-



stitute the Board according to appellant's reading of 35 U.S.C. § 7. Denial of the petition to quash was followed by the present proceeding in the District Court seeking to mandamus the Commissioner of Patents to vacate the decision of the Board of Appeals on the ground that the Board was improperly constituted and to empanel a properly constituted Board of Appeals. A motion for summary judgment was filed by the defendant Commissioner and the plaintiff filed a cross motion for summary judgment. After argument, the Commissioner's motion was granted, that of plaintiff was denied, and this appeal followed.

The correct interpretation of Title 35 United States Code § 3 and § 7<sup>1</sup> is the pivotal issue before this court. More specifically, the controversy swirls around two sentences of § 7.<sup>2</sup> Appellant's argument is several-fold. At the outset, he contends that §§ 3 and 7 must be read together since § 3 demonstrates that the Board of Appeals was created by statute to be a quasi-judicial board independent of the Commissioner of Patents. This, according to appellant, is why the statute provides for the fifteen examiners-in-chief to be appointed by the President with the advice and consent of the Senate. Building upon this argument, appellant then contends that the second paragraph of § 7 must not be read in such a way as to defeat the intent of Congress. By his reading, then, the sentence "[n]ot more than one such primary examiner shall be a member of the Board of Appeals hearing an appeal" means that every panel (the practice of the Board of Appeals is to sit in panels of three) must have at least two examiners-in-chief (presidentially appointed and Senate confirmed) and not more than one designated examiner. Appellee, in rebuttal, urges the correct reading of § 7<sup>3</sup> to be that, while a Board of Appeals can be comprised of only one designated examiner of a primary grade, it may contain another designated examiner of a salary grade higher than primary.

Appellant's argument is ingenious and, seemingly, pieces of legislative history support his ingenuity. The logic is convincing, however,

<sup>1</sup> [§ 3] *Officers and employees*

A Commissioner of Patents, one first assistant commissioner, two assistant commissioners, and not more than fifteen examiners-in-chief, shall be appointed by the President, by and with the advice and consent of the Senate. The assistant commissioners shall perform the duties pertaining to the office of commissioner assigned to them by the Commissioner. The first assistant commissioner, or, in the event of a vacancy in that office, the assistant commissioner senior in date of appointment, shall fill the office of Commissioner during a vacancy in that office until a Commissioner is appointed and takes office. The Secretary of Commerce, upon the nomination of the Commissioner in accordance with law, shall appoint all other officers and employees.

The Secretary of Commerce may vest in himself the functions of the Patent Office and its officers and employees specified in this title and may from time to time authorize their performance by any other officer or employee. The Secretary of Commerce is authorized to fix the per annum rate of basic compensation of each examiner-in-chief in the Patent Office at not in excess of the maximum scheduled rate provided for positions in grade 17 of the General Schedule of the Classification Act of 1949, as amended.

[§ 7] *Board of Appeals*

The examiners-in-chief shall be persons of competent legal knowledge and scientific ability. The Commissioner, the assistant commissioners, and the examiners-in-chief shall constitute a Board of Appeals, which, on written appeal of the applicant, shall review adverse decisions of examiners upon applications for patents. Each appeal shall be heard by at least three members of the Board of Appeals, the members hearing such appeal to be designated by the Commissioner. The Board of Appeals has sole power to grant rehearings.

Whenever the Commissioner considers it necessary to maintain the work of the Board of Appeals current, he may designate any patent examiner of the primary examiner grade or higher, having the requisite ability, to serve as examiner-in-chief for periods not exceeding six months each. An examiner so designated shall be qualified to act as a member of the Board of Appeals. Not more than one such primary examiner shall be a member of the Board of Appeals hearing an appeal. The Secretary of Commerce is authorized to fix the per annum rate of basic compensation of each designated examiner-in-chief in the Patent Office at not in excess of the maximum scheduled rate provided for positions in grade 16 of the General Schedule of the Classification Act of 1949, as amended. The per annum rate of basic compensation of each designated examiner-in-chief shall be adjusted, at the close of the period for which he was designated to act as examiner-in-chief, to the per annum rate of basic compensation which he would have been receiving at the close of such period if such designation had not been made. [Emphasis added.]

<sup>2</sup> See the italicized portions of the statute, *supra* note 1.

<sup>3</sup> Appellee contends also that § 3 is not relevant and should not be considered in conjunction with § 7. We do not pause at this contention for it does not affect appellee's principal argument.

only by assuming one accepts appellant's initial premise that Congress intended the Patent Office Board of Appeals to be independent of the Commissioner of Patents. Whatever may have been the intent of Congress, a reading of *both* paragraphs of § 7 plainly indicates otherwise.

[1] According to the statute, the Commissioner of Patents, the assistant commissioners, and the examiners-in-chief comprise the Board of Appeals.<sup>4</sup> Further, the Commissioner of Patents has statutory power to designate which three examiners-in-chief shall constitute any given panel. Moreover, he is not restricted to the fifteen examiners-in-chief. He may name himself or one or more of the assistant commissioners to a panel, for the language of the statute is explicit: "The Commissioner, the assistant commissioners, and the examiners-in-chief shall constitute a Board of Appeals . . ." [Emphasis added.]

[2] Against the background of the first paragraph, the second paragraph of § 7 assumes a meaning different from the one ascribed to it by appellant. If § 7 gives to the Commissioner of Patents the power that we understand it does, then it is difficult to read the restriction to "one such primary examiner" more narrowly than does the Patent Office. If the Commissioner of Patents can place himself and/or the assistant commissioners on the Board of Appeals, then he is not precluded from designating a temporary examiner-in-chief of a primary salary grade and another temporary examiner-in-chief of a salary grade higher than primary.

[3] Thus we are faced with a situation where the two sections of the Code, on their face, plainly read in one direction and legislative history is claimed to indicate a divergent congressional intent. The legislative history, while in some respects favoring appellant, is not so definite and unequivocal as to cause us to demur from application of the meaning that one would, on balance, assign to the statute without consideration of the legislative history. While we believe the ultimate solution rests with Congress, it is for us to adjudge the present litigation as the law now reads. Congress has the power to change the section if it sees fit.

[4] We believe that appellee properly invokes the rule set forth in, e.g. *Bate Refrigerating Co. v. Sulzberger*, 157 U.S. 1, 15 S.Ct. 508, 39 L.Ed. 601 (1894), that "if there be reasonable ground for adopting either of two constructions; this court, without departing from sound principle, may well adopt that construction which is in harmony with the settled practice of the executive branch of the government . . ." 157 at 34. When statutes are susceptible of different readings it is practically axiomatic that "administrative interpretation, practice and usage is accorded great weight as an extrinsic aid in the interpretation of statutes by the courts." 3 Sutherland, *Statutory Construction* § 6605 (3d Ed. 1943); *Helvering v. Winmill*, 305 U.S. 79, 59 S.Ct. 45, 83 L.Ed. 52 (1938). Such deference is paid by the courts, especially when the construction placed upon a statute by the administrative agency is contemporaneous with its enactment;<sup>5</sup> the practice is long standing;<sup>6</sup> or the agency suggested the legislation

<sup>4</sup> Since the statutes in question are susceptible, on the face, to a reading other than that propounded by appellant, it follows that Congress may have provided for presidential nomination and Senate confirmation of examiners-in-chief in order to ensure their high caliber and competence rather than their independence of the Commissioner of Patents. *Schell v. Fauche*, 138 U.S. 562, 11 S.Ct. 376, 34 L.Ed. 1040 (1891); see also *Squire v. Capomani*, 351 U.S. 1, 76 S.Ct. 611, 100 L.Ed. 883 (1956).

<sup>6</sup> *Logan v. Davis*, 233 U.S. 613, 34 S.Ct. 685, 58 L.Ed. 1121 (1914).



subsequently enacted.<sup>7</sup> The rationale for such decisions is thought to be a presumed congressional acquiescence.<sup>8</sup>

The litigation now before us, presenting as it does the dual image of controverted statutes and a history of Patent Office action closely akin to the above examples,<sup>9</sup> is clearly a situation in which this court should defer to the discretion of the Patent Office.

**AFFIRMED.**

<sup>7</sup> *United States v. American Trucking Ass'n.* 310 U.S. 534, 60 S.Ct. 1059, 84 L.Ed. 1345 (1940); *Adams v. United States*, 319 U.S. 312, 63 S.Ct. 1122, 87 L.Ed. 1421 (1943).

<sup>8</sup> *Norwegian Nitrogen Products Co. v. United States*, 288 U.S. 294, 53 S.Ct. 350, 77 L.Ed. 796 (1933).

<sup>9</sup> The Patent Office has followed the practice it now urges upon us at least since January 1, 1953, the effective date of the present Title 35, United States Code, on through May 15, 1967, the filing date of the complaint in this present case.

### In the United States Patent Office Commissioner's Decision

Decided August 12, 1968

#### 1. INTERFERENCE—MOTION TO DISSOLVE—RULE 231(1).

"Patent Office Rule 231(1) provides that motions to dissolve interferences will not normally be considered so far as they may be based on facts sought to be established by affidavits or evidence outside of official records and printed publications; and the submission of a copy of a transcript of testimony does not, of course, make it an official record within the meaning of that rule. This is in accordance with long-established practice. See *Barber v. Wood*, 1907 C.D. 96, 127 O.G. 1991; *Barber v. Wood*, 1907 C.D. 174, 128 O.G. 2835; *Winton v. Jeffery*, 1904 C.D. 386, 112 O.G. 500; *Dunn v. Douglass*, 1912 C.D. 360, 184 O.G. 804; *Horton v. Leonard*, 1910 C.D. 81, 155 O.G. 305; and *Hyatt v. Bogle*, 103 USPQ 297, and cases there cited."

#### 2. SAME—SAME—TESTIMONY EXCLUDED AS BASIS FOR DISSOLUTION—RULE 231(1).

"Naturally the Patent Office accords full respect to any opinions expressed by Federal courts. It is to be noted however that, as fully stated in *Allen v. U.S. ex rel Lowry et al.*, 1905 C.D. 643, 116 O.G. 2253, the statutes make no provision for motions to dissolve interferences and the extent to which such motions may be permitted and decisions thereon reviewed, as well as the grounds on which they may be based rests in the discretion of the Commissioner."

ON PETITION.

**DENIED.**

REYNOLDS, *First Assistant Commissioner*.

This is a petition by the party Rausser et al. requesting that the Patent Interference Examiner be directed or authorized to transmit the accompanying transcript of testimony to the Primary Examiner for consideration prior to his decision on motions.

In a decision rendered March 12, 1968 in this interference it was held that the circumstances of this case did not justify an exception to the settled practice of refusing to consider testimony in support of interlocutory motions. Since that time the United States District Court, District of New Jersey has authorized the taking of the testimony now presented and is alleged to have intimated that such testimony might properly be considered in connection with the motions here involved; and it is contended that these circumstances justify a modification of the decision of March 12, 1968 to the extent requested by the petition.

[1] Patent Office Rule 231(1) provides that motions to dissolve interferences will not normally be considered so far as they may be based on facts sought to be established by affidavits or evidence out-

side of official records and printed publications; and the submission of a copy of a transcript of testimony does not, of course, make it an official record within the meaning of that rule. This is in accordance with long-established practice. See *Barber v. Wood*, 1907 C.D. 96, 127 O.G. 1991; *Barber v. Wood*, 1907 C.D. 174, 128 O.G. 2835; *Winton v. Jeffery*, 1904 C.D. 386, 112 O.G. 500; *Dunn v. Douglass*, 1912 C.D. 360, 184 O.G. 804; *Horton v. Leonard*, 1910 C.D. 81, 155 O.G. 305; and *Hyatt v. Bogle*, 103 USPQ 297, and cases there cited.

This case has again been carefully considered without finding any sufficient reason for departing from the practice just referred to. Certainly the fact that testimony has been taken and is now available affords no sufficient reason for modifying the conclusion formerly reached since the affidavits referred to in the Rule and in some of the cited decisions were equally available and yet were not considered.

[2] Naturally the Patent Office accords full respect to any opinions expressed by Federal courts. It is to be noted however that, as fully stated in *Allen v. U.S. ex rel Lowry et al.*, 1905 C.D. 643, 116 O.G. 2253, the statutes make no provision for motions to dissolve interferences and the extent to which such motions may be permitted and decisions thereon reviewed, as well as the grounds on which they may be based rests in the discretion of the Commissioner. The cited Rule and decisions represent the formulation of a definite policy of excluding testimony as a basis for dissolution. Experience has shown this policy, over all, to be the most equitable and efficacious for all parties concerned. Any exception could be justified only under extraordinary circumstances in which justice required it, and as already indicated, such circumstances are not found to exist here.

The petition is denied.

### U.S. Court of Customs and Patent Appeals

IN RE DOW D. WARREN AND CLEMENT M. KUCERA

No. 7961. Decided May 2, 1968

[55 CCPA—; 393 F.2d 534; 157 USPQ 427]

#### 1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"DRILL STRING MEMBER."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Drill String Member" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 298,180.

**AFFIRMED.**

*J. Vincent Martin, Joe E. Edwards, (Carl T. Mack, of counsel)* for appellants.

*Joseph Schimmel (Jere W. Sears, of counsel)* for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK<sup>1</sup>

WORLEY, *Chief Judge*, delivered the opinion of the court.

Warren and Kucera appeal from the decision of the Board of Appeals affirming the Examiner's rejection of claims 1, 2, 4-6, and 9-18 in their application<sup>2</sup> for "Drill String Member" as unpatentable in view of certain prior art under 35 U.S.C. 103.

<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

<sup>2</sup> Serial No. 298,180, filed July 29, 1963.



The invention relates to drill collars used in drilling oil and gas wells. The specification describes the problems resulting from the use of certain prior art drill collars:

One of the most important purposes in the use of drill collars is to concentrate the weight load near the bit at the lower end of the rotary drill string. A drill collar comprises a long and heavy member located in the drill string above the bit, and is connected to the lower end of a lighter string of drill pipe. The string is used for rotating the drilling bit, and to conduct drilling fluid downwardly therethrough and through the bit to remove formation cuttings being dislodged by the drill bit. Two or more drill collars may be connected in series with one another, depending on the desired weight to be applied to the bit.

The outside dimension of a drill collar is less than the diameter of the bit so as to permit the drilling fluid and cuttings to be returned upwardly to the surface of the earth through the space between the bore wall, drill collar and drill pipe. In some formations, especially if rotation is suspended, the drill collars may become stuck in the well bore, and it is believed that in the drilling of oil and gas wells, such sticking may be caused by a force acting on the collar when it engages a side wall of the bore. In such cases the hydrostatic pressure of the drilling fluid conventionally employed in this type of drilling, may be greater than that of the formation pressure at the drill collar location in the bore, such that the collar may be held against the wall of the bore with a force dependent upon the area of drill collar contact and the pressure differential between the hydrostatic pressure of the drilling fluid and that of the formation at such location in the well bore.

Appellants obviate the likelihood of the drill collar sticking to the well bore by either placing grooves in the surface of the collar, or providing holes extending through portions of the collar to relieve any differential pressure which may exist. In cross-section, the drill collar may be square with rounded corners, as recited in claims 1, 2, 9, 10 and 16, or circular, as recited in the remaining claims. Claims 1 and 4 are illustrative:

1. A drill collar connectable at its ends into a rotary drill string, and having a substantially square cross-sectional shape with rounded corners, the said corners having a plurality of axially spaced grooves therein, the said grooves adapted to permit the passage of a fluid therethrough.

4. A drill collar connectable at its opposite ends into a rotatory drill string, and being generally cylindrical [circular?] in cross-sectional shape, a bore extending longitudinally through said collar, the wall of said drill collar having a plurality of holes therethrough extending substantially transversely of said member to establish communication through said wall from one area of the drill collar to another area remote therefrom.

The references are:

Fox, 2,999,552, Sept. 12, 1961.

Toelke, 3,175,374, Mar. 30, 1965 (filed June 22, 1962).

The Oil and Gas Journal, Mar. 19, 1962 (pages 177 and 178).

The Journal publication discloses a drill collar of square cross-section having rounded corners which tend to center the drill string in the well bore and lessen and chance of boring a crooked hole with "severe dog legs." According to the specification, appellants employ such a construction to achieve the same result. But, as appellants point out, the publication does not disclose the use of grooves or holes in the surface of the drill collar as fluid passageways.

Toelke acknowledges prior proposals "to center the drill string in the well bore to inhibit sticking, and various means of grooving of the drill string." He discloses a drill collar of circular cross-section wherein axially spaced grooves or recesses form passageways for conducting fluid from one surface area to another surface area of the collar, thus relieving the differential pressure acting to stick the collar

to the well bore wall. The recesses may be arranged "at an angle relative to the longitudinal axis of the drill string."

The Board regarded Fox as cumulative to Toelke. We need not discuss Fox further, beyond noting that he, like Toelke, recognized the problem of the collar stick to the well bore, and consequently provided the collar with helical grooves in its outer surface to allow passage of fluid and "lessen the likelihood of its sticking."

The Board sustained the Examiner's rejection of claims 1, 2, 9, 10 and 16 as unpatentable over the Oil and Gas publication in view of Toelke, and claims 4-6, 11-15, 17 and 18 as unpatentable over Toelke alone. Both were of the opinion that, in view of Toelke's disclosure of the use of grooves in the outer wall of a drill collar of generally circular cross-section to establish fluid passageways from one outer surface area to another in order to decrease any differential pressure, it would be obvious to a person of ordinary skill in the art to provide grooves in the outer wall surface of the drill collar of square cross-section described by the publication to achieve the same result. The Examiner regarded the use of holes extending through the wall of the drill collar to be obvious as "merely a matter of design or choice," the Board adding that the functional uses of a recess, groove, conduit or hole "are so closely related" and interchangeable as to leave nothing unobvious in the substitution of one for another in the present instance.

Appellants' arguments do not convince us of error in those positions. It is no doubt true, as appellants contend, that the cited references *per se* do not preclude "further invention in the drill collar field." Nevertheless, Congress has said that a patent may not be obtained if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. We are satisfied that, for the reasons advanced by the tribunals below, the presently claimed subject matter does not conform to the conditions for patentability expressed in section 103.

[1] The decision is affirmed.

AFFIRMED.

## PATENT SUITS

Notices under 35 U.S.C. 290: Patent Act of 1952

2,676,706. (See 2,693,205.)

2,693,205. C. D. Coulter, APPARATUS FOR CONSTRUCTING SCREENING ELEMENTS; 2,714,961. Miller, Mathewson and Meinzer, SCREENING MECHANISM; 2,753,999, same; 2,777,578, same; 3,029,946. Wright and Spencer, CLAMPING MEANS FOR MATERIAL SEPARATORS; 3,035,700. R. J. Causland, SHAKING APPARATUS; 3,156,643. Wright and Racine, TENSIONING MEANS FOR SEPARATOR SCREENS; 3,243,042. A. K. Moulton, SCREEN SUPPORTING FRAME; 3,291,164. D. M. Swallow, REMOUNTABLE SEPARATOR SCREEN AND METHOD OF MANUFACTURE; 2,676,706. H. E. Temple, GYRATORY SIFTER; 2,696,302. Miller, Mathewson and Meinzer, SCREEN MECHANISM, filed May 12, 1967, D.C.N.J. (Trenton), Doc. C-524-67, Separator Engineering, Ltd. et al. v. Southwestern Engineering Co. Order transferring action to the Central District of California, Mar. 13, 1968.

2,696,302. (See 2,693,205.)

2,714,961. (See 2,693,205.)

2,753,999. (See 2,693,205.)

2,777,578. (See 2,693,205.)

2,919,534. (See 3,024,518.)

2,955,170. Dieter and Bauer, PHONOGRAPH PICKUPS, filed Oct. 8, 1965, D.C., S.D.N.Y., Doc. 65-C-3024, Sonotone Corp. v. Tetrad Co., Inc. Stipulation and order of discontinuance, June 28, 1968.

2,982,819. Melnema and Canfield, ARTIFICIAL REVERBERATION APPARATUS; 3,037,414. H. E. Melnema, ARTIFICIAL REVERBERATION CONTROL APPARATUS; 3,106,610. A. C. Young, ARTIFICIAL REVERBERATION UNIT, filed Aug. 15, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1426, Hammond Corporation v. Kinematix, Inc. and Leonard A. Fish. Consent order; dismissed without prejudice; plaintiff owner, May 28, 1968.

3,024,518. R. B. Newton, METHOD OF MAKING PILE FABRICS; 3,325,988. Klein and Bollinger, BALANCED ELASTICIZED MULTIFILAMENT YARN; 3,325,989. E. D. Bollinger, BALANCED ELASTICIZED MULTIFILAMENT YARN; 2,919,534. Bollinger, Dare and Klein, IMPROVED TEXTILE MATERIALS AND METHODS AND APPARATUS FOR PREPARING THE SAME, filed May 22, 1968, D.C., W.D. Va. (Lynchburg), Doc. 68-C-24-L, Deering Milliken Research Corporation v. Burlington Industries, Inc., and E. I. du Pont de Nemours and Company.



3,029,946. (See 2,693,205.)

3,035,700. (See 2,693,205.)

3,037,414. (See 2,982,819.)

3,048,996. Russell and Solovieff, ROSE BLOCKING KNOB; 3,190,001. REMOVABLE CYLINDER SPINDLE RETAINING SHOULDER. filed May 16, 1968, D.C., S.D. Ind. (Indianapolis), Doc. IP66-C-239, *Fred J. Russell v. Best Universal Lock Co., Inc. et al.* Patent 3,190,091 invalid and not infringed by defendants' 6K7A9 lock set. Patent No. 3,048,996 is valid and not infringed by defendants' 6K7A9 lock set. Complaint dismissed.

3,106,610. (See 2,982,819.)

3,111,344. Hoven, Nordmark and Thompson, CHAIR; 3,173,723. Hoven and Nordmark, SEAT ATTACHMENT, filed June 2, 1965, D.C., N.D. Ala. (Birmingham), Doc. CA65-388-S, *Southeastern Metals Company, Incorporated v. American Spating Company*. Claim 2 of Pat. 3,111,344 invalid. Claims 1 to 5 of Pat. 3,173,723 valid, but plaintiff has not infringed. Defendant and all others in active concert perpetually enjoined. Defendant's counterclaims dismissed with prejudice, Jan. 31, 1968.

3,154,643. (See 2,693,205.)

3,174,723. (See 3,111,344.)

3,194,001. (See 3,048,996.)

3,216,060. Trojanowski and Brandt, APPARATUS FOR THE MANUFACTURE OF MOLDED ARTICLES, filed Feb. 16, 1966, D.C., S.D.N.Y., Doc. 66-C-446, *Oceana International Inc. v. Emaig Manufacturing Co. et ano.* Order of dismissal for lack of prosecution, June 13, 1968.

3,244,042. (See 2,693,205.)

3,249,001. N. L. Stauffer, AUTOMATIC FOCUSING PHOTOGRAPHIC PROJECTOR, filed Sept. 7, 1966, D.C., N.D. Ill. (Chicago), Doc. 66C162S, *Honeywell Inc. v. Bell & Howell Co.* On stipulation of parties, cause dismissed, July 8, 1968.

3,254,915. L. Maslow, TRAY OR RACK ASSEMBLY, filed July 20, 1967, D.C., S.D.N.Y., Doc. 67-C-2802, *Metropolitan Wire Goods Corporation v. William Hodges & Company, Inc.* Pursuant to 28 U.S.C. 1406(a) the above-entitled action is transferred to the United States District Court for the Eastern District of Pennsylvania, May 21, 1968.

3,291,164. (See 2,693,205.)

3,295,190. C. B. Harker, FREEZING CONDITION CONTROL, filed July 10, 1968, D.C. Minn. (Minneapolis), Doc. 4-68-C-221, *The Cornelius Company v. Beatrice Foods Co.*

3,298,471. R. C. Evans, VALVE FOR HYDRAULIC BRAKE HOLDING SYSTEM, filed Jan. 9, 1967, D.C. Ariz. (Phoenix),

Doc. C-6232 Phx., *Mazucell International Corporation v. Automotive Electronics, Inc.* Consent decree, plaintiffs' patent is good and valid in law, defendant, Scientific Automotive Clinic, an Arizona corporation, has infringed the claims of said patent, said defendant, Scientific Automotive Clinic, is granted the royalty-free right and license to use articles and apparatus embodying the inventions covered by the claims of said patent, May 14, 1968.

3,303,943. Lambert, Black and Chaffin, APPARATUS FOR TRANSFERRING ARTICLES FROM ONE LOCATION TO ANOTHER LOCATION, filed Mar. 21, 1968, D.C., N.D. Ala. (Birmingham), Doc. CA68-153, *H. K. Porter Company, Inc. v. Koppers Company, Inc.* Dismissed pursuant to request of plaintiff, no answer filed by defendant, May 13, 1968.

3,304,371. A. J. Rosenberg, INFORMATION PROCESSING SYSTEM, filed May 22, 1968, D.C., E.D.N.Y. (Brooklyn), Doc. 68C-509, *Alex J. Rosenberg v. Standard Wine & Liquor Co.*

3,319,720. O. K. Hobbs, PEANUT DIGGER, filed Apr. 26, 1968, D.C., E.D.N.C. (Raleigh), Doc. 1070-C, *Wilson Div., Oliver K. Hobbs v. Long Manufacturing Co. and Enfield Tractor & Equipment Co., Inc.*

3,325,988. (See 3,024,518.)

3,325,989. (See 3,024,518.)

3,349,900. Jones and Bundy, PACKAGED PLATE GLASS, filed July 8, 1968, D.C., E.D. Mich. (Detroit), Doc. 31461, *American Saint Gobain Corporation v. Ford Motor Company*.

3,380,433. S. Glogover, UNDERGARMENT, filed May 8, 1968, D.C., S.D.N.Y., Doc. 68-C-1888, *Fleznit Company, Inc. v. De Luze Girdlecraft Co., Inc.*

3,382,440. W. T. Turner, APPARATUS FOR AUTOMATICALLY CONVERTING A RADIO RECEIVER TO AN FM OR VHF RECEIVER, filed May 8, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68-755-F, *William T. Turner v. Consolidated Merchandising Corporation*.

Re. 24,017. J. A. Henricks, METHOD OF COATING AND DRAWING METAL AND COMPOSITIONS THEREFOR, filed May 21, 1968, D.C. Del. (Wilmington), Doc. 3545, *Devez Corporation et al. v. General Motors Corporation*.

D. 173,177. L. B. Wright, PARKA, filed July 8, 1968, D.C. Alaska (Anchorage), Doc. A-81-68-C, *Laura B. Wright v. Products Development Co., Inc., doing business as Totem House Furs & Gifts*.

D. 201,793. J. K. Raina, SWIMMING POOL, filed Sept. 20, 1965, D.C., W.D.N.Y. (Buffalo), Doc. C-11,568, *John K. Raina v. Niqua, Inc.* Final judgment, D. 201,793 invalid, action dismissed in favor of the defendant, May 17, 1968.

## PATENTS

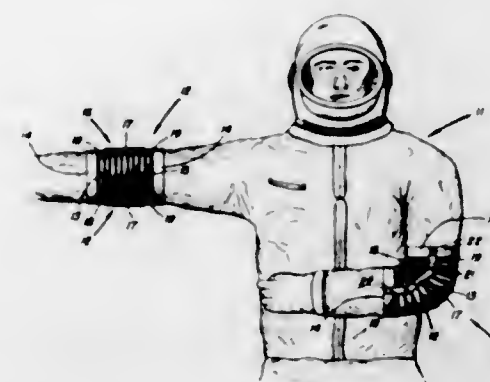
### GRANTED NOVEMBER 19, 1968 GENERAL AND MECHANICAL

3,411,156  
SPACE GARMENT  
Stephen I. Feher, San Diego, Calif., assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California  
Filed Mar. 17, 1965, Ser. No. 440,535  
6 Claims. (Cl. 2-2.1)



A heat transfer system for a garment for use in space in which heat exchanger fluid is circulated from the irradiated side to the unirradiated side of the garment and in which expandable bimetallic elements cause the heat conductivity of the unirradiated side to be greater than that of the irradiated side.

3,411,157  
MOBILE SPACE SUIT JOINTS  
David W. Rabenhorst, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy  
Filed June 2, 1965, Ser. No. 460,880  
3 Claims. (Cl. 2-2.1)



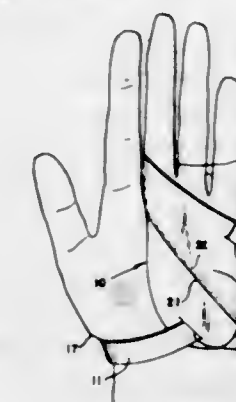
Flexible joints provided in the midportions of protective garment sleeves such as in a space suit each comprising a flexible tube sidewall with convolutions to enable expansion and contraction of the tube along its axis. A pair of linkages each connects the portions of the garment sleeves adjacent the ends of said tube and thereby constrains the tube in a partially collapsed position. Pressure inside the tube will urge it toward expansion against the constraint afforded by the linkages. Thus, upon flexure of the joint by a wearer of the garment, the internal pressure of said tube will expand the tube convolutions in the direction of flexure, thereby permitting easy bending of the joint by the wearer. If the internal pressure of the tube is insufficient to assist in the expansion of the convolutions, a resilient coil spring may be provided for expanding the convolutions.

3,411,158  
LENS RETAINING UNIT  
Charles E. Benner, Grosse Pointe, Mich., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York  
Filed Feb. 17, 1966, Ser. No. 528,281  
1 Claim. (Cl. 2-8)



This disclosure is directed toward a protective eye shield wherein the frame for the retention of the transparent lens means is constructed of a deformable resilient material shaped to have inwardly directed channels for the retention of the lens means with the channels being shaped both for the purpose of fitting the contour of the lenses and for the purpose of permitting ease in the assembly and disassembly of the protective shield.

3,411,159  
GOLFER'S GRIP-AID  
Robert W. Berkhemer, 10834 Galvin Ave.,  
Ventura, Calif. 93003  
Filed Oct. 18, 1967, Ser. No. 676,207  
10 Claims. (Cl. 2-159)



A golfer's hand gripping aid and protective device formed of a pliable part-palm covering piece provided with extension straps which adjustably affix the covering in place on the palm of a golfer's hand, without binding the wrist action of the golfer and without destroying the "feel" of the club. The construction and design affords easy adjustment of the covering to the desired position and there maintains the same in firm position. The covering is provided with a visual club alignment guide which is likewise adjusted along with the palm covering to the correct palm position.

3,411,160  
SECURING MEANS  
Paul L. Le Roux, Oak Ridge, Tenn. (350 NE. 114th St., Miami, Fla. 33161), and Milford A. Juten, Brookmont, Md.; said Juten assignor to said Le Roux  
Continuation-in-part of application Ser. No. 381,717, July 10, 1964. This application Oct. 22, 1965, Ser. No. 502,255

1 Claim. (Cl. 2-232)

1. An accurately adjustable band for encircling a leg to yieldably and permanently retain a pant leg in neatly pleated condition with a minimum of tension to avoid



discomfort to the user, comprising a strip of elastic of less length than the portion of the leg to be encircled when the elastic is under the desired tension, said strip of elastic having a number of rubber bands woven into a fabric, a strip of hook fastening means attached by a narrow section at one end to a narrow section at one end of the strip of elastic with the hooks extending outwardly from one surface of the strip of elastic, closely positioned wide zig-zag stitching confining the said narrow section at one end of the strip of elastic and the said narrow section at one end of the strip of hook fastening means in substantially non-stretchable condition whereby the stitching transfers the stress of the strip of elastic to the hook fastening means without objectionable displacement of the position of the adjacent stitch holes in the strip of elastic and the strip of hook fastening means receiving the threads of the zig-zag stitching whereby the closely positioned zig-zag stitching remains permanently effective securing the strip of elastic and the strip of hook fastening means permanently together, a cooperating strip of loop fastening means having a narrow section at one



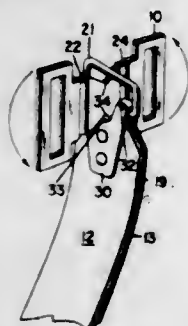
end secured to a narrow section at the other end of the strip of elastic with the loops extending away from the other surface of the strip of elastic, closely positioned wide zig-zag stitching confining the narrow section at the other end of the elastic and the narrow section at the one end of the strip of loop fastening means securely together in substantially non-stretchable condition whereby the closely positioned wide zig-zag stitching transfers the stress of the strip of elastic to the loop fastening means without objectionable displacement of the position of the adjacent stitch holes in the strip of elastic and in the strip of loop fastening means receiving the thread of the closely positioned wide zig-zag stitching whereby the stitching remains permanently effective securing the elastic and loop fastening means permanently together, said band when in use having no portion of greater thickness than the cooperating strips of hook and loop fastening means whereby a legging or boot worn over the pleated pant leg can be applied over the leg on which the band is used without producing local pressure points and without interfering with the flow of blood to the leg.

3,411,161

**REVERSIBLE BELT AND BUCKLE**

William H. Meeker, Rochester, N.Y., assignor to Hickok Manufacturing Co., Inc., Rochester, N.Y., a corporation of New York

Filed May 15, 1967, Ser. No. 638,353  
13 Claims. (Cl. 2-301)



A buckle for a reversible belt is formed with a pair of longitudinally spaced, slotted portions for receiving and holding the belt, and the slotted portions are connected by a longitudinal portion narrower than the belt. Such a buckle is retained loosely on one end of the belt by a ring

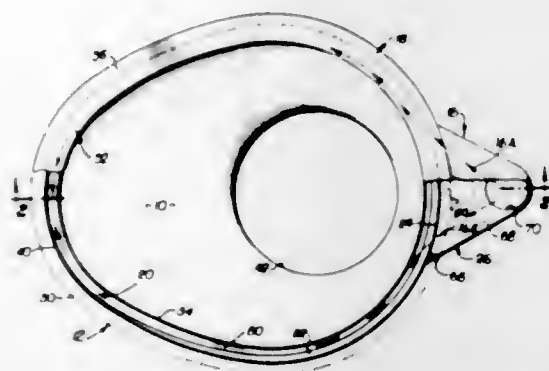
encircling the connector portion. As the belt is reversed to display opposite faces outward, the ring is slid from one end of the connector portion to the other, and grooves are formed for seating the ring at each end of the connector portion. The ring and the connector portion can be sized so that the buckle can be turned within the ring. This allows either face of the buckle to be matched with either face of the belt for four possible combinations of belt surfaces and buckle surfaces.

3,411,162

**TOILET BOWL CONSTRUCTION**

Norbert J. Palmer, Playa del Rey, Calif., assignor to Monogram Industries, Inc., Culver City, Calif.

Filed Feb. 25, 1966, Ser. No. 530,044  
7 Claims. (Cl. 4-89)



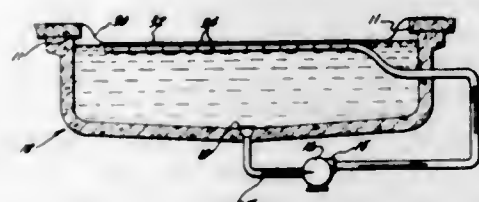
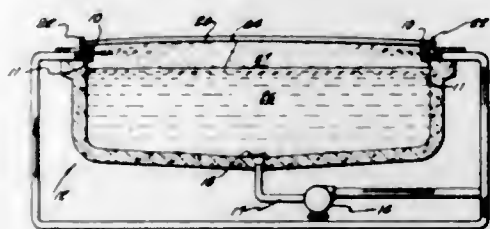
A toilet bowl has a continuous annular flushing liquid channel on its upper oval-shaped peripheral portion with a continuous annular flushing slot therein through which flushing liquid may escape and flow down the inner bowl wall in the form of a sheet of flushing liquid. The liquid is directed into the oval channel by a diverging conduit such that liquid under pressure enters in directions extending generally tangentially to said channel. The flushing slot has a width which is widest at the diverging conduit, and progressively and continuously narrows in both directions around said bowl to uniformly distribute the liquid around the bowl without creating high-pressure splash-producing regions.

3,411,163

**SWIMMING POOL HEATER**

Henry S. Myers, Jr., 3695 Denair, Pasadena, Calif. 91107

Filed Jan. 21, 1966, Ser. No. 522,172  
8 Claims. (Cl. 4-172)



1. Apparatus for solar heating a swimming pool, the apparatus comprising a cover disposed over the pool to

absorb solar radiation, and mechanical pump means for circulating water in the pool against the bottom of the cover to extract heat from it and reduce the temperature of the cover to decrease the loss of heat from the cover and returning heated water to the pool.

3,411,164  
**PILLOW**

Saul Sumergate, 1185 Park Ave., New York, N.Y. 10028  
Filed Sept. 7, 1966, Ser. No. 583,142  
1 Claim. (Cl. 5-337)



A pillow having a plurality of divider panels for forming separate compartments. An inflatable member is disposed within the casing and is supported by the inflatable member between the fabric layers and spaced from the fabric layers and the peripheral edges thereof. A filling material is disposed between the inflatable member and the fabric layers.

3,411,165  
**SWIM FIN**

Frank N. Murdoch, Bellevue, Wash.  
(527 Summit, E 302, Seattle, Wash. 98102)  
Filed Dec. 12, 1966, Ser. No. 601,233  
3 Claims. (Cl. 9-309)



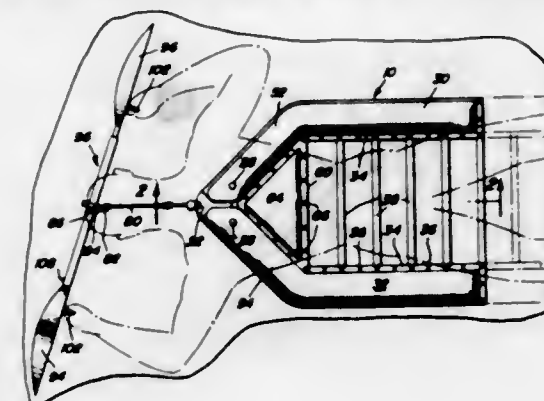
This invention is concerned with a swim fin having a relatively thin, transversely bowed, nonstretched, bellied web which reversibly cups during swimming by reason of marginal portions flexibly being secured to the front of a shoe-like member and to the inner portions of diverging substantially inflexible forward extending ribs.

3,411,166  
**INFLATABLE BOARDING LADDER AND PADDLE COMBINATION**

Jean A. Kimmel, 431 Park St., Sheridan, Wyo. 82801  
Filed Dec. 30, 1966, Ser. No. 606,394  
9 Claims. (Cl. 9-312)

A buoyant boarding ladder including removable and additional removably mounted rungs operable to form a platform when the ladder is floating horizontally on the surface of a body of water together with a buoyant double-

ended paddle accessory removably tetherable to one end of the ladder by means of a line secured between the



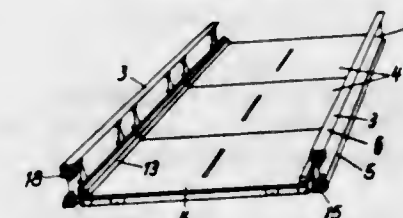
ladder and the paddle centrally intermediate its opposite ends.

3,411,167

**ROAD CONSTRUCTION**

Hugo Sedlacek, Rheinhausen, Germany, assignor to Fried. Krupp Gesellschaft mit beschränkter Haftung, Essen, Germany

Filed Apr. 11, 1966, Ser. No. 541,854  
Claims priority, application Germany, Apr. 10, 1965,  
P 15 34 205.9  
5 Claims. (Cl. 14-1)



A roadway capable of being readily assembled and disassembled and arranged for mounting on vertical supports, the roadway including a plurality of identical vehicle supporting elements, each consisting of two longitudinal main girder members, a plurality of rectangular roadway plates having their narrow edges extending parallel to the main girder members and rigidly connected thereto, and angle irons defining curbs extending parallel to the narrow edges of the roadway plates and fastened to the main girder members, the vehicle supporting elements being connectible together by means of hinge portions which permit adjacent elements to be vertically pivoted relative to one another, and fastening means which permit adjacent elements to be connected together with any desired horizontal and vertical angular orientation with respect to each other.

3,411,168

**DOCKBOARD**

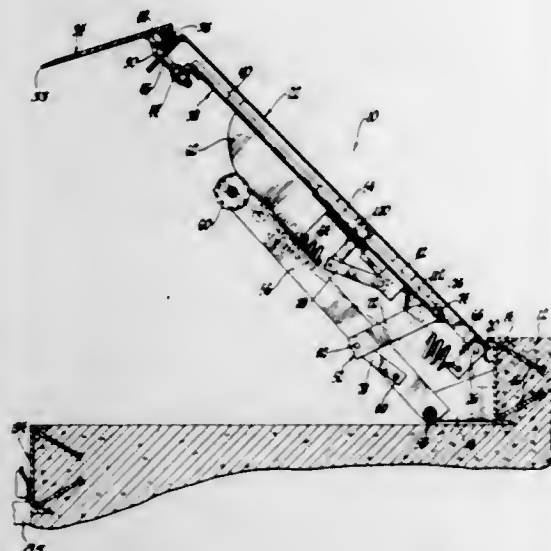
Robert W. Hecker, Jr., Clare, Mich., assignor to Loomis Machine Company, Clare, Mich., a corporation of Michigan

Filed June 20, 1966, Ser. No. 558,881  
16 Claims. (Cl. 14-71)

A dockboard including a support structure with a ramp pivotally connected at a first end thereof to the support structure for pivotal movement upwardly and downwardly between a substantially vertical position and a lower position. A ramp lip is pivotally connected to the second end of the ramp for movement between a pendent position and an extended cantilevered position. There is included actuation means for automatically pivoting the ramp lip from the pendent position to the extended cantilevered position in response to upward pivotal movement of the ramp. More specifically, this actuation means includes components and a lost motion connection therebetween so



that said components will function when said ramp reaches said predetermined position to begin to pivot said ramp lip to the extended cantilevered position whereby the lip will



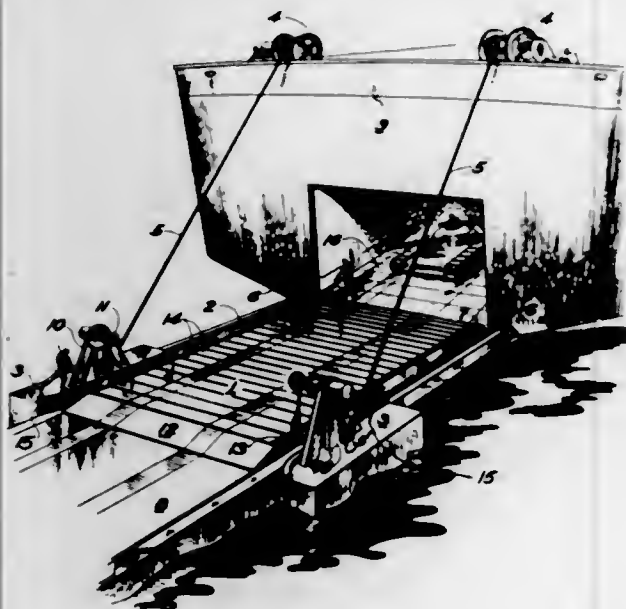
not contact a vehicle immediately adjacent the dock when the ramp first begins to move upwardly because of the delayed movement of the lip from the pendent to the extended cantilevered position.

3,411,169

**CARGO RAMP ASSEMBLY**

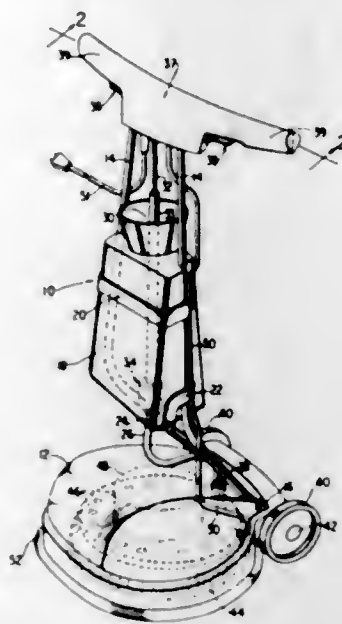
Peter O. Guerke, Miami, Fla., assignor to Miami Beach Yacht Corporation, Miami Beach, Fla., a corporation of Florida

Filed Jan. 6, 1967, Ser. No. 607,675  
12 Claims. (Cl. 14-71)



A ramp and float assembly for movement of cargo between two zones, especially between a ship and a lighter, having a ramp proper hinged about a transverse axis at one end, a pair of flanking booms hinged at a corresponding end and having floats of controllable buoyancy at the other end adjacent the free end of the ramp proper, automatic take-up winches controlling elevation of the booms, winches on the floats controlling elevation of the ramp proper relative to the booms and floats, and fender formations on the floats for locating engagement with portions of the lighter. The ramp proper is constructed of longitudinal beams and transverse slats pivotally coupled to the beams to facilitate twisting of the ramp.

3,411,170  
**CLEANING DEVICE**  
Jerrold L. Kingsley, San Francisco, Calif., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware  
Filed July 31, 1967, Ser. No. 657,219  
10 Claims. (Cl. 15-50)



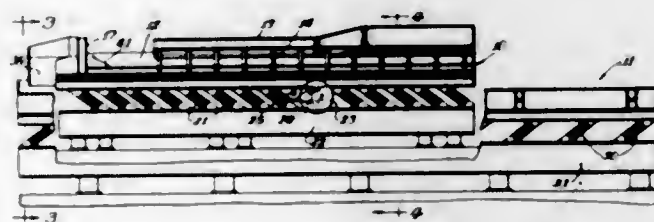
A rug cleaning apparatus having the cleaning fluid release cooperating with a rotary brush actuator so that cleaning fluid cannot be released from a reservoir until the cleaning brush is rotating and the rotation of the brush cannot be stopped until the cleaning fluid flow is stopped.

3,411,171

**MATERIAL HANDLING APPARATUS**

Albert Musschoot, Barrington, and Marvin G. Thomson, Prospect Heights, Ill., assignors to General Kinematics Corporation, a corporation of Illinois

Filed May 31, 1966, Ser. No. 554,077  
2 Claims. (Cl. 15-94)



The present apparatus provides a vibratory conveyor for large castings, which conveyor serves to orient the castings in a predetermined alignment, to separate said therefrom, and to convey the castings to a desired point of delivery. Additionally, the invention provides means for receiving the sand expelled from castings, for breaking up any lumps from the sand, and then conveying the sand to a desired point.

3,411,172

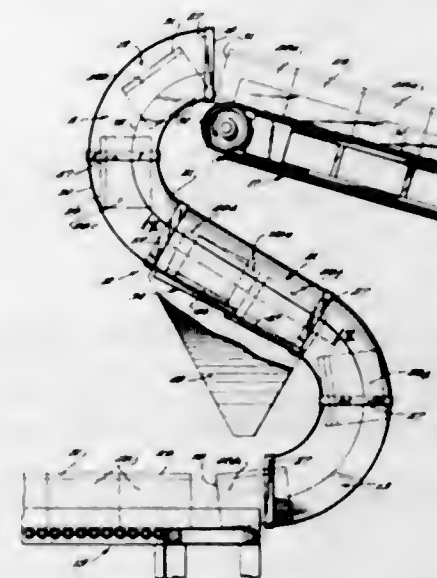
**CASE CLEANING APPARATUS**

James E. Grant, La Crosse, Wis., assignor to G. Heileman Brewing Company, Inc., La Crosse, Wis., a corporation of Wisconsin

Filed May 4, 1966, Ser. No. 547,566  
3 Claims. (Cl. 15-94)

Removing foreign material from reusable, open-ended cases and the like containers is accomplished by cleaning apparatus comprising a generally S-shaped upstanding guide means for receiving cases at the upper leg thereof

in an upright position and for guiding the cases through an S-shaped path of travel as they fall gravitationally to the lower leg thereof. The guide means is constructed to maintain the longitudinal axis of the cases substantially coincident with the path of travel so that the cases are turned to an inverted position as they descend to the



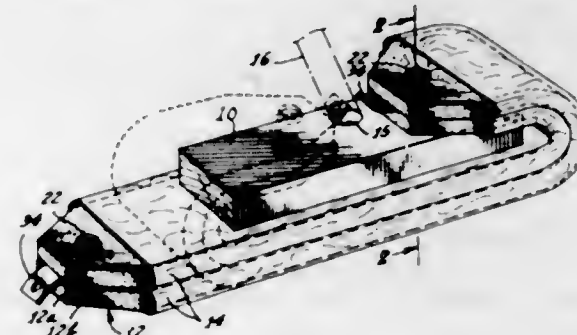
central portion of the guide means. In order to enable the foreign material to drop from the open ends of the inverted cases, a grille is formed in the central portion of the guide means through which the material passes to a collection receptacle. The cases are then returned to an upright position as they descend to the lower leg of the guide means.

3,411,173

**DRY MOP INCORPORATING FOAMED PLASTIC**

Louis O. Berrington, 1254 N. June, Hollywood, Calif. 90028, and Bertie B. Cutler, 38550 Florence St., Beaumont, Calif. 92223

Filed Jan. 12, 1967, Ser. No. 608,937  
4 Claims. (Cl. 15-231)



The invention provides a manually operable cleaning device wherein a disposable sheet such as a paper towel is backed by two coextensive layers of resilient foamed plastic that are centrally longitudinally united to form two longitudinal side slits. Paper toweling encases all of the longitudinal surfaces of the two layers to make all of the longitudinal surfaces available for cleaning operations. Marginal portions of the paper toweling are tucked into at least one of the two longitudinal slits to hold the paper toweling in place.

3,411,174

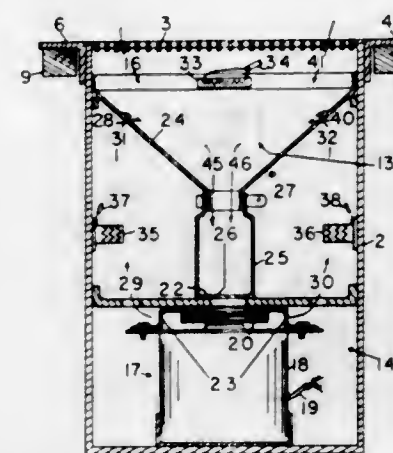
**DIRT REMOVAL AND DISPOSAL UNIT**

Howard E. Jordan, 25300 Chatworth Drive, Euclid, Ohio 44117

Filed Oct. 21, 1965, Ser. No. 499,688  
3 Claims. (Cl. 15-310)

This invention relates to a dirt removal and disposal unit for use as a portable unit or for installation in the

entrance halls of buildings to remove dirt from the shoes of persons entering the building by a combination of rubbing action of the shoes on a grating and suction action provided by the unit.



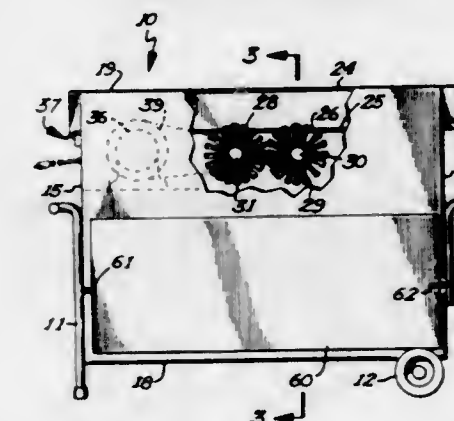
bing action of the shoes on a grating and suction action provided by the unit.

3,411,175

**INDUSTRIAL DUST-MOP CLEANER**

Robert J. Mills, Forest Lake, Minn. (1818 Lakeview Road, Clearwater, Fla. 33516)

Filed Aug. 22, 1966, Ser. No. 574,102  
3 Claims. (Cl. 15-311)



Apparatus for cleaning industrial dust-mops having frame means defining an enclosed dust-receiving chamber therewithin, vertically adjustable mop-receiving channel means disposed adjacent the top surface of the dust-receiving chamber and having an air ingress port to permit transfer of environmental air to the dust-receiving chamber, a pair of counter-rotating brushes disposed within the chamber and having a peripheral surface extending adjacent to the mop-receiving channel, the brushes being rotated along an axis which is generally transverse to the elongated axis of the mop-receiving channel, and fan means within the dust-receiving chamber for exhausting air from the dust-receiving chamber, filter means being provided to remove dust from the air being exhausted.

3,411,176

**PATTY MOLD**

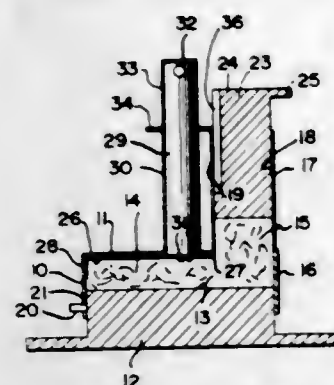
James A. Holly, Olympia Fields, Ill., assignor to Hollymatic Corporation, a corporation of Illinois

Filed July 18, 1966, Ser. No. 566,131  
4 Claims. (Cl. 17-32)

An apparatus for forming a shaped portion of plastic food material such as a food patty with the apparatus having a passage for the food material leading to a shaping cavity for forming the shaped portion, the cavity having an open end for the ejection of material therefrom, but closable by closure means therefor, pressure means such as a ram for pressure moving the material through the passage into the cavity, and a rotatable dividing means at the shaping cavity movable about its axis of rotation for



separating the shaped portion in the cavity from material remaining in the passage, an arcuate edge portion on the dividing means extending more than 180° located

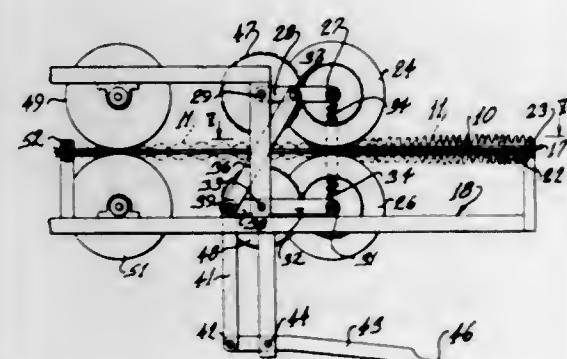


within and adjacent an arcuate wall means forming a part of the passage during this separating rotation for aid in giving a smooth surface to the shaped portion.

### 3,411,177 APPARATUS FOR SHIRRING TUBULAR MATERIAL

Allen G. McMillan, Rte. 1, Munford, Ala. 36268  
Continuation-in-part of application Ser. No. 416,402,  
Dec. 6, 1964. This application July 15, 1966, Ser.  
No. 565,625

9 Claims. (Cl. 17-42)



1. In apparatus for shirring and packaging a tubular knitted material suitable for use on a horn as a covering for food products:

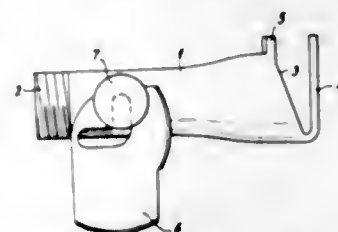
- a tube-like shirring mandrel disposed to move from a collapsed flat position with opposite sides thereof parallel to each other for receiving said tubular knitted material to an extended position for insertion over a horn which delivers the products to be covered,
- means supporting said tube-like mandrel in said collapsed flat position for receiving the tubular knitted material,
- means successively engaging a portion of said tubular knitted material and feeding the same onto one end of said tube-like mandrel, and
- stop means adjacent the other end of said tube-like mandrel limiting longitudinal movement of said tubular knitted material relative to said other end.

### 3,411,178 CAULKING GUN NOZZLE

Sándor Szentivánszky, Márton Békés, and László Novák,  
Budapest, Hungary, assignors to Nikex Nekezipari Kul-  
kereskedelmi Vállalat, Budapest, Hungary  
Filed Dec. 29, 1966, Ser. No. 606,426  
10 Claims. (Cl. 18-3.5)

A caulking gun nozzle has an outlet slot which is opposed by a spaced baffle blade that is carried by the nozzle and that replaces the conventional separate backing strips and deflects the sealant laterally. The slot is at an acute angle to the length of the blade and also at an acute angle

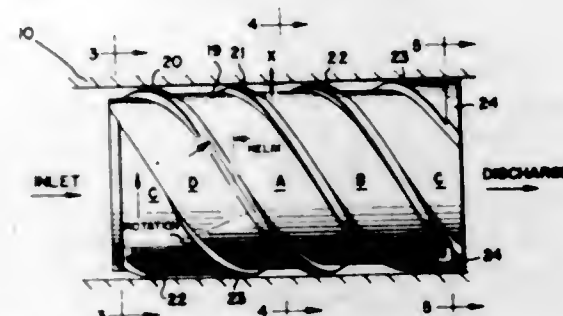
to the axis of the nozzle, and a smoothing member is disposed to the side of the end of the slot that is farthest from the blade and is spaced from the blade a distance



that at least initially determines the thickness of applied sealant. The depth to which the nozzle may be inserted is adjustable.

3,411,179  
EXTRUDER SCREW MIXING SECTION  
Robert B. Gregory, Flemington, and Louis F. Street,  
Hampton, N.J., assignors to Frank W. Egan &  
Company, Somerville, N.J., a corporation of New  
Jersey

Filed Apr. 12, 1966, Ser. No. 542,137  
7 Claims. (Cl. 18-12)

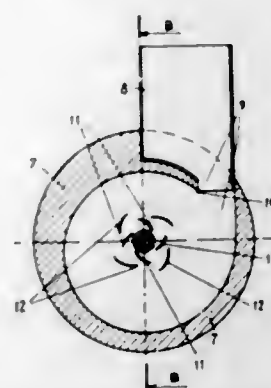


A plastic extrusion machine including a rotary screw unit having a mixing section at its forward end, formed with at least one helical feed channel and at least one helical discharge channel. The feed and discharge channels are so configured as to improve the dispersive mixing ability of the screw in use, i.e. simultaneously apply high shear stress upon the higher viscosity thermoplastic constituents and low shear stress upon the lower viscosity thermoplastic constituents, and thereby attain improved viscosity and temperature homogeneity of the resulting extrudate.

3,411,180  
PLASTIC EXTRUSION MACHINE  
Claude Ledoux, Antony, France, assignor to Produits  
Chimiques Pechiney-Saint-Gobain, Neuilly-sur-Seine,  
France

Continuation-in-part of application Ser. No. 549,321,  
May 11, 1966. This application Oct. 5, 1966, Ser.  
No. 584,438  
Claims priority, application France, Apr. 27, 1966,  
59,304

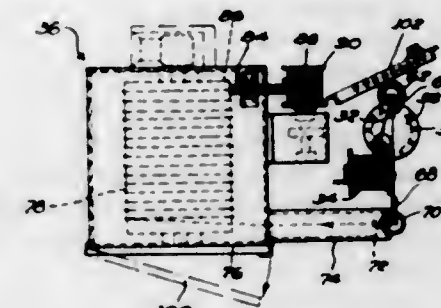
5 Claims. (Cl. 18-12)



An apparatus for extrusion of plastic materials which includes a housing having a stator in the form of a sta-

tionary disc plate, a rotor in the form of a disc plate corresponding to the stator and arranged in face to face relationship therewith, a circular cavity in the portion of the stator facing the rotor with a rim about the cavity to define an air gap between the rotor and stator, a die opening through the central portion of the stator for the extrusion of plastic material therethrough, a feed opening through a portion of the rim in the stator in communication with the air gap for the introduction of plastic material to be processed through the apparatus, the circular cavity in the face of the stator being eccentric to the rotor, and a beveled edge portion in the surface of the rotor facing the stator with a complementary beveled portion in the corresponding portion of the stator to provide a nested relationship between rotor and stator to enable turning movement of the rotor relative to the stator with a minimum of play therebetween and in which the die opening may be fitted with a spinneret having a plurality of narrow openings for the extrusion of fine streams of plastic material from which fibers may be drawn.

3,411,181  
PROCESS FOR PRODUCING SEALING MATERIAL  
Charles R. Cawley, Butler, Pa., assignor to Fre-Mar In-  
dustries, Butler, Pa., a corporation of Pennsylvania  
Filed Jan. 14, 1965, Ser. No. 425,398  
1 Claim. (Cl. 18-13)

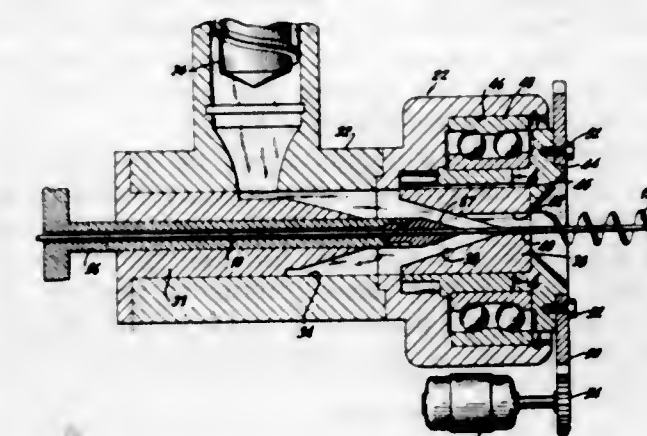


A repair product comprised of a knitted sleeve and malleable plastic repair product is constructed by taking the knitted sleeve and effecting longitudinal stretching of the sleeve so that it becomes of uniform cross sectional diameter and has uniform orifice openings along the length of the sleeve to receive the plastic repair product which is extruded through the openings to form a solid central core surrounded by the sleeve. Thereafter, longitudinal tension on the repair product will have little, if any, effect on its dimension.

3,411,182  
APPARATUS FOR EXTRUDING HELICAL  
WEBS ON CONDUCTORS  
John J. Nevin, Yonkers, N.Y., assignor to Phelps Dodge  
Copper Products Corporation, New York, N.Y., a cor-  
poration of Delaware  
Filed Sept. 28, 1966, Ser. No. 582,702  
5 Claims. (Cl. 18-13)

The electrical conductor is passed through the main orifice of an extrusion die having an exit end through which the main orifice opens and also having a sub-orifice intersecting the main orifice and extending generally radially outward therefrom, the sub-orifice opening through the exit end of the die with the radially outer portion of the sub-orifice terminating short of the outer periphery of the die. The die is supported for rotation about the conductor and is provided with an inlet to which a plasticized resinous material is supplied under pressure in all rotational positions of the die, to cause the material to be extruded continuously through the exit opening of the sub-orifice in the form of a generally radial web on the conductor. Driving means are provided to rotate the die so

as to spiral the web in a helix about the conductor, the pitch of the helical web being determined by the rota-



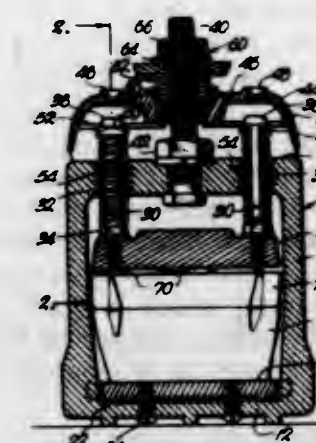
tional speed of the die relative to the speed at which the conductor is moved lengthwise through the die by a transport means.

3,411,183  
APPARATUS FOR SLITTING FILM INTO  
UNEQUAL WIDTH  
William Penn Gaskill Hall, Berwyn, Pa., and Daniel Park-  
hurst MacMurray, Carcroft, Wilmington, Del., as-  
signors to E. I. du Pont de Nemours and Company,  
Wilmington, Del., a corporation of Delaware  
Filed Jan. 11, 1966, Ser. No. 520,009  
7 Claims. (Cl. 18-14)



Apparatus for continuously converting an extruded continuous tubing into at least two flattened films having different widths.

3,411,184  
SPRING-ACTION DENTAL COMPRESS  
George F. McGowan, 4509 Forest Ave.,  
Kansas City, Mo. 64110  
Filed Sept. 1, 1966, Ser. No. 576,722  
9 Claims. (Cl. 18-33)

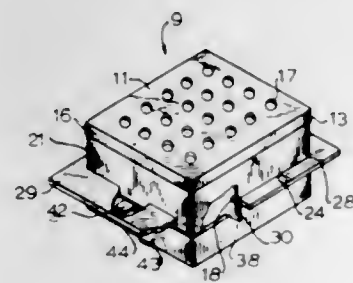


1. A compress for a sectional dental flask comprising:  
a base;



a beam spaced from said base, the latter being adapted to support said flask between the base and the beam;  
means interconnecting said base and said beam;  
a pressure plate between said base and said beam; and  
pressure means mounted on the beam and coupled with said plate for forcing the plate against the flask when the latter is on the base,  
said pressure means including a pair of spaced, yieldable, force transmitting elements extending from the plate away from said base, and struture engageable with said elements for simultaneously applying equal forces thereto directed toward said plate, whereby to place said elements in compression as the flask is clamped between the plate and the base.

**3,411,185**  
**COMPOSITE HISTOLOGIC TISSUE RECEPTACLE**  
John E. P. Pickett, 3323 Pinafore Drive,  
Durham, N.C. 27705  
Filed June 6, 1966, Ser. No. 555,630  
7 Claims. (Cl. 18—34)



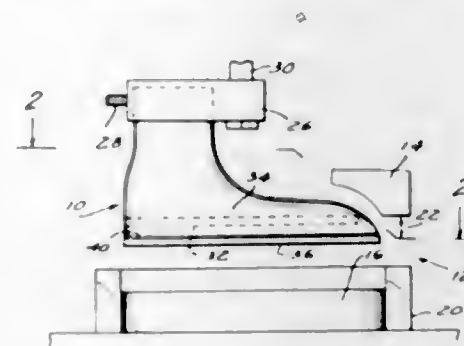
7. A two part tissue handling structure which provides means for receiving permanent indicia to identify a selected histologic tissue specimen, means for providing a partially removable mold in which the specimen may be selectively positioned following processing and then embedded in a molten paraffin type medium and cooled to provide a tissue block, means for holding the embedded tissue block in a microtome vice and, after cutting, means for covering the block during storage, said structure comprising:

- a rectangular boat receptacle having a substantially flat bottom wall, side walls integral with said bottom wall and an open top, said bottom wall being substantially thin and said walls being formed of a thermal conductive material which is releasable from said medium when cooled and which material exhibits sufficient resiliency to adapt said top to snap-fit connection, the size of said receptacle corresponding to the desired size of said block;
- a rectangular embedding box having integral side walls, an open top and bottom, said box interior walls, having a surface configuration adapted to lock the said block to said box when cooled after being formed therein from said medium, said receptacle and box having mating snap-fit edge connections providing a composite rectangular substantially unobstructed unitary container in which the said side walls of said box form a continuation of the said side walls of said receptacle, said box being formed of a material which is sufficiently rigid to adapt said box to being clamped in said vice while retaining such resiliency as is required to effect said snap-fit connections;

said receptacle in combination with said box thereby providing means for molding said block, for cooling said medium through said receptacle bottom wall, for holding said block in said vice while said receptacle is re-

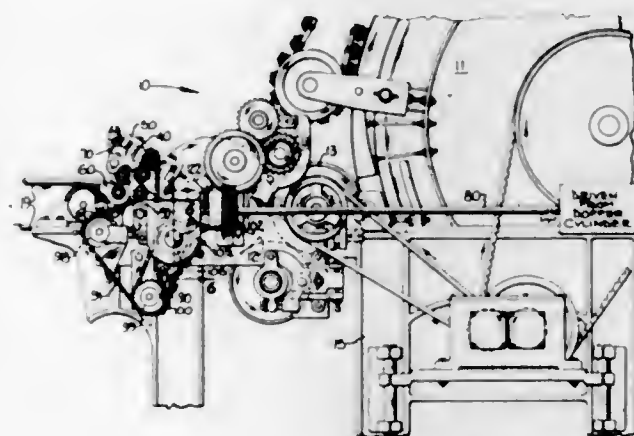
moved, and with said receptacle resecured following cutting for protecting said block during storage.

**3,411,186**  
**SHOE LAST**  
Lionel M. Huff, Johnson City, N.Y., assignor to Endicott Johnson Corporation, Endicott, N.Y., a corporation of New York  
Filed Sept. 23, 1966, Ser. No. 581,497  
4 Claims. (Cl. 18—46)



3. A shoe last for use with a molding machine for fabricating a shoe lower and joining it to a shoe upper having mold structure including a two-piece side, a sole plate and a toe plate at least some of which are adapted for movement into a molding position to define a cavity, said last defined by a support including a heel, toe and ankle portion for supportingly receiving said shoe upper, said last and shoe upper being adapted for movement into said cavity substantially bounded by said mold at the inception of the molding process during which time said shoe lower is fabricated, a heating element contained within said shoe last and generally traversing the portion between said heel and toe for providing the necessary heat required to join said shoe upper and lower, and insulation means in the form of a sheet of heat insulating material disposed within said last and positioned between said element and said last bottom thereby to divide the last into an upper and lower section and maintain said last lower at a temperature substantially below the temperature of said last upper.

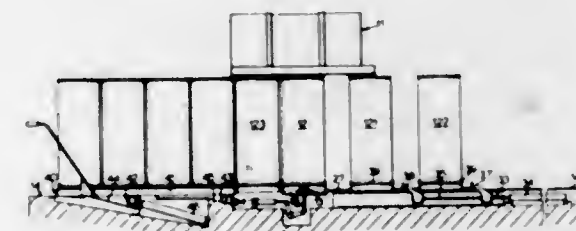
**3,411,187**  
**FEED ROLLER ARRANGEMENT TO CARD LICKER-IN**  
Homer W. Groce and William A. Warnock, Lyman, S.C., assignors to Wellman Industries, Inc., Johnsonville, S.C., a corporation of Delaware  
Filed Feb. 23, 1967, Ser. No. 617,918  
8 Claims. (Cl. 19—105)



In a high production textile card, correct feeding of textile materials to the operating instrumentalities of the card is assured by a novel mounting and drive arrange-

ment for a plurality of toothed feed rollers. The feed rollers are supported in at least one predetermined group from the card frame adjacent one of two licker-in cylinders so as to be adjustable as a unit in a group relative to the operating instrumentalities of the card and so as to be individually adjustable relative to other feed rolls in the same group. Transmission means are provided to operatively connect the feed rolls together for coordinated rotation and to one of the operating instrumentalities of the card to normally be driven in rotation therefrom while permitting interruption of the driving connection when excessive torque is required to drive the feed rollers. The mounting and drive arrangement provides a wide range of choices as to roll spacing while properly coordinated drive is maintained and damage to the feed rollers is avoided.

**3,411,188**  
**SLIVER COILING APPARATUS**  
Daniel Norman Walker, Lytham, and Robert Harry Woodhead, Whalley, England, assignors to T.M.M. (Research) Limited, Oldham, Lancashire, England, a British company  
Filed June 2, 1967, Ser. No. 643,285  
Claims priority, application Great Britain, June 3, 1966, 24,923/66  
15 Claims. (Cl. 19—159)

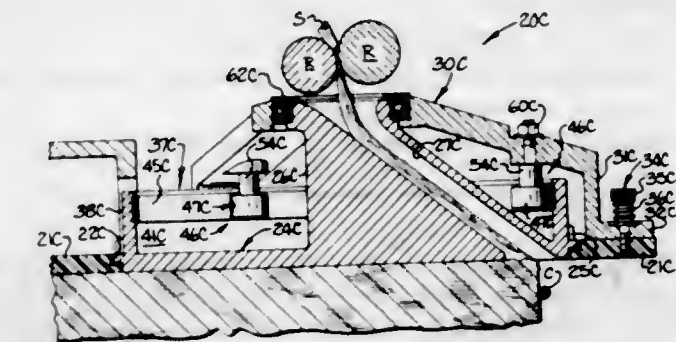


The disclosure concerns an automatic can changing system for a plurality of sliver cans adapted to receive sliver issuing from a coiler head and subsequently be moved to storage or other processing facilities. An automatic counter initiates the can changing cycle. Two indexing arms move first and second empty cans, the first can moving to the coiling position on a turntable beneath the coiling head and simultaneously pushing a full can from the coiling position. The second empty can is moved up to the position just vacated by the first can and the indexing arms are retracted. When the first empty can pushes the full can from the coiling position, it moves to a position slightly beyond a centered position on the turntable so as to clear the full can from engagement with the turntable. The cans employed in this system each have holes centered in the bottom thereof and each can is then retracted from the advanced position on the turntable to a centered position by a conically tipped member which is projected upwardly through the turntable and into the hole in the bottom of the can. The edge of the hole engaging the point of the conical tip is such that the can is caused to retract by the lateral force exerted on the edge of the hole as the conically tipped member is extended further upwardly.

**3,411,189**  
**TEXTILE SLIVER COILER**  
Joe R. Whitehurst, Bessemer City, N.C., assignor to Ideal Industries, Inc., Bessemer City, N.C., a corporation of North Carolina  
Filed Oct. 21, 1965, Ser. No. 499,456  
5 Claims. (Cl. 19—159)

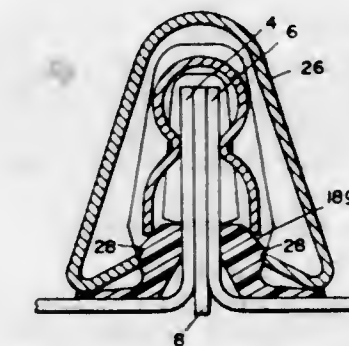
A textile coiler including a rotatable tube gear element and a supporting element overlying the same, bearing means on the supporting element for suspendingly sup-

porting the entire weight of the tube gear element, and means for stabilizing and maintaining the tube gear element rotating in a concentric manner including an in-



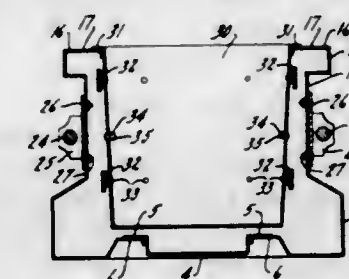
wardly facing annular trackway carried by one of said elements, with a plurality of spaced rollers cooperatively engaging the trackway and being carried by the other element.

**3,411,190**  
**MOULDING ATTACHMENT DEVICE FOR PINCH WELD JOINT**  
Michel Augier, Grenoble, France, assignor to A. Raymond, Grenoble, France, a firm  
Filed Feb. 12, 1968, Ser. No. 704,864  
Claims priority, application France, Mar. 16, 1967, 99,073  
5 Claims. (Cl. 24—73)



This is a two-piece fastener device for engagement with a molding comprising a plastic staple-shaped fastener element which holds the molding from metal surfaces and a metal fastener clip element which is engaged with the staple-shaped fastener element to provide the means of holding the staple-shaped element to the support.

**3,411,191**  
**METHOD FOR SEALING OPENINGS IN A CASKET**  
George H. Ikert, Elgin, and Edward W. Dower, Dundee, Ill., assignors to Elgin Metal Casket Company, Elgin, Ill., a corporation of Illinois  
Filed Aug. 20, 1964, Ser. No. 390,859  
4 Claims. (Cl. 27—6)

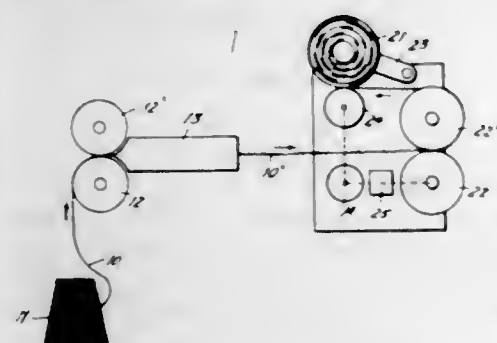


1. The method of sealing openings in a burial casket which comprises the steps of



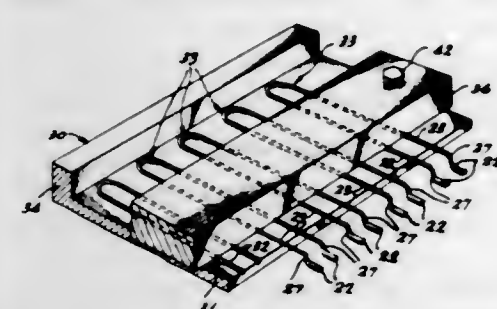
forming a casket, placing therein a removable mold, supporting said mold upon said casket and thereby producing a confined volume within the casket and between the casket and the mold, thereafter introducing between the mold and the casket a quantity of fluid plastic material, retaining the mold in place until the plastic material has become self-sustaining, and thereafter removing the mold from within the casket.

**3,411,192**  
**STRAND TREATMENT PROCESS AND APPARATUS**  
Malcolm F. Irwin, Philadelphia, Pa., assignor to Techni-service Corporation, Lester, Pa., a corporation of Pennsylvania  
Filed Dec. 12, 1966, Ser. No. 600,977  
20 Claims. (Cl. 28—1)



13. Strand-treating apparatus comprising a stuffer-crimper and stabilization means located to receive crimped strand therefrom comprising a pair of nip rolls, at least one of which is resilient, whereby said means is adapted to stabilize the crimped strand without reduction in crimp level.

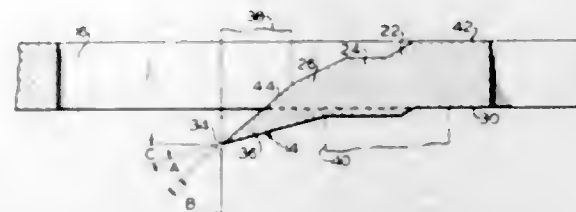
**3,411,193**  
**TERMINAL LEADS FOR ELECTRICAL DEVICES**  
Albert S. Takacs, Hacienda Heights, Calif., assignor to Marshall Industries, San Marino, Calif., a corporation of California  
Filed Aug. 31, 1965, Ser. No. 484,077  
3 Claims. (Cl. 29—25.41)



1. The method of attaching leads to metallic edge coatings of a plurality of ceramic blocks, wherein the edge coatings on each block extend around the edges onto one face of the block, comprising:  
forming a plurality of U-shaped wire elements with legs of equal length and spacing;  
forming the ends of the legs of said U-shaped elements so they are flat and offset, the flattened ends being spaced apart a distance equal to the distance between the coatings on the one face of a ceramic block;  
securing said elements side by side on a fixture having a horizontal surface with the mid-points of the rounded ends of said elements on a line at right angles to the axes of said legs;

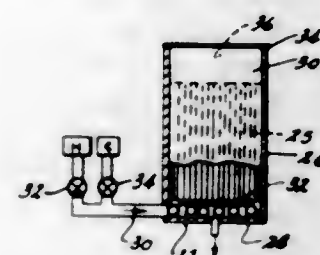
placing a portion of conductive bonding material on the upper surface of each flattened end;  
placing a respective ceramic block astride the flattened ends of each U-shaped element, with the coatings on the one face thereof seated in the portions of bonding material and in registry with the flattened ends;  
heating the flattened ends, bonding material and edge coatings to cause the flattened ends to be conductively bonded to the coatings;  
forming a plurality of open-topped housings;  
arranging said fixture vertically with said ceramic blocks extending downwardly from the lower ends of said U-shaped elements;  
inserting the ceramic blocks into said housings;  
and potting said ceramic blocks in place in the respective housings.

**3,411,194**  
**CUTTING AND ABRADING TOOLS**  
Jules M. Don, Naugatuck, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut  
Continuation-in-part of application Ser. No. 397,249, July 24, 1963. This application July 7, 1966, Ser. No. 563,419  
6 Claims. (Cl. 29—78)



1. In a cutting and abrading tool a sheet metal blade body having a plurality of openings therein, and cutting elements associated with said openings and forming an edge portion thereof rearwardly of the cutting direction of the tool, each of said cutting elements comprising a shank portion offset from and integrally joined to the blade body, said shank portion having a densified tapered tongue portion at its forward end forming a cutting edge, said cutting edge projecting below the lower surface of the blade body, the breast and rear surfaces of said tongue extending at an angle to the blade body to form predetermined rake and clearance angles for the cutting element.

**3,411,195**  
**HELICAL COILS USING MOTHBALL FILLER**  
Erich Himstedt, Monrovia, Calif., assignor to American Standard Inc., a corporation of Delaware  
Filed Feb. 4, 1966, Ser. No. 525,237  
2 Claims. (Cl. 29—157)



This invention relates to a method of forming thin walled Bourdon coils having small cross-sectioned passages therein. The method comprises filling a partially flattened tube with liquid filler, maintaining the tube in an upright condition while allowing the tube to cool and

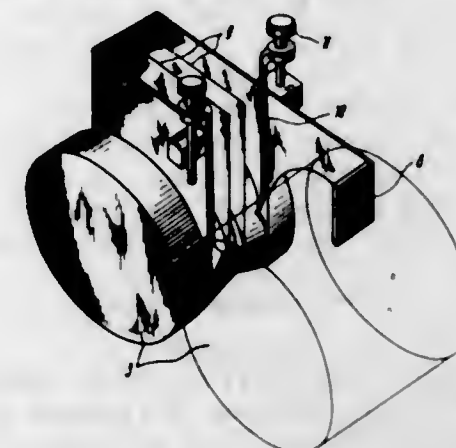
the filler to harden from bottom to top so as to cause superjacent liquid to drain into void areas, further flattening the tube to reduce voids, winding the tube into a coil shape, and removing the filler from the coil.

**3,411,196**  
**CENTRAL HEATING RADIATOR**  
Otto Zehnder, Granichen, Aargau, Switzerland, assignor to Gebrüder Zehnder AG, Radiatorenfabrik Granichen, Aargau, Switzerland  
Filed Mar. 24, 1967, Ser. No. 625,672  
Claims priority, application Switzerland, Mar. 30, 1966, 4,614/66  
7 Claims. (Cl. 29—157.4)



The present invention relates to central heating radiators of the type comprising top and bottom headers and connecting tubes extending between the headers. More particularly the invention relates to a method for producing radiators of the above type, according to which method the headers are first provided with holes for engagement of the ends of the connecting tubes, then the radiator is provisionally assembled by engaging the connecting tubes with their ends into the holes of the headers, the provisional assembly is immersed in a liquid bath to provide a metal coating on the internal and external surfaces of the headers and connecting tubes and along the joints between the headers and the ends of the connecting tubes engaged therein, so that after removal of the assembly from the metal bath and solidification of the metal coating this latter rigidly connects the headers with the tubes and forms a tight seal around the joints between the connecting tube ends and the headers. The invention also relates to a radiator which is obtained in accordance with this method.

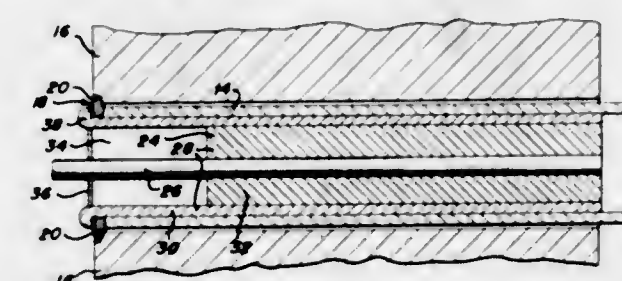
**3,411,197**  
**METHOD FOR CONTINUOUSLY MANUFACTURING COMMUTATOR SEGMENTS**  
Gennady Ivanovich Axenov, Viktor Alexandrovich Soosanin, Vsevolod Leonidovich Belousov, Valentin Petrovich Revjakin, and Alexei Mikhailovich Sorokin, Kulbyshev, U.S.S.R., assignors to Kulbyshevsky Aviatsonny Institute, Kulbyshev, U.S.S.R.  
Filed Nov. 26, 1963, Ser. No. 326,116  
1 Claim. (Cl. 29—420)



This invention relates to a method for continuously manufacturing commutator segments by cold rolling

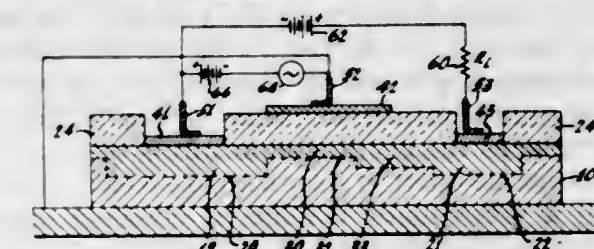
three streams of metal powder, the middle stream being copper powder, and the two outer streams being steel powder, to form a unitary composite band which is rhombic in lateral cross section and has a uniform density. The band is then sintered by simultaneously hot compressing and calibrating it in a protective medium, and finally commutator segments are punched from the band so that the waste occurs in the steel edges.

**3,411,198**  
**EXPLOSIVE EXPANSION OF TUBES INTO TUBE SHEETS**  
Irwin Berman, Bronx, N.Y., and Bharatkumar S. Thakkar, Carteret, and Joseph W. Schroeder, Clark, N.J., and Laszlo Kunsagi, New York, N.Y., assignors to Foster Wheeler Corporation, New York, N.Y., a corporation of New York  
Filed June 6, 1966, Ser. No. 555,304  
10 Claims. (Cl. 29—421)



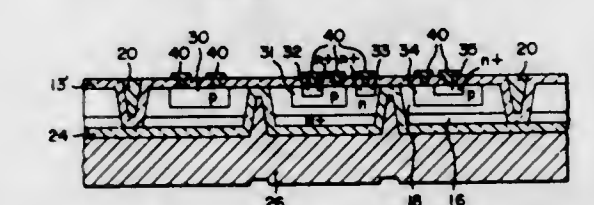
Tubes expanded into tube sheets by cartridge in plastic insert spaced from tube sheet to form an air gap.

**3,411,199**  
**SEMICONDUCTOR DEVICE FABRICATION**  
Frederic P. Heiman and Karl H. Zaininger, Princeton, N.J., assignors to Radio Corporation of America, a corporation of Delaware  
Filed May 28, 1965, Ser. No. 459,709  
10 Claims. (Cl. 29—571)



The conductivity of that portion of the channel of an offset insulated gate field effect transistor which is not covered by the gate electrode is increased by heating the transistor in a hydrogen-containing ambient after the formation of the gate electrode.

**3,411,200**  
**FABRICATION OF SEMICONDUCTOR INTEGRATED CIRCUITS**  
Napoleon P. Formigoni, Baltimore, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Apr. 14, 1965, Ser. No. 448,119  
3 Claims. (Cl. 29—580)

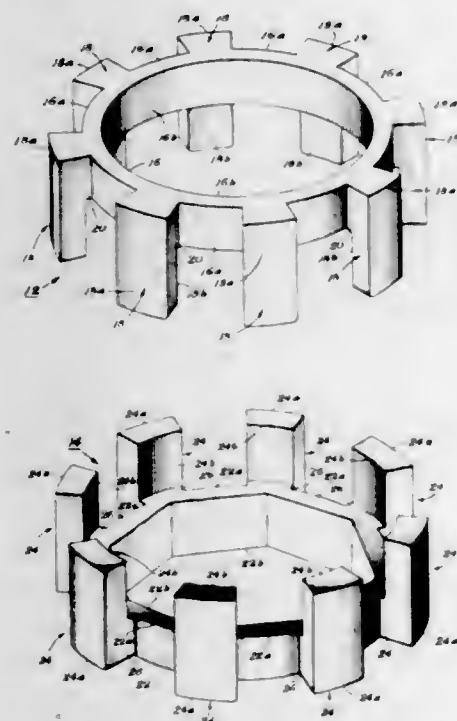


In fabricating a semiconductor integrated circuit with a dielectric isolation medium, index grooves are formed



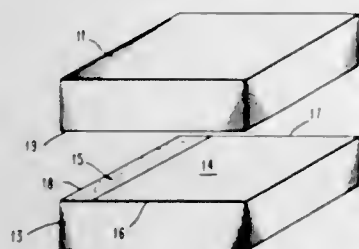
in the surface of a body of semiconductor material to a depth desired for the thickness of the resulting device structures following which a support member is formed on the grooved surface and material is removed from the opposite surface uniformly down to the index grooves. Isolation grooves are then formed from the second surface and a second support member is formed on the exposed surface after which the first support member is removed.

**3,411,201**  
**METHOD OF MANUFACTURING A ROTARY SWITCH**  
Russell R. Krone, 6613 N. Prospect,  
Oklahoma City, Okla. 73111  
Filed Oct. 28, 1963, Ser. No. 319,222  
6 Claims. (Cl. 29—597)



A rotary switch is formed from a plurality of integral members, each of which has a ring portion electrically interconnecting a plurality of electrically conductive segments extending therefrom. Nonconductive material is molded between the conductive members so that the segments are spaced apart in electrically isolated relationship, yet form a substantially continuous common outer surface of conductive material. The molded nonconductive material is recessed from the common outer surface of the segments, and may cover the inwardly facing surface of the ring portion of one or more of the members.

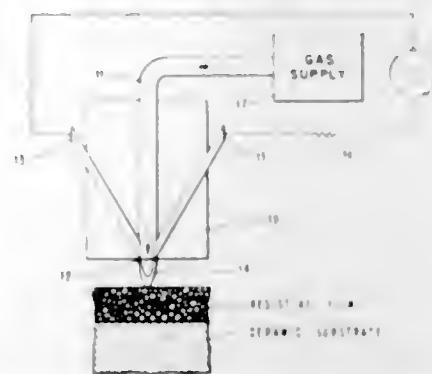
**3,411,202**  
**METHOD OF MANUFACTURING RECORDING HEADS**  
Bernard Schwartz, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York  
Filed June 25, 1964, Ser. No. 377,810  
2 Claims. (Cl. 29—603)



A magnetic recording head is formed by laminating a plurality of ferrite sheets having at least one end carrying a nonmagnetic electrical conductor thereon. Cutting the

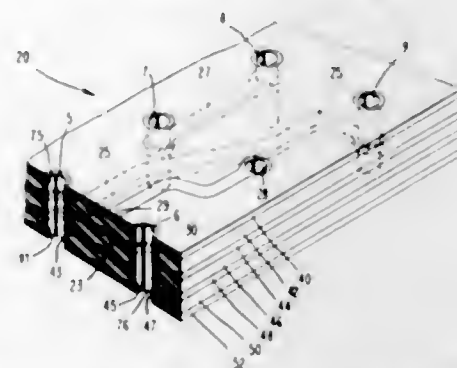
laminated sheets into a predetermined shape and thereafter sintering the same to provide said magnetic recording head.

**3,411,203**  
**ELECTRIC FIELD TAILORING OF THIN FILM RESISTORS**  
Francis J. Pakulski, La Grangeville, and William L. Wright, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Jan. 14, 1966, Ser. No. 520,761  
9 Claims. (Cl. 29—620)



A method for down-tailoring the ohmic value of a resistor by an electric field irradiation with a jet of ionized gas particles.

**3,411,204**  
**CONSTRUCTION OF ELECTRICAL CIRCUITS**  
Gilbert R. Reid, Norristown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware  
Original application Mar. 7, 1963, Ser. No. 263,655.  
Divided and this application July 6, 1965, Ser. No. 469,795  
10 Claims. (Cl. 29—625)

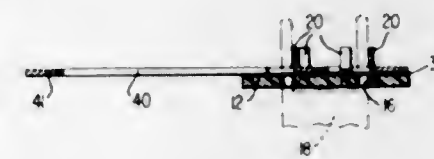


This disclosure relates to a method for making interconnections in a multi-layer circuit. The method provides for making perforations in the area where a connection is to be made. This is done by means of photographic and chemical techniques only. As a result of the chemical milling process of the invention, an aperture with an uneven side wall is developed through the circuit since the insulation is etched more deeply than the metal. The uneven side wall enables a solid three-sided connection to be made to each printed circuit element when a conductive material is applied to the sides or made to fill the perforation since each element is chemically cleaned by the etching process. As a result, improved continuity is obtained.

**3,411,205**  
**WELDABLE PRINTED CIRCUIT MAKING**  
William J. McGinley, Palatine, Ill., assignor to Methode Electronic, Inc., Chicago, Ill., a corporation of Illinois  
Filed Jan. 27, 1965, Ser. No. 428,467  
2 Claims. (Cl. 29—625)

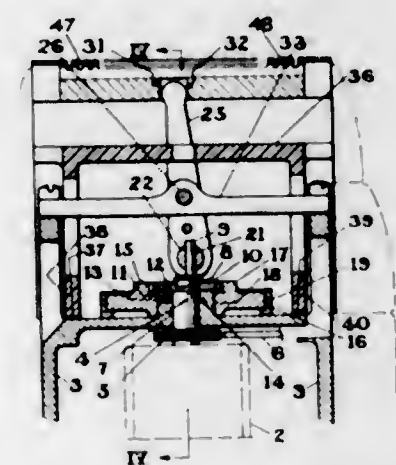
A method for making weldable printed circuit boards, and specific examples of printed circuit boards, made ac-

ording to the method, are disclosed in the hereinafter specification. A prepunched base board is laminated to a prepunched film adhesive and a relatively thick, hard piece of metal foil. A circuit configuration is formed on the foil. Powdered rosin is applied and formed into a fused, thick mass on the circuit configured portions of the foil



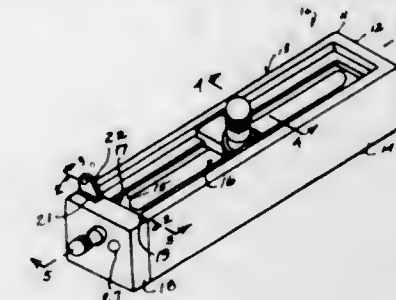
by subjecting the rosin to blasts of hot air. Etching acids are applied for a relatively long period of time, and the board is thereafter washed with a solvent to remove the fused rosin. Portions of the printed conductors are thereafter formed up as tabs to which components may be welded.

**3,411,206**  
**SHAVER HAVING RECIPROCATING MEANS FOR THE SHEAR COMBS AND INNER CUTTERS**  
Lewis M. Showers, Jr., 87 School House Lane, Rte. 2,  
Glen Mills, Pa. 19342  
Filed Mar. 22, 1966, Ser. No. 538,476  
1 Claim. (Cl. 30—43.91)



A shaver having reciprocating cutting head and inner cutters. The cutter head and cutters are operated by a drive crank which induces an oscillation motion to a rocker assembly head and inner cutters. A lower frequency reciprocation of the cutting head is produced relative to the inner cutters to comb the whiskers into the slots of the shear combs.

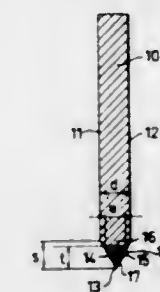
**3,411,207**  
**HAND CUTTING TOOL**  
Ralph C. Zimmerman and Ralph Charles Zimmerman, Cincinnati, Ohio, assignors to Zimmerman Packing Company, Cincinnati, Ohio, a corporation of Ohio  
Filed Nov. 3, 1966, Ser. No. 591,892  
5 Claims. (Cl. 30—310)



The hand cutting tool of the present invention includes an elongated body member having downwardly of its upper surface a groove on the base of which is mounted

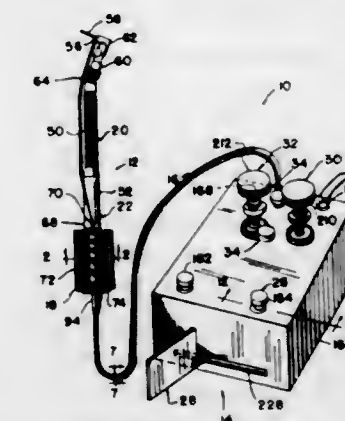
a scale adapted to give direct readings as to the diameter of the disc, circle, gasket, ring, or the like that is being cut by the tool. The direct reading centering pin securing means includes a cooperating scale indicator which is disposed above the surface of the scale and wherefore continuous movement of the said scale indicator will not scratch or otherwise deface the said scale and thereby prolong the usefulness of the scale for the life of the tool.

**3,411,208**  
**CUTTING STRIPS, CUTTING DIE KNIVES, CUTTING RULES AND THE LIKE**  
Eugen Olof Malm, Sandviken, Sweden, assignor to Sandvikens Jernverks Aktiebolag, Sandviken, Sweden  
Filed June 14, 1966, Ser. No. 557,428  
Claims priority, application Sweden, June 14, 1965, 7,776/65  
6 Claims. (Cl. 30—350)



A steel cutting strip is disclosed having a main strip portion of substantially uniform hardness throughout, which is readily deformable so that it may be bent to form corners of low radii, and a cutting edge integral with the main body portion and of much greater hardness, but also of substantially uniform hardness throughout. The cutting edge portion is connected to the main strip portion by a thin layer integral with both of said portions. With this arrangement the cutting edge is sufficiently small to permit it to be bent without damage, even though it is extremely hard, and the bond to the main strip portion remains intact.

**3,411,209**  
**MOTORIZED DENTAL HANDPIECE AND CONTROL THEREFOR**  
Joseph Stemler, St. Clair Shores, Kenneth G. Slotkowski, Oak Park, and John E. Sargeant, Clawson, Mich., assignors, by mesne assignments, to Ritter Pfaudler Corporation, Rochester, N.Y., a corporation of New York  
Filed July 30, 1964, Ser. No. 386,350  
18 Claims. (Cl. 32—23)



The invention consists of a conventional dental handpiece having an electric motor structure directly connected thereto forming a rigid unit. There is a quick disconnect coupling between handpiece and motor. A flexi-



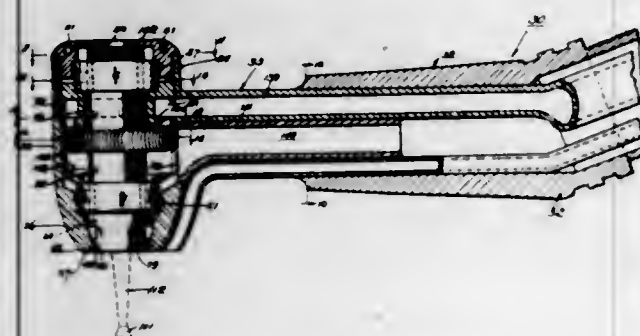
ble electric cord leads from the D.C. motor to a foot controller provided with a rectifier and means for varying the amount of current to thereby control the motor speed.

3,411,210

# AIR DRIVEN TURBINES FOR DENTAL HANDPIECES AND THE LIKE

Martin Staunt, Des Plaines, Ill., assignor, by mesne assignments, to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois  
Continuation-in-part of application Ser. No. 494,607, Mar. 16, 1955. This application Dec. 5, 1958, Ser. No. 778,526

16 Claims. (Cl. 32-27)

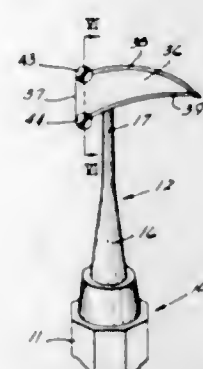


1. A high speed air driven turbine assembly comprising a cylindrical shell having a cylindrical bore, open at both ends, and having a lateral inlet port and a lateral outlet port spaced axially from each other, a cylindrical stator having an axial through bore and fitting in said shell bore, and comprising a pair of cylindrical annular flanges separated by a peripheral groove communicating with said inlet port and forming an air manifold, one of said flanges engaging one end of said shell and closing off air from one end of said shell, and the other of said flanges having a plurality of diagonal open slots cut in its periphery and forming air nozzles receiving air from said air manifold, said slots being closed at the periphery of the stator by said shell, a ball bearing assembly at each end of said turbine assembly, each ball bearing assembly comprising an outer race, one outer race engaging the stator and the other outer race engaging one end of the shell, a plurality of spaced balls located in an inner continuous groove in each outer race, and an inner race at each end of the assembly, and each inner race having an outer continuous groove engaging the spaced balls of its ball bearing assembly, a cylindrical turbine shaft having an annular shoulder at one end and a threaded portion at its other end, a turbine rotor having a through bore fitting on said shaft, and comprising a cylindrical body with a tubular spacer sleeve at each end, said spacer sleeves each engaging the end of one of said inner races and a threaded member carried by said threaded portion of said shaft and clamping said inner races against the tubular spacers and against the annular shoulder at the end of the shaft, forming a unitary assembly, said rotor having a clearance between its spacer sleeve and the stator bore and between one end of the stator cylindrical body and the adjacent end of the cylindrical rotor body, permitting leakage of air through said clearances and through the spaces between the balls of the ball bearing at that end of the shell, said rotor having a plurality of curved concentric walled slots in its periphery, forming curved vanes located in close proximity to but having a clearance with respect to the bore in said shell, said air nozzles directing air peripherally and axially into said rotor slots in the direction of rotation of the rotor, which discharges the air downwardly from the rotor into an exhaust chamber communicating with said outlet port and with the spaces between the balls of the adjacent ball bearing assembly, for cooling the ball bearings and producing air flow out of the end of the assembly to exclude dirt by outward flow.

3,411,211

# DENTAL TOOL

Harold Ward Fountain, 921 W. Kilgore Road, Portage Township, Kalamazoo County, Mich. 49081  
Filed Sept. 28, 1965, Ser. No. 490,829  
6 Claims. (Cl. 32-46)



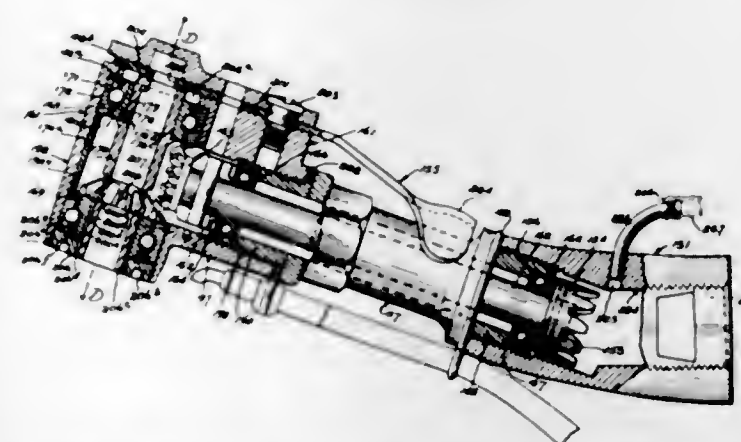
A dental cutting tool having a handle and a shank extending therefrom. A mounting base is disposed at the end of the shank and a blade is removably mounted adjacent one end thereof on the mounting base. The mounting base is elongated in a direction transverse to the adjacent portion of the shank. The blade is preferably elongated in a direction transverse to both the mounting base and the shank and has cutting edges extending longitudinally thereof.

3,411,212

# DENTAL HANDPIECES

Martin Staunt, Des Plaines, Ill., assignor, by mesne assignments, to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois  
Continuation of application Ser. No. 82,872, Jan. 16, 1961, which is a continuation-in-part of application Ser. No. 620,434, Nov. 5, 1956. This application Mar. 4, 1963, Ser. No. 264,470

The portion of the term of the patent subsequent to June 19, 1978, has been disclaimed  
24 Claims. (Cl. 32-27)



Contra-angle dental handpiece constructions wherein a cartridge assembly including drive means for the handpiece is removably mounted by clamping the outer ball bearing races thereof in place within the cylindrical chamber of the housing.

3,411,213

# AMALGAM CONVEYOR

Ronald P. Spinello, Westbury, N.Y., assignor to The Dentists' Supply Company of New York, York, Pa., a corporation of New York  
Continuation-in-part of application Ser. No. 437,806, Mar. 8, 1965. This application Feb. 14, 1966, Ser. No. 532,512

10 Claims. (Cl. 32-60)

An amalgam condenser and carrier operable to receive the ingredients to form dental amalgam and comprising

a housing in which at least the interior decreases progressively in diameter from adjacent an inlet opening to a discharge opening adjacent the opposite end thereof, a screw conveyor complementary to and rotatable within the interior of said housing, said conveyor having threads thereon of a uniform pitch and depth to define a groove comprising a spiral passage for amalgam which is of uniform depth and decreasing uniformly in diameter to the

shallow direction of the path. Dried polymer is obtained from the exit end of the path wherein inert gas is added

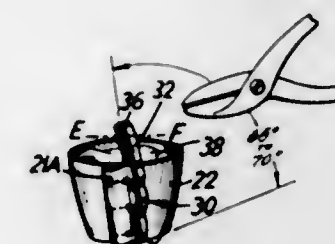


discharge opening of the housing whereby, upon rotation of the screw in a feeding direction, amalgam simultaneously is fed to the discharge opening and is condensed without sharp changes in magnitude and direction to insure uninterrupted feeding movement of the amalgam through said housing from said inlet to said discharge openings, thereby obviating any appreciable condensing of amalgam after being discharged into a prepared dental cavity.

3,411,214

# DENTAL APPLIANCE

Harry J. Lazarus, Teaneck, N.J., assignor to Lazarus and Peyser Associates, Teaneck, N.J., a limited partnership of New Jersey  
Filed May 16, 1966, Ser. No. 550,189  
23 Claims. (Cl. 32-63)



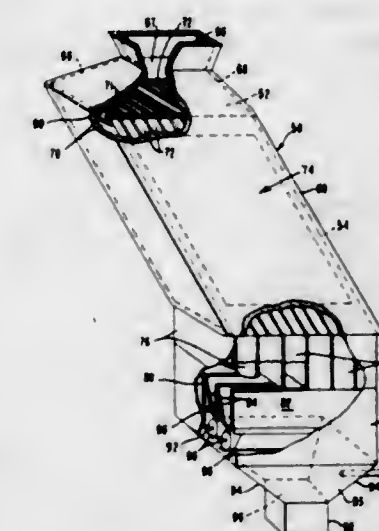
A dental appliance for tooth matrix work comprises a unit consisting of a flexible metal band and a flattened loop metal bridge anchored transversely of the band adjacent one end the other end extended therethrough to form a circlet. One end of the band has a formation engageable with a rotatable winding member inserted into the inner convolution of a coiled portion of the band, for winding of the band to draw the circlet into tight conforming engagement about the tooth. The tool may be removed from the band with locking ridges on the bridge engaging in indentations in the band to hold the band tightly around the tooth. For removal of the band, the bridge is easily severed.

3,411,215

# APPARATUS AND PROCESS FOR DRYING PARTICULATE POLYMER

Reuben T. Fields, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
Filed Dec. 8, 1966, Ser. No. 600,235  
14 Claims. (Cl. 34-12)

Polymer powder is dried by an apparatus and process wherein the polymer is gravity flowed along an inclined path which is filled with the polymer, with the path being shallow in one width direction and with heat being applied to the polymer powder by the wall defining the



to the path to maintain the polymer under an inert atmosphere during the application of heat.

3,411,216

# STRIP LENGTH GAUGE AND CONTROL

Leonard N. Evans, Pinson, Joseph W. Grill, Birmingham, and Grady R. Vines, Lipscomb, Ala., assignors to United States Steel Corporation, a corporation of Delaware  
Filed June 11, 1965, Ser. No. 463,238  
9 Claims. (Cl. 33-129)



Tachometer generators sensing the strip speed at the entrance and exit of a looping pit may be interconnected to two integrators. When a hole is punched in the strip at the entrance, the entrance tachometer is connected to add footage to the first integrator. When a sensor detects the hole at the exit, the exit tachometer is also connected to subtract footage from the first integrator and the pit footage is thereafter continuously shown on an indicator. When the next coil is started and before the first integrator is disconnected, the second integrator is connected to the entrance tachometer to collect an entering footage record, and when a hole made at that time is sensed at the exit, the second integrator indicates the pit footage at that time. Then the exit tachometer is switched from the first to the second integrator which thereafter counts the pit footage.

## ERRATUM

For Class 34-12 see:  
Patent No. 3,411,215

3,411,217

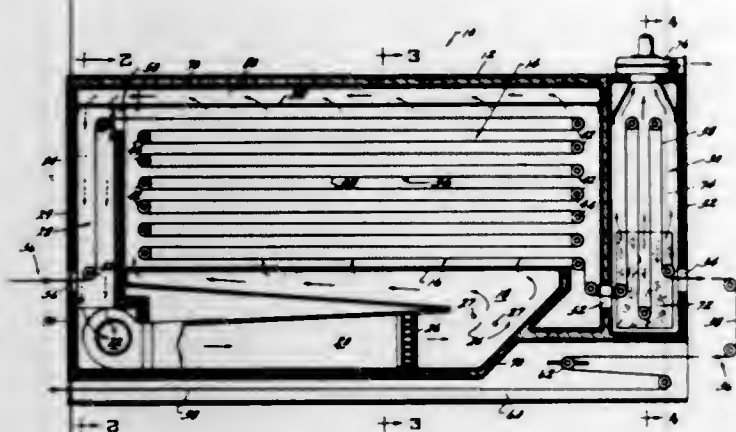
# METHOD AND APPARATUS FOR DRYING PRINTED SILK SCREENED ARTICLES

Eugene J. Daley, Union Township, Clermont County, Ohio, assignor to Cincinnati Printing and Drying Systems, Inc., Cincinnati, Ohio, a corporation of Ohio  
Filed Dec. 27, 1966, Ser. No. 604,720  
5 Claims. (Cl. 34-13)

A silk screen drier machine having an insulated drying chamber separated by a perforated or orificed plate or base from a plenum chamber having a volumetric gradient

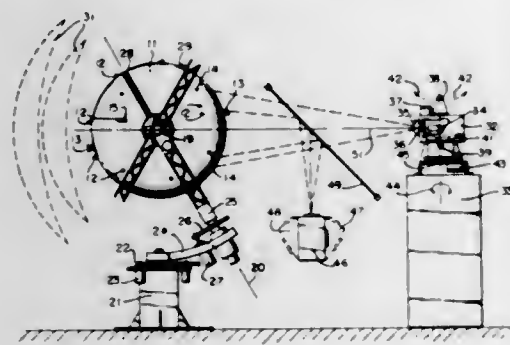


constructed therein and in which a minimum temperature gradient for the drying medium is maintained, the medium being distributed at a uniform temperature throughout the drying chamber; means for ascertaining and means for regulating the temperature of the drying medium in the plenum chamber so that temperature in the drying chamber is critically controlled to prevent dis-



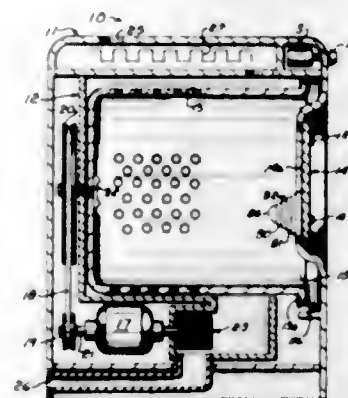
tortion of plastic articles on which printed indicia has been silk-screened and to properly dry, cure, or bake such indicia thereon at a temperature past which distortion would occur. Cooling means is provided to permanently condition the printed article; tilting features for stably supporting the drying articles are provided in a conveying means for such articles.

**3,411,218**  
**SYSTEM FOR INDIVIDUAL STAR OCCULTING IN A PROJECTED STARFIELD**  
Peter Ferko, Rockville, Md., assignor to General Precision, Inc., Binghamton, N.Y., a corporation of Delaware  
Filed Dec. 29, 1965, Ser. No. 517,271  
4 Claims. (Cl. 35-45)



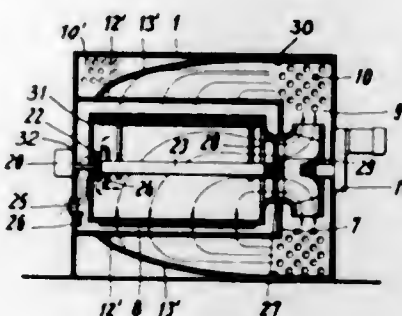
This disclosure describes an optical system in which a plurality of images are superimposed, one upon the other, on a common image plane. Where one image is that of an opaque object which is interposed between the background image and the viewer, occulting optical relays controlled by the image of the opaque object serve to obliterate appropriate portions of the background image to prevent the background image from bleeding through the foreground image. Where a planetarium, for example, projects the background image, the foreground image is projected onto the back side of the planetarium. Each projector of an optical image on the planetarium is equipped with an occulting shutter. Each shutter is controlled by a photocell which is 180° displaced from the shutter. Thus, the foreground image projected on the back of the planetarium illuminates photocells mounted thereon. These photocells control the appropriate shutters which close and block off a portion of the background image.

**3,411,219**  
**DRYNESS CONTROL**  
Russell W. Bartholomew, Worthington, Ohio, assignor to Ranco Incorporated, Columbus, Ohio, a corporation of Ohio  
Filed Feb. 17, 1967, Ser. No. 616,882  
10 Claims. (Cl. 34-45)



A clothes dryer comprising a frame having a rotating drum therein through which heated air is passed to dry fabrics which are tumbled in the drum, the control of the heated air being effected by a moisture sensing circuit means including two electrodes adapted to be bridged by fabrics in the drum, the electrodes being disposed on a nonrotating part of the frame.

**3,411,220**  
**APPARATUS FOR THE TREATMENT OF TEXTILE MATERIALS**  
Heinz Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to VEPA AG, Basel, Switzerland  
Filed Mar. 21, 1967, Ser. No. 624,880  
Claims priority, application Germany, Mar. 21, 1966, A 51,908

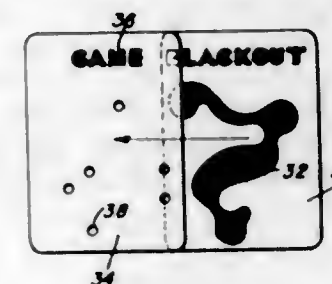


The present disclosure relates to an apparatus for the heat-treatment of textile materials, preferably materials which are permeable to air, comprising a substantially closed housing, at least one cylindrical sieve drum rotatably disposed within said housing, fan means for drawing the treatment medium, for example, air, through the material being treated and out of the interior of the sieve drum and means for providing a uniform temperature of the treatment medium drawn through the material being treated.

**3,411,221**  
**WORD GAME DEVICE**  
Melford D. Clark, 4068 Ridge Road, Cleveland, Ohio 44109  
Continuation-in-part of application Ser. No. 434,570, Feb. 23, 1965, This application July 13, 1965, Ser. No. 477,069  
10 Claims. (Cl. 35-9)

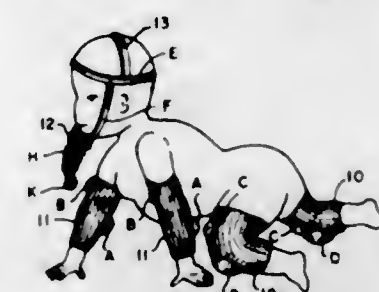
A word game device in which an article such as a card representing an unknown word contains indicia which when compared with means representing selected known

words indicate the number of letters common to the unknown word and the selected known words. Successive



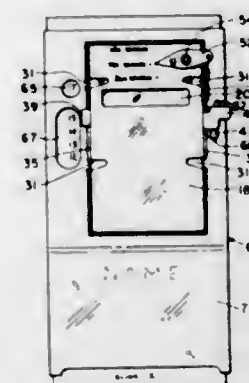
comparisons are made with different known words to determine the unknown word.

**3,411,222**  
**METHODS AND APPARATUS FOR INSTRUCTION OF CROSS PATTERN CRAWLING AND CROSS PATTERN WALKING**  
Kathryn I. Williams, 716 N. La Grange Road, La Grange Park, Ill. 60528  
Filed Aug. 30, 1965, Ser. No. 483,610  
7 Claims. (Cl. 35-29)



1. The method of teaching and improving cross pattern crawling for development of portions of the brain of normal and abnormal individuals comprising the steps of affixing a sound producing means on each leg of the user, affixing sound producing means on each arm of the user for engagement by the one of said sound producing means on the adjacent leg and affixing a sound producing means on the head of the user for alternate engagement with said sound producing means on the arms, each of said sound-producing means being so located on their respective body portions such that when the user is in a crawling position, the sound-producing means on an arm can contact the sound-producing means on the adjacent leg and the sound-producing means on the head can contact the sound-producing means on an arm whereby proper cross pattern movement by the user produces audible sequential rhythmic sounds.

**3,411,223**  
**TACHISTOSCOPIC DEVICE**  
Robert A. Vinci, Chicago, Ill., assignor to Markus-Campbell Company, a corporation of Illinois  
Continuation-in-part of application Ser. No. 548,099, May 6, 1966, This application Feb. 1, 1967, Ser. No. 613,285  
7 Claims. (Cl. 35-35)

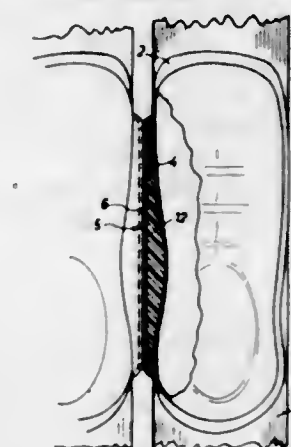


The present invention relates to flash recognition training devices, commonly referred to as tachistoscopes, and

particularly to such a device which may be hand-held and operated by manipulating a shutter device which permits momentary exposure of a word or symbol on a slide disposed beneath the shutter.

**ERRATUM**  
For Class 35-45 see:  
Patent No. 3,411,218

**3,411,224**  
**PAIR OF SKI-BOOTS HAVING GUIDING SURFACES**  
Fritz Wagner, Darmstadt, Germany, assignor to Schuhfabrik Henke & Co. Aktiengesellschaft, Stein am Rhein, Schaffhausen, Switzerland  
Filed Aug. 14, 1967, Ser. No. 660,333  
Claims priority, application Austria, Aug. 12, 1966, A 7,720/66  
10 Claims. (Cl. 36-2.5)



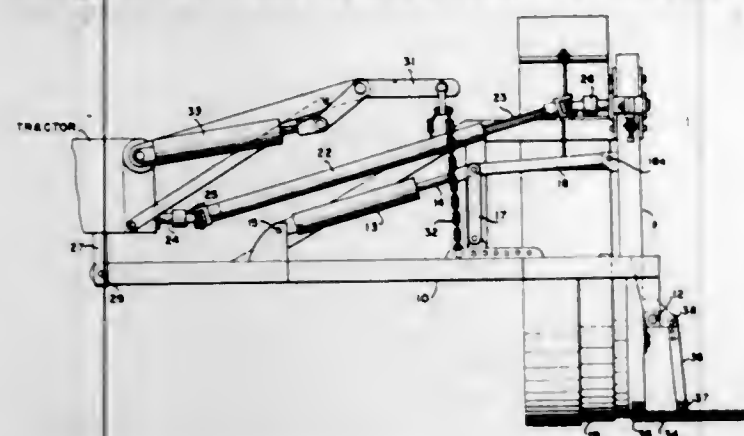
Each boot of a pair of ski-boots is formed with an external guiding surface provided on the inner side of the upper of the boot, said guiding surface extending in substantially longitudinal direction from the fore-foot portion of the boot until the heel portion thereof and in vertical direction from the sole of the boot until the portion of the upper situated below the ankle of the wearer. The two guiding surfaces on the inner sides of the two boots facing each other are adapted to contact each other when the wearer going on skis presses the two feet one towards the other, to thereby facilitate skiing with the two skis in parallel joined position. The guiding surfaces may be formed by the outer surface of a member attached to the upper of the boot. This member may be laminated and consist of an inner layer of a molded plastic material and an outer layer of leather, or said member forming the guiding surface may be integral with the sole of the boot and molded in a single piece together with the sole.

**3,411,225**  
**AUTOMATICALLY REGULATABLE DRAIN CLEANER**  
Herbert Barras, P.O. Box 327, Baldwin, La. 70518  
Filed Apr. 20, 1966, Ser. No. 543,976  
1 Claim. (Cl. 37-93)

The present invention is directed to an automatically regulatable drain cleaner for use with a tractor having an engine driven hydraulic pump and power take-off. The structure consists essentially of a main frame pivotally connected to the tractor and a secondary frame pivotally connected to the main frame at the rear thereof. A rotary earth engaging cutter and earth distributor are carried by the secondary frame and in particular a means is provided for varying the pitch angle of attack of the rotary earth cutter during rotation thereof by way of hydraulically varying the angle between the pivoted secondary frame and the main frame in accord-



ance with operational variable conditions at the discretion of the tractor operator. This is accomplished by

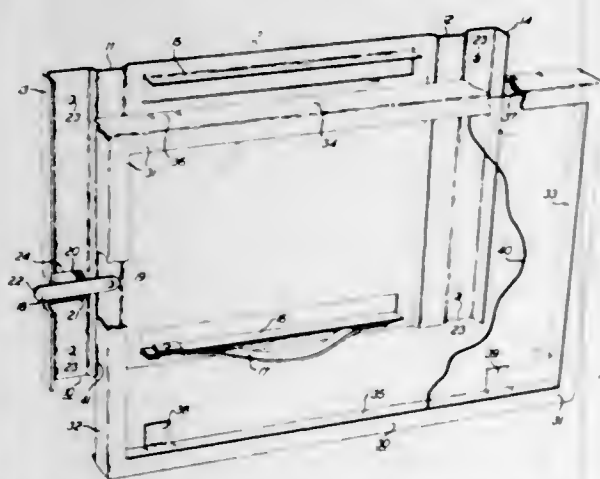


providing a hydraulic control valve accessible to the tractor operator for varying the pitch angle of attack of the earth cutter.

3,411,226

## DISPLAY CARD FRAME

James W. Ericsson, Indianapolis, Ind., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York  
Filed Jan. 9, 1967, Ser. No. 608,114  
5 Claims. (Cl. 40-10)

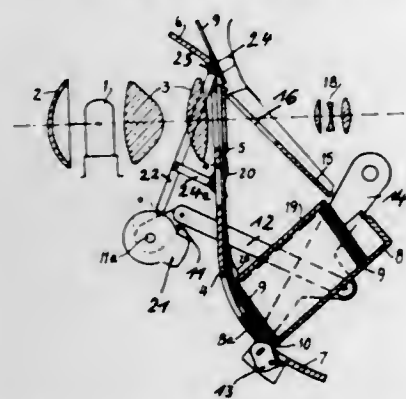


A card holder including a base member mountable on a support and a frame member overlying the base member to hold the card therebetween and with spring biased means to lock the said base and frame member in assembled relation.

3,411,227

## PHOTOGRAPHIC SLIDE PROJECTOR

Reinhard Sobotta, Braunschweig, Germany, assignor to Rollei-Werke Franke & Heidecke, Braunschweig, Germany, a firm of Germany  
Filed July 6, 1966, Ser. No. 563,263  
Claims priority, application Germany, July 13, 1965, R 41,081  
9 Claims. (Cl. 40-79)



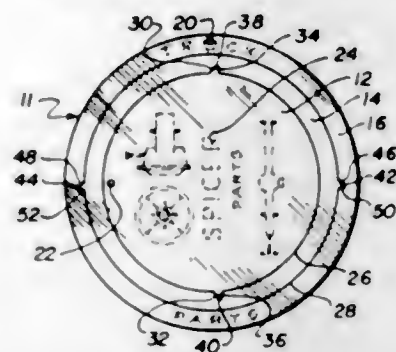
A slide projector has means for pushing successive slides from one end of a stack of slides, upwardly to a projec-

tion gate and then on upwardly to a return chute which delivers the slide to the rear end of the stack of slides. When the upwardly traveling slide reaches a position appropriate to the return chute, a movable pusher member engages the lower part of the slide and pushes it obliquely upwardly in a direction through thickness of the slide, to disengage it positively from the top edge of the next lower slide, so that it will not fail to drop into the return chute.

3,411,228

## DISPLAY

John W. Lacey, Winnetka, Ill., assignor to Pre-Vue Display Services Inc., Chicago, Ill., a corporation of Illinois  
Filed Dec. 18, 1967, Ser. No. 691,539  
10 Claims. (Cl. 40-124.1)

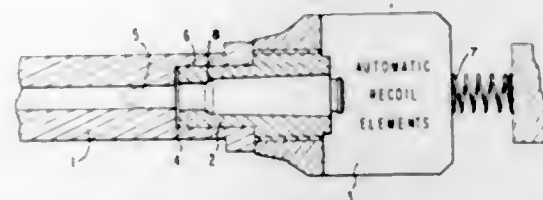


An article of manufacture which is cut from a blank of suitable flat sheet material such as, for example, paper-board or plastic, in the form of a number of sections having shapes such as rings, ellipses, ovals, squares, rectangles or other regular or irregular shapes, which allow for hinge pivot points at right angles. These sections are internally affixed together by means of the hinge pivot points, so as to be concentrically arranged with respect to one another, and foldable to lie in planes perpendicularly disposed with respect to one another. The articles are pre-cut, pre-folded, and can have a string affixed to them so that they can be shipped and/or stored flat, and thereafter easily and quickly erected simply by grasping the string between two fingers and permitting the article to free-fall. The articles can be of a relatively large size, and can be attractively colored for use as a decorative ornament, or as a decorative, eye-catching display, with advertising material printed or otherwise provided on them. The articles also can be smaller in size, for use as novel advertising mailing pieces, or as greeting cards.

3,411,229

## BARREL FOR FIRING PRACTICE AMMUNITION FROM AUTOMATIC FIREARMS

Richard Gronemann, Furth, Germany, assignor to Dynamit Nobel A.G., Troisdorf, Germany  
Filed Nov. 28, 1966, Ser. No. 597,271  
Claims priority, application Germany, Nov. 26, 1965, D 48,760  
4 Claims. (Cl. 42-77)



The present disclosure relates to a barrel for shooting practice ammunition from automatic firearms. The barrel is subdivided into front and rear portions that are axially movable relative to each other. The rear portion is spring-loaded and contains the automatic recoil elements. With this arrangement, the relatively small recoil forces of the

practice ammunition are sufficient to actuate the automatic recoil elements in the relatively low inertia rear portion.

3,411,230

## FISHING POLE HANDLE AND REEL

James H. Hopper, 1 Taylor Road, Hazardville, Conn. 06036  
Filed Oct. 21, 1965, Ser. No. 499,605  
7 Claims. (Cl. 43-21)



A spinning reel and a fishing rod having an electric drive motor in the rod handle wherein the motor is reciprocable in the handle. When the motor is moved in one direction it moves a drive shaft to retract a pin which releases the line for spin casting and when moved in the other direction it energizes the motor while simultaneously moving the drive shaft to extend the pin into condition to reel in the line.

3,411,231

## FOLDING FISHING ROD HOLDER

Raymond D. Philbrick, Ericson, Nebr. 68637  
Filed Dec. 16, 1966, Ser. No. 602,289  
7 Claims. (Cl. 43-21.2)



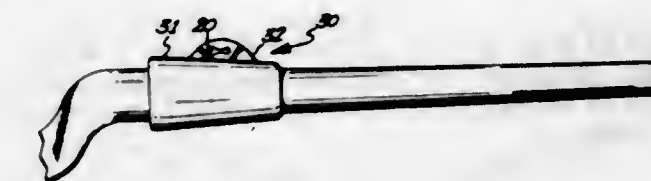
A supporting standard has an upper bifurcated portion and a pivoted lower portion having a pointed end. A channel-shaped member is pivoted at one end to the upper end of the bifurcated portion. At the pivoted end the channel member has its side walls turned outwardly to provide a limiting stop in cooperation with the bifurcations and its bottom wall has a finger grip receiving aperture and a notched, upwardly turned end portion for securing a rod portion.

3,411,232

## HOOK-KEEPING SLEEVE

James T. Rumbaugh, Spirit Lake, Iowa, assignor to Berkley & Company, Spirit Lake, Iowa, a corporation of Iowa  
Filed June 30, 1966, Ser. No. 561,937  
4 Claims. (Cl. 43-25.2)

A hook-keeping sleeve for a fishing rod or fishing rod assembly, wherein the sleeve is provided with a hook keeper or retainer for receiving the bight of a fishhook

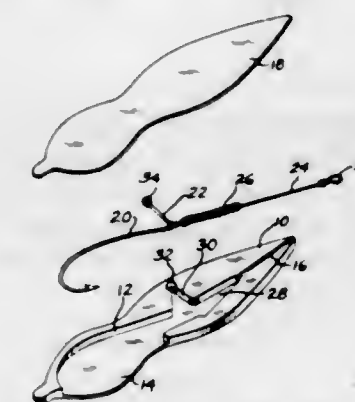


in retained disposition within a hook-receiving slot formed in the keeper or retainer. It is a desirable feature that the slot have a forward and rear segment separated

3,411,233

## RETRACTABLE FISHHOOK

James H. Hopper, 1 Taylor Road, Hazardville, Conn. 06036  
Filed Oct. 21, 1965, Ser. No. 499,606  
2 Claims. (Cl. 43-35)

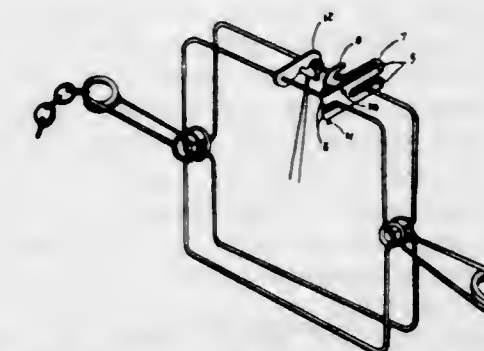


Fishing lure of the weedless type having a body with a cavity in which at least one hook is pivotally supported. The hook is spring-urged toward retracted position within the cavity and a line is attached to the hook so that when a pulling force is developed on the line, the hook will move to a position in the cavity wherein the point of the hook is outside the cavity.

3,411,234

## SAFETY DEVICE

John Osborn Harrison, P.O. Box 226, Beaverdell, British Columbia, Canada  
Filed Dec. 1, 1966, Ser. No. 598,246  
1 Claim. (Cl. 43-97)

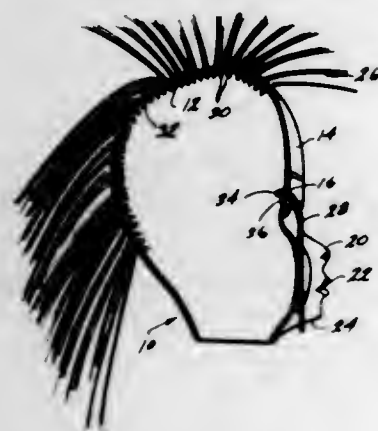


1. A safety device for a spring loaded jaw trap comprising a pair of substantially H-shaped frames formed of a single piece of material folded back on itself to provide a double frame, spacers to space apart the said frames at their free extremities, the said frames having a pair of substantially long legs and a pair of short legs, said short legs being adapted to straddle a jaw of a jaw trap, a cotter pin to secure said short legs to said jaw in straddling position, said long legs being adapted to straddle the opposing jaw of a trap and a hook member on said double frame provided with a finger grip to



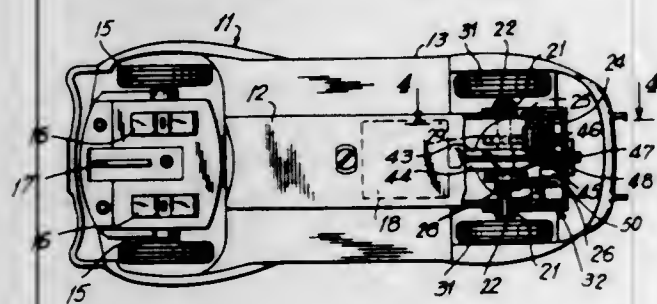
secure said second mentioned jaw in straddled position to said long legs while the trap is being baited and set for operation.

**3,411,235**  
**EYELASH-SIMULATING ROOTED FIBRE**  
Charlotte Buettenback Johnson, Los Angeles, Calif., assignor to Mattel, Inc., Hawthorne, Calif., a corporation of California  
Filed May 27, 1966, Ser. No. 553,469  
3 Claims. (Cl. 46-165)



Simulated eyelashes are provided on a doll having a rubber-like base simulating eyelids by embedding a plurality of strands of heat-settable plastic fibre in the base along the lower edges of the simulated eyelids, heat setting the fibre in an upwardly curved configuration and cutting the fibres to eyelash length.

**3,411,236**  
**MOTOR SOUND UNIT**  
Eugene W. Fileger, Girard, Pa., and John Bennett, Jamestown, N.Y., assignors to Louis Marx & Co., Inc., a corporation of New York  
Filed Mar. 30, 1966, Ser. No. 538,619  
6 Claims. (Cl. 46-192)



A motor sound unit for a toy vehicle in which a sound-producing board is adapted to be struck by a pair of resilient fingers controlled by multi-lobe cams operated in response to driving action of the toy vehicle with at least one lobe on two adjacent cams being in alignment for concurrent actuation of the noise producing fingers with other lobes being out of alignment so that irregular sounds are produced which more nearly simulate the sounds produced by an internal combustion engine.

**3,411,237**  
**TOY HAVING MAGNETICALLY ACTUATABLE APPENDAGE**  
Dorland L. Crosman, Glen Ridge, N.J., assignor to DeLuxe Topper Corporation, a corporation of Delaware  
Filed Nov. 3, 1966, Ser. No. 591,847  
11 Claims. (Cl. 46-239)

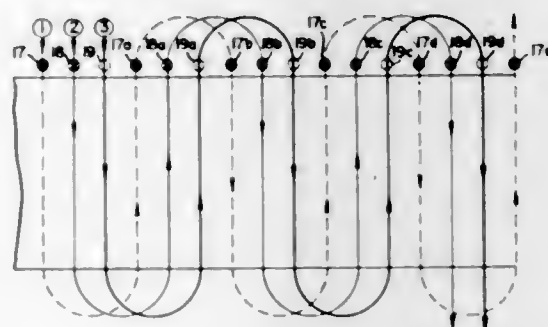
1. In an animated toy:  
a hollow body provided with an opening,  
a shaft within said body and terminating at one end near said opening, said shaft being mounted for rotation about its longitudinal axis,

an appendage having an end provided with means for connecting it to the end of said shaft for animation by rotative movement of the latter,  
spring means within said body constantly urging said shaft to rotate in one direction toward a released position,



means for preventing shaft rotation in the spring-urged direction beyond the released position, said shaft being rotatable in the opposite direction toward a cocked position by activation of said appendage, and a releasable latch mechanism within said body for retaining said shaft in the cocked position, said latch mechanism including a magnet responsive to a magnetic field outside said body for actuating the latch and permitting said spring means to rotate said shaft to its released position.

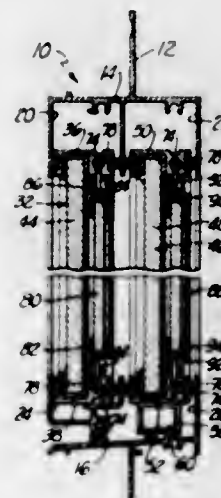
**3,411,238**  
**AERIAL APPLICATION OF AGRICULTURAL CHEMICALS**  
Irvine L. Phillips, Greenfield, and Wilton J. Smith, Salinas, Calif., assignors to Sollserv, Inc., Salinas, Calif.  
Filed July 11, 1966, Ser. No. 564,352  
5 Claims. (Cl. 47-58)



1. An improved method for the aerial application of agricultural chemicals to a field comprising establishing a plurality of parallel strips of substantially uniform width on a field; establishing a first series of markers distinguishable from the air at the ends of selected boundaries between adjoining parallel strips; establishing a second series of markers distinguishable from the air at the ends of boundaries between adjoining parallel strips, arranged so that one of said second series of markers is between each pair of adjacent markers in said first series of markers; and applying an agricultural chemical to said strips from an aircraft by traversing strip boundaries located from the air with reference to at least said first series of markers on an initial day of chemical application, and thereafter applying the same chemical on a subsequent day by traversing with an aircraft boundaries located from the air with reference to at least said second series of markers; the boundaries located with reference to said second series of markers being different than those boundaries located with reference to said first series of markers; said agricultural chemical being applied from said aircraft by maintaining said aircraft at a sufficient altitude above said strips so

as to substantially cover at least the two adjoining strips defining the boundary being traversed when the chemicals are discharged from the aircraft; the amount of agricultural chemical discharged being regulated so that said initial day of application and at least one subsequent day of application are required to distribute a chemical concentration on the strips sufficient for treatment and control of the situation for which the chemical is being applied.

**3,411,239**  
**CLOSURE WITH IMPROVED SASH FASTENING**  
Abraham Grossman, Northridge, Calif., assignor of one-half to Thomas P. Mahoney, Malibu, Calif.  
Filed Nov. 28, 1966, Ser. No. 597,319  
3 Claims. (Cl. 49-62)



A main sash is mounted in a frame and has end connected rails and stiles receiving a pane in a pane opening thereof. The rails and stiles have lengthwise bores therein in a common plane parallel to and spaced normal to the plane of the pane, and also channels from said bores opening toward said pane opening in said parallel, spaced plane. Fasteners are received in said bores securing said rails and stiles together, and latch plates of a storm sash in said pane opening are received in said channels and bores.

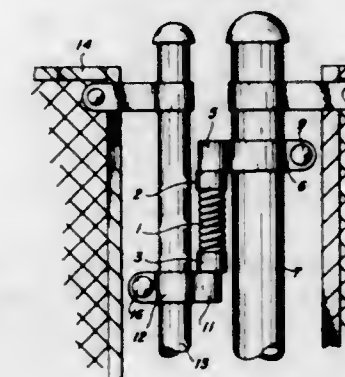
**3,411,240**  
**DOOR ASSEMBLY**  
Marshall O. Groat, Fort Payne, Ala., assignor to Kingsberry Homes Corporation, a corporation of Delaware  
Filed Apr. 4, 1967, Ser. No. 628,432  
3 Claims. (Cl. 49-380)



A door assembly having a pair of door frames connected along their outer edges to door casings with the inner sides of the door frames facing each other and connected by connector members to each other and to jamb studs. A door is hingedly connected along one edge to one side of one door frame and the opposite edge of the door is retained adjacent the other side of said one door frame by a keeper and gauge member. A transverse member connects the lower ends of the door frames and

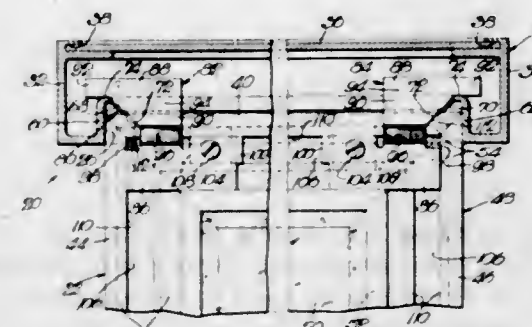
the door is held in spaced relation to the transverse member by a door support.

**3,411,241**  
**COMBINATION HINGE AND AUTOMATIC GATE CLOSER**  
Arizona B. Harmon, 1821 N. 35th St., Phoenix, Ariz. 85008  
Filed Aug. 4, 1967, Ser. No. 658,417  
1 Claim. (Cl. 49-386)



A combination hinge and gate closer having a torsion coil spring having its ends frictionally engaged in hollow cap members which are respectively secured against rotation relative to the gate and gate post.

**3,411,242**  
**HINGED CLOSURE**  
Thomas R. Robinson, Jr., New Haven, Conn., assignor to Marlin Industrial Division, Inc., New Haven, Conn., a corporation of Connecticut  
Filed Sept. 15, 1966, Ser. No. 580,091  
17 Claims. (Cl. 49-400)



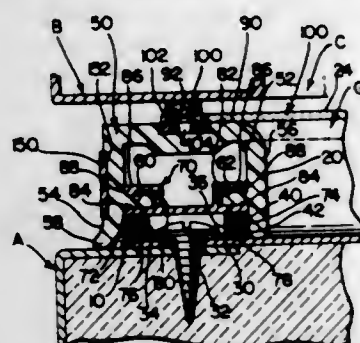
1. A closure, having a closure member with a back and straight bottom; a support therefor with an opening and front-and-back-faced side and straight bottom stops; and a hinge connection between said support and member providing in front of said bottom stop a ledge on which said member rests with its bottom, and a part secured to the back of said member and having spaced lugs shaped substantially like the legs of an L in back view of said member, of which first legs are spaced from the back of said member and extend longitudinally toward and across the bottom thereof and into said opening to the other legs of said lugs, and said other legs extend in all positions of said member behind the back faces of said side stops, with said legs and stops being coordinated so that said first legs engage the back face of said bottom stop when said member engages with its back the front faces of said stops in position to close said opening, and also permit opening movement of said member about said ledge as a fulcrum, and said other legs will on opening movement of said member swing into engagement with the back faces of said side stops and thereby limit such opening movement.



3,411,243

**PERMANENT MAGNET GASKET**

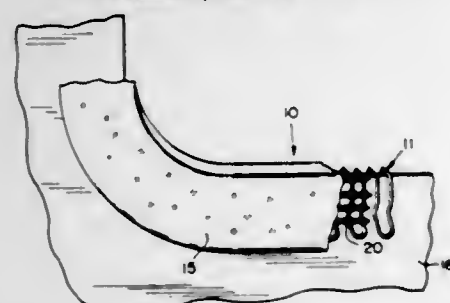
Max Baermann, 506 Bensberg Wulfshof, Bezirk, Cologne (Rhine), Germany  
 Filed June 8, 1966, Ser. No. 556,222  
 Claims priority, application Germany, Nov. 17, 1965, B 84,547  
 9 Claims. (Cl. 49—478)



A structure for mounting a flexible permanent magnet around the periphery of a closure. This structure includes a rigid rail attached onto the closure; a vertically deformable strip with the magnet secured to the upper portion thereof; and a rigid adaptor secured onto the lower portion of the deformable strip and telescopically received in the rail by a simple sliding movement.

3,411,244  
**BEADING**

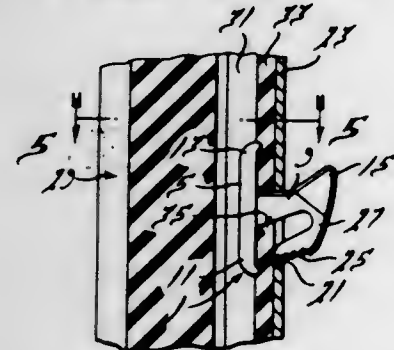
Harold Horner, Seacroft, Leeds, England, assignor to The Schlegel Manufacturing Company, Rochester, N.Y., a corporation of New York  
 Filed May 25, 1966, Ser. No. 552,740  
 Claims priority, application Great Britain, May 27, 1965, 22,563/65  
 3 Claims. (Cl. 49—491)



An edge beading for a structural member is formed with a woven wire framework having legs straddling the edge with the wires bent to form intumed knees and with a resilient cover extending over the ends of the legs and in past the knees so that the knees press the cover against the surface over which the beading is forced to retain both the cover and the beading in place.

3,411,245  
**FASTENER**

Mark J. Sturtevant, Grosse Pointe, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware  
 Filed July 21, 1966, Ser. No. 566,945  
 3 Claims. (Cl. 49—492)



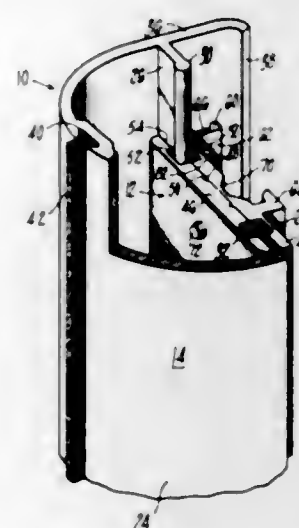
A plastic material fastener including an elongated head,

a leg portion extending away from the head, and a foot portion connected to the leg portion. The foot portion includes a heel section at the one end thereof adjacent the leg portion and an outer portion having plurality of ridges therein. The fastener extends through apertures in weatherstripping and a panel with the ridges engaging the edge of the aperture in the panel to secure the weatherstripping and panel together.

3,411,246

**FINGER GUARD**

Robert A. Miller, Plainville, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut  
 Filed Sept. 25, 1967, Ser. No. 670,183  
 5 Claims. (Cl. 49—493)

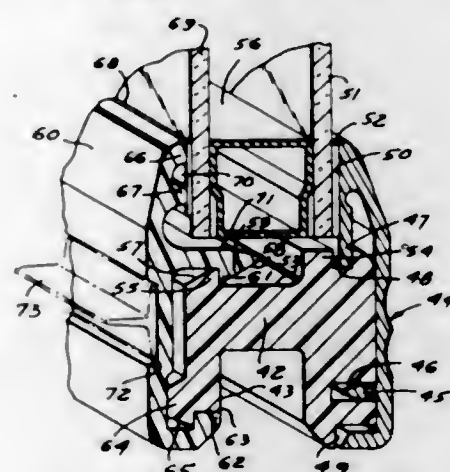


A finger guard preassembly for sliding door panels constructed from elongated extruded stock components is readily preassembled and mounted on a split door jamb in such a manner as to conceal the mounting and securing members. The finger guard preassembly consists of a two-piece mounting bracket having elongated side channels for retainably receiving a hollow finger guard strip which fully overlies and conceals all of the bracket. The finger guard is fully preassembled prior to mounting of the jamb while the mounting bracket is adapted to be retained by the jamb and preferably secured thereto in a simple and facile manner.

3,411,247

**REFRIGERATOR DOOR FRAME**

Robert S. Fleming, Pompton Plains, N.J., assignor to Amerace Corporation, New York, N.Y., a corporation of Delaware  
 Filed Oct. 10, 1966, Ser. No. 585,402  
 5 Claims. (Cl. 49—501)

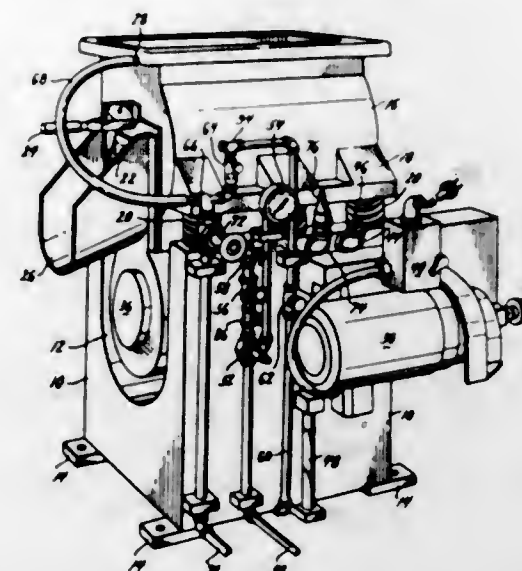


An outer aluminum facing member and an inner snap-on plastic glazing strip secured to a plastic main frame structure for supporting a double glass thermal unit.

3,411,248

**VIBRATING EQUIPMENT**

Gerald W. Dwyer, Skokie, and Leonard M. Haluch, Chicago, Ill., assignors to Productive Equipment Corporation, Chicago, Ill., a corporation of Illinois  
 Filed Oct. 23, 1965, Ser. No. 503,377  
 8 Claims. (Cl. 51—163)

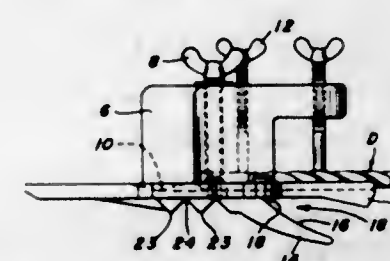


Air pressure within a tank forces polishing material into a mixing chamber and water pressure forces water into that mixing chamber, and then the admixed polishing material and water are sprayed into a vibrating container which contains objects to be polished. The amount of polishing material admixed with the water can be controlled by an appropriate adjustment in the setting of a valve intermediate the tank and the mixing chamber.

3,411,249

**HOLDER FOR SHARPENING EDGED TOOLS**

Arland J. Tidwell, 1185 North 50 East, Orem, Utah 84057  
 Filed Apr. 13, 1966, Ser. No. 542,253  
 2 Claims. (Cl. 51—219)



Apparatus for holding a drill bit while it is being sharpened on a grinding wheel. The apparatus includes a plate with a groove in its top surface in which the drill bit is clamped. A finger extends from the underside of the plate toward the grinding wheel and cooperates with the underside of the plate to envelop the outer edge of the tool rest on the grinder. Using this finger, the apparatus is pivoted on the outer edge of the tool rest in such a manner as to guide the point of drill bit over the grinding wheel to sharpen the cutting edge and give the drill bit point its desired rake angle.

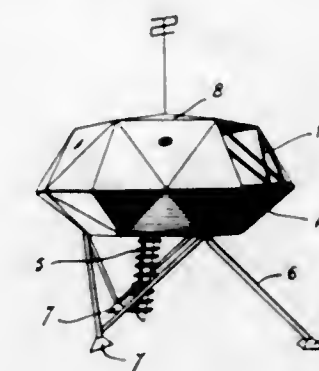
3,411,250

**DWELLING WITH LEG SUPPORT ELEMENTS**

Paul Maymont, 49 Rue de Pontien, Paris 8eme, France, and Jean Zorbibe, 15 Ave. Victor Hugo, Paris 15, France  
 Filed Aug. 2, 1965, Ser. No. 476,573  
 Claims priority, application France, Aug. 5, 1964, 984,208  
 6 Claims. (Cl. 52—81)

A dwelling is constructed from a plurality of triangular panels interconnected along their edges. The dwelling

has a flat bottom, and the triangular panels form the sides of the cup-shaped halves of the dwelling that are joined along a horizontal midplane. The dwelling is sup-

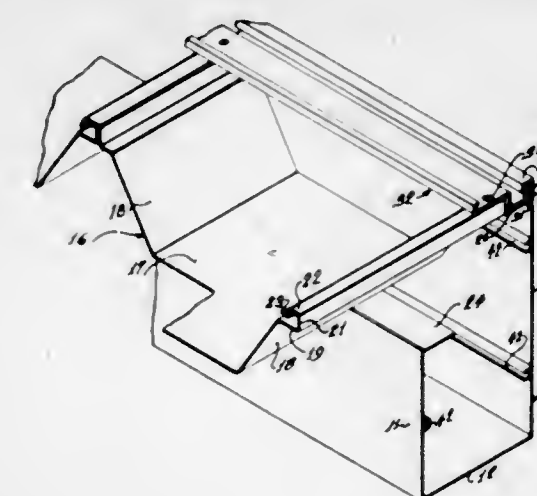


ported on three legs, each of which is formed by two bars; and each bar forms an apex with an adjacent bar at its upper and lower ends so that the bars are disposed in zigzag fashion.

3,411,251

**COMBINED FACIA AND ROOF PANEL HOLD DOWN MEANS**

Jon C. Corry, Birmingham, Ala., assignor to Southeastern Tool & Die Company, a corporation of Alabama  
 Filed Oct. 24, 1966, Ser. No. 588,927  
 1 Claim. (Cl. 52—94)



A combined facia and panel roof hold down means in which the facia is provided with a transverse flange on which the panels rest, a transversely elongated groove on the inner surface of the facia, outwardly disposed relative to the ends of the panels, and an elongated clip having an upturned end disposed to fit in said groove whereby, when the clip is rotated so that a rearwardly extending, flat portion contacts the tops of the panels, and a fastener is passed therethrough and into the panels, the entire structure is securely locked together.

3,411,252

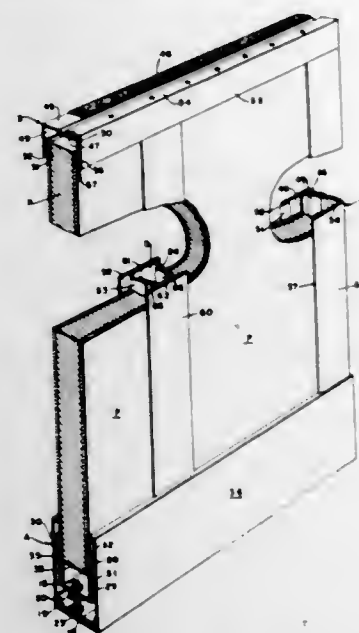
**INTERIOR WALL SYSTEM**

William J. Boyle, Jr., New Orleans, La., assignor to Interior Contractors, Inc., New Orleans, La., a corporation of Louisiana  
 Filed Oct. 21, 1965, Ser. No. 499,301  
 4 Claims. (Cl. 52—122)

The disclosure of this invention pertains to an interior movable partitioning system in which the wall panels are vertically adjustable to compensate for any inequalities in floor level in which a vertically adjustable cradle sup-

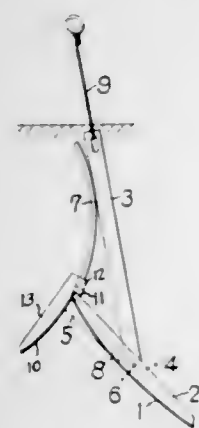


ports the lower end portion of the panel and ceiling and side wall panel devices are provided for receiving the assembly is heated to expand the plastic into tight and rigid



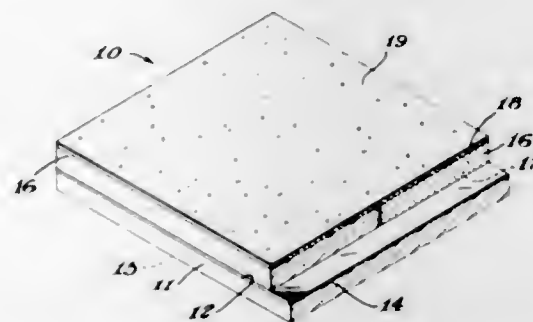
### 3,411,253 STRAIN ANCHOR

Hikoitsu Watanabe, 5-13 1-chome, Ehara-cho, Nakano-ku, and Sanji Genma, 4-8 1-chome, Ehara-cho, Nakano-ku, both of Tokyo, Japan  
Filed Oct. 28, 1965, Ser. No. 505,560  
11 Claims. (Cl. 52-158)



An improved wall construction utilizing a mounting unit having a number of interconnected, slotted members defining a central opening with the slots of the members communicating with the opening. A tempered glass panel is inserted in the opening with the outer margins of the panel inserted within the slots of the members. Panel gripping and sealing strips are received within the slots and engage opposite faces of the panels to maintain the latter in a generally fixed position relative to the mounting unit.

3,411,256  
ROOF CONSTRUCTION AND METHOD THEREOF  
John S. Best, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
Filed Oct. 14, 1965, Ser. No. 495,847  
8 Claims. (Cl. 52-408)

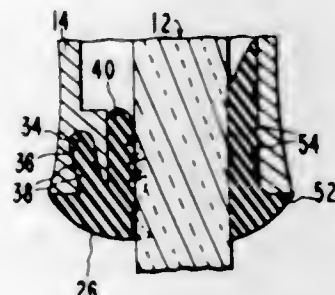


3,411,254  
PLASTIC THERMO-BREAK FOR HEAT CONDUCTIVE ELEMENTS  
Gerald Kessler, 388 Cranberry Road, Youngstown, Ohio 44512  
Filed May 24, 1966, Ser. No. 552,615  
6 Claims. (Cl. 52-309)

A plastic locking strip is provided which rigidly holds two spaced metal units by extending into recesses formed in the units and also serves to block the transfer of heat between the metal units. The plastic strip contains a heat-

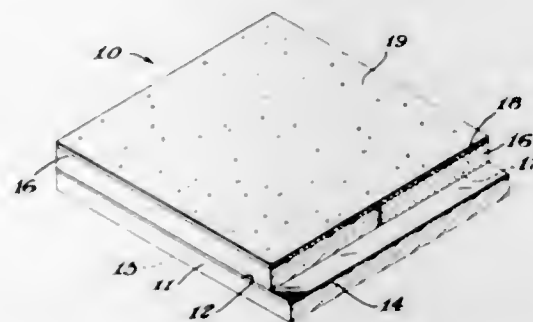
engagement with the two metal members to form a rigid assembled unit including thermal barrier.

3,411,255  
FRAMELESS GLASS ENCLOSURE STRUCTURE  
Ralph T. Casebolt, 500 High St., Oakland, Calif. 94601  
Filed Feb. 23, 1966, Ser. No. 529,413  
2 Claims. (Cl. 52-397)



An improved wall construction utilizing a mounting unit having a number of interconnected, slotted members defining a central opening with the slots of the members communicating with the opening. A tempered glass panel is inserted in the opening with the outer margins of the panel inserted within the slots of the members. Panel gripping and sealing strips are received within the slots and engage opposite faces of the panels to maintain the latter in a generally fixed position relative to the mounting unit.

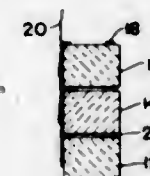
3,411,256  
ROOF CONSTRUCTION AND METHOD THEREOF  
John S. Best, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
Filed Oct. 14, 1965, Ser. No. 495,847  
8 Claims. (Cl. 52-408)



3,411,254  
PLASTIC THERMO-BREAK FOR HEAT CONDUCTIVE ELEMENTS  
Gerald Kessler, 388 Cranberry Road, Youngstown, Ohio 44512  
Filed May 24, 1966, Ser. No. 552,615  
6 Claims. (Cl. 52-309)

A plastic locking strip is provided which rigidly holds two spaced metal units by extending into recesses formed in the units and also serves to block the transfer of heat between the metal units. The plastic strip contains a heat-

3,411,257  
STRUCTURE FOR AND METHOD OF BRICKLAYING  
George Yaremchuk, 5138 Lonyo, Detroit, Mich. 48210  
Filed Mar. 28, 1966, Ser. No. 537,852  
4 Claims. (Cl. 52-415)



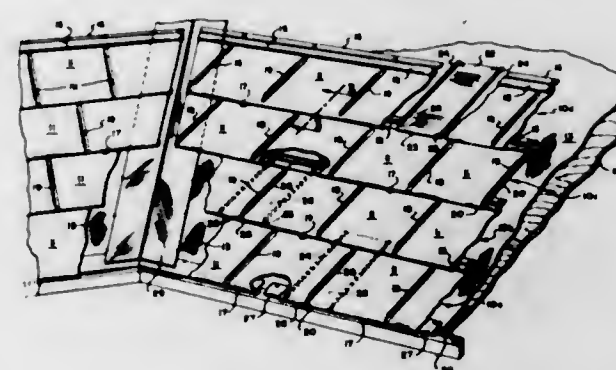
A brick structure comprising a plurality of courses of vertically aligned bricks separated by spacing members positioned at the inner section of joints between the bricks adjacent the front surface of the brick structure and separate aligning and spacing members positioned at the back surface of the brick structure including portions extending into the horizontal joints between the brick courses and a backing portion extending over a portion of the back surface of the brick structure having the plan configuration of the brick structure and mortar inserted in the joints between bricks provided by the spacing and spacing and aligning members and the method of constructing the brick structure. The spacing and spacing and aligning members are preferably constructed of an open mesh material.

3,411,258  
PLASTIC FALSE MUNTIN FOR WINDOWS  
Milton Kessler, 6690 Harrington, Youngstown, Ohio 44512  
Filed Feb. 27, 1967, Ser. No. 618,987  
3 Claims. (Cl. 52-456)



Plastic false muntin for giving a single large glass window the appearance of colonial window with smaller lights including special end caps for removably retaining the plastic false muntin or grille in place.

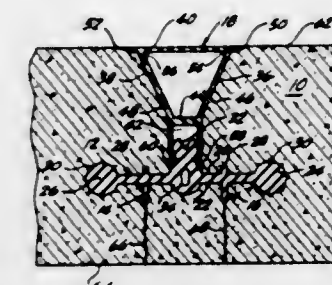
3,411,259  
METAL ROOFING  
Ivar E. Anderson and William J. Heldrich, Rome, N.Y., assignors to Revere Copper and Brass Incorporated, Rome, N.Y., a corporation of Maryland  
Filed June 9, 1966, Ser. No. 556,449  
2 Claims. (Cl. 52-531)



In a sheet metal roofing structure featuring shingle-like courses, the ends of each course terminate in half of a groove-like depression and a flashing pan with upturned

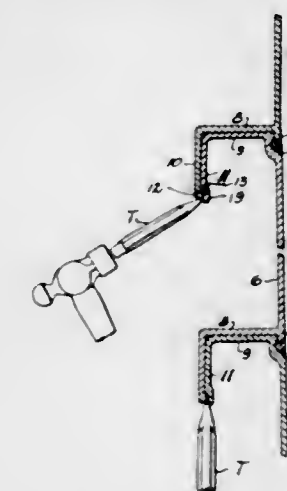
water seal side lips and a bottom backing flange spans the underside of each joint between the aforementioned ends of the metal sheet.

3,411,260  
CONTROL SEAL AND FRACTURING MEMBER  
Robert F. Dill, Westminster, Calif., assignor of one-half to Harry Fox, Los Angeles, Calif.  
Filed Feb. 25, 1966, Ser. No. 530,087  
4 Claims. (Cl. 52-573)



An elongated control seal and fracturing member adapted to be embedded in a concrete section comprising: An elongated liquid impervious barrier strip with at least one elongated fracturing strip integrally attached to and extending outwardly from one side of the barrier strip and an elongated relatively rigid cap strip releasably attached and extending outwardly from the other side of the barrier strip.

3,411,261  
INTERLOCKING PANEL STRUCTURE  
Thomas C. Soddy, Downers Grove, Ill., assignor, by mesne assignments, to Evans Products Company, Plymouth, Mich., a corporation of Delaware  
Original application Mar. 16, 1960, Ser. No. 15,376, now Patent No. 3,203,149, dated Aug. 31, 1965. Divided and this application Aug. 30, 1965, Ser. No. 505,200  
5 Claims. (Cl. 52-588)

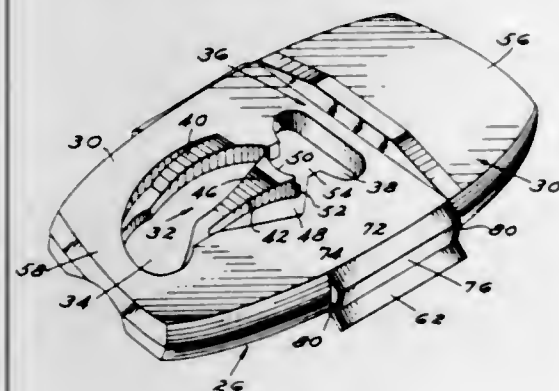


1. A structure formed of a plurality of elongated panel forming units each comprising substantially parallel spaced apart walls and a transverse web between them, curved tongue and groove elements on opposite longitudinal marginal portions respectively of one wall and arranged to pivotally interengage with corresponding curved groove and tongue elements on juxtaposed units upon relative rotation of the units about their interengaged tongue and groove elements, reversely facing straight sided hook-like elements on opposite marginal portions respectively of the other wall extending at angles not exceeding 90° to the exterior face of said other wall and arranged to positively interengage corresponding hook-like elements on juxtaposed units upon said relative rotation of the units to interlock the units to each other with



their walls in common planes, one of the hook-like elements being on the outer face of the unit wall from which it projects and the other hook-like element being on the inner face of said unit wall, there being a wide recess between said hook-like elements providing clearance between the interengaged hook-like elements to receive an edged tool for prying the interlocked hook-like elements apart.

**3,411,262**  
**ADAPTOR AND MOLDING ASSEMBLY**  
Engelbert A. Meyer, Union Lake, Mich., assignor to Warren Fastener Corporation, Mount Clemens, Mich., a corporation of Michigan  
Filed Sept. 7, 1966, Ser. No. 577,712  
13 Claims. (Cl. 52-718)

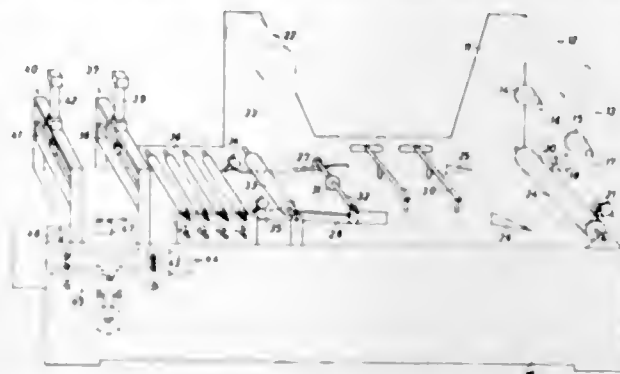


This disclosure relates to a molding assembly including a support having a headed button secured thereto, a longitudinal molding device, and an adaptor interconnecting the molding device to the support. The adaptor has a key hole slot which receives the button, and a locking means including an arm resiliently joined to the body portion of the adaptor within the key hole slot, having an axis generally coincident with the axis of the button seat opposite the enlarged opening of the key hole slot, and a finger opposite the button seat. The finger includes a lip which is received beneath the button head, and the slot, opposite the arm of the locking means, is arcuate to bias the arm out of restrictive engagement during attachment. In the molding assembly, a plurality of spaced adaptors are secured to the support with the locking arms parallel to the axis of the molding device to prevent lateral shifting thereof, and the edge of the adaptor is tapered to accommodate a molding device having a tapered end. One embodiment of the disclosed adaptors includes a pair of angularly related body portions adapted to overlie angularly related support surfaces. In this embodiment, the axis of the key hole slot is generally parallel to the junction of the angularly related body portions of the adaptor to permit shifting of the adaptor parallel to the junction during attachment.

**3,411,263**  
**METHOD AND APPARATUS FOR PACKAGING SHEETS**  
Albert Emiel Smolderen, Wilrijk-Antwerp, Belgium, assignor to Gevaert Agfa N.V., Mortsel, Belgium, a Belgian company  
Filed Dec. 29, 1965, Ser. No. 517,313  
Claims priority, application Belgium, Mar. 31, 1965, 13,718/65  
7 Claims. (Cl. 53-28)

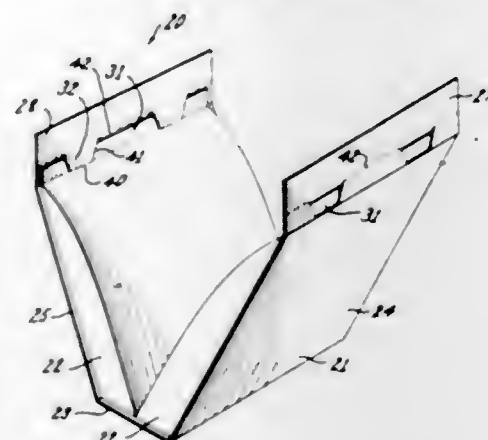
Method and apparatus for wrapping sheets or stacks of sheets, wherein a first web of wrapping material is continuously supplied from a supply of such material, the marginal portions of the web are folded upwardly over a height exceeding the thickness of the sheets or the stacks of sheets, the sheets or stacks of sheets are fed successively onto spaced positions on the travelling web, the extremities of said upstanding marginal web portions are

folded towards each other in one plane, a second web of wrapping material is continuously supplied from a supply of such material and conducted over the path of said sheets or stacks of sheets so as to accompany them in their travel with the first web, the sheets are flexed, the



folded extremities of the first web and opposed longitudinal margins of the second web are progressively secured to each other, the flexed sheets are relaxed to tighten the wrap, and the first and second web are transversely sealed and severed between successive sheets or stacks of sheets.

**3,411,264**  
**METHOD FOR MAKING A CONTAINER CONSTRUCTION THAT HOLDS PRODUCT CONTAINING POUCH MEANS THEREIN**  
Melville T. Farquhar, Bon Air, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware  
Filed Aug. 7, 1963, Ser. No. 300,446  
1 Claim. (Cl. 53-29)

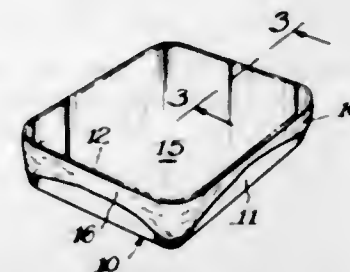


This disclosure relates to a container means having opposed open end walls and integral tab means carved from certain of the walls of the container means to hold flexible product containing pouch constructions within the container, the tab means each being substantially rigidly hinged to the wall from which it is carved whereby the tab means has a natural resiliency to remain coplanar with its respective wall so that when a substantially flat edge means of a pouch construction is disposed between the tab means and its associated wall, the natural tendency of the tab means holds the edge means of the pouch construction against its associated wall of the container.

**3,411,265**  
**METHOD OF PACKAGING**  
Robert G. Carpenter, Palos Park, Richard G. King, Chicago, and Thomas W. Greaves, Geneva, Ill., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut  
Filed Sept. 28, 1956, Ser. No. 612,833  
9 Claims. (Cl. 53-42)

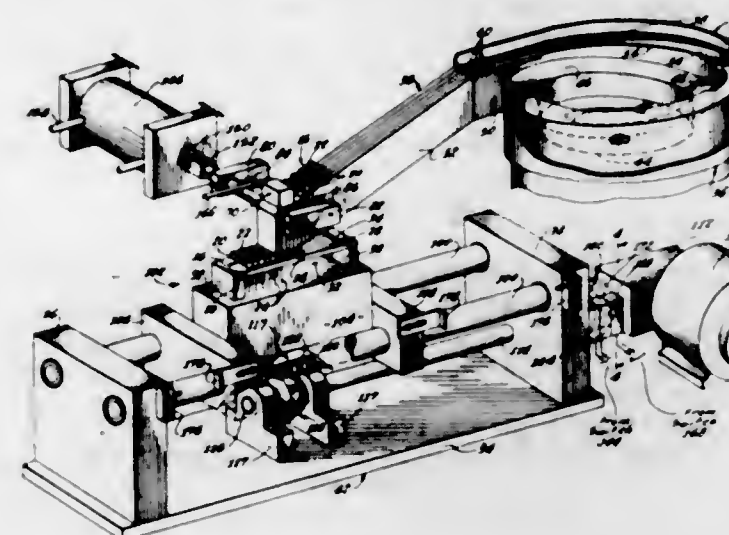
1. A method of packaging a product in a container which comprises: supporting the product upon a container; placing a substantially flat limp cover sheet of heat-shrinkable material over the container and product,

with substantial edge portions of the sheet extending beyond the outer edges of the uppermost portion of the



container; and applying heat to said edge portions to shrink them into a snug fit against said uppermost portion of the container.

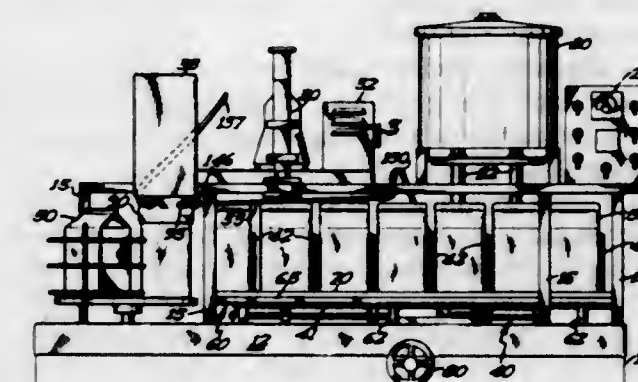
**3,411,266**  
**LOADING MACHINE**  
Sydney Dix, Costa Mesa, Calif., assignor, by mesne assignments, to GTI Corporation, Providence, R.I., a corporation of Rhode Island  
Filed Aug. 19, 1963, Ser. No. 303,015  
5 Claims. (Cl. 53-142)



1. A machine for automatically loading a plurality of glass capsules for encapsulating diodes onto a workpiece holder having a plurality of capsule receiving receptacles arranged in a plurality of longitudinal rows and transverse lines, said machine comprising the combination of: a loader having separate loading means for each row of receptacles on said workpiece holder, transfer means for carrying said workpiece holder past said loader with said rows being aligned with said loading means, a drive shaft in said transfer means for being driven at a substantially constant angular speed, a cam in said transfer means secured to said drive shaft for rotating at said constant speed, a follower in said transfer means positioned to mesh with said cam, said cam having a lead section positioned to mesh with said follower and to intermittently advance said transfer means and said workpiece holder by distances equal to the spaces between said lines and a dwell section positioned to mesh with said follower and to intermittently position said workpiece holder in predetermined reference positions with the receptacles in said lines being positioned in substantial alignment with said loading means, and timing means operatively interconnected with said loading means and responsive to the angular posi-

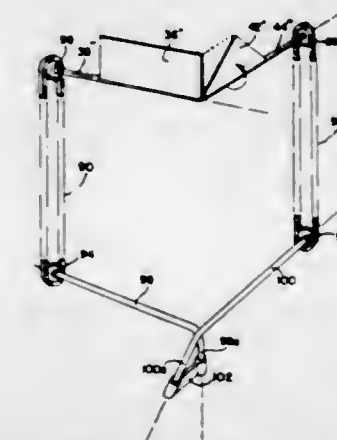
tion of said drive shaft, said timing means being effective when said dwell section engages said follower to actuate said loading means to cause a separate capsule to be moved through each of said loading means and into the receptacles in the line aligned with said workpiece holder.

**3,411,267**  
**FILLING AND SEALING MACHINE**  
Howard R. Garrett, Woodstock, Ill., assignor to Haskon, Inc., Warsaw, Ind., a corporation of Delaware  
Filed Nov. 28, 1966, Ser. No. 597,311  
8 Claims. (Cl. 53-266)



This invention is directed to a filling and sealing machine for filling preformed plastic coated paper cartons with a fluid and sealing the top of the same. The improvement resides in the introduction of a cooling and lubricating medium to the conveying portion of the machine, which moves the cartons during the filling and sealing operation, for the purpose of solidifying the bottom seals on the carton prior to filling of the same and to lubricate the bottom surface of the carton in contact with the conveying means to facilitate moving of the same on the filling and sealing machine.

**3,411,268**  
**BAG CLOSING APPARATUS**  
George Long, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware  
Filed Oct. 7, 1964, Ser. No. 402,239  
5 Claims. (Cl. 53-371)



2. An apparatus to collapse a bag which is filled to a predetermined level, said bag comprising two side panels and two end panels, said bag to be folded in such a manner that said end panels are tucked in and said side panels are folded down and over portions of said end panels, said end panels each being folded along a respective hinge line generally proximate said predetermined level, and being formed with two reentrant folds along two diagonal lines reaching from approximately opposite ends of its related hinge line and joining at an apex point,



the portion of each end wall defined by its related hinge line and two diagonal lines being a triangular fold piece, said side panels being folded each along a respective hinge line generally proximate said predetermined level so that two generally rectangular portions, one from each side panel, are folded down to overlie the triangular fold pieces of said two end walls, said apparatus comprising:

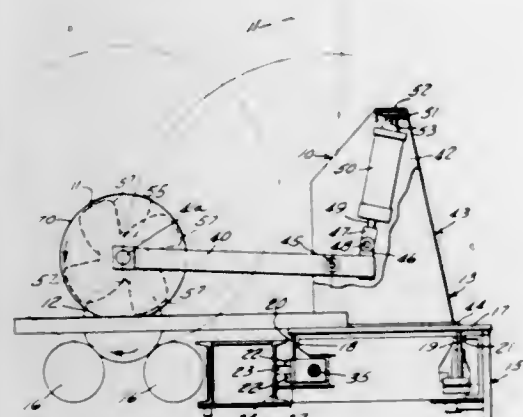
- (a) two tucker members each of which has edge means to engage a related one of said end panels along the diagonal fold lines thereof to move its related triangular fold piece inwardly and down,
- (b) two side folding members each of which engages a related one of said side panels at said rectangular portion thereof, said side folding members moving said two rectangular portions down and over said triangular fold pieces,
- (c) said side folding members and said tucker members each being swing mounted about a respective axis adjacent to the hinge line of a respective proximate bag panel, and
- (d) means to move said tucker members inwardly and down and to move said side folding members inwardly and down over said tucker member so as to fold said bag as described hereabove, said mover means being such that the distance between that part of each tucker member that is adjacent the apex point of its proximate end panel and that part of each side folding member that is adjacent proximate edge portion of the rectangular portion of its adjacent side panel, which edge portion is perpendicular to the hinge line of its related rectangular portion, remains constant.

3,411,269

## CRIMPER PADDLE

Gerald W. Karr, West Chester, Pa., assignor to Beloit Eastern Corporation, Downingtown, Pa., a corporation of Delaware

Filed July 15, 1965, Ser. No. 472,124  
9 Claims. (Cl. 53—380)

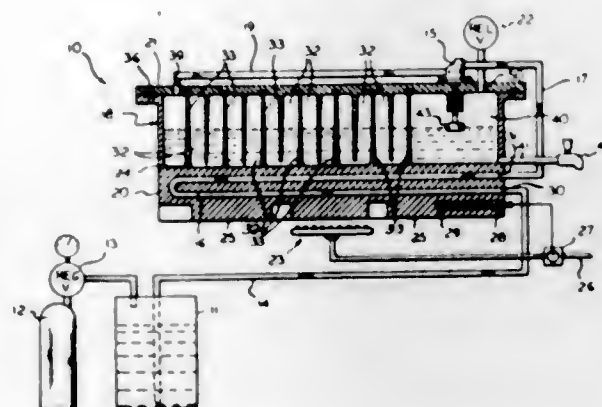


A crimping device for crimping the projecting ends of a wrapper wrapped about a roll of paper and the like, inwardly along the ends of the roll. The device comprises an individual crimping wheel supported for engagement with each end of the roll. Each crimping wheel is driven by the roll in a direction opposite to the direction of rotation of the roll and is in the form of a disk spaced from the end of the roll and having a body portion extending toward the roll having a face facing and engaging the end of the roll. The body portion includes a plurality of integrally extending spaced blades extending from the plane of the disk to the plane of the face of the body portion and pitched in the direction of the rotation of the roll and sloping from the leading end portions of the blades toward the plane of the face of the body portion.

3,411,270  
METHOD AND MEANS FOR DISPENSING  
COFFEE BEVERAGE

Richard T. Cornelius, Minneapolis, and Donald Edgar Holcomb, Brooklyn Center, Minn., assignors to The Cornelius Company, Anoka, Minn., a corporation of Minnesota

Filed Feb. 26, 1964, Ser. No. 347,473  
12 Claims. (Cl. 55—42)



A decarbonator for carbonated coffee beverage includes an externally-heated thermally-conductive housing having internal baffles integral therewith which define a tortuous horizontal flow path having a dispensing faucet at the outlet end, and a valve which agitates incoming carbonated beverage at the other end, the valve being under the control of the liquid level in such flow path, carbon dioxide gas that is released by decarbonation being vented through a relief valve.

3,411,271

APPARATUS FOR BRINGING A LIQUID INTO  
CONTACT WITH A GAS OR VICE VERSA

Karl-Axel Goran Gustavsson, Enkoping, Sweden, assignor to Aktiebolaget Babco, Lilla Essingen, Stockholm, Sweden

Filed Sept. 19, 1966, Ser. No. 580,339  
Claims priority, application Sweden, Oct. 7, 1965,  
13,042/65  
4 Claims. (Cl. 55—226)

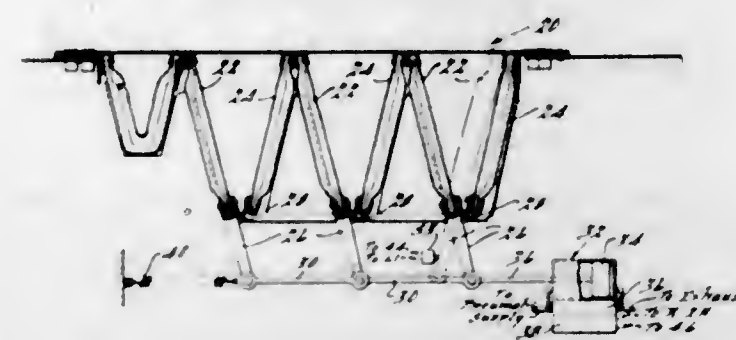


An apparatus for contacting a liquid and a gas comprising a partially filled liquid container, a gas inlet directing the gas at right angles to the liquid surface, and a treatment channel disposed within the container at right angles to the liquid surface and having annular gap means adjacent its lower end for the flow of substantially liquid-free gas therethrough, and a droplet separator within the upper portion of said channel.

3,411,272  
AUTOMATIC FLUID BYPASS SENSING, ACTUATING, AND INDICATING SYSTEM

Richard L. Carmon, Birmingham, Mich., assignor to Michigan-Dynamics, Inc., Detroit, Mich., a corporation of Michigan

Filed Feb. 7, 1966, Ser. No. 525,589  
25 Claims. (Cl. 55—274)



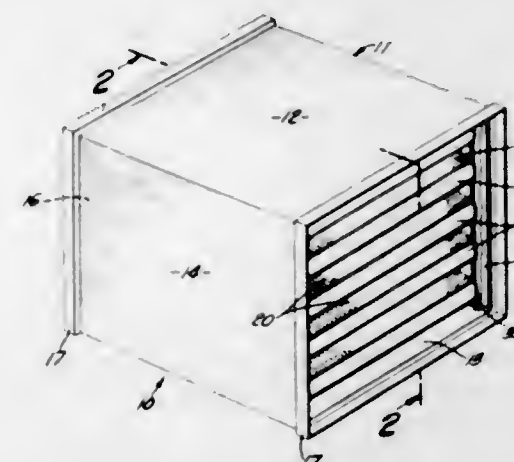
A filter construction having a closed position for filtering air and an open position in which the filters are bypassed and apparatus for automatically controlling the pressure responsive opening and closing of the filters.

3,411,273

## ELIMINATOR TYPE AIR FILTER

Sydney F. Duncan, deceased, late of Torrance, Calif., by Eloise E. Duncan, executrix, Torrance, Calif., and Clyde O. Boothe, Hermosa Beach, Calif., assignors to Farr Company, El Segundo, Calif., a corporation of California

Filed Sept. 8, 1964, Ser. No. 395,099  
2 Claims. (Cl. 55—387)



An air filtering apparatus of the type employing a granular adsorbing material such as activated charcoal. A plurality of individual flat cells or panels containing such material and mounted in a housing in a manner for causing the air to flow through the cells with the air flow being confined to a direction along the surface of each cell and through elongated slots in the surface extending in the direction of airflow.

3,411,274

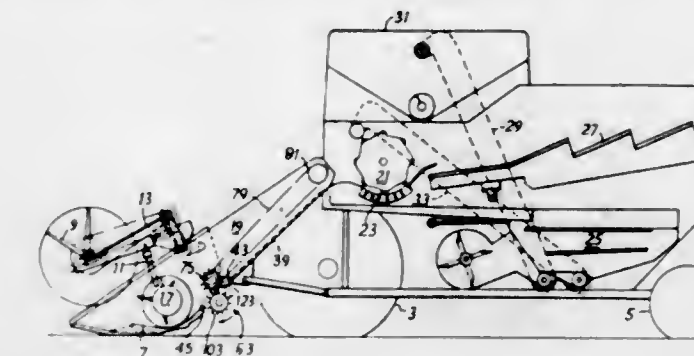
## COMBINE HARVESTERS

John Stevens Jarvis, Ipswich, England, assignor to Ransomes Sims & Jefferies Ltd.

Filed June 20, 1966, Ser. No. 558,999  
Claims priority, application Great Britain, June 25, 1965,  
27,119/65  
5 Claims. (Cl. 56—21)

1. A combine harvester having a feed table including a crop cutting mechanism, feed auger means rearward of the cutting mechanism upwardly and rearwardly inclined elevator means rearwardly of the feed auger means to a lower end of which crop cut by the cutting mechanism

is fed by the feed auger means, crop threshing mechanism adjacent to the upper end of the elevator means and grain separating and cleaning means rearwardly of the crop threshing mechanism, wherein the casing of the elevator means is formed in a floor portion and towards the lower end thereof with an opening having a removable



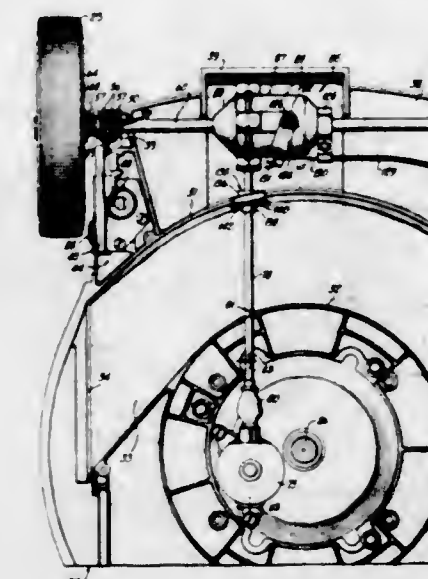
cover and is adapted, adjacent the removable cover and when the latter is removed, to support co-operating bruising or crimping rollers, whereby, during operation of the combine harvester as a hay harvester, cut material is fed by the feed auger means to the crimping rollers from which it is discharged to the ground through the opening in the floor portion of the elevator means.

3,411,275

## SELF-PROPELLED ROTARY LAWN MOWER

Charles A. Mattson, Oak Park, and William V. Kalmans, Lombard, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois

Filed July 5, 1966, Ser. No. 562,865  
24 Claims. (Cl. 56—25.4)



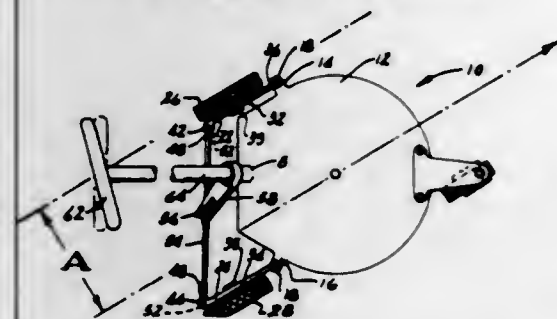
1. In a self-propelled rotary lawn mower comprising an inverted cup-shaped housing supporting an engine, a cutter disposed under said housing and secured to said engine for rotation, an axle extending horizontally under and across said housing and attached to a supporting wheel at each end thereof, said axle rotatably supported by a bearing positioned near each of said wheels, levers pivotally attached to said housing and said levers receive and support said bearings so that said axle can pivot about a longitudinal axis, wheel elevation means carried by said housing for selectively positioning and controlling the pivotal movement of each of said levers, clutch means mounted on said axle within said housing between said wheels, power means positioned under said housing and extending from said engine to said clutch means for transmitting power to said wheels through said clutch means.



### 3,411,276 POWER DRIVEN ROTARY MOWER WITH PIVOTAL HANDLE

Frank De Buigne, 1420 Suffield,  
Birmingham, Mich. 48009

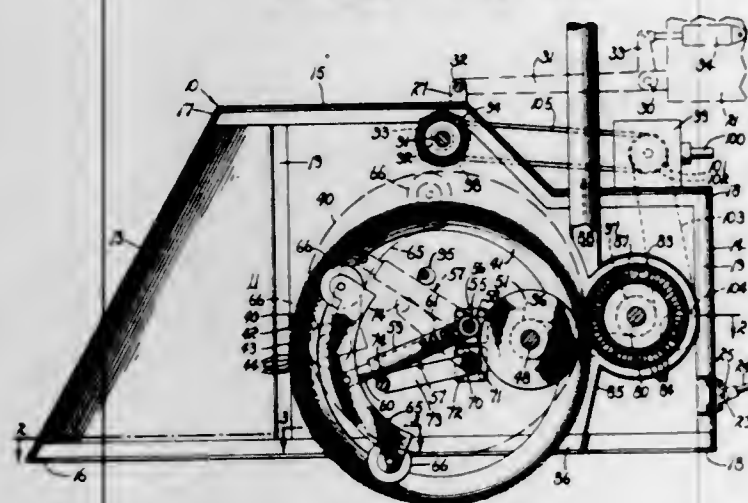
Original application Oct. 16, 1964, Ser. No. 404,304, now  
Patent No. 3,382,653. Divided and this application Oct.  
9, 1967, Ser. No. 678,768  
5 Claims. (Cl. 56—25.4)



This invention relates to a steering means for a power driven rotary mower, wherein a pair of wheels are pivotally secured to the mower housing and actuated by a handle member which is connected to a pivotal link between the wheels. Displacement of the handle member displaces the pivotal link and the wheels so as to permit the operator of the mower to traverse a path parallel to the path of said mower thereby avoiding any overhanging bushes, trees or the like which might interfere with the operator.

### 3,411,277 SALVAGING APPARATUS

Earl M. Kelly, P.O. Box 788, Tulare, Calif. 93274  
Filed Nov. 29, 1965, Ser. No. 510,267  
10 Claims. (Cl. 56—28)



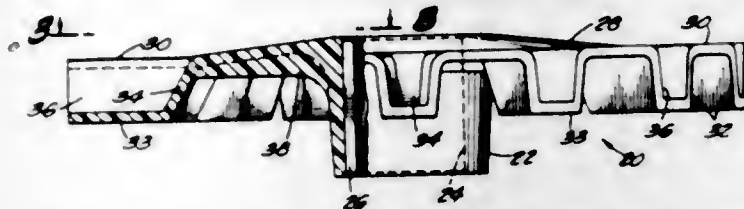
A salvaging apparatus providing an annular salvaging rim having inner and outer peripheries with picking means mounted on the outer rim and drive means engageable with the inner periphery of the rim including roller means and drive means opposite to the roller means, and means mounting the roller means for floating elevational movement permitting the rim to rise and fall in traversing uneven terrain while remaining in engagement with the drive means.

### 3,411,278 DOFFER FOR COTTON HARVESTERS

John C. Grant, Huntington Park, Calif., assignor to  
Byron Jackson Inc., Long Beach, Calif., a corporation  
of Delaware  
Filed Apr. 25, 1966, Ser. No. 544,916  
8 Claims. (Cl. 56—41)

1. In a cotton doffer having a principal axis of rotation and adapted for use in a cotton harvester having picker spindles and a power-driven doffer-supporting shaft, said doffer being adapted for rotatably contacting

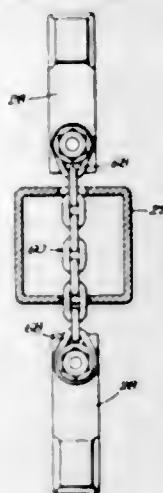
and removing cotton from said picker spindles; said doffer comprising means forming a generally annular shaped disc composed substantially entirely of a unitary, rubber-like material adapted to be mounted on said shaft for driven rotation, said doffer being particularly characterized by being formed with radially extending peripherally



located undulations or corrugations of sheet-like substantially uniform thickness in circumferential cross-section, and said corrugations being open at least at the outer terminals thereof, said undulations forming axially facing crests for contacting cotton, said undulated sheet-like construction functioning to facilitate yieldingly resisting movement of said cotton-engaging surfaces when engaging cotton.

### 3,411,279 FLAIL KNIFE ASSEMBLY

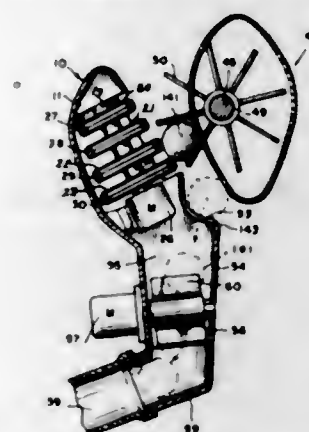
Bruno J. Panek, Chicago, and Robert W. Woodring, La Grange, Ill., assignors to International Harvester Company, a corporation of Delaware  
Filed July 21, 1965, Ser. No. 473,660  
10 Claims. (Cl. 56—294)



A flail knife assembly having a holder and mounting means extending through apertures in the holder and connected to knife means.

### 3,411,280 CITRUS FRUIT PICKER

Kermil H. Burgin, Box 212, R.R. 1,  
Whitestown, Ind. 46075  
Filed June 9, 1966, Ser. No. 556,317  
10 Claims. (Cl. 56—328)



A structure having an up and down passageway through open at both top and bottom; a flight of at least one belt exposed to travel transversely across a side of the

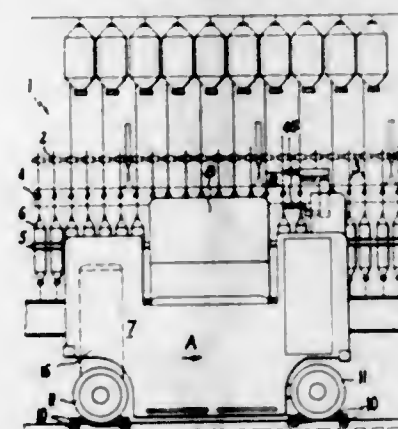
passageway; a fruit discharge through a side of the passageway below said belt flight; and means engaging and conveying branches of a tree downwardly through said passageway past said belt flight, across said fruit discharge opening, and out through said passageway bottom opening, permitting said structure to be operated in vertical travel through the tree.

### 3,411,281 DEVICE FOR INDICATING BROKEN THREADS IN SPINNING MACHINES

Carlo Guido and Francesco Foglio Para, both of  
21 Via Faletti, Biella, Italy

Continuation-in-part of application Ser. No. 463,178,  
June 11, 1965. This application Jan. 17, 1966, Ser.  
No. 521,136

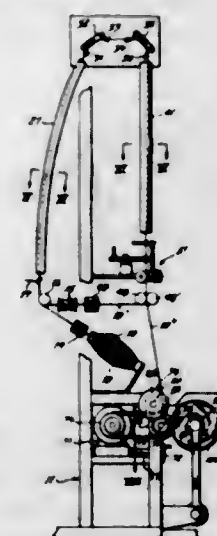
16 Claims. (Cl. 57—34)



A sensing device for indicating broken threads in textile machines, the device comprising a motor-driven carriage which travels alongside the machine and carries an operator thereon. A sensing device is mounted on the carriage for movement in a direction substantially perpendicular to the thread path, the sensing device being continuously urged against the thread path in a direction outwardly of the carriage. A control device permits current to flow to the carriage motor to drive the carriage as long as the sensing device is in an operating position wherein it bears against the threads. If the sensing device locates a broken thread, the device moves forwardly into a non-operating position and actuates the control device to stop the carriage adjacent the broken thread.

### 3,411,282 TEXTILE STRAND TREATMENT

Frederick J. E. Hampel, East Greenville, Pa., assignor to  
Techniservice Corporation, Lester, Pa., a corporation  
of Pennsylvania  
Filed Jan. 16, 1967, Ser. No. 609,586  
16 Claims. (Cl. 57—34)

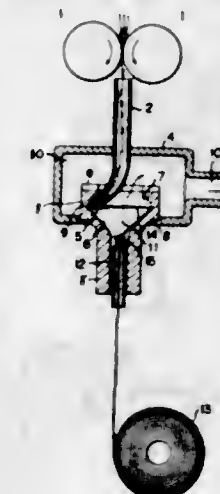


A textile strand is bulked by being formed into a loop configuration, with a plurality of lengths of the strand ad-

joining one another, twisting the adjoining strand lengths about one another, heating and optionally then cooling the strand lengths while so twisted, and separating them.

### 3,411,283 SPINNING APPARATUS UTILIZING AIRSTREAM

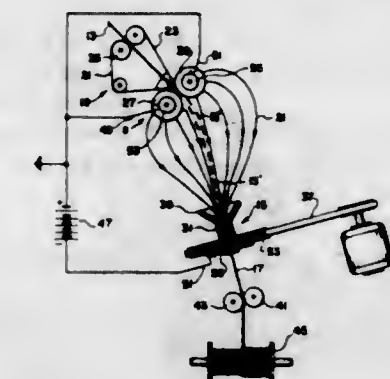
Kiyosige Isomura, Kariya, Japan, assignor to Toyoda  
Automatic Loom Works, Ltd., Kariya, Japan  
Filed Mar. 27, 1967, Ser. No. 626,224  
Claims priority, application Japan, Mar. 31, 1966,  
41/20,325, 41/20,326  
4 Claims. (Cl. 57—58.89)



Apparatus for continuous spinning utilizing an airstream issuing into a spinning chamber. Said spinning chamber having oppositely formed inclined walls which form a V and said apparatus having a guide tube for depositing opened sliver-like fiber in said V-shaped area. The spinning chamber having vanes at the top thereof to facilitate discharge of air toward a suction box connected to a source of negative pressure.

### 3,411,284 METHOD AND APPARATUS FOR SPINNING TEXTILE FIBRES

André Corbaz, Carouge, Geneva, and Maurice Poull,  
Meyrin, Geneva, Switzerland, assignors to The Battelle  
Development Corporation, Columbus, Ohio, a corporation  
of Delaware  
Continuation of application Ser. No. 468,835, July 1,  
1965. This application July 13, 1966, Ser. No. 564,845  
Claims priority, application Switzerland, July 3, 1964,  
8,786/64  
9 Claims. (Cl. 57—58.91)



A method and apparatus for spinning textile fibers including: substantially prealigning the fibers, electrically charging the fibers, delivering the charged fibers into an electrical field which propels the fibers toward an oppositely charged collecting means, and twisting the collected fibers into a thread. The fibers are electrically charged before or as they enter the electrostatic field and are thereby oriented, aligned, and propelled to the collecting means. The similar charges on the fibers keep them

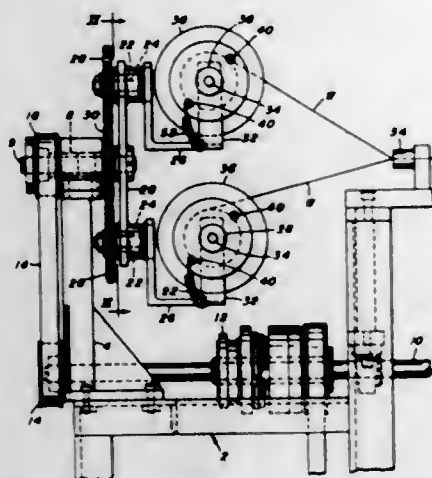


separated as they fly to the collecting means. The apparatus includes, what is called in the textile spinning art, a "false twist" element which is spinning rapidly and includes the collecting means.

3,411,285

**WIRE PAY-OFF APPARATUS**

James R. McDonald, Fairview, Ohio, assignor to United States Steel Corporation, a corporation of Delaware  
Filed July 28, 1966, Ser. No. 568,496  
4 Claims. (Cl. 57—59)



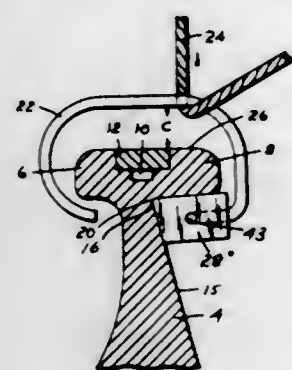
Wire pay-off apparatus including a rotatable main shaft having an arm centrally mounted on the shaft with a stub shaft rotatably mounted on each end of the arm, a gear fixed to one end of each stub shaft, a free running gear mounted on the main shaft in mesh with the first gear, a support attached to the other end of each stub shaft having a spool shaft attached thereto with its axis in a plane normal to the axis of the main shaft, a wire supporting spool rotatably supported on each spool shaft, a pressure plate surrounding the spool shaft and resiliently urged against said spool, and resilient means for urging said pressure plate in a direction of opposite that of the spool.

3,411,286

**HORIZONTAL SPINNING RING WITH TRAVELER POSITIONING MEANS**

Andrew J. Wayson, Needham, Mass., assignor to Merriam, Inc., Hingham, Mass., a corporation of Massachusetts

Filed Apr. 12, 1967, Ser. No. 630,446  
14 Claims. (Cl. 57—120)



This invention relates to the textile industry and comprises a new form of horizontal spinning and/or twisting ring and a new combination of horizontal spinning and/or twisting ring and traveler in which the supporting web of the ring is so constructed that the inner end of the traveler will always assume a fixed vertical and radial position with respect to the ring. As a result of the novel combination, the clearance between the top of the ring and the underside of the traveler at normal operating

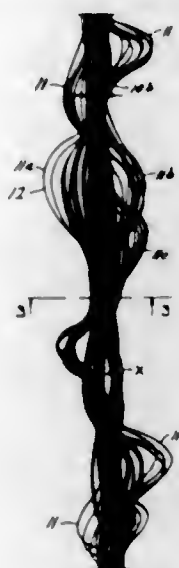
speeds will be of a substantially constant and adequate dimension, thereby to preclude yarn passing under the traveler coming into contact with the adjacent surface of the ring. In this way, "trapping" of the yarn, which is a major cause of ends down, is prevented.

3,411,287

**FANCY YARN**

Gustav E. Benson, Greenville, R.I., assignor to Owens-Corning Fiberglass Corporation, a corporation of Delaware

Filed May 18, 1966, Ser. No. 551,091  
18 Claims. (Cl. 57—140)



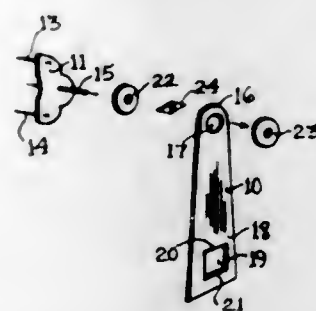
A bulky linear textile product of continuous filaments having a core portion of substantially linear, closely grouped filaments and groups of dispersed filaments in successive regions along the outside surface of the core portion extending outwardly in elongated undulatory waves. The undulatory waves have substantially less filament density than the core portion and have a height substantially greater than the diameter of the core portion. The filaments forming the waves return to the core portion on each side of the wave and remain in the core portion with other filaments from the core portion forming the next adjacent wave.

3,411,288

**SELF-ALIGNING PENDULUM MOUNT**

Solomon E. Koplar, 316 Barry St., Chicago, Ill. 60657, and Roberto Romo, Chicago, Ill.; said Romo assignor to said Koplar.

Filed Aug. 11, 1966, Ser. No. 571,848  
4 Claims. (Cl. 58—134)



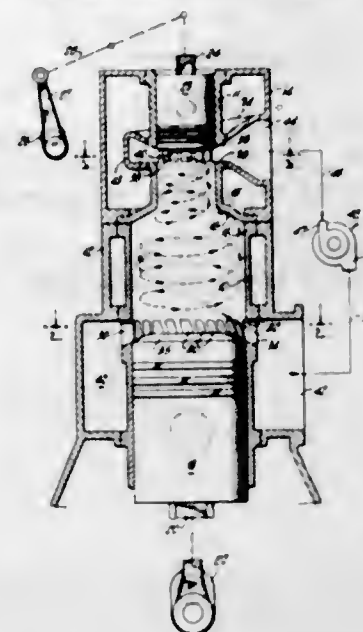
A mounting member for a clock pendulum adapted to extend between an escapement pin pallet plate supported on a spindle and a pendulum supporting arm which provides frictional contact between one end of the mounting member and the spindle so that a pendulum supported therefrom by its own weight will assume a self-adjusted vertical plane relative to the spindle.

3,411,289

**TURBOCHARGED OPPOSED PISTON ENGINE HAVING IMPROVED AIR CHARGING AND SCAVENGING**

Anker K. Antonsen and Matthew L. Foreman, Beloit, Wis., assignors to Fairbanks Morse Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 21, 1967, Ser. No. 624,814  
8 Claims. (Cl. 60—13)



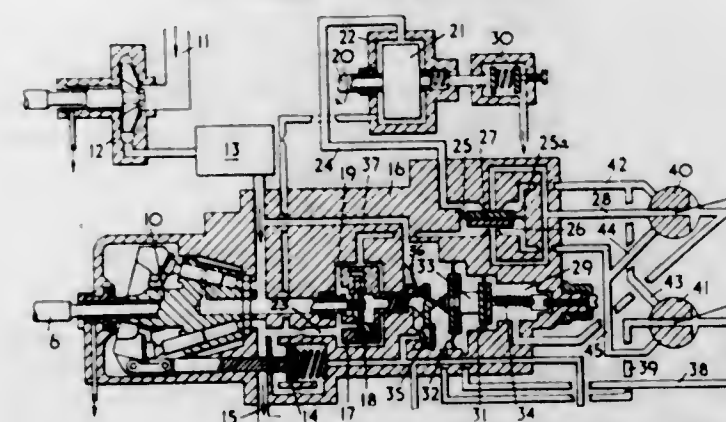
A two cycle compression-ignition engine of opposed piston, uniflow scavenged form, supplied with combustion and scavenging air by an exhaust driven turbocharger, the engine having one piston of larger diameter than the other, air ports controlled by the larger piston and directed to establish air flow helically through the cylinder space, and an exhaust discharge system including exhaust ports controlled by the smaller piston, the system providing two volute-form exhaust passages of unequal length terminating in adjacent outlets, the longer passage being common to a majority of the exhaust ports which ports are directed for discharge generally in the direction of the helical air flow in the cylinder space, and the exhaust ports opening to the shorter passage being directed oppositely to the first mentioned ports, whereby to attain optimum scavenging and exhaust discharge, with reduced pressure drop through the engine for improving exhaust drive of the turbocharger.

3,411,290

**APPARATUS FOR CHECKING THE CORRECT OPERATION OF SPEED RESPONSIVE DEVICES FOR ENGINE FUEL SYSTEMS**

Eugene Harold Warne, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company

Filed Mar. 20, 1967, Ser. No. 624,439  
Claims priority, application Great Britain, Mar. 24, 1966, 13,118/66  
3 Claims. (Cl. 60—39.28)



Apparatus for use with a gas turbine engine having two independently rotatable concentric shafts comprises

558 O.G.—25

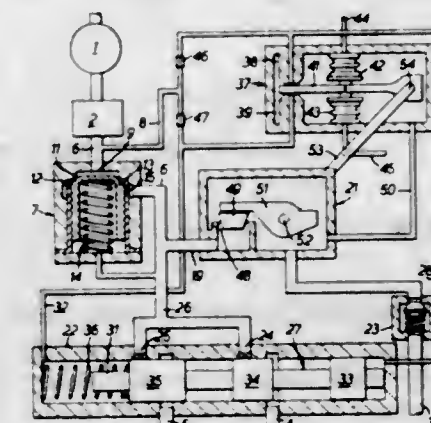
a pair of speed responsive devices driven by the engine shafts respectively, these devices producing signals applied to a valve actuating member through a first diaphragm to control fuel flow to the engine from a pump through a servo device, there being manually controllable valve means whereby the signal pressures can be applied to the valve actuating member through a second diaphragm so that the valve will be actuated, for test purposes, at a substantially reduced speed.

3,411,291

**FUEL SUPPLY SYSTEM FOR GAS TURBINE ENGINES**

Stanley R. Tyler, Cheltenham, England, assignor to Dowty Fuel Systems Limited, Cheltenham County, Gloucester, England, a British company

Filed May 1, 1967, Ser. No. 635,111  
Claims priority, application Great Britain, May 3, 1966, 19,568/66  
5 Claims. (Cl. 60—39.28)



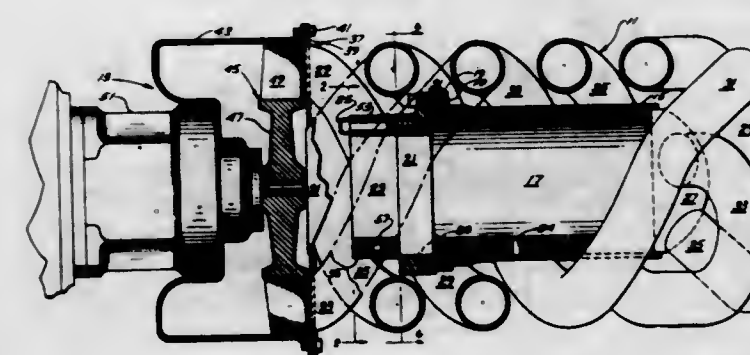
In a gas turbine engine having at least three burners which are brought into use, or closed down, one after the other, the first of said burners is supplied with fuel from a controlled source by way of a flow-sensing device, while the supply of fuel to the remaining burners is regulated by a distribution valve under the control of a pilot valve. This pilot valve is controlled by one or more signals of engine-operating parameters and by a flow signal from the sensing device so as to determine a maximum fuel flow to the first burner, any excess in the total fuel flow being passed by the distribution valve to one or more of the remaining burners.

3,411,292

**RESONANT COMBUSTOR TYPE GAS TURBINE ENGINE**

Robert L. Binsley, Sepulveda, and Robert S. Siegler, Hidden Hills Calabasas, Calif., assignors to North American Rockwell Corporation

Filed Sept. 1, 1966, Ser. No. 576,726  
9 Claims. (Cl. 60—39.77)



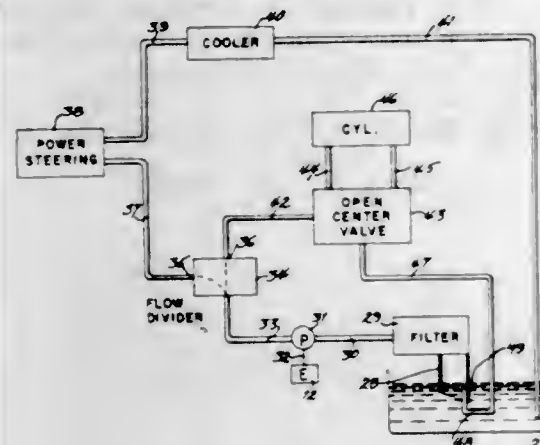
A pulse-jet type turbine engine is disclosed consisting of a cylindrical housing defining a combustion chamber which has air and fuel supply at one end and multiple



exhaust tubes at the other, said tubes being acoustical in length, wound about said housing, and arranged to exhaust into a turbine rotor located at said one end.

**3,411,293**  
**RECIRCULATING FLUID IN HYDRAULIC SYSTEMS HAVING MOVING TRANSMISSION COMPONENTS IN THE HYDRAULIC RESERVOIR**  
Herbert G. Akins, Downers Grove, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

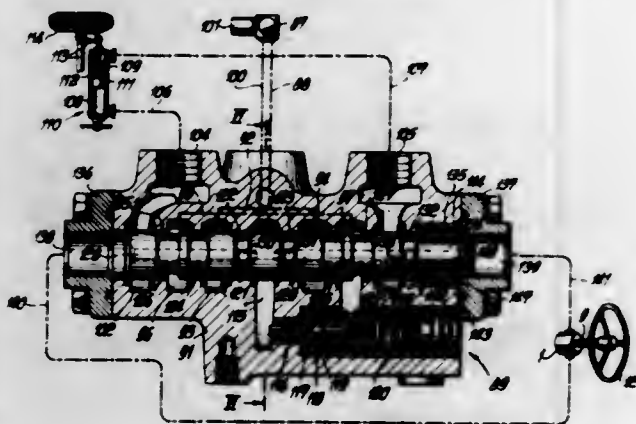
Filed Oct. 20, 1966, Ser. No. 588,188  
10 Claims. (Cl. 60—52)



A hydraulic system having a fluid reservoir accommodating rotating components and including a low volume priority circuit with an intake manifold, filter, pump, flow divider, energy-using device, and cooler connected in series communication with the reservoir and a high volume nonpriority circuit including the intake manifold, filter, pump and flow divider in common with the priority circuit and further including an open center valve for controlling a hydraulic energy translation device connected in series with the common portion of the priority circuit and communicating directly with the intake manifold so that substantial mixing with agitated fluid within the reservoir is avoided.

**3,411,294**  
**REVERSIBLE HYDRAULIC CONTROLLER, PARTICULARLY FOR AUTOMOTIVE HYDRAULIC STEERING CONTROLS**  
Dieter Hedermann, Immenstaad, Germany, assignor to Robert Bosch, G.m.b.H., Stuttgart, Germany, a limited liability company of Germany

Filed Mar. 17, 1967, Ser. No. 624,036  
Claims priority, application Germany, Apr. 9, 1966, B 86,624  
6 Claims. (Cl. 60—52)

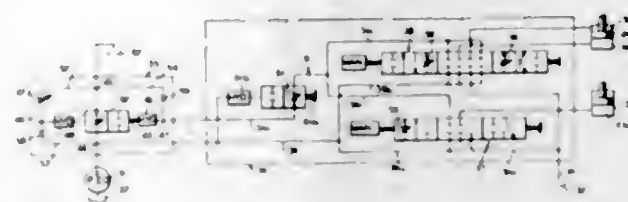


Manual or power steering control having a pair of chambers (FIGS. 3, 4, 5) which may be at equal or, alternatively, at high or low pressure, depending upon

fluid displacement due to steering; a bore (67) interconnects these chambers in which a spindle valve (68) is located, establishing communication with a master leakage oil duct (76) and the chamber which is at the lower pressure, when the pressure differential between the chambers exceeds a pre-set spring pressure (71, 72); the controller may be used directly for control of a hydraulic steering cylinder (FIG. 4) or may be used with a power steering regulator (FIG. 5).

**3,411,295**  
**HYDRAULIC SUPPLY SYSTEMS**  
James O. Byers, Jr., Kalamazoo, Mich., assignor to General Signal Corporation, a corporation of New York

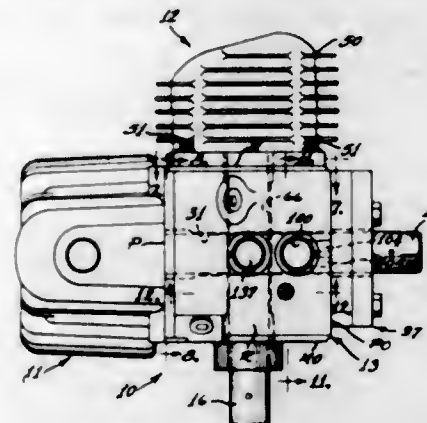
Filed May 31, 1967, Ser. No. 642,436  
31 Claims. (Cl. 60—52)



Supply systems for hydraulically actuated loads. Each system uses closed center distributing valves, and a separate fluid delivery-control device which is positioned by a servo control that responds to actuation of the distributing valves. The servo control employs a hydraulic Wheatstone bridge whose command orifices are arranged in series or in parallel and are controlled either by manually operated distributing valves, or by pilot valves which also position main distributing valves through secondary hydraulic Wheatstone bridge servo controls. The fluid delivery-control device is a bypass valve in cases where the supply pump is of the fixed delivery type, and is the pump delivery control element in cases where a variable delivery pump is used. In the first case, the bypass valve may discharge directly to tank or to a second fluid-utilization circuit. The distributing valves can be arranged in a parallel, series or tandem flow circuit, and some versions afford a selection between tandem and parallel circuits.

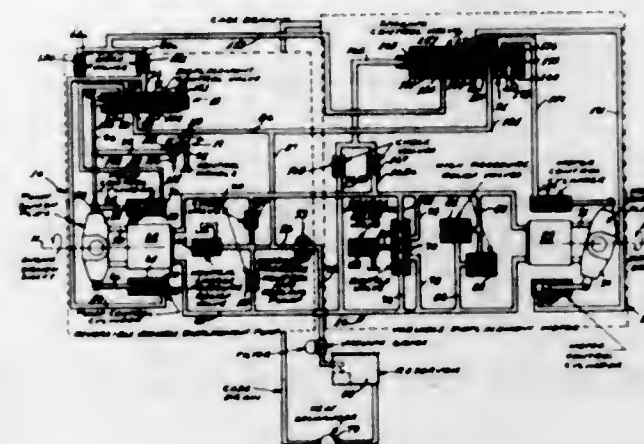
**3,411,296**  
**HYDROSTATIC TRANSMISSION**  
Kenneth E. Peterson, Rockford, Ill., assignor to Sundstrand Corporation, a corporation of Delaware

Filed Apr. 13, 1966, Ser. No. 542,275  
14 Claims. (Cl. 60—53)



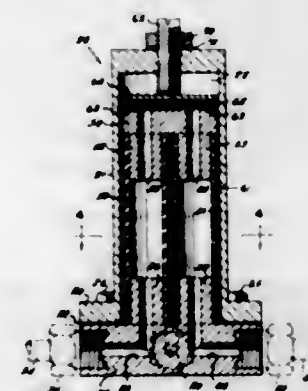
A hydrostatic transmission including axial piston pumps and motors mounted on adjacent perpendicular faces of a generally cubic integral valve block with both the pump and the motor shafts extending in perpendicular directions completely through the valve block and being supported therein.

**3,411,297**  
**HYDROSTATIC TRANSMISSION**  
Melvin M. Hann, La Salle, Ill., assignor to Sundstrand Corporation, a corporation of Delaware  
Filed Mar. 20, 1967, Ser. No. 624,538  
10 Claims. (Cl. 60—53)



A hydrostatic transmission of the type comprising a variable displacement pump and a variable displacement motor including a staging valve for reducing the displacement of the motor after the pump reaches maximum displacement by sensing an increase in fluid pressure in a control motor which controls the pump displacement.

**3,411,298**  
**PRESSURE TRANSFER APPARATUS**  
Max Sorensen, 4256 Park Lane, Dallas, Tex. 75220  
Filed Sept. 22, 1966, Ser. No. 581,378  
18 Claims. (Cl. 60—54.5)

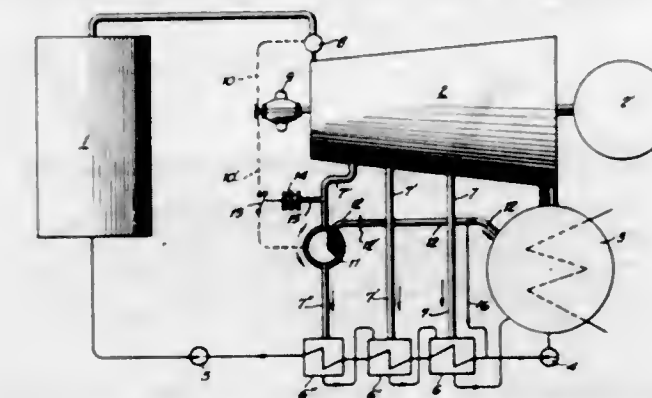


A pressure transfer apparatus for transmitting fluid pressure from one pressure source to one or more independent fluid pressure systems without direct fluid communication between the systems and with the pressure source. A modified form provides a normally open bleed port between the pressure source and the independent fluid pressure system for permitting low rate flow communication therebetween to provide pressure equilization under predetermined conditions.

**3,411,299**  
**PEAK LOAD OPERATION IN STEAM POWER PLANTS**  
Frederick Nettel, 173 Chapel Road, Manhasset, N.Y. 11030  
Filed Jan. 25, 1967, Ser. No. 611,749  
7 Claims. (Cl. 60—67)

Steam power plant comprising a boiler, feeding a multi-stage turbine connected to heaters for regeneratively preheating feedwater, two governors, the first acting only at

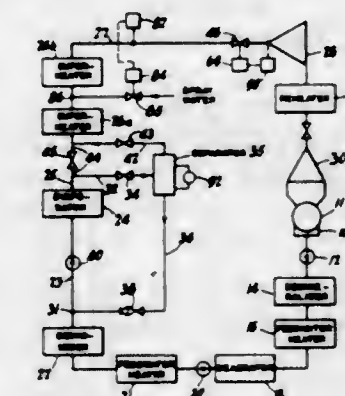
outputs up to the rated as known, the second operative only at outputs from rated up to a peak output, controlling output automatically by decreasing extraction for required output increases and by increasing extraction for



output decreases with said increase in extraction steam led from an extraction stage directly into the condenser, enabling the plant to furnish sudden peak outputs instantaneously and without substantial increase in boiler output above the rated.

**3,411,300**  
**METHOD AND APPARATUS FOR SLIDING PRESSURE OPERATION OF A VAPOR GENERATOR AT SUBCRITICAL AND SUPERCRITICAL PRESSURE**  
Wolfram G. Schuetzenduebel, Avon, and John I. Argersinger, Simsbury, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

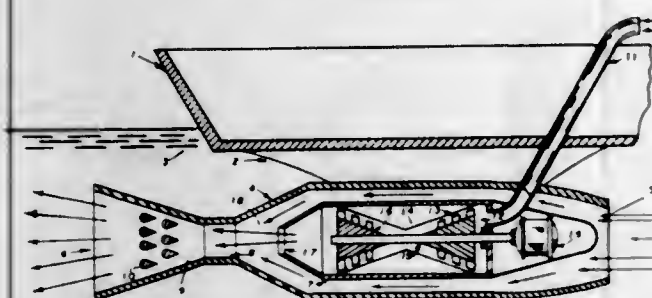
Filed May 31, 1967, Ser. No. 642,478  
8 Claims. (Cl. 60—104)



A method and apparatus for operating and controlling a supercritical vapor generator with sliding pressure, with the pressure of the vapor varying between a low subcritical pressure at a low vapor output rate and a high supercritical pressure at a high vapor output rate. The output of the vapor generator in the subcritical pressure range is controlled with sliding pressure, with the working fluid following a "controlled circulation" flow system, i.e., passing through a vapor and liquid separator. The output of the vapor generator in the supercritical pressure range is controlled with sliding pressure with the working fluid following a "once-through" flow system, i.e., bypassing the vapor and liquid separator. Transition from sliding pressure operation in the subcritical pressure range to sliding pressure operation in the supercritical pressure range is preceded by switching from the "controlled circulation" flow system to the "once-through" flow system before the critical pressure is reached, and with the working fluid leaving the vapor generating section preferably being slightly superheated, however, possibly having a small liquid content up to approximately 10%.

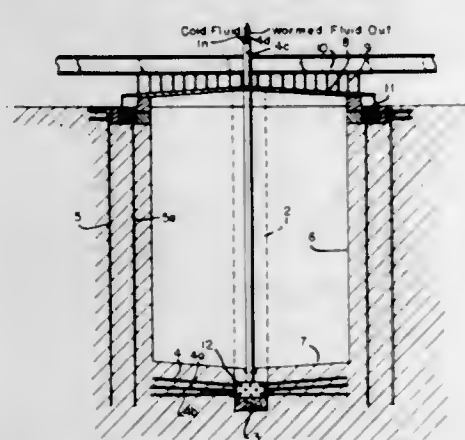


**3,411,301**  
**THERMAL HYDROJET**  
 Douglas R. Olsen, Richmond County, N.Y.  
 (N. Quaker Hill Road, Pawling, N.Y. 12564)  
 Filed July 15, 1966, Ser. No. 565,660  
 4 Claims. (Cl. 60—221)



The invention is a marine propulsion system which increases the economy and thrust possible from a jet of hot combustion gases such as the discharge of a gas turbine. Water is inducted into a heat interchange chamber by the high velocity combustion gases. In the interchanger, a portion of the water is vaporized to steam, multiplying the velocity and thrust of the vapors leaving the interchanger. This is possible by the special designs of the water entry, venturi, and heat interchanger sections. The thermal hydrojet may be mounted beneath the hull of a vessel making it especially useful for hydrofoil craft.

**3,411,302**  
**IN-GROUND RESERVOIR WITH FROZEN BOTTOM FOR THE STORAGE OF LIQUEFIED GASES**  
 Maurice Nachshen, London, England, assignor to Conch International Methane Limited, Nassau, The Bahamas, a Bahamian company  
 Filed Jan. 10, 1967, Ser. No. 608,404  
 Claims priority, application Great Britain, Feb. 28, 1966, 8,653/66  
 7 Claims. (Cl. 61—36)

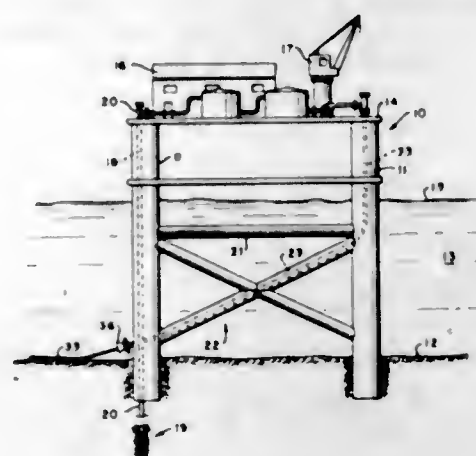


The present invention relates to a method of constructing a bottom of frozen soil to an intended in-ground storage cavity for liquefied gases, in advance of its excavation and to a predetermined thickness, so that external soil and water would be excluded during excavation so enabling the cavity to be excavated.

**3,411,303**  
**OFFSHORE PLATFORM WITH INTERNAL FLOWLINE**  
 Richard D. Bates, Anchorage, Alaska, and Robert C. Vliesser, San Dimas, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware  
 Filed Dec. 28, 1966, Ser. No. 605,422  
 9 Claims. (Cl. 61—46)

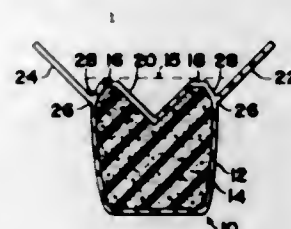
An offshore platform provided with at least one internal passage in the structural members of the platform for receiving and protecting a flowline from ice floes, water current, debris and the like. The passage, which may be a

separate tube within a leg and cross-bracing of the platform, serves to guide the flowline as it is pulled through



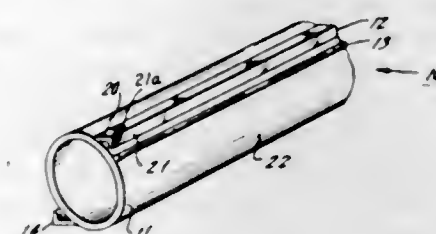
the passage from the ocean floor up to the surface of the platform.

**3,411,304**  
**DOCK FENDER**  
 Russell B. Miller, Akron, Ohio, assignor to Barberton Plastics Products, Inc., Barberton, Ohio, a corporation of Delaware  
 Filed May 15, 1967, Ser. No. 638,534  
 5 Claims. (Cl. 61—48)



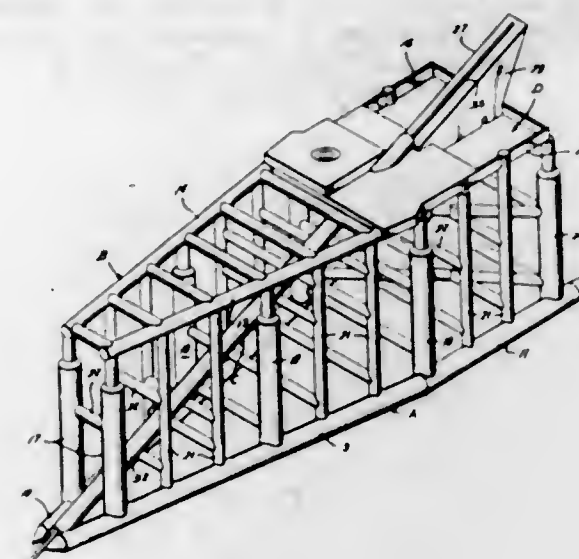
A resilient body for use as a dock fender or the like having a face portion adapted to conform to the surface of the object to which the fender is to be secured. Integral flap portions extending outwardly from the body along the lateral margins of the face portion are provided to facilitate securing the fender to the object.

**3,411,305**  
**TUBULAR INTERLOCKING PILING FOR WALL ASSEMBLIES**  
 Alexander A. Cella, Great Notch, N.J., assignor to Alexander A. Cella, Great Notch, and Charles Vinzant, Wharton, N.J.  
 Filed Jan. 23, 1967, Ser. No. 611,126  
 4 Claims. (Cl. 61—60)



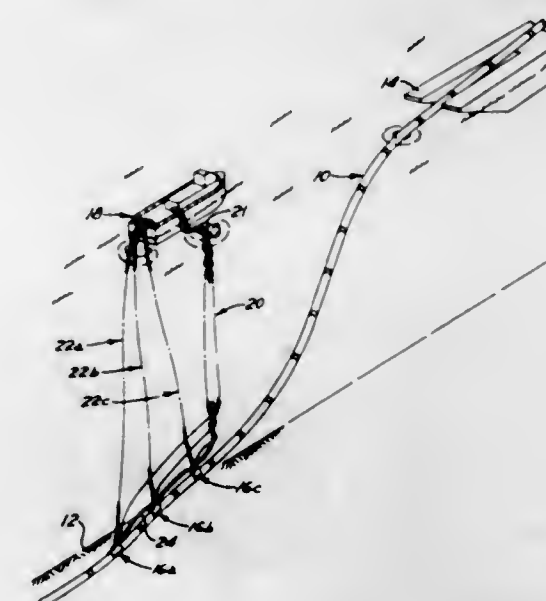
A pile unit for use in interconnected tubular piling. The tubular unit has an interlocking element, L-shaped in cross-section, welded to the exterior surface of the tube, and a second L-shaped, interlocking element and a bead element welded to the exterior surface of the tube and spaced from the first connecting element. Two tubular units are interconnected by sliding an L-shaped element of one into an L-shaped element of a second, with the bead element of the second maintaining the engagement of the interlocking elements.

**3,411,306**  
**APPARATUS FOR LAYING SUBMERGED PIPE**  
 Russell C. Mosby, Houston, Tex., assignor to Zapata Off-Shore Company, Houston, Tex., a corporation of Delaware  
 Filed July 7, 1965, Ser. No. 470,048  
 4 Claims. (Cl. 61—72.3)



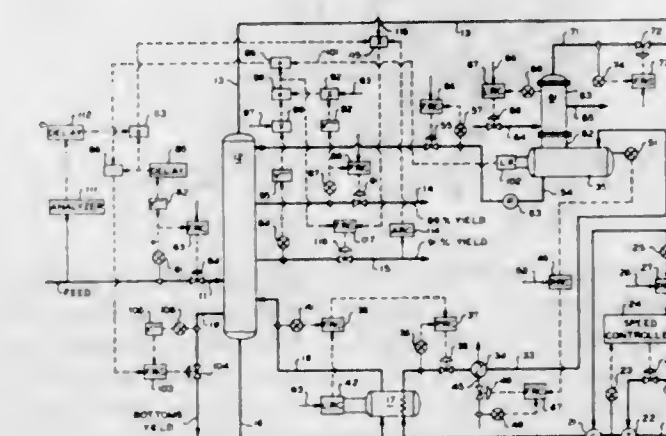
A semisubmersible pipe laying barge has a longitudinally inclined ramp discharging at the lower front corner thereof and a sealed portion in which the pipe can be joined and coated below the water level.

**3,411,307**  
**METHOD AND APPARATUS FOR BURYING OFFSHORE PIPELINES**  
 Jimmie L. Hultt, Glenshaw, and James E. Knizner and Nicholas Marusov, Verona, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware  
 Filed Nov. 23, 1966, Ser. No. 596,494  
 8 Claims. (Cl. 61—72.4)



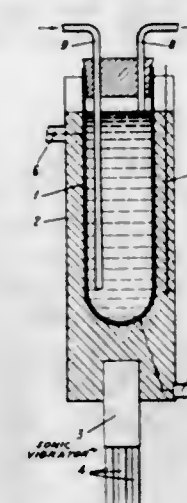
The invention comprises methods and apparatus to bury offshore pipelines with the use of moveable vibrating means which are selectively, rigidly fixed with respect to the pipeline. Because of the thixotropic nature of the underwater mud, the vibration permits the pipeline to fall by gravity through the liquefied mud to thereby bury itself.

**3,411,308**  
**METHOD AND APPARATUS FOR CONTROLLING BY A MATERIAL BALANCE THE BOTTOMS FLOW RATE IN A FRACTIONAL DISTILLATION SYSTEM**  
 Carnot E. Bellinger, Old Ocean, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware  
 Filed Jan. 3, 1967, Ser. No. 606,677  
 8 Claims. (Cl. 62—21)



The flow rate of a bottoms product stream from a fractionator is regulated responsive to the difference between a delayed function of the flow rate of the feed and the sum of the flow rates of the remaining product streams. The overhead product flow rate signal is a bias value or the output of liquid level controller on the overhead accumulator instead of an actual flow measurement. The flow rate of a medium purity side draw stream is manipulated responsive to the difference between a signal representing a computed yield of the component of interest and a signal representing measured yield.

**3,411,309**  
**FRACTIONAL FREEZE SEPARATION APPARATUS AND PROCESS**  
 Jerzy Konrad Skrebowski and John Williamson, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain  
 Filed Feb. 13, 1967, Ser. No. 615,510  
 17 Claims. (Cl. 62—58)



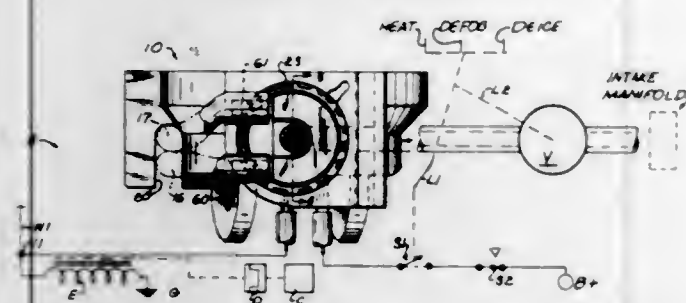
Liquids (for example mixtures of xylenes) are frozen to produce slurries of crystals and mother liquor by contacting the liquid with a cold surface. Crystals which adhere to the surface are removed by applying sonic vibrations to the liquid.



### 3,411,310 TIME DELAY MECHANISM FOR REFRIGERATION SYSTEM

Roland B. Caldwell, Worthington, Ohio, assignor to Ranco Incorporated, Franklin County, Ohio, a corporation of Ohio

Filed Mar. 17, 1967, Ser. No. 624,061  
14 Claims. (Cl. 62-158)

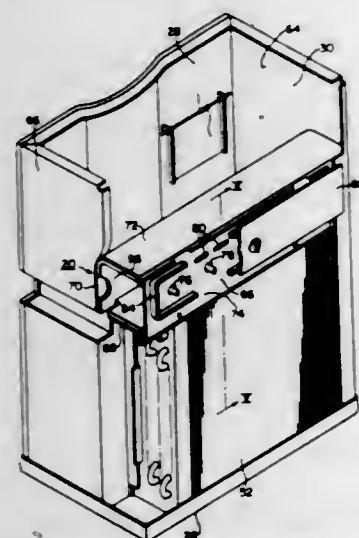


A time delay mechanism for connection to a source of vacuum pressure includes a pressure regulating valve means operative to produce a relatively constant vacuum pressure regardless of variations of the pressure of the vacuum source, a chamber having a wall portion formed by a resiliently flexible diaphragm with one side thereof exposed to fluid pressure in the chamber and the other side exposed to atmospheric pressure, a conduit connecting the chamber to the regulated pressure at the valve means, a flow restrictor in the conduit for providing a gradual change in pressure in the chamber in response to the establishment of a regulated pressure at the valve means, and a switch in the chamber which is actuated by the diaphragm as the pressure in the chamber is gradually reduced with the switch being actuated a substantial interval subsequent to establishment of the regulated pressure by the valve means. The time delay additionally includes a second conduit communicating between the chamber and the valve means and a temperature responsive valve within the chamber which is open at ambient temperatures below a predetermined temperature to immediately equalize the pressures in the chamber and at the regulator valve to effect immediate actuation of the switch by the diaphragm.

### 3,411,311 ROOM AIR CONDITIONER CONTROL ARRANGEMENT

Evert S. Wegman, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 27, 1967, Ser. No. 618,639  
6 Claims. (Cl. 62-180)

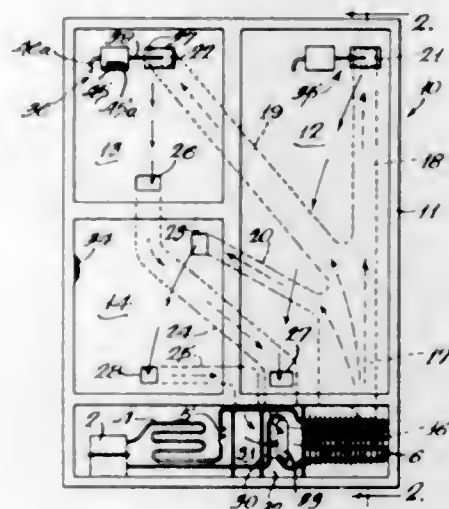


Room air conditioner apparatus having a temperature control system of the character responsive to a stream of bypass air with the control chamber containing the tem-

perature responsive control located between the recirculation air inlet and outlet in a position so that the sweep of the recirculation air past the chamber influences the temperature control in an anticipatory fashion.

### 3,411,312 REFRIGERATOR WITH CONVERTIBLE COMPARTMENT

John Sigl and Louis H. Carl, Evansville, Ind., assignors to Whirlpool Corporation, a corporation of Delaware  
Filed Sept. 1, 1967, Ser. No. 665,148  
11 Claims. (Cl. 62-180)

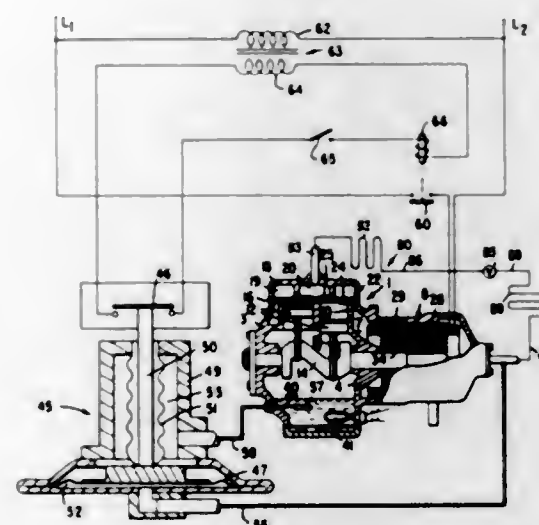


A combination refrigerator-freezer having three compartments, one of which has a cold air controller permitting operation selectively as a refrigerator or freezer section. The air controller is locked open when the convertible compartment is operated as freezer and is thermally responsive to modulate the cold air flow when the compartment is operated as a refrigerator.

### 3,411,313 COMPRESSOR PROTECTIVE CONTROL

Ted W. Brown, North Syracuse, and David N. Shaw, Liverpool, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

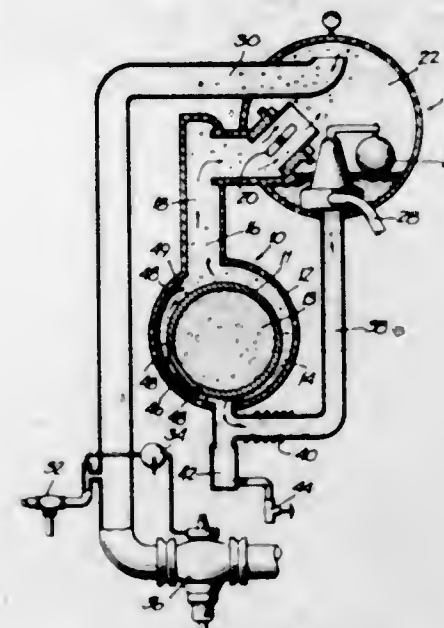
Filed Dec. 2, 1966, Ser. No. 598,837  
4 Claims. (Cl. 62-192)



Compressor protective control responsive to predetermined differential in pressure between gaseous pressure in the low side of the compressor and a pressure corresponding to lubricant temperature to shut down the compressor upon intake of liquid medium by the compressor and dilution of the compressor lubricant by the liquid medium.

### 3,411,314 REFRIGERATING APPARATUS WITH TUBULAR EVAPORATOR

Alden Harvey Wakeman, Lake Mills, Wis., assignor to St. Regis Paper Company, New York, N.Y.  
Filed Feb. 1, 1967, Ser. No. 618,252  
9 Claims. (Cl. 62-219)

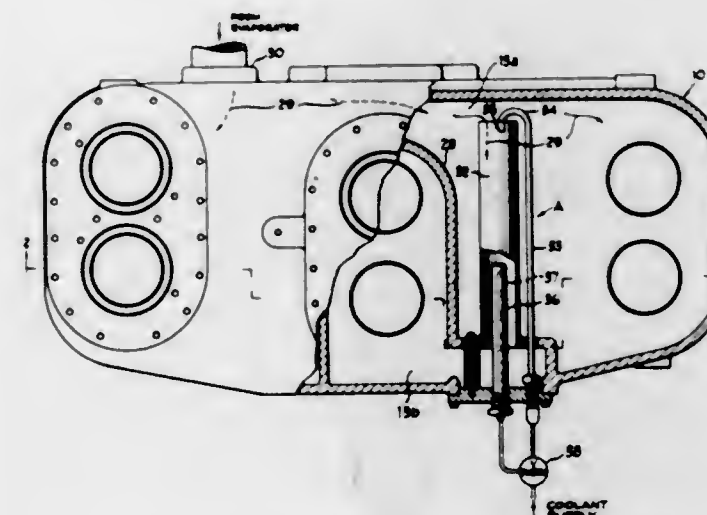


Refrigerating apparatus having an accumulator, an evaporator including a tube in which a product may be cooled, an outer shell spaced from the tube to form a chamber which has a lower inlet that is connected to a liquid refrigerant portion of the accumulator and an upper inlet which is connected to a refrigerant vapor portion of the accumulator, liquid refrigerant being supplied to and vapor refrigerant being removed from their respective portions of the accumulator, and a baffle mounted in spaced relationship between the shell and the tube for preventing vapor bubbles from forming and remaining on the outside surface of the tube.

### 3,411,315 COMPRESSOR COOLING SYSTEM

Knute Sable, West Manchester Township, York, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Nov. 14, 1966, Ser. No. 593,930  
1 Claim. (Cl. 62-224)

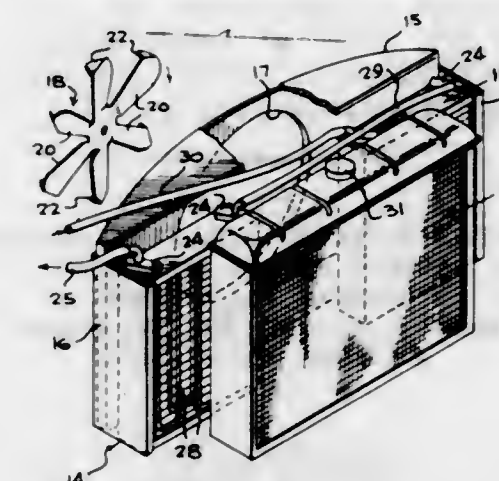


A multi-cylinder refrigeration compressor including means for injecting liquid refrigerant into the suction gas. The refrigerant is mixed with the gas in an elongated tube which includes a temperature sensor to control the amount of liquid refrigerant supplied.

### 3,411,316 COOLING SYSTEM FOR VEHICLES HAVING AIR CONDITIONERS

Lewis C. Wright, Rte. 1, Box 132, Valdosta, Ga. 31601

Filed Feb. 6, 1967, Ser. No. 614,152  
3 Claims. (Cl. 62-239)

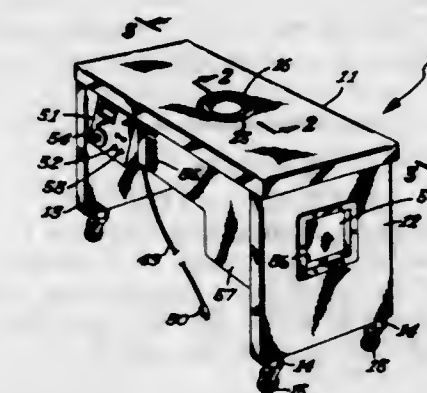


A cooling system for vehicles equipped with air conditioners wherein there is provided auxiliary radiators which function in cooperation with a fan to assure that the vehicle air conditioner will be efficiently and properly cooled.

### 3,411,317 HYPOTHERMIA OPERATING TABLE

Emil S. Swenson, Coon Rapids, and William L. Koski, Minneapolis, Minn., assignors to Swenko Research & Development Incorporated, Minneapolis, Minn., a corporation of Minnesota

Filed May 10, 1966, Ser. No. 548,956  
4 Claims. (Cl. 62-258)

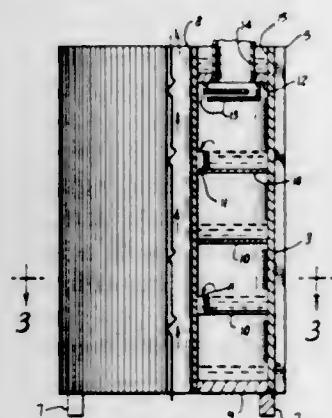


1. A hypothermia operating table device for performing surgical procedures on living tissues and organs which are to be transplanted and in which the surgical procedures are to be performed at a location distal with respect to the operating field, said device comprising a plurality of vertical supporting leg structures and a table top mounted on said leg structures and having a substantially flat horizontal planar upper surface, said table top having a generally centrally located opening therein, an upwardly opening double wall receptacle including an upwardly opening outer cylindrical member and an upwardly opening inner liner member spaced inwardly from said outer member to define a cooling chamber between said members which is sealed from the exterior, said inner member adapted to contain a saline solution therein, means mounting said receptacle on said table top so that the interior of said inner liner member communicates with said opening in the table top and the upper peripheral edge portion of said inner liner member is substantially co-extensive with the upper surface of said table top, conduit means connected in communicating relation with said cooling



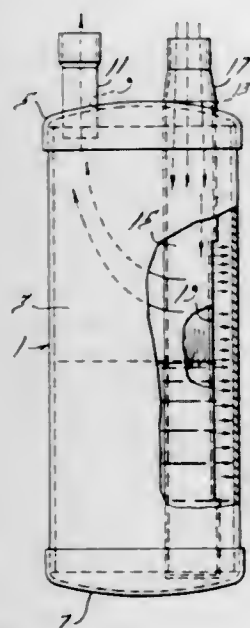
chamber and being connected to a source of suitable liquid coolant, pump means interposed in said coolant conduit means for circulating coolant through the cooling chamber, a refrigeration unit mounted on said table and including a refrigeration conduit containing a suitable fluid refrigerant and extending into said cooling chamber to form a helical coil around said inner liner member, said refrigeration unit including means for cooling and circulating the fluid refrigerant through refrigerant conduit whereby the liquid coolant will be cooled as it flows over the helical coil in said cooling chamber.

**3,411,318**  
**PORTABLE REFRIGERATING DEVICE**  
Allen B. Puckett, 1144 Yale,  
Houston, Tex. 77008  
Filed Feb. 27, 1967, Ser. No. 618,968  
4 Claims. (Cl. 62-478)



A portable refrigerating apparatus for use by campers, and the like, having a sealed refrigerant and a novel means for absorbing the refrigerant agent and for heating an aqueous-ammonia solution to release the refrigerant and reactivate the evaporator apparatus, the absorber unit having trays for holding water at a constant level to absorb the ammonia gas, and the evaporator unit having trays for holding the liquid ammonia in equal proportions to assist in accomplishing the evaporation thereof.

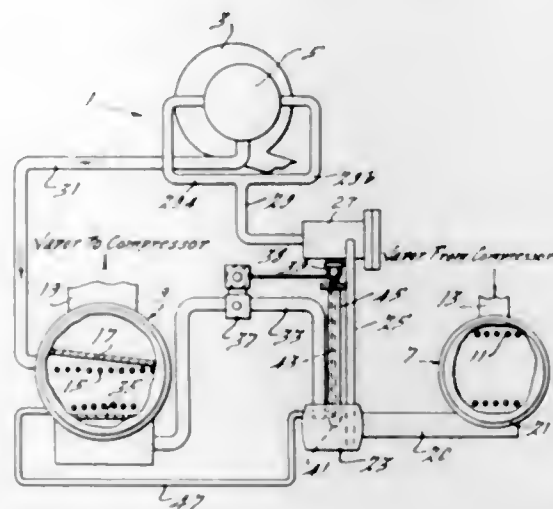
**3,411,319**  
**ACCUMULATOR**  
Chester H. Thompson, Xenia, and William C. Schollenberger, Dayton, Ohio, assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware  
Filed Aug. 1, 1966, Ser. No. 569,218  
2 Claims. (Cl. 62-503)



Accumulator formed of a cylindrical hollow body, an inlet tube extending from the upper end of the body toward

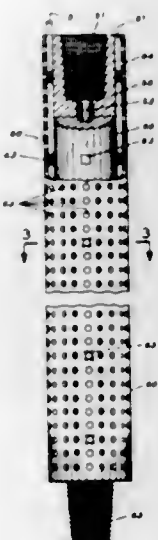
the lower end thereof adjacent the body wall, the lower end of the tube being closed, an elongated slot in the tube opening toward the wall, and an outlet in the upper end of the accumulator.

**3,411,320**  
**MOTOR COOLING APPARATUS**  
Lewis R. Smith, Edwin I. Ghormley, and Robert C. Hartman, Dayton, Ohio, assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware  
Filed Sept. 9, 1966, Ser. No. 578,250  
13 Claims. (Cl. 62-505)



Refrigerating apparatus including a condenser, an evaporator, and a compressor connected together to form a closed refrigerant system with an electric motor drivingly connected to the compressor. An equalizer line extends from the evaporator below the level of liquid refrigerant in the latter to a sump located in the refrigerant line between the condenser and the evaporator. A take-off line extends from the sump to the electric motor for delivering liquid refrigerant from the sump to the electric motor.

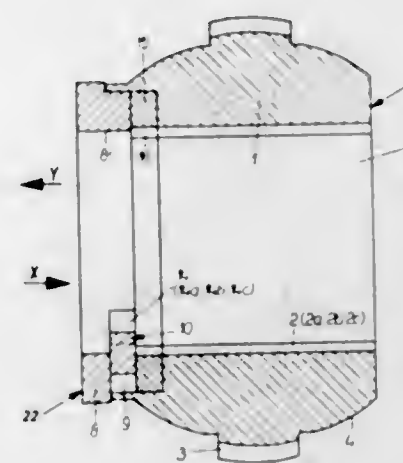
**3,411,321**  
**LARGE-DIAMETER FLUID BYPASS DRILL COLLAR**  
Glenn A. Schurman, New Orleans, La., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware  
Filed Mar. 1, 1966, Ser. No. 530,966  
5 Claims. (Cl. 64-1)



This invention is designed to prevent drill collars from sticking against the drill hole while in operation. The structure to accomplish the above end consists of a con-

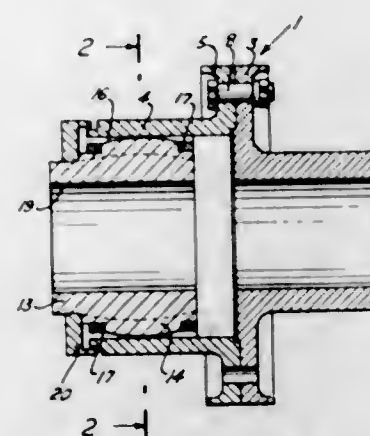
centric collar around the drill string provided with fluid bypass ports to allow high pressure mud to flow between the drill string and drill hole, thus preventing high pressure wedging by the drill string against the drill hole.

**3,411,322**  
**GEAR COUPLING HAVING AUTOMATIC ENGAGEMENT MEANS**  
Walter Abels, Bochum, Germany, assignor to DEMAG Aktiengesellschaft, Duisburg, Germany  
Filed Mar. 13, 1967, Ser. No. 622,762  
Claims priority, application Germany, Mar. 17, 1966, Z 12,109  
8 Claims. (Cl. 64-6)



The construction of a gear coupling is described in respect to a single embodiment which includes a ball member having an external gear formation and a partial spherical surface adjacent the gear formation and including a bore defined therethrough with gearing including axially elongated gear teeth extending completely around the interior periphery of the bore.

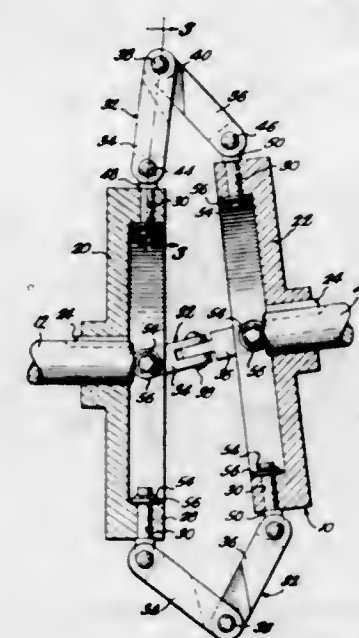
**3,411,323**  
**ELASTIC COUPLING**  
Heinrich Nehl, Peine, Hannover, Germany, assignor to Kerkhoff & Co., Wolfenbittel, Germany  
Filed Mar. 15, 1967, Ser. No. 624,661  
Claims priority, application Germany, Sept. 12, 1966, K 55,482  
5 Claims. (Cl. 64-14)



An elastic coupling mainly comprising a first tubular coupling member provided at the inner surface with a plurality of axially extending grooves having substantially parallel side faces, a second substantially cylindrical coupling member extending into the first tubular coupling member and provided at the outer surface with a plurality of teeth respectively located with ample lateral clearance in the aforementioned grooves, and an endless jacket of elastic material surrounding each tooth, the side faces of each jacket respectively facing the side faces of the respec-

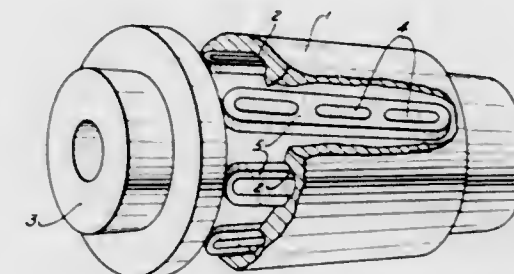
tive groove are curved in axial direction so that each jacket has its greatest width substantially midway between opposite ends of the respective tooth and engages the side faces of the respective groove in the region of the aforementioned greatest width.

**3,411,324**  
**SHAFT COUPLING**  
Calvin W. Federline, Thurmont, Md., assignor of one-half interest to Lyle L. Zabriskie, Silver Spring, Md.  
Filed Oct. 25, 1966, Ser. No. 589,431  
5 Claims. (Cl. 64-19)



This disclosure contains drawings and a description of a universally flexible coupling for transmitting torque between a pair of rotary shafts. A series of articulated linkages pivotally connected to radially disposed stub shafts carried by the respective driving and driven shafts enables extensibility in the coupling as well as an accommodation for both angular and radially offset misalignment between the shafts while at the same time maintaining constant velocity through the joint.

**3,411,325**  
**ELASTIC COUPLING**  
Heinrich Nehl, Peine, Hannover, Germany, assignor to Kerkhoff & Co., Wolfenbittel, Germany  
Filed Mar. 15, 1967, Ser. No. 624,660  
Claims priority, application Germany, Sept. 14, 1966, K 55,525  
4 Claims. (Cl. 64-27)



An elastic coupling mainly comprising a first tubular coupling member provided at the inner surface thereof with a plurality of axially extending grooves, a second substantially cylindrical coupling member extending into the first tubular coupling member and provided at the

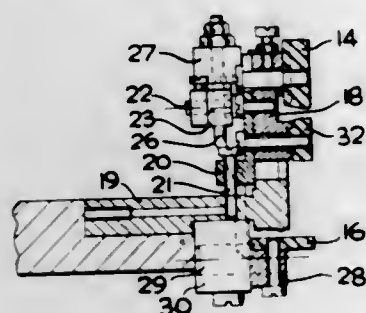


outer surface thereof with a plurality of rows of teeth in which the teeth in each row are axially aligned with and spaced in axial direction from each other and in which the rows of teeth are respectively arranged with ample lateral clearance in the aforementioned grooves, and an integral jacket of elastic material surrounding each row of teeth and substantially filling the aforementioned lateral clearance and the spaces between adjacent teeth in each row.

3,411,326

**CIRCULAR KNITTING MACHINES**

Alfred Woodward Kent, Rothley, and Gillies Wood, Leicester, England, assignors to The Bentley Engineering Company Limited, Leicester, England  
Filed Sept. 1, 1964, Ser. No. 393,542  
Claims priority, application Great Britain, Sept. 5, 1963, 35,143/63  
11 Claims. (Cl. 66—54)

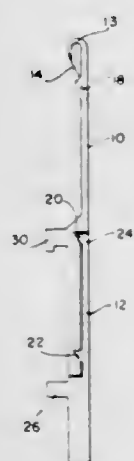


A needle cam arrangement whereby during the splicing operation those selected needles utilized therefore descend the stitch to its lowest point. The butts of the needles at said point engage a small pivotal cam, which is interconnected to the stitch cam, thereupon pivoting said small cam and adjusting the stitch cam and thus forming longer loop length during the splicing operation.

3,411,327

**EXPANDABLE KNITTING NEEDLE**

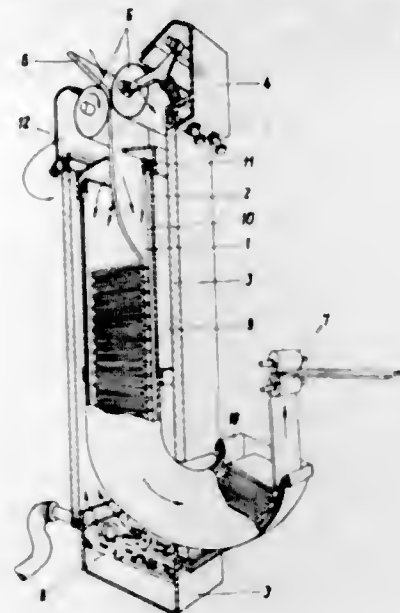
Leonard A. Beckenstein, Farmingdale, N.Y., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey  
Filed Aug. 11, 1966, Ser. No. 571,931  
1 Claim. (Cl. 66—123)



An expandable knitting needle is disclosed as having two relatively positionable parts. One part has a pair of notches, while the other part has a tooth engageable with either notch, such former needle part being provided with a hooked boss that may be easily seized to allow the needle parts to be pulled apart for relatively positioning such needle parts.

3,411,328  
**HEAT TREATMENT CHAMBER WITH REMOVABLE HOSE LINING**

Gerold Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignors to VEPA AG, Basel, Switzerland  
Filed Feb. 24, 1967, Ser. No. 618,498  
Claims priority, application Germany, Feb. 24, 1966, A 51,662  
8 Claims. (Cl. 68—5)

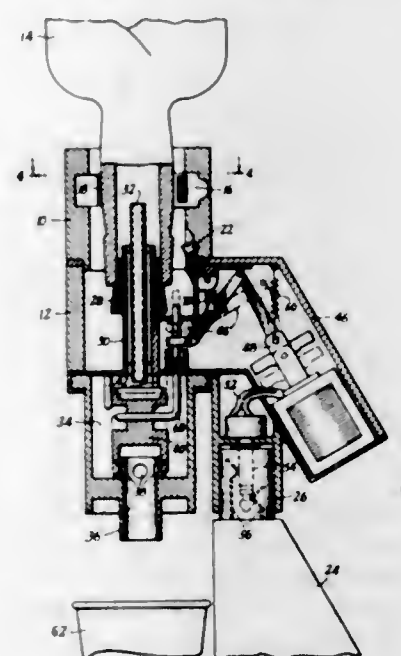


The present disclosure relates to an apparatus for the heat-treatment of a textile material wherein the material to be treated is introduced into a heated chamber, that portion of said chamber in contact with the material being treated providing a smooth surface for said material, said smooth surface also being resistant to acid-forming substances. More particularly, the present disclosure concerns the use of a synthetic material, such as for example, polytetrafluoroethylene, as the contacting surface in the heat-treatment of a textile material.

3,411,329

**SECURITY DEVICE FOR DRINK DISPENSER**

Frederick Z. Goosman, 200 E. 57th St., New York, N.Y. 10022  
Filed Dec. 19, 1966, Ser. No. 602,649  
1 Claim. (Cl. 70—57)



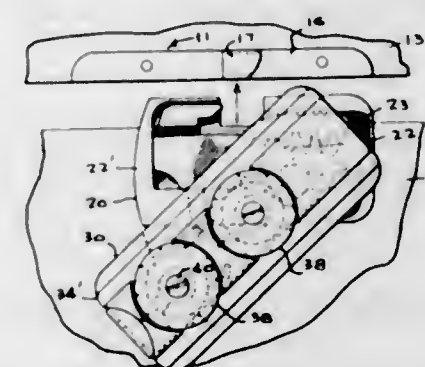
The application discloses a cap which is especially designed to receive the neck of a bottle and secure the bottle in place so that a drink dispenser in communica-

tion with the interior of the bottle is secure once it has been attached to the cap. Security of the dispenser is achieved by providing a specially wound clamping member within the cap, the member being operated by a wheel and key. An elongated slot is provided in the cap to receive the key. Tampering with the wheel without possessing the key is thereby discouraged and the dispenser is made relatively secure when the bottle is thusly clamped in position.

3,411,330

**COMBINED LATCH AND LOCK STRUCTURE**

Wallace E. Atkinson, Dinwiddie County, Va., assignor to Long Manufacturing Co., Inc., Petersburg, Va., a corporation of Virginia  
Filed July 31, 1967, Ser. No. 657,143  
10 Claims. (Cl. 70—71)

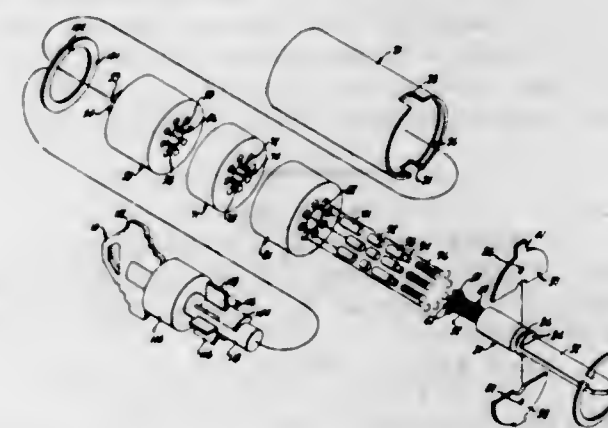


A combined latch and lock structure for luggage cases and similar receptacles including a keeper and a latch section respectively mounted on the separable luggage sections. The latch section includes a stationary base plate having a slide cavity and a hook plate slidable therein having rack teeth. A cover member is pivotally mounted on the base plate for arcuate movement, having an integral gear or gear section for driving the hook plate into and out of latched relation with the keeper upon rotation of the cover member. A fence plate, finger actuated, is slidably carried by the cover plate and includes fence tabs coacting with gatings in tumbler wheels of a pair of dial and tumbler wheel assemblies on the cover plate for combination locking and unlocking of the fence plate and thus of the cover member.

3,411,331

**AXIAL PIN CYLINDER DEVICE**

Ernest L. Schlage, Burlingame, Calif., assignor to Schlage Lock Company, a corporation  
Filed Jan. 10, 1967, Ser. No. 608,379  
10 Claims. (Cl. 70—363)



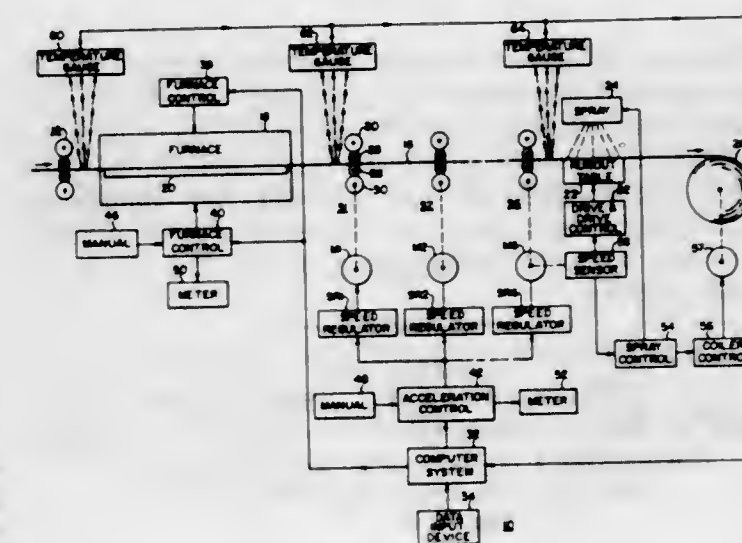
A pin tumbler locking unit having a cylindrical housing enclosing three axially aligned barrels having axially extending pin tumbler bores arranged around and, in the

front two barrels, communicating through radial channels with a central axially extending bore. Spring-pressed pin tumblers are movable in the pin tumbler bores into positions shearing between the first two barrels and the second and third barrels by a key having a central rod and radial vanes of different axial lengths. The proper key passes a rotatable slotted annulus and rotates a lock driver clutched to the front barrel or the second barrel.

3,411,332

**TEMPERATURE CONTROL APPARATUS AND METHOD FOR OPERATING A REDUCTION ROLLING MILL**

John W. Cook, Williamsville, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Nov. 10, 1966, Ser. No. 593,471  
9 Claims. (Cl. 72—9)

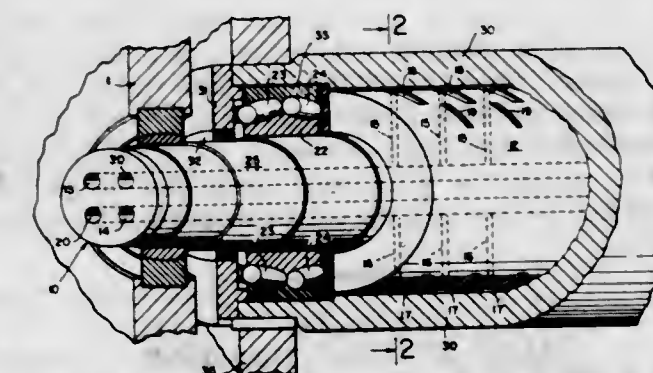


An electric roller hearth furnace is installed on the entry table prior to the first finishing stand of a plural stand rolling mill. The furnace temperature is controlled in coordination with the mill acceleration rate and the workpiece schedule so that the mill is accelerated in a predetermined manner in cooperation with the operation of the furnace to maintain substantially constant delivery temperature from the last stand of the mill throughout the full length of the workpiece.

3,411,333

**ROLLING MILL DEVICE**

Sydney Frankel, 318 Briarcliffe Road, West Englewood, N.J. 07666  
Filed Nov. 22, 1965, Ser. No. 509,057  
5 Claims. (Cl. 72—45)

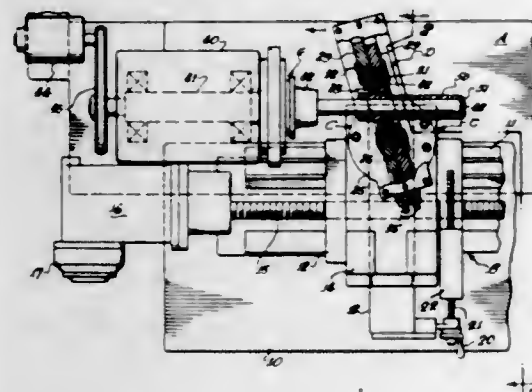


The invention relates to a rolling device for rolling sheets or strips such as metals, plastics, paper, laminates, etc., in which at least one roller which contacts the sheet or similar material being rolled comprises a stationary core and a rotatable sleeve, the core containing passageways for the introduction of a high viscosity lubricant into the space between the core and the sleeve.



### 3,411,334 METHOD AND APPARATUS FOR ROLL- EXTRUSION OF SMALL TUBES

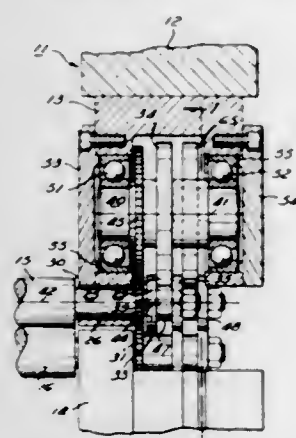
Adolph W. Ernestus, Encino, Calif., assignor to N.T.W. Missile Engineering Inc., Los Angeles, Calif.  
Filed Oct. 22, 1965, Ser. No. 501,791  
13 Claims. (Cl. 72-78)



External extrusive rolling of tubes over a mandrel by a balanced set of roller rings obliquely mounted in encircling large diameter anti-friction bearings which can be adjusted angularly about an axis that is radially related to the mandrel axis, so as to vary the obliqueness of the roller rings relative to the mandrel axis to maintain their balanced relationship when the rings are laterally moved.

### 3,411,335 THRUST BEARING ASSEMBLY

Rudolf G. Dragar, Pittsburgh, Pa., assignor to Lee Wilson Engineering Company, a corporation of Ohio  
Filed Feb. 16, 1966, Ser. No. 527,793  
17 Claims. (Cl. 72-237)



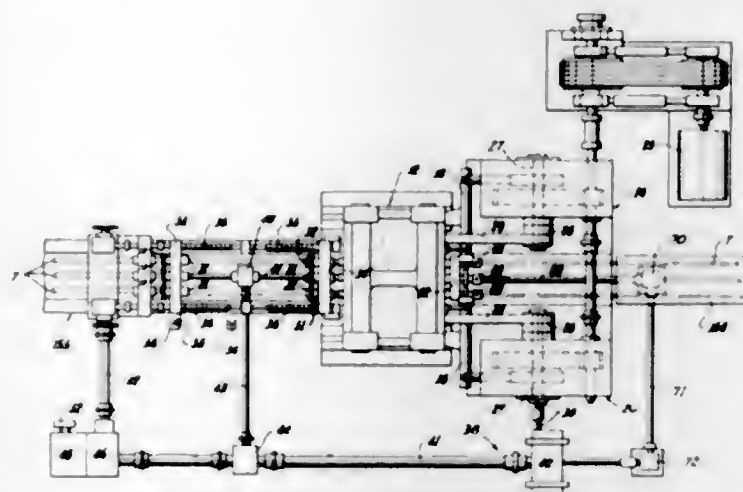
Thrust bearing assemblies for use on machines with restricted space for a thrust bearing, which have many small diameter closely spaced work rolls to flex and work the metal and which develop high longitudinal thrust loads on the work rolls. The thrust bearing assembly transfers those thrust loads in a direction transversely of the work rolls to a location where there is a larger space for a larger capacity rollable element thrust bearing. A first thrust member is mounted on the work roll and a second thrust member is mounted on an arbor spaced from the axis of the work roll. These two thrust members overlap to transmit the thrust through a thrust contact area.

### 3,411,336 TUBE ROLLING MACHINE

Joseph P. Wadleck, Snyder, N.Y., assignor to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware  
Filed Apr. 6, 1966, Ser. No. 540,678  
12 Claims. (Cl. 72-250)

A tube rolling apparatus of the type in which the working rolls are reciprocated and a workpiece is intermittently advanced into the bite of the rolls and is rotated during a time in the cycle when the rolls are not in work-

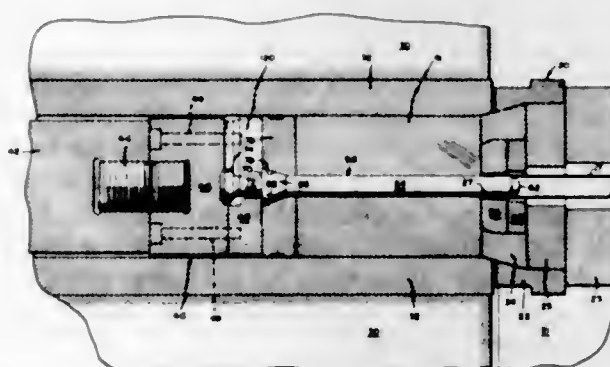
ing engagement with the workpiece. A chuck is provided on the exit side of the apparatus and is arranged to grip the workpiece firmly and rotate it at the proper time; however, the grip of the chuck is relaxed during each work-



ing stroke of the rolls to permit the workpiece to move through the chuck with relative freedom in accordance with the elongation of the workpiece that takes place at that time.

### 3,411,337 APPARATUS FOR EXTRUDING METAL TUBING

Alfred M. Murphy and Thomas P. Long, Richmond, Va., and Nicholas A. Wagner and Carl M. Filak, Chester, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware  
Filed Oct. 14, 1966, Ser. No. 586,837  
14 Claims. (Cl. 72-264)



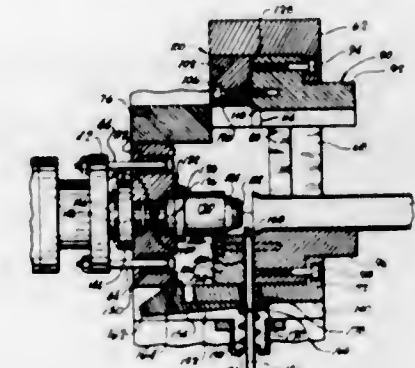
A traveling piercing mandrel has an enlarged base which fits within a slot in a fixed dummy block, whereby the mandrel is securely locked therein but may be quickly replaced. The shapes of the mandrel base and slot allow the mandrel base to be slid freely through the slot when it has a certain angular orientation with respect thereto. At the bottom of the slot, the mandrel may be rotated 90°, camming it back into a recess and locking it in a position to pierce and extrude. Rear and front surfaces of the mandrel base and slot are conical so as to keep the mandrel centered during piercing and extruding.

### 3,411,338 TUBE FLARING APPARATUS

Joseph E. Carlin, San Diego, Calif., assignor to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware  
Filed Aug. 2, 1965, Ser. No. 476,489  
13 Claims. (Cl. 72-293)

A tube flaring apparatus having a male die mounted on the plunger of an actuating cylinder for reciprocal movement toward and away from a female die. The female die has a plunger guide fixed thereto to maintain precise alignment of the male die axis with the female die axis. The female die together with the plunger guide is split along

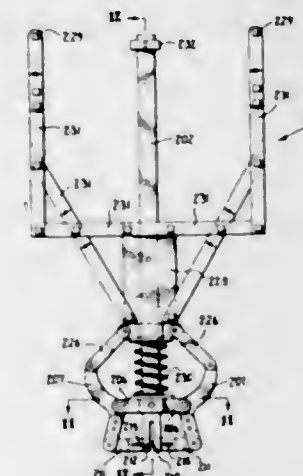
the axis of its bore to allow for separation for insertion of tubing. A locator pin acts as a stop to control the longitudinal positioning of the tubing with respect to the female die flare. Locator pin is automatically retracted out of the



path of the male die plunger by initial movement of the plunger. Tubing is restrained against movement in the female die by interference fit with the tapered bore or by an abrasive insert secured in the bore of the die segments.

### 3,411,339 BUILDING CONSTRUCTION

Robert C. Brown, 5846 Haverford St., Indianapolis, Ind. 46220  
Filed Dec. 7, 1965, Ser. No. 512,110  
4 Claims. (Cl. 72-326)



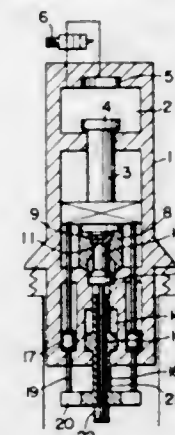
1. A tool comprising a base having a slot having a pair of opposite parallel side walls spaced from one another and sized to receive a sheet of material in close fitting relation, a shear blade reciprocally mounted on said base for movement through said slot to punch out and bend a tab from sheet material positioned in said slot, one of said parallel opposite side walls acting as an anvil against which said blade operates to shear said sheet of material, said one side wall having an opening therein which defines the edge of said anvil and is formed to receive said shear blade, and means for moving said shear blade.

### 3,411,340 KNOCK-OUT DEVICE OF IMPACT FORMING MACHINE

Akira Asari, Osaka-shi, Japan, assignor to Kobe Steel Ltd., Kobe, Japan  
Filed Aug. 22, 1966, Ser. No. 574,033  
Claims priority, application Japan, Sept. 1, 1965, 40/53,768  
10 Claims. (Cl. 72-453)

1. A knock-out device of impact forming machine comprising, an upper mold and a lower mold disposed at a corresponding position to said upper mold for providing a material disposed on said lower mold with impact forming, a ram supporting said upper mold, a

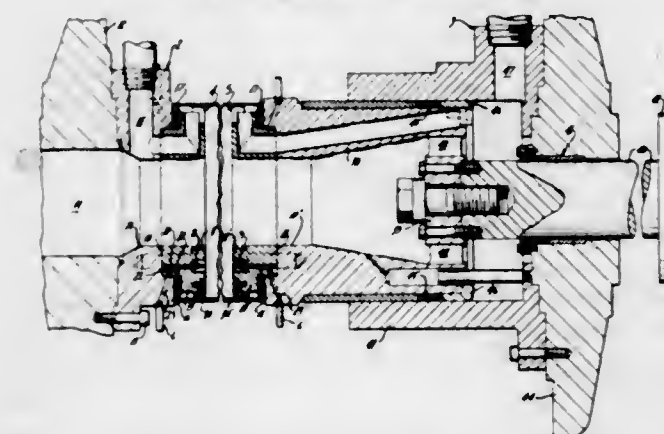
jack mechanism for providing said ram with return motion by which said upper mold is taken from a formed material after impact forming, a knock-out mechanism for knocking-out said formed material from said lower mold at a time between a time of just before and just on time of taking-off said upper mold from said formed



material according to said return motion of ram by said jack mechanism, said jack mechanism working with said knock-out mechanism in a combined relation while said taking-off motion of said ram from said formed material and knocking-out motion of said formed material from said lower mold.

### 3,411,341 HYDROSTATIC TESTING APPARATUS

Douglas R. Hortvet, Houston, Tex., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York  
Filed Jan. 3, 1966, Ser. No. 518,458  
10 Claims. (Cl. 73-37)



This disclosure relates to testing a pipe sealed by head members, each including a sealing ring having a lesser diameter than the pipe. A ring seal is held by a garter spring within a head recess adjacent a flange abutting the pipe and has an inner groove which is pressurized to expand the seal. A valved opening connects the groove to the pipe to balance pressures.

One head includes an axially apertured piston with the same effective opposite end areas to eliminate end loading of the pipe. A hydraulic backup cylinder positions the piston to compensate for frictional forces and the stretch factors during testing.

### 3,411,342 APPARATUS FOR CONTINUOUSLY MEASURING OPTICALLY ACTIVE MATERIALS

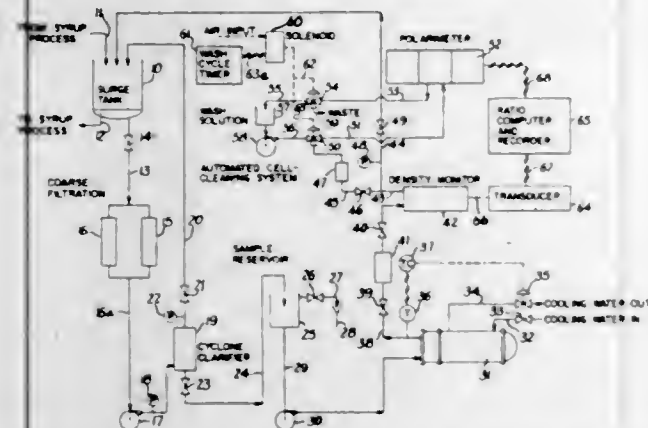
Theodore F. Liermann, Decatur, Ill., assignor to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware  
Filed June 8, 1966, Ser. No. 556,059  
10 Claims. (Cl. 73-53)

A continuous determination of the concentration of an optically active material in a solution can be obtained by introducing a solution of the optically active



material through an apparatus comprising a density measuring means and a polarimeter both adapted to provide an electrical response which, when introduced into a

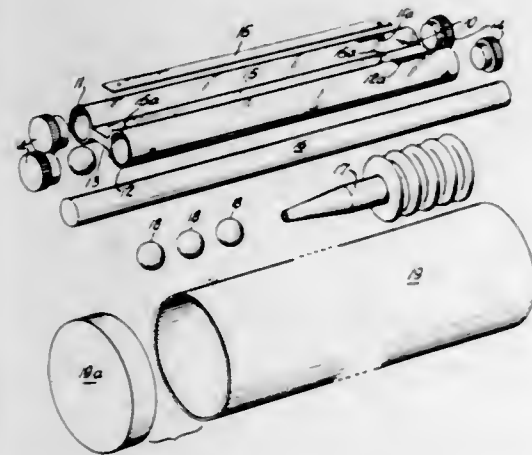
ing a magnetic field, scanning the member with pickup coils and providing an indication of the output of the pickup coils to locate flaws in the member and the apparatus therefor.



computation means, will produce a response which is equivalent to the concentration of the optically active material.

### 3,411,343 VISCOSITY TEST KIT

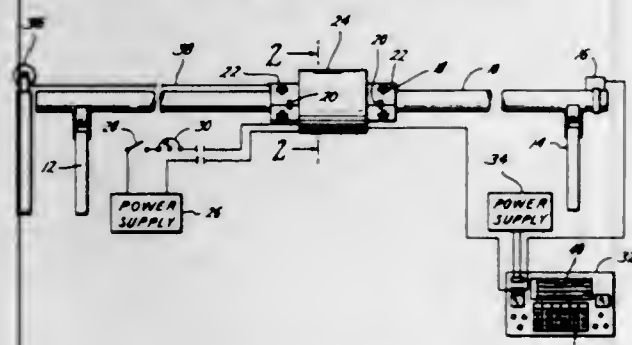
Roger P. Baird, Jr., Richmond, Va., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware  
Filed Oct. 23, 1965, Ser. No. 503,552  
11 Claims. (Cl. 73-57)



A pocket-size, do-it-yourself assembly kit for measuring and demonstrating viscosity comprising at least a pair of cylindrical members with end closures and a supporting web for holding a test scale, test members for insertion into said cylindrical members, means for providing test samples to the same and a container with closure for housing the elements of the kit.

### 3,411,344 RESONANT FREQUENCY VIBRATION TESTING METHOD AND APPARATUS

Donald Lloyd, Houston, Tex., assignor of fifty percent to William H. Hopkins, Harlingen, Tex.  
Filed Nov. 2, 1964, Ser. No. 408,226  
11 Claims. (Cl. 73-67.2)

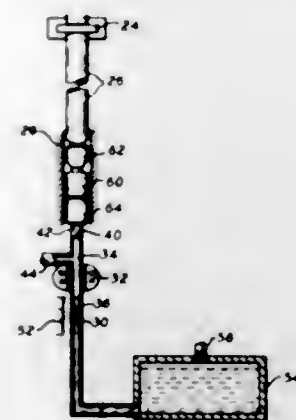


A method for detecting flaws in a member including vibrating the member at a resonant frequency, establish-

### 3,411,345 APPARATUS FOR INDICATING LOAD ON MACHINE FRAMES

George Wintriss, Carversville, Pa., assignor to Industronics Controls, Inc., New York, N.Y., a corporation of New York

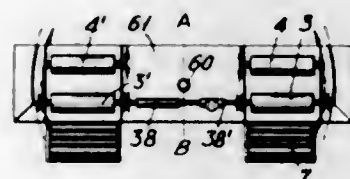
Filed Dec. 9, 1965, Ser. No. 512,636  
13 Claims. (Cl. 73-88)



This specification discloses apparatus for indicating the load on a press by measuring the elongation of the frame of the press when under load. A pneumatic system contains air under pressure and the escape of air from the system is controlled by a part connected to the frame of the press near the crank shaft. Elongation of the frame causes this part to move with respect to the pneumatic system and to cause a pressure change in the pneumatic system. This pressure change operates actuators for signal lights which selectively indicate progressively greater pressure changes in the pneumatic system. The load is preferably indicated in percentage of total safe load, and as an overload when it exceeds a predetermined value.

### 3,411,346 APPARATUS FOR SUPPORTING AND TESTING VEHICLE WHEELS

Romano Gagliardi, Lugano, Switzerland, assignor to R.A.P. Rollen Automobil Patent Anstalt, Vaduz, Liechtenstein  
Filed Aug. 16, 1965, Ser. No. 479,855  
Claims priority, application Switzerland, Aug. 25, 1964, 11,192/64; Jan. 28, 1965, 1,216/65  
4 Claims. (Cl. 73-117)



Apparatus for supporting vehicle wheels for test purposes comprises a portable frame carrying a pair of generally horizontal rotatable rolls. Means are provided for changing the orientation of the axis of one roll with respect to the axis of the other roll of the pair. Ramps are provided for enabling vehicle wheels to mount the rolls, and means are provided for measuring the angular velocity of at least one of the rolls and for braking the rotation of at least one of the rolls. The rolls of a pair can be oppositely inclined at small acute angles to the horizontal for centering the supported wheel, and the

axes of the rolls can also be inclined in a horizontal plane. Two such portable frames can be secured together by parallel rods at the front and rear of the frames.

### 3,411,347 VIBRATING STRING FOR MEASURING PURPOSES

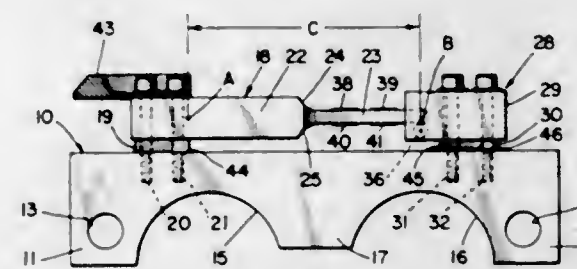
Johannes Wirth and Mario Gallo, Zurich, Switzerland, assignors to Wirth, Gallo & Co., Zurich, Switzerland  
Filed Oct. 20, 1965, Ser. No. 498,914  
Claims priority, application Switzerland, Nov. 27, 1964, 15,394  
7 Claims. (Cl. 73-141)



A string for measurement purposes is mounted to vibrate in a given plane. When the string is set into transverse vibration, the ratio of the axes of the mean ellipse of gyration of the cross section along the length of the string is suitably chosen for two resonant frequencies of like mode, which develop within the measuring range of tensions in the direction of the two bisectors of the ellipse of radiation and one of which is used for the measurement, to differ by more than their respective resonance band widths while remaining between the resonant frequencies of neighboring modes.

### 3,411,348 ELECTRONIC DYNAMOMETER

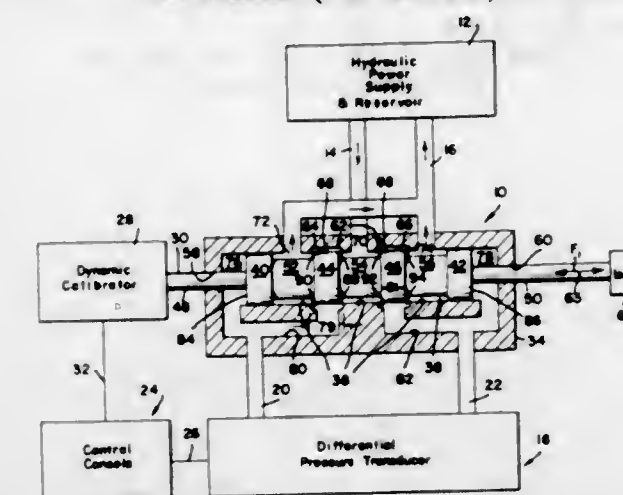
Harry B. Schultheis, Jr., Woodland Hills, Calif., assignor to W. C. Dillon & Company, Inc., a corporation of California  
Filed June 30, 1966, Ser. No. 561,957  
4 Claims. (Cl. 73-141)



A dynamometer in the form of a flexible bar arranged to bend under a loading force is provided. Measurements of the force are effected by strain gauges secured to an elongated flexure member running parallel to the top surface of the bar and having one end rigidly secured to the bar. The other end in turn rides over a roller structure rigidly secured adjacent to another end of the bar the flexure member thus being flexed upon bending of the bar. Electrical output signals indicative of the loading are derived from changes in the physical lengths of the strain gauges secured to the flexure member. The natural resonant frequency of the bar is different from the natural resonant frequency of the flexure member so that sudden release of loads will not damage the instrument, the bar motion tending to damp out vibrations in the flexure member.

### 3,411,349 HIGH RESPONSE HYDRAULIC/PNEUMATIC LOAD CELL SYSTEM

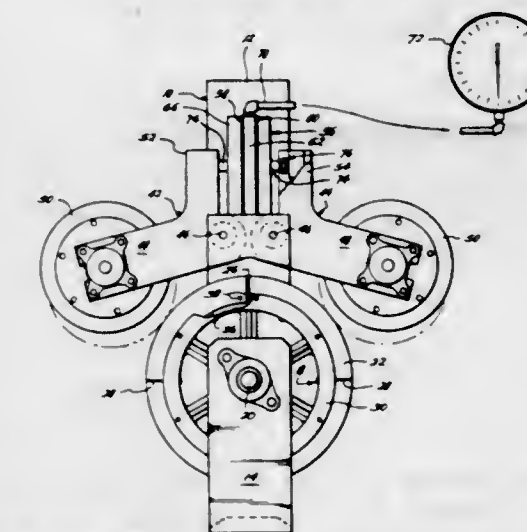
Jody D. Smith, Chatsworth, and Robert Kuberek, Jr., Thousand Oaks, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware  
Filed July 26, 1966, Ser. No. 568,006  
10 Claims. (Cl. 73-141)



The system measures linearly applied unidirectional and bidirectional forces of varying frequency or, conversely, calibrates a pressure differential transducer through the use of forces having known values and has a capability of reading frequency rates up to 1,000 c.p.s. The primary element of the system is a closed loop high dynamic response load cell having a high speed and large flow closed loop hydraulic supply, including a large under-lapped negative feedback circuit control assembly, and a closed loop negative pressure feedback circuit including opposed spool surfaces of equal area. Compartments adjacent these large spool areas have the smallest possible volume to obviate the effects of fluid compressibility. This smallest possible volume permits a very small fluid displacement in comparison to the large and high speed flow of fluid in the hydraulic supply so as to effectively eliminate the inertia of the mass of supply fluid. Therefore, the system has a very high hydraulic spring rate, a fast response to input force loads and a very low spool displacement under the loads to develop a restoring output force proportional to the force load input which is independent of supply pressure and the supply pressure variations.

### 3,411,350 CABLE LENGTH AND TENSION INDICATING APPARATUS

Martin T. Sokolosky, 3703 Underwood, Houston, Tex., 77025  
Filed Jan. 16, 1967, Ser. No. 609,569  
7 Claims. (Cl. 73-144)



Cable length and tension measuring apparatus of the measuring wheel type including means for adapting such



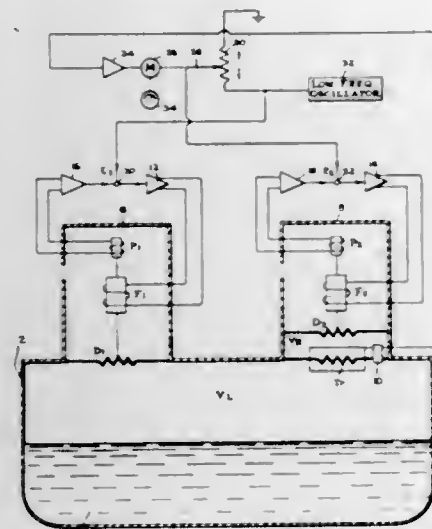
apparatus for use with cables of different diameters while maintaining accurate length measurement and indicating the tension on the cable.

3,411,351

**FLUID MEASURING SYSTEM**

Joseph Schwartz, Ossining, N.Y., assignor to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York

Filed Oct. 23, 1965, Ser. No. 503,436  
2 Claims. (Cl. 73-149)



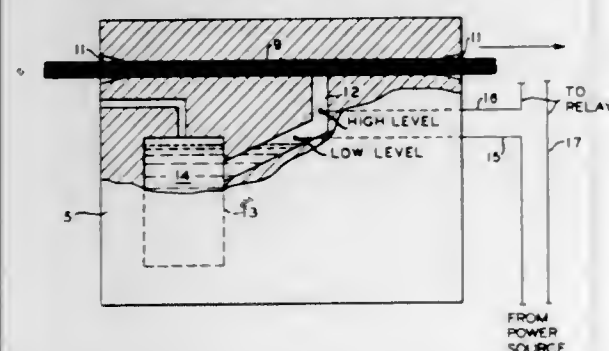
A fluid gauging system which derives liquid volume from pressure changes in the ullage volume within a container of liquid to be measured wherein a small reference chamber is connected to the main tank such that the gas composition and static pressure in the reference chamber is the same as that in the main tank containing the ullage space. A first transducer means is connected to the main tank for producing a continuous known change in the ullage volume while a second transducer means connected to the reference chamber provides a similar alternating volume change for pressure variations therein. By means of a servo loop including a differential pressure transducer connected between the tank volume and reference chamber volume, the alternating components of the ullage and reference gas pressures are made equal, the output signal necessary to bring about this null condition being an indication of the ullage volume and hence the volume of liquid in the container.

3,411,352

**METHOD AND APPARATUS FOR DETERMINING YARN BULK**

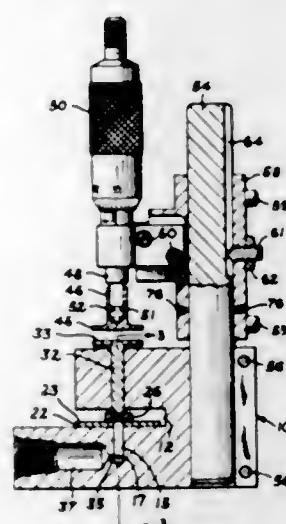
Frederick L. Stoller, Greenville, S.C., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 1, 1966, Ser. No. 591,201  
5 Claims. (Cl. 73-160)



Insufficiently bulked sections of yarn are detected by passing the yarn through a tube to establish a fluid pressure within the tube which is affected by the bulk of the yarn and monitoring the established pressure.

3,411,353  
**FORCE MEASURING APPARATUS**  
William H. Smyers, Jr., Dayton, Ohio, assignor to Koehler-Dayton, Inc., a corporation of Ohio  
Continuation of application Ser. No. 395,479, Sept. 10, 1964. This application June 14, 1967, Ser. No. 646,122  
6 Claims. (Cl. 73-161)



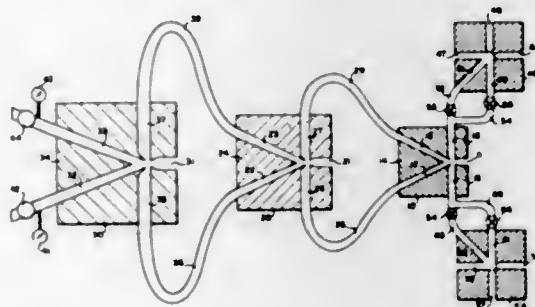
Apparatus including a body defining an air chamber having an outlet surrounded by a smooth surface forming a seat for a force sensing member connected to a movable platform. Air is supplied to the chamber and the flow from said outlet is restricted by the force sensing member, and indicating means registers the changes of air pressure within the chamber in response to minute movement of the sensing member. A micrometer supports a pressure plate above the platform and is quickly released to slide on a supporting post for conveniently inserting and removing articles between the pressure plate and platform.

3,411,354

**CURRENT METER**

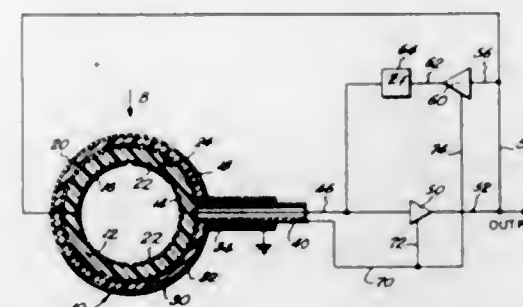
Julian Josephson, 4814 Eastern Lane, Apt. 103, Suitland, Md. 20023

Filed Aug. 18, 1966, Ser. No. 573,392  
5 Claims. (Cl. 73-170)



This disclosure is directed to a device for determining ocean currents with a minimum of moving parts. The device includes a three stage fluid amplifier system in which the only movable parts are control valves and pressure gages none of which are directly in the current flow through the amplifier system. The fluid amplifiers are connected in series such that the outputs of one stage controls the fluid output flow through the next stage in the series, etc. The output of the last fluid amplifier stage is provided with a pressure gage and a fluid flow meter which determines the flow of the water through the last stage of the fluid amplifier system. The pressure indicated by the pressure gage and the fluid flow indicated by the flow meter represents the current flow measured by the amplifier system. In use, the device is suspended from a stationary ship, secured to a buoy, or any other means from which current flow may be determined.

3,411,355  
**ELECTROMAGNETIC VOLUMETRIC FLOWMETER**  
Vincent J. Cushing, 9804 Hillridge Drive, Kensington, Md. 20795  
Filed June 17, 1966, Ser. No. 558,486  
5 Claims. (Cl. 73-194)



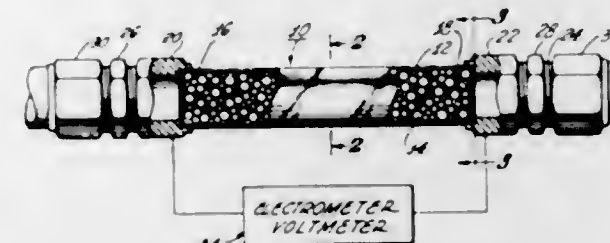
Two detecting electrodes are disposed at opposite sides of a flow conduit, and a guard means is disposed adjacent a high impedance electrode which is connected with the high impedance input of a negative gain amplifier. The output of the amplifier is connected with the other of the electrodes which comprises a low impedance electrode. The electrical network includes means for maintaining the guard means and the reference level of the amplifier means at the same potential. Shield means is also disposed outwardly of the high impedance electrode.

3,411,356

**ZETA POTENTIAL FLOWMETER**

Robert C. Seamans, Jr., Deputy Administrator of the National Aeronautics and Space Administration with respect to an invention of Billy G. Moser, Lake View Terrace, and Raymond E. Wiech, Anaheim, Calif.

Filed Aug. 3, 1966, Ser. No. 570,095  
8 Claims. (Cl. 73-194)



A flowmeter is disclosed which consists of a tubular chamber, disposed in the direction of flow of a fluid. At least 60% of the chamber volume is filled with non-porous glass beads. Electrodes with electrically conductive meshes, through which fluid flows into and out of the chamber, are positioned at opposite ends of the chamber. The rate of flow of fluid through the chamber is determined by measuring the Zeta potential difference between the electrodes.

3,411,357

**POSITIVE CRANKCASE VENTILATION TESTER**

Elbert B. Childs, Hastings-on-Hudson, N.Y., assignor to Mobil Oil Corporation, a corporation of New York

Filed Nov. 17, 1967, Ser. No. 684,067  
8 Claims. (Cl. 73-209)

A flow meter useful in measuring the rate of gas flow is constructed of two concentric tubes wherein the inner tube has a V-shaped slot oriented parallel to the longitudinal axis of the tube, the sides of which have a variation in slope; and an outer tube telescoped over the inner one. A low density sphere is freely movable and retained within the inner tube. In use, the instrument is positioned vertically so that the apex of the V-shaped slot points downwardly and gas is passed upwardly through the tube. The movement of the sphere in the tube is a measure of the rate of gas flow. The variation in slope of the V-

shaped slot results in a non-linear instrument wherein there is a relatively large displacement of the sphere at a low gas flow rate and a progressively smaller displacement



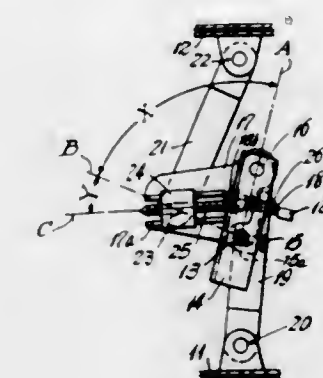
ment of the sphere as the gas flow rate increases. The instrument may be employed to advantage in the testing of positive crankcase ventilation systems.

3,411,358

**ADJUSTMENT FLANGE ASSEMBLY FOR GAS METERS**

Theodore A. St. Clair, Fairfield, and Louis A. Godkin, Bethel, Conn., assignors to Textron, Inc., Providence, R.I., a corporation of Rhode Island

Filed Mar. 21, 1967, Ser. No. 624,747  
5 Claims. (Cl. 73-281)



The three chamber gas meter is provided with a novel tangent adjustment flange assembly having a movable pivot so arranged as to permit displacement adjustment of the diaphragm without substantial interference with or alteration of the timing of the meter. Also the timing adjusting screw and the displacement adjusting feed screw are so arranged in close proximity that they can readily be located by an adjusting tool inserted through an opening in the meter casing for adjustment of the timing and displacement during the proving of the meter.

3,411,359

**OVEN CONTROL MEANS AND PARTS THEREFOR OR THE LIKE**

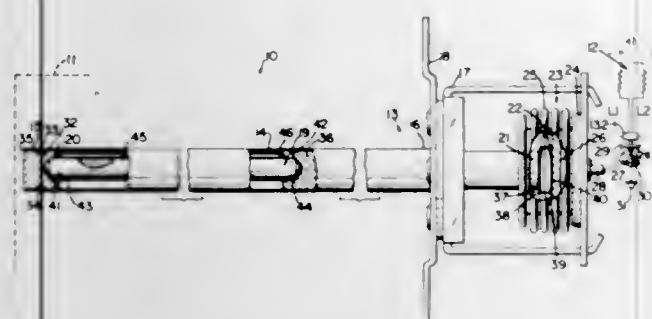
Henry F. Hild and Siegfried E. Manecke, Indiana, Pa., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Mar. 7, 1966, Ser. No. 532,464  
4 Claims. (Cl. 73-362.3)

This disclosure relates to a rod and tube temperature sensing unit for an oven that has the rod thereof formed



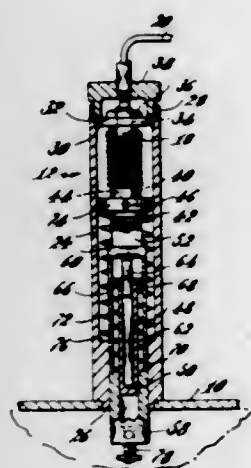
of a material having a substantially linear rate of expansion and contraction whose coefficient is less than the coefficient of expansion and contraction of the associated tube means with the rod means and tube means being so constructed and arranged that the unit is adapted to turn off the heating means before the temperature of the rod means can increase to the selected temperature for the



oven and is adapted to turn on the heating means before the temperature of the rod means can be decreased to the lowest temperature that the oven reaches whereby the unit is adapted to provide a relatively narrow temperature differential in the oven as the temperature of the rod means will never reach the selected temperature during the selected temperature cooking operation.

### 3,411,360 TEMPERATURE CONTROLLER AND/OR RECORDER WITH COMPENSATOR

John A. Denner, West Roxbury, Mass., assignor to United Electric Controls Company, Watertown, Mass., a corporation of Massachusetts  
Filed Oct. 21, 1965, Ser. No. 499,925  
10 Claims. (Cl. 73-362.5)



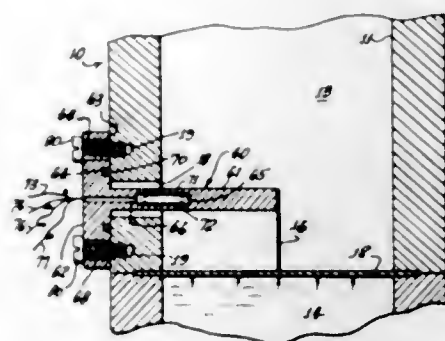
A temperature compensator comprising telescoping parts having distal and proximate ends, means yieldably resisting expansion of the telescoping parts, and a thermally expandable rod disposed between the parts with its ends in engagement, respectively, with the proximal ends of the parts so that expansion of the parts is neutralized by the expansion of the rod.

### 3,411,361 SEALED BEAM SENSORS

William H. McLellan, Pasadena, Calif., assignor to Electro-Optical Systems, Inc., Pasadena, Calif., a corporation of California  
Filed Oct. 23, 1965, Ser. No. 503,137  
10 Claims. (Cl. 73-398)

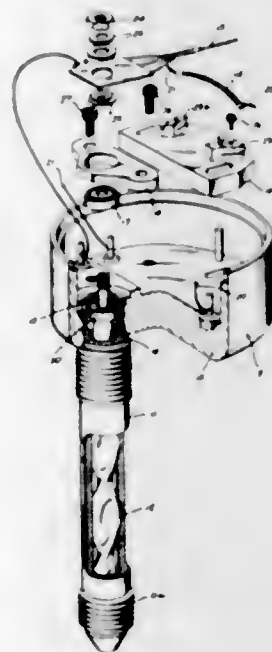
Sealed beam strain sensing apparatus cantilever mounted in the interior volume of a structure and having gages disposed within a transverse slot in the beam. Elec-

trical connecting leads extend from the gages through a longitudinal internal beam passageway in its secured end and a registered passageway through the structure



trical connecting leads extend from the gages through a longitudinal internal beam passageway in its secured end and a registered passageway through the structure

3,411,362  
**DIRECT DRIVE PRESSURE TRANSDUCER**  
John Arasim, Jr., Albuquerque, N. Mex., assignor to Sparton Corporation, Jackson, Mich., a corporation of Ohio  
Filed Dec. 20, 1965, Ser. No. 514,794  
9 Claims. (Cl. 73-398)

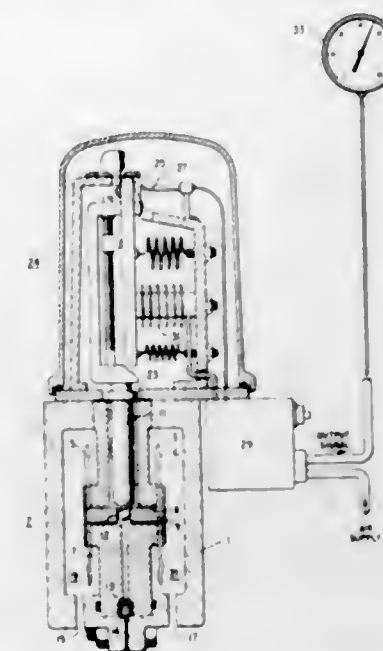


An electromechanical transducer for converting pressure into electrical signals comprising a rotatably mounted twisted Bourdon tube adapted to directly drive a wiper arm cooperating with a potentiometer to provide for a high resolution, low hysteresis instrument.

3,411,363  
**DIFFERENTIAL PRESSURE TRANSMITTER**  
Joseph A. Danvic, Lyndhurst, and Peter B. Lewis, Euclid, Ohio, assignors to Bailey Meter Company, a corporation of Delaware  
Filed Dec. 1, 1966, Ser. No. 598,441  
4 Claims. (Cl. 73-407)

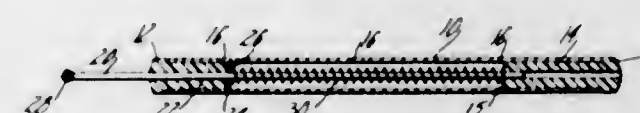
A differential pressure responsive device using two chambers, a nesting bellows in each chamber, a bar linking the bellows, and fluid communication between the bellows. The bar has a thermal coefficient of expansion that tends to compensate for the thermal expansion of the fluid. The bar contacts a beam midway between the

bellows and thereby transmits the motion of the bar outside the device. There is symmetry in the structure of the



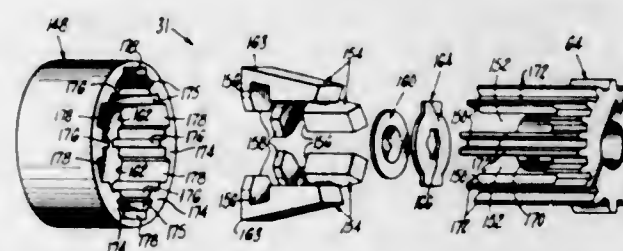
device about the beam tending to cancel static pressure error.

3,411,364  
**CONTACT LENS INSTRUMENT**  
Donald W. Horley, Winchester, and Donald R. Korb, Boston, Mass., assignors to Boylston Research Associates, Boston, Mass., a partnership consisting of Donald W. Horley and Donald R. Korb  
Filed Dec. 7, 1965, Ser. No. 512,159  
5 Claims. (Cl. 73-432)



An instrument for simulating eyelid pressure on a contact lens includes a tube  $4\frac{3}{8}$  inches long in which is axially received a  $\frac{1}{10}$  inch diameter rod, the end of which protrudes  $\frac{3}{4}$  inch from the tube. The forward end of the rod is rounded and coated with a soft compound which has a high coefficient of friction and prevents scratching of the lens. A 30-40 turn helical spring of 0.009 inch music wire surrounds the rods and applies a biasing force of about 20 grams to the rod which remains substantially constant over the permitted range of travel of the rod (less than  $\frac{3}{4}$  inch). The exterior surface of the tube is knurled and has several weep holes therethrough.

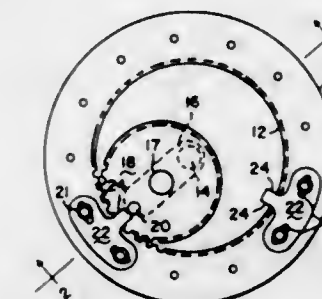
3,411,365  
**GOVERNOR FOR FUEL INJECTION PUMP**  
Vernon D. Roosa, % The Hartford Machine Screw Company, P.O. Box 1440, West Hartford, Conn. 06102  
Filed Nov. 1, 1965, Ser. No. 505,840  
10 Claims. (Cl. 73-494)



A fuel pump governor of the type utilized in fuel injection systems for delivering measured charges of fuel to the nozzles of an associated internal combustion en-

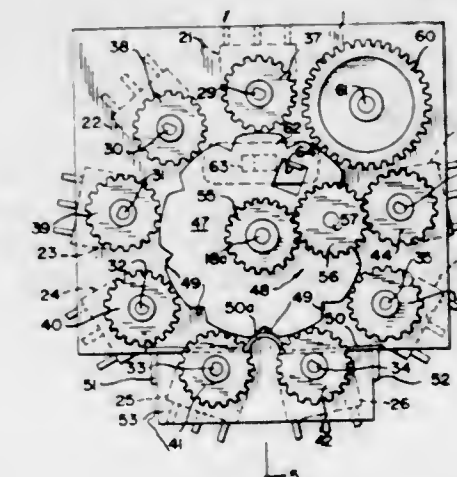
gine. Said governor comprising a gear, one end of which is segmented to provide a plurality of angularly spaced slots around the periphery thereof, a cap member engaging the segments of said gear for rotation therewith, a plurality of weights mounted in said slots for pivotable movement during rotation, whereby said gear and cap members form a cage for guiding the weights in said pivotable movement.

3,411,366  
**ADJUSTABLE STOP MECHANISM**  
Alfonso Leto, Granada Hills, Calif., assignor to General Precision Systems Inc., a corporation of Delaware  
Filed Aug. 22, 1966, Ser. No. 574,125  
1 Claim. (Cl. 74-10.2)



A shaft rotation of stop mechanism, the limits of which may be readily adjustable while the mechanism is coupled to its associated mechanism. The input shaft drives a planetary gear system in which a small spur gear rotates in a stationary internal gear. An index pin in the surface near the periphery of the spur gear describes a hypocycloid as the input shaft rotates and strikes a plate which is adjustably mounted at any desired position around the internal gear.

3,411,367  
**MULTIPLE FUNCTION ADJUSTMENT MEANS**  
Dominick A. Massa, Arlington Heights, and Richard W. Blohm, Norridge, Ill., assignors to Warwick Electronics Inc., a corporation of Delaware  
Filed Sept. 9, 1966, Ser. No. 578,232  
10 Claims. (Cl. 74-10.45)



A control means for an electronic device, such as a color television set, having a plurality of adjustable function controlling devices arranged at fixed positions in a compact area, with a single adjustment means being movable to a plurality of locations, each adjacent to a function controlling device, where it is effective to adjust the selected device. In one embodiment, a drivable means is



rotatably mounted at a fixed location on a detent wheel for direct engagement with driven means associated with a selected function controlling device. In a second embodiment, a drivable means is rotatably mounted on an arm that is pivotally mounted on a detent wheel, with the arm being movable relative to the detent wheel to place the drivable means in engagement with driven means associated with a selected function controlling device. In both embodiments the drivable means is rotatable about an axis that is parallel with the axes of the driven means.

3,411,368

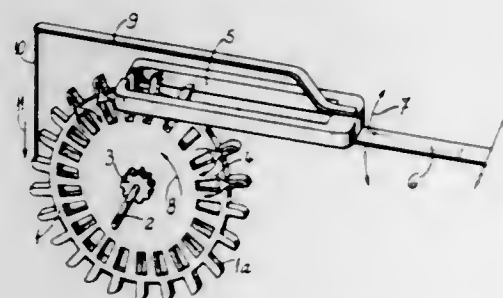
**MAGNETIC DRIVING DEVICE**

Ali Schneider, Neuchatel, Switzerland, assignor to Ebauches S.A., Neuchatel, Switzerland, a firm of Switzerland

Filed Dec. 5, 1966, Ser. No. 599,208

Claims priority, application Switzerland, Dec. 10, 1965, 17,093/65

2 Claims. (Cl. 74—142)



A magnetic driving device comprising, a bifurcated member, a rotatable member, a toothed member rigid with said rotatable member and positioned between the bifurcations of the rotatable member, the oscillating member and toothed member being formed from magnetic material and constituting a magnetic way, and a pawl carried by said oscillating member and drivingly engageable with the toothed member only on initial actuation of the device to drive the wheel.

3,411,369

**TRACTIVE FLUIDS AND METHOD OF USE**

William C. Hammann, Creve Coeur, and Robert M. Schisla, Kirkwood, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 586,370, Oct. 13, 1966. This application Aug. 15, 1967, Ser. No. 660,575

37 Claims. (Cl. 74—200)

Improvements in tractive drives are afforded through use of certain fused, saturated, carbon-containing compounds as the fluid component thereof. The tractive fluids of this invention, when disposed on the tractive surfaces, provide increased traction as compared to conventional fluids. The tractive fluids disclosed herein are defined by limitations on chemical structure.

3,411,370

**TORQUE RESPONSIVE MULTI-ROLLER FRICTION DRIVE**

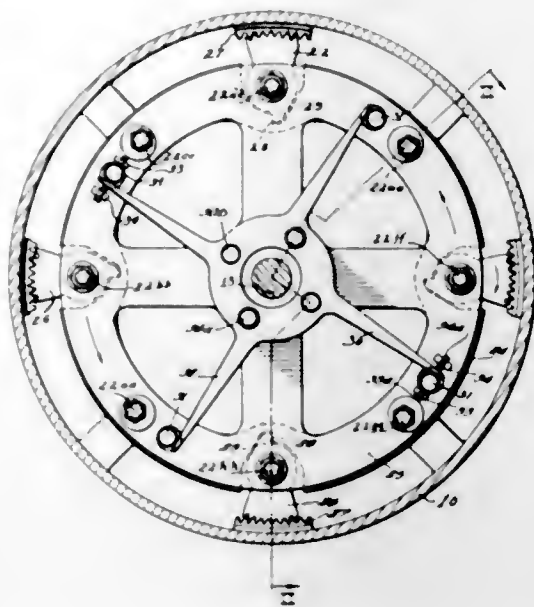
Algirdas L. Nasvytis, Cleveland, Ohio, assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio

Filed Dec. 27, 1966, Ser. No. 604,736

9 Claims. (Cl. 74—208)

A friction gear system employing an output annular ring member and a concentric input sun member drivingly engaged by three rows of friction rollers. A two part carrier is provided, each part rigidly carrying alternate rollers of the outer row. A lost motion connection is

provided between the carrier parts and a lever system is provided to rotate one carrier part relative to the



other a limited distance to maintain a given preload to the gear system dependent on the transmitted torque.

3,411,371

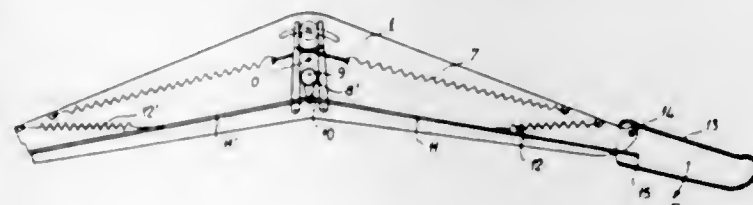
**STEERING DEVICES OF AUTOMOTIVE VEHICLES**

Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a French corporation

Filed June 28, 1966, Ser. No. 561,889

Claims priority, application France, July 30, 1965, 26,678

3 Claims. (Cl. 74—495)



Steering device for a vehicle having a steering column with a rudder mounted on the steering column having a stop member coincident with the rudder pivot axis. Two levers are pivoted on the central portion of the rudder and bear against the stop member. Two tension springs are disposed symmetrically between a point adjacent to the free end of the rudder and one of the levers. A fixed roller independent of the rudder is engaged by the two levers so that the springs will exert equal tractive efforts in opposite directions on the rudder whereby to rotate the rudder a force capable of compensating that of said antagonistic springs must be exerted on one end of the rudder.

3,411,372

**REMOTELY CONTROLLED MIRROR**

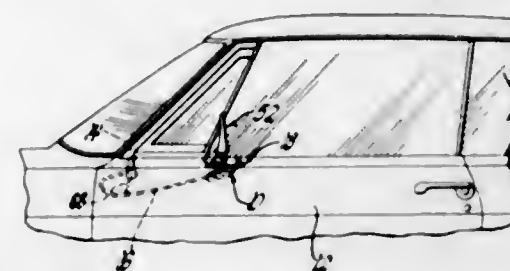
George A. Skillin, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 4, 1966, Ser. No. 570,216

6 Claims. (Cl. 74—501)

A remotely controlled mirror wherein a mirror assembly is fixedly connected to one end of a shaft that is rotatably supported by a pivot member. The pivot member, in turn, is universally supported within a socket formed by a mounting bracket. Gearing at the other end of the shaft is operable through a flexible cable controlled

by a remotely located actuator such that rotation of the cable positions the mirror assembly about a vertical axis



while axial movement of the cable positions the mirror assembly about a horizontal axis.

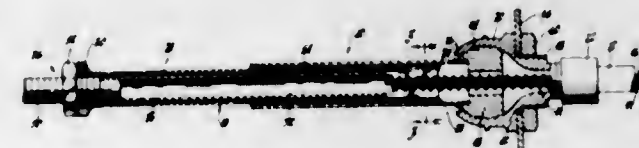
3,411,373

**MOTION TRANSMITTING REMOTE CONTROL ASSEMBLY**

George M. Zieber, King of Prussia, and Rodney L. Alderfer, Harleysville, Pa., assignors to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware

Filed Oct. 20, 1966, Ser. No. 588,166

11 Claims. (Cl. 74—501)



A motion transmitting remote control assembly which includes a conduit and a motion transmitting core element movably disposed in the conduit. A sleeve is operatively attached to the end of the conduit and slidably supports a tubular member. A gripping member is disposed within the tubular member and includes a first end which is flared and has a bore extending longitudinally thereto for receiving the core element. The other end of the gripping member extends from the tubular member and has threads thereabout. A nut threadably engages the threads on the gripping member and abuts the end of the tubular member to draw the gripping member into the tubular member so that the flared end of the gripping member is radially compressed and forced into gripping engagement with the core element as it moves into the tubular member. The nut may be loosened to move the flared end of the gripping member out of the tubular member to release the gripping connection with the core element so that the gripping member may be repositioned or adjusted along the length of the core element and redispensed in gripping connection with the core element, thus changing the overall length of the core element.

3,411,374

**PLASTIC VENT CONTROL**

Joseph A. Holly, Milwaukee, Wis., assignor to Springtrol, Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed May 3, 1967, Ser. No. 635,760

3 Claims. (Cl. 74—502)



A push-pull control is provided which comprises a plastic casing having an actuating member axially movable in the casing. As an integral part of the casing two cantilever fingers are positioned axially of the casing and bear against

the actuating member to provide a preload resisting displacement of the actuating member. This preload is achieved by reason of the fact that the fingers as molded extend into the path of the actuating member a distance in the range of about 0.010 inch to about 0.025 inch. Desirably the plastic is an acetal copolymer.

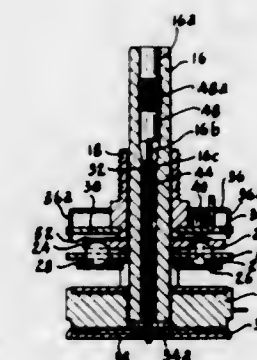
3,411,375

**ROTARY SWITCH HAVING TORSION BAR TYPE RETURN SPRING**

Peter A. Medicks and Earl E. Schwarzenbach, Smithfield, N.C., assignors to Shallcross Manufacturing Company, Selma, N.C.

Filed Feb. 3, 1967, Ser. No. 613,932

4 Claims. (Cl. 74—504)



A rotary switch operating mechanism having a torsion bar type return spring, secured at one end in a bore in a rotary operating shaft, and non-rotatably secured at its other end to the switch frame to afford return of the operating shaft to normal position following rotation thereof to one or more switch operating positions.

3,411,376

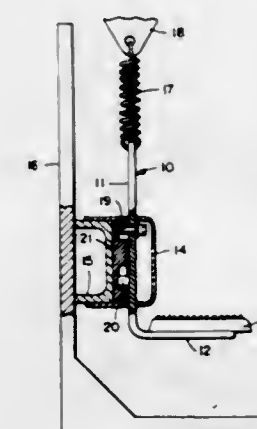
**INTERLOCKING DEVICE FOR ACTUATING MEMBER**

Klaus Weber, Remscheid-Lennep, and Robert Führer and Fritz Urbahn, Remscheid, Germany, assignors to Barmag Barmen Maschinenfabrik Aktiengesellschaft, Wuppertal, Germany

Filed Feb. 20, 1967, Ser. No. 617,318

Claims priority, application Germany, Mar. 26, 1966, B 65,811

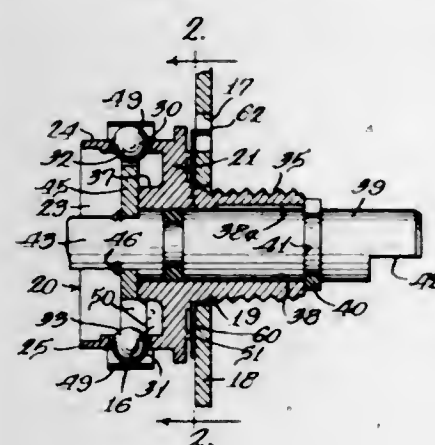
5 Claims. (Cl. 74—527)



Resiliently biased, manually operated, actuating member adapted to reciprocate between at least two stop positions, in combination with locking member containing endless keyway and reciprocable substantially laterally to reciprocal movement of actuating member. Guide pin on actuating member rides in endless keyway, which has at least two stop notches.

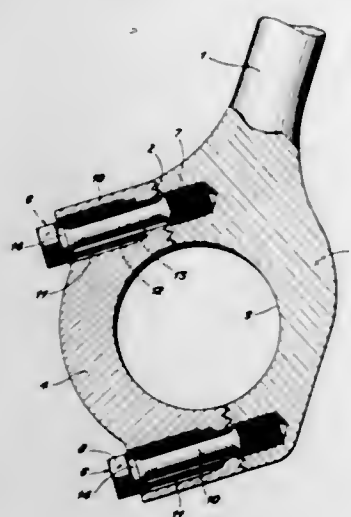


**3,411,377**  
**INDEX MECHANISM WITH MEANS FOR ADJUSTING THE ANGULAR ORIENTATION THEREOF**  
 Bernard J. Golbeck, Crystal Lake, Ill., assignor to Oak Electro/Netics Corporation, a corporation of Delaware  
 Filed Mar. 3, 1967, Ser. No. 620,468  
 11 Claims. (Cl. 74-527)



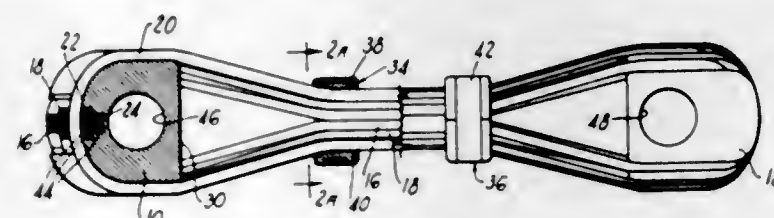
An adapter member for an index mechanism of a rotary electric switch having a fixed locating lug thereon, in which the adapter member is provided with a plurality of equiangularly spaced notches at the outer periphery thereof each being adapted to embrace the locating lug selectively, and wherein a further locating member extends outwardly from the outer periphery of the adapter member, so that the adapter member can be rotated relative to the index mechanism to position different ones of the peripheral notches selectively in engagement with the index mechanism locating lug, and the adapter member locating member can be inserted through an opening in a mounting plate to vary the position of the index mechanism relative to the mounting plate.

**3,411,378**  
**SPLIT CONNECTING ROD**  
 Pierre Borgeaud, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company  
 Filed Sept. 21, 1966, Ser. No. 581,072  
 Claims priority, application Switzerland, Sept. 24, 1965, 13,254/65  
 5 Claims. (Cl. 74-579)



1. A connecting rod comprising a shank portion and a cap portion, said portions having mating surfaces extending obliquely to the length of the shank, a plurality of screws securing the cap to the shank, and a tubular member disposed about each of said screws and engaged between the head of the screw and the cap.

**3,411,379**  
**MULTIPLE LOOP TIE-BAR**  
 Gerard P. Deyerling, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware  
 Filed Mar. 13, 1967, Ser. No. 622,789  
 11 Claims. (Cl. 74-579)

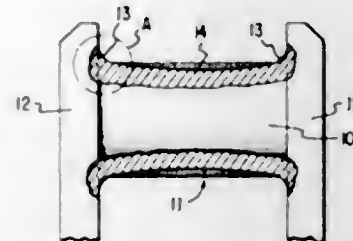


A tension-torsion tie-bar having a plurality of bands of parallel filaments encased in a flexible substance about and bonded to end fittings providing separate elements for carrying tensile loads while being torsionally flexible.

**3,411,380**  
**MEANS FOR INCREASING THE ENDURANCE LIMIT OF HIGHLY STRESSED STRUCTURAL PARTS, ESPECIALLY OF CRANK SHAFTS FOR MOTOR VEHICLES**

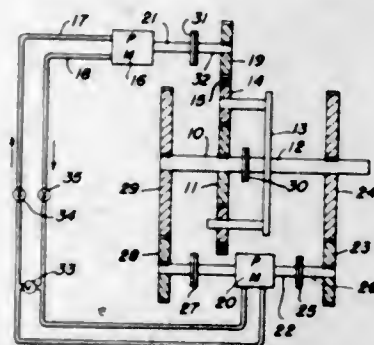
Jurgen Ehl, Stuttgart-Bad Cannstatt, and Rudolf Hornig, Hofingen, Wurttemberg, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart, Germany

Filed July 22, 1966, Ser. No. 567,204  
 Claims priority, application Germany, July 24, 1965, D 47,826  
 13 Claims. (Cl. 74-595)



A crankshaft with a surface-hardened pin portion, where the hardened zone boundary is concavely arcuate with respect to the adjacent pin surface and terminates on each side tangentially with the rounded-off fillet that smoothly joins the pin and adjacent web, and the method of producing the same. The intersection of the boundary and fillet being at an angle of 15° as measured from the center of curvature with respect to the perpendicular passing through the axis of the pin.

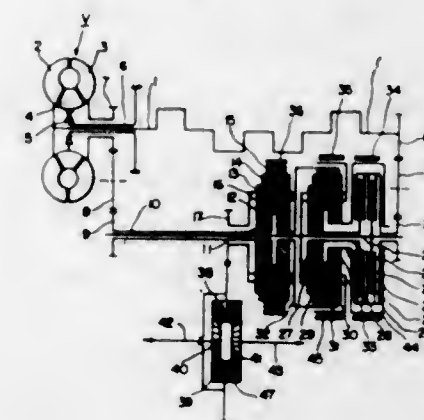
**3,411,381**  
**SPLIT TORQUE TRANSMISSION**  
 Elias Orshansky, Jr., San Francisco, Calif., assignor to URS Corporation, Burlingame, Calif., a corporation of California  
 Filed Sept. 8, 1966, Ser. No. 578,061  
 2 Claims. (Cl. 74-687)



A hydrodynamical transmission of the type having a planetary gear set with an input shaft secured to its input means, an output shaft secured to its output means, and

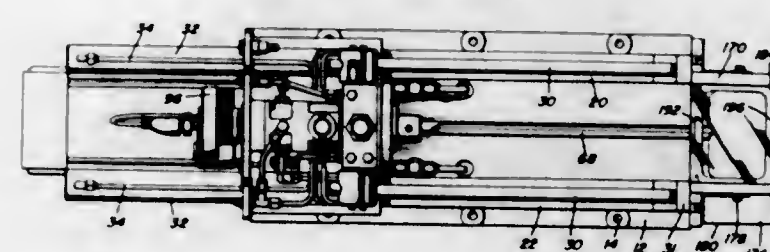
a hydraulic system connected to its reaction means and having a pair of pump-motors connected to each other by hydraulic conduits, so that when one acts as a pump, the other acts as a motor, one pump-motor acting as a pump for reaction on the reaction means, the other one being connected to the output shaft, so that the system acts as a torque divider. There are four clutches, one between the second pump-motor and the output shaft, one between the second pump-motor and the input shaft, one (normally disengaged) for directly connecting the input and output shafts, and one (normally engaged) for connecting the first pump-motor to the reaction means.

**3,411,382**  
**FIVE STAGE AUTOMATIC SPEED CHANGE DEVICE**  
 Yoichi Mori, Yokohama, Japan, assignor to Nissan Jidosha Kabushiki Kaisha, Yokohama, Japan  
 Filed May 24, 1967, Ser. No. 640,887  
 Claims priority, application Japan, July 15, 1966, 41/45,962  
 11 Claims. (Cl. 74-688)



A five stage automatic speed change device, comprising a torque converter having a pump connected to an input shaft and a turbine, a first planetary gear assembly connected to said turbine through a suitable transmitting means, a second planetary gear assembly connected to said turbine or said pump through a suitable transmitting means including two clutches, an output gear connected to said first planetary gear assembly, and three brake means, thereby said output gear is driven in five stages by actuating said clutches in combination with said brakes in a suitable manner.

**3,411,383**  
**HORIZONTAL SPINDLE DRILLING MACHINE WITH CONSTANT SPEED HYDRAULIC DRIVE**  
 Thomas W. Hotchkiss and Eric F. Bloch, Milford, Conn., assignors, by mesne assignments, to Eldorado Tool and Manufacturing Corporation, a corporation of Connecticut  
 Filed Dec. 31, 1964, Ser. No. 422,798  
 12 Claims. (Cl. 77-5)



A drilling machine of the horizontal spindle type having a constant speed hydraulic drive motor associated therewith capable of precise adjustment. The spindle is

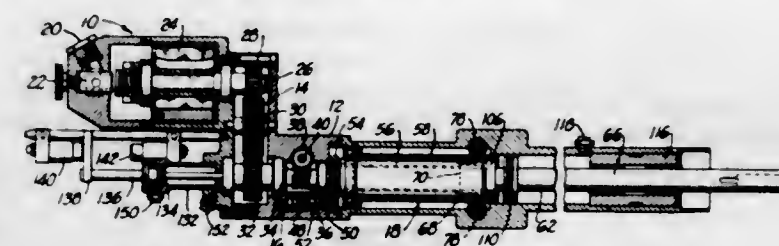
carried by a movable carriage having a pair of extensible and contractible motors operatively associated therewith for reciprocating the carriage. The spindle drivingly engages an elongated gun drill which extends through a guide at the outer end thereof and into a chip box with a work holder disposed on the outer surface of the chip box. A protective bellows extends between the drill carriage and the chip box to form a cover for the elongated drill. The hydraulic drive motor is provided with a precise control including a compensator for maintaining the output speed of the hydraulic motor substantially constant regardless of load variation on the output of the motor.

**3,411,384**  
**DRILLING APPARATUS**  
 Burton Ver Nooy, Broken Arrow, Okla., assignor to T. D. Williamson Inc., Tulsa, Okla.  
 Filed June 16, 1966, Ser. No. 558,141  
 10 Claims. (Cl. 77-37)



This invention relates to a hot tapping apparatus wherein a boring bar and bit are fed into a workpiece responsive to relative rotation between the boring bar and a feed drive. Such relative rotation is controlled by a slippable frictional drive between the boring bar and the feed drive which tends to prevent such relative rotation and therefore tends to prevent feeding of the boring bar and bit toward the workpiece. A slippable frictional holding connection is provided between the apparatus housing and the feed drive tending to overcome the frictional drive connection thereby causing the boring bar to feed toward the workpiece.

**3,411,385**  
**POSITIVE FEEDING STRUCTURE**  
 Robert C. Quackenbush, Glendale, Calif., assignor of one-half to Arthur B. Quackenbush, Glendale, Calif.  
 Filed Aug. 8, 1966, Ser. No. 570,839  
 20 Claims. (Cl. 77-32.8)



1. In a positive feeding structure for rotating and feeding tools and the like, the combination of: a housing; a spindle rotatably mounted in said housing; a lead screw rotatably mounted in said housing and operably connected to said spindle for axial movement with said spindle; means operably connected to said spindle and said lead screw for constantly rotating



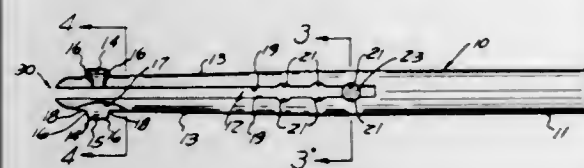
said spindle and lead screw in single directions of rotation during axial movement of said spindle and lead screw from a retracted position in a high speed advance stroke, in a reduced speed feeding stroke in the same axial direction as said advance stroke and a retraction stroke back to said retracted position; means operably connected to said spindle and lead screw for axially moving said spindle and lead screw in said high speed advance stroke; means threadably engaged with said lead screw for axially moving said spindle and lead screw through said lead screw threaded engagement in said reduced speed feeding stroke, said last mentioned means remaining threadably engaged with said lead screw throughout said spindle and lead screw high speed advance stroke and reduced speed feeding stroke and retraction stroke; and means operably connected to said spindle and lead screw for axially moving said spindle and lead screw in said retraction stroke.

3,411,386

## DEBURRING TOOLS

Louis A. Kubicek, Detroit, Mich., assignor to Burr-Ban Tool Service Company, Detroit, Mich., a corporation of Michigan

Filed Dec. 5, 1966, Ser. No. 599,273  
8 Claims. (Cl. 77-73.5)



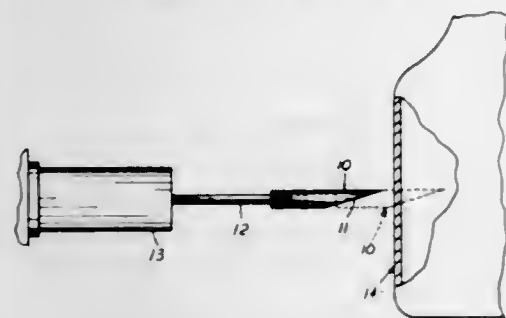
A cutting tool having a cylindrical body formed with a through slot to provide a pair of spaced apart spring arms with the cutting edges formed on the spring arms and having means for adjusting the spring tension of the spring arms.

3,411,387

## BOTTLE PUNCTURING METHOD AND DEVICE

Robert L. Bailey, Spokane, Wash., assignor to National Distillers and Chemical Corporation, New York, N.Y.  
Original application June 6, 1966, Ser. No. 555,373.  
Divided and this application Oct. 18, 1967, Ser. No. 647,943

2 Claims. (Cl. 83-30)



A method of puncturing plastic bottles by the gradual introduction of an elongated sharpened instrument. The instrument first initiates a slot through the bottle wall and thereafter expands the slot in a tubular arc to define an inner flap.

3,411,388

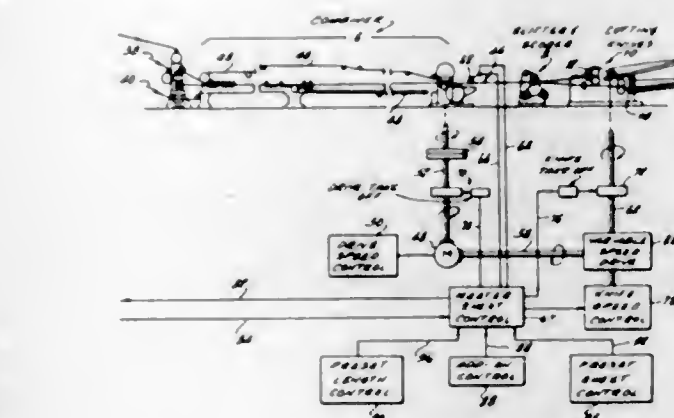
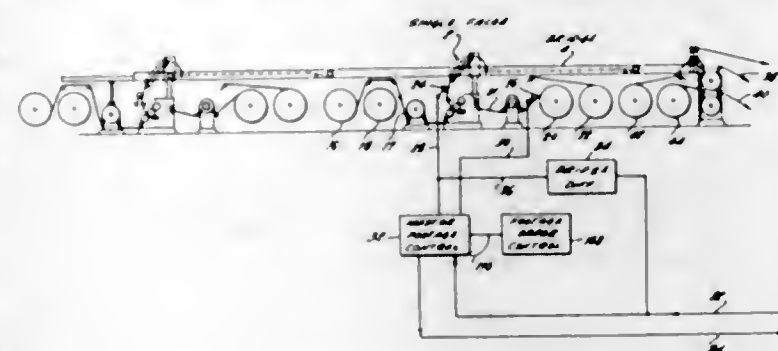
## INTEGRATED SHEET PRODUCTION CONTROL SYSTEM

Max Rappaport, River Edge, N.J., assignor, by mesne assignments, to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed Jan. 11, 1965, Ser. No. 424,685  
13 Claims. (Cl. 83-76)

An integrated system of sheet length and number order control, automatic cut-off knife speed control, and pro-

duction footage requirement and storage indication to aid in the production of webs of cardboard or corrugated box-board and afford cut-off of the web into desired numbers and lengths of individual sheets. A master sheet control is presettable for at least two successive production runs to direct the number and length of sheets to be produced. A digital pulse type cut-off knife speed control automatically functions under the direction of the master sheet control to hold the length of cut sheets within a predetermined tolerance range. The knife speed control corrects for errors in sheet length only when a sequential



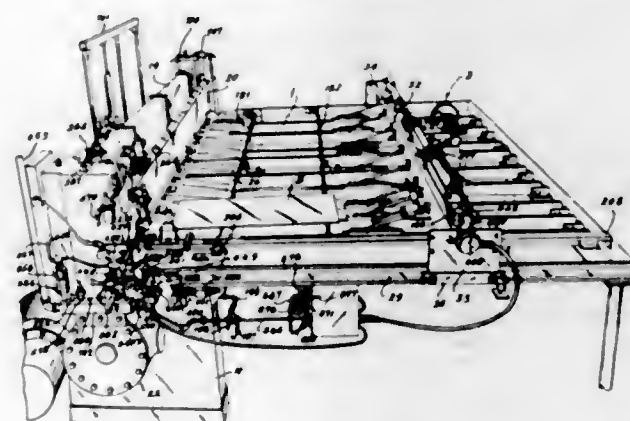
error trend is noticed, and does not afford corrected action when the desired preset length is changed. Automatic compensation for knife speed non-linearity is also incorporated. A master footage control responding to signals from the master sheet control presettings, a footage order control and from a rider on material entering an initial production station affords indication at any time during a production run of the footage of web material required to complete a production run of cut sheets. Continuous indication of the amount of partially completed web stored at an intermediate point is also provided.

3,411,389

## SHEARING APPARATUS AND METHOD

John M. Wiese, Kirkwood, Mo., assignor, by mesne assignments, to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Apr. 27, 1966, Ser. No. 545,641  
18 Claims. (Cl. 83-94)



An apparatus for shearing sheet metal to precise dimensions and angularity. The apparatus functions automatically to: transfer rough-cut blanks of sheet metal from a

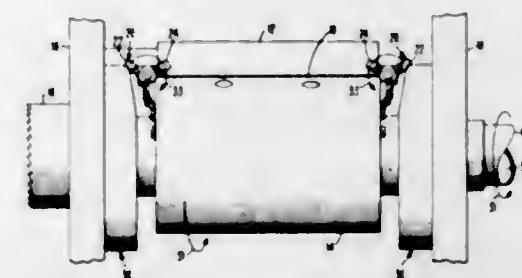
stack thereof onto a delivery table; provide positioning mechanism to move the blanks between shear blades; actuate the shear blades after the blanks are properly aligned and measured to cut the blanks into precisely dimensioned and angled pieces; dispose of the remanent sheet metal and convey the properly cut sheet metal pieces to stacking apparatus for stacking.

3,411,390

## WEB NOTCHING DEVICE

Kenneth B. Maynard, Apalachin, N.Y., and Verl W. Jennings, San Jose, Calif., assignors to International Business Machines Corporation, a corporation of New York

Filed Jan. 12, 1967, Ser. No. 608,863  
10 Claims. (Cl. 83-100)



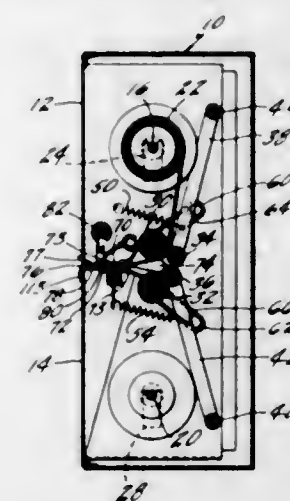
A notching device, having a rotatable support which rotates at a rate equal to the speed of a continuously moving web so that there is no relative motion between the support and the portion of the web that is in contact with said support, and cutters for completely shearing portions from the edges of said web during the time of contact; the rotatable support having a hollow structure for facilitating the removal of sheared out portions of the web by vacuum.

3,411,391

## APPARATUS FOR AUTOMATICALLY DISPENSING AND CUTTING SELECTED LENGTHS OF STRIP MATERIAL

Samuel Drubner, Waterbury, Conn., assignor to American Photocopy Equipment Company, Evanston, Ill., a corporation of Illinois

Filed Dec. 1, 1966, Ser. No. 598,311  
8 Claims. (Cl. 83-242)



1. A dispenser for dispensing material in the form of strips of preselected length, said dispenser comprising: means supporting a roll of the material to be dispensed, means for drawing material off of the roll on said supporting means, means operatively connected to said drawing means for sensing the removal of incremental lengths of material off the roll and for generating a signal commensurate with each increment,

counter means responsive to the signals generated by said sensing means for totaling said signals, means responsive to said counter means for providing signals indicative of coincidence between said totaled number of increments and said preselected length,

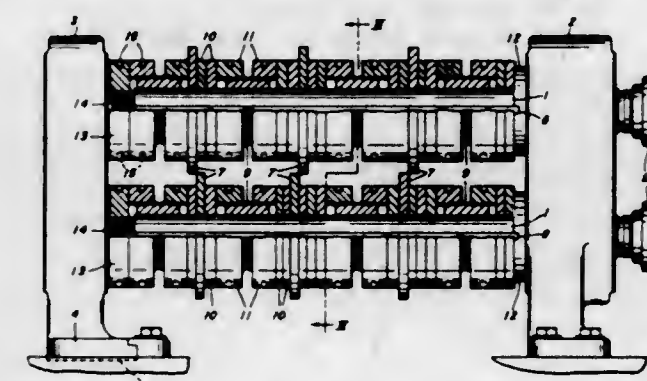
means responsive to said counter means for terminating operation of said drawing means, cutter means for transversely severing said material, means for applying a first coincidence signal to said cutter means to actuate said cutter means in a first direction to cut said material, and means responsive to the complete traversal of the material by said cutter means in a first direction for deenergizing the cutter means and altering electrical connections thereto whereby said cutter means will traverse the film in the opposite direction in response to another coincidence signal.

3,411,392

## ADJUSTABLE SLITTER KNIFE MOUNTING

Earl D. Spangler, Gary, Ind., assignor to United States Steel Corporation, a corporation of Delaware

Filed May 11, 1966, Ser. No. 549,348  
4 Claims. (Cl. 83-664)



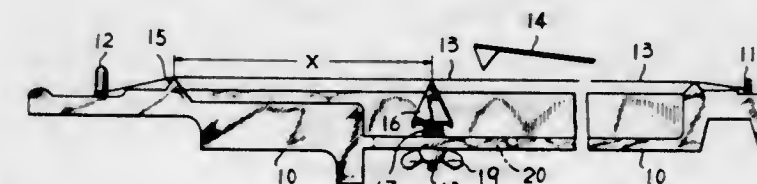
Slitting apparatus comprising slitter knives adjustably mounted in an axial direction on the arbors of the slitting apparatus. The axial operating positions of the slitter knives may be changed without removing either the slitter knives or the spacer sleeves.

3,411,393

## APPARATUS FOR ADJUSTING DAMPED OSCILLATION CHARACTERISTICS IN ELECTRONIC MUSICAL INSTRUMENTS

Masami Yamazaki, Yokohama, Japan, assignor to Victor Company of Japan, Limited, Yokohama, Japan, a corporation of Japan

Filed July 6, 1965, Ser. No. 469,430  
Claims priority, application Japan, July 9, 1964,  
39/38,176, 39/38,177, 39/38,178  
2 Claims. (Cl. 84-216)



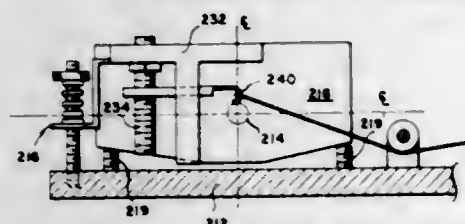
An apparatus for adjusting damped oscillation characteristics in electronic musical instruments wherein a contact portion of the damper, which contacts the oscillating body under pressure is formed with a knife-edge shape and the tone color and damped time of the oscillation is made adjustable by changing the position of the contact portion and the contact pressure.



### 3,411,394 FRETTED INSTRUMENTS TREMOLO-VIBRATO TUNING SYSTEM

Ralph S. Jones, Hyattstown, Md., assignor to Mirco-Frets Corporation, Frederick, Md., a corporation of Maryland

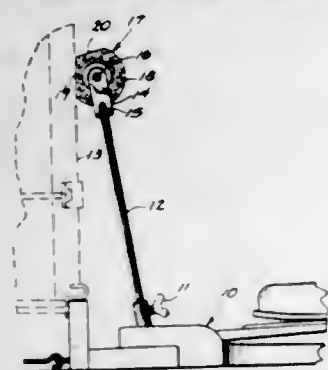
Filed June 29, 1965, Ser. No. 467,937  
7 Claims. (Cl. 84-313)



This is a tuning aid for fretted musical instruments such as guitars having tremolo and/or pitch modulation control. It is a novel combination of individual string bridge and anchor means therefor, which is adapted to maintain correct tuning of all strings while applying tremolo (pitch modulator) control in the playing of the instrument.

### 3,411,395 CONVERTIBLE BASS DRUM BEATER

Roger A. Hanes, Fort Dodge, Iowa, assignor of one-half to Thomas Keiser, Charles City, Iowa  
Filed Aug. 1, 1966, Ser. No. 569,194  
6 Claims. (Cl. 84-422)



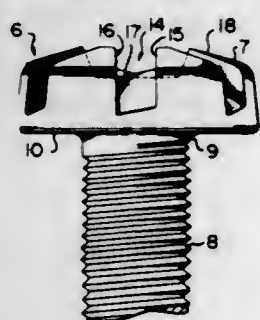
A convertible drum beater which has several different types of striking surfaces thereon, each of which can be rotated into an operative position as desired. The beater ball is mounted on an arm member which is secured to the foot pedal apparatus. The ball is rotatable about an axis which is perpendicular to the arm member longitudinal axis and which is parallel to the flat striking surface of the drum.

### 3,411,396 SCREW HEAD WITH INCLINED DRIVING RECESS

William M. Herpich, Litchfield, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Connecticut

Continuation-in-part of application Ser. No. 529,072, Feb. 21, 1966. This application Dec. 22, 1966, Ser. No. 603,949

17 Claims. (Cl. 85-45)



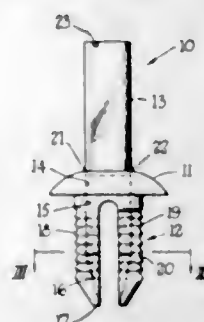
A screw having a head with channels therein. The channels are provided with bottom surfaces which are inclined both radially and circumferentially to facilitate

transmitting greater driving or tightening torque than removal torque, through the screw head through the screw shank.

### 3,411,397 PLASTIC FASTENER WITH ROTATABLY RELEASABLE EXPANDER

Douglas William Birmingham, Ickenham, England, assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware

Filed Mar. 6, 1967, Ser. No. 620,763  
Claims priority, application Great Britain, Mar. 7, 1966, 9,916/66  
2 Claims. (Cl. 85-72)



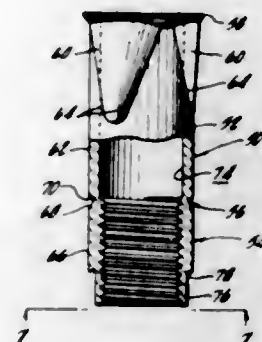
A rivet comprising a head, a hollow shank and an expander pin which projects from the head and which is struck down through the head to expand the shank. The shank is internally tapered towards its tip and is divided, by an axial slot into two resilient tongues. The pin is elongate in transverse cross-section and provided with means for facilitating its rotation relative to the head. Initially the pin is attached to the head with its major transverse axis perpendicular to the major transverse axis of the slot and when struck down through the head the pin forces the tongues radially outwardly. In order to release the rivet the pin is rotated through 90° to align the major transverse axes of the pin and the slot thereby allowing the tongues to return to their original unstressed position.

### 3,411,398 BLIND FASTENER

Richard H. Blakeley, Encino, and Paul Hernadi, Torrance, Calif., assignors to VSI Corporation, Pasadena, Calif., a corporation of Illinois

Continuation-in-part of application Ser. No. 539,182, Mar. 31, 1966. This application Mar. 30, 1967, Ser. No. 641,404

9 Claims. (Cl. 85-72)



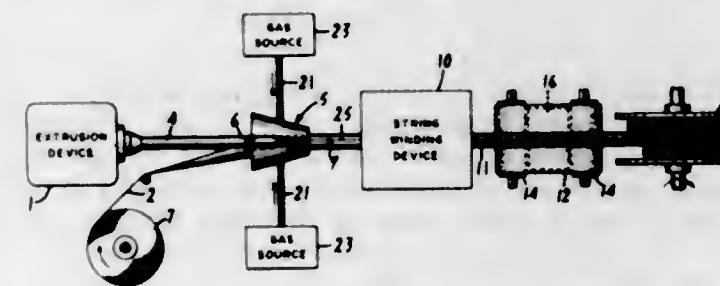
An integrally formed fastener is defined by: a body, a nut forming portion, a breaking neck between the body and nut and a head. An externally threaded member may pass through a bore in the head and body, engage threads in the nut forming portion and apply a compressive stress on the breaking neck to fracture the neck and draw the nut into the body's bore. As the nut is drawn into the bore, it expands the body behind the sheet in which the fastener is to be set. The head and expanded body portions coact to retain the fastener in the sheet. The bore

of the body and the major diameter of the nut's threads are equal. The diameter of the outer surface of the body and the major diameter of the nut are also equal. An alternate embodiment employs spaced-apart lobes disposed about the upper portion of the body adjacent the head. Each of the lobes is defined by a tapered, longitudinal, smooth surface which converges in the direction of the nut to meet the cylindrical body above the breaking neck. The lobes elastically deform the material surrounding the hole in which the fastener is set to increase fatigue strength.

### 3,411,399 METHOD AND APPARATUS FOR PACKING EXPLOSIVES

George L. Griffith, Coopersburg, Pa., assignor to Trojan Powder Company, Allentown, Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 466,158, June 23, 1965, which is a division of application Ser. No. 177,583, Mar. 5, 1962. This application Feb. 23, 1967, Ser. No. 618,201  
15 Claims. (Cl. 86-1)



A method and apparatus for packaging explosives are provided in which a stream of air is directed against a sheet of wrapping material from a plurality of radial positions thereby folding the wrapping material about a long columnar body of explosive that is self-supported at least in the folding zone, to completely enclose the body of explosive in the wrapping material.

### 3,411,400 SPliced LOOP AND METHOD OF FORMATION THEREOF

Gilbert Morieras and Michel Sere de Lanauze, Lyon, France, assignors to Societe Rhodaceta

Filed Sept. 6, 1967, Ser. No. 665,793  
Claims priority, application France, Sept. 20, 1966, 77,007

8 Claims. (Cl. 87-8)



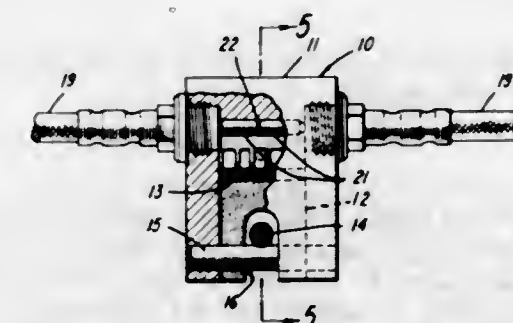
The invention describes a spliced loop in a textile rope, and method of making such a loop, in which the rope consists of a plurality of parallel textile core filaments covered by an envelope and comprising a first uncovered portion of said rope from which the envelope has been removed adjacent the free end thereof, a second uncovered portion of said rope, from which the envelope has been removed spaced from said first portion, at least two bundles of filaments in said second uncovered portion, and at least two bundles of filaments in said first uncovered portion, braided with said at least two bundles of said second portion.

### 3,411,401 EXPLOSIVE DRIVEN GUILLOTINE

Darrel W. Harris, Colonial Beach, Va., assignor to the United States of America as represented by the Secretary of the Navy

Filed Apr. 26, 1967, Ser. No. 634,813

6 Claims. (Cl. 89-1)

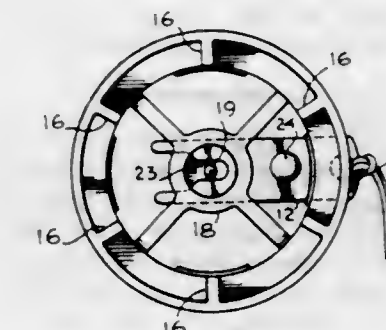


An explosive driven cutting device having a guillotine blade capable of being lowered against a wire, rope, cable, tube, or like member for severing, the device being insertable along a confined detonating cord explosive train at a plurality of points whereby detonation along the train will serially effect a lowering of the guillotine blade for severance.

### 3,411,402 APPARATUS FOR LAUNCHING ROCKET- PROPELLED SHELLS

George Rasmussen, Long Beach, and Robert J. Spellmire, San Marino, Calif., assignors, by mesne assignments, to Pike Corporation of America, Los Angeles, Calif., a corporation of California

Filed Feb. 3, 1967, Ser. No. 613,899  
2 Claims. (Cl. 89-1.812)



An apparatus for launching a rocket-propelled shell which comprises a hollow tube into which a shell is inserted at one end and in which a firing pin is mounted on the other end. The end of the tube adjacent the firing mechanism has at least one pair of flexible but resilient finger elements extending downwardly from the rib structure to hold and detain the lower end of a shell and to hold it into position prior to firing. The shell firing mechanism includes a spring loaded firing pin for striking the shell and means for constraining the firing pin against the action of its spring. The shell firing mechanism also includes a safety device including a spring loaded release pin mounted on a slidable plate.

### 3,411,403 PROPELLANT LINED HIGH VELOCITY ACCELERATOR

Charles A. Rodenberger, College Station, Tex. (508 Crescent Drive, Bryan, Tex. 77801)

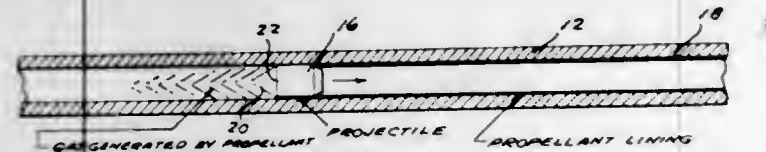
Filed Apr. 14, 1967, Ser. No. 631,045

2 Claims. (Cl. 89-8)

A hypervelocity accelerator for a projectile. The projectile is accelerated in a tube lined with an explosive pro-



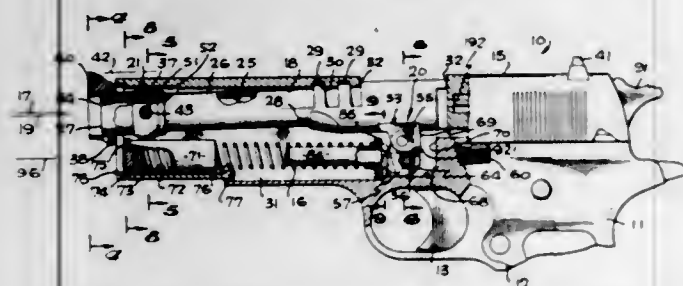
pellant. Ignition of the propellant is caused by passage of the projectile, which continuously generates gas at high



pressures in contact with the base of the projectile to drive it in hypervelocity flight.

### 3,411,404 GUN BARREL LOCATING STRUCTURE

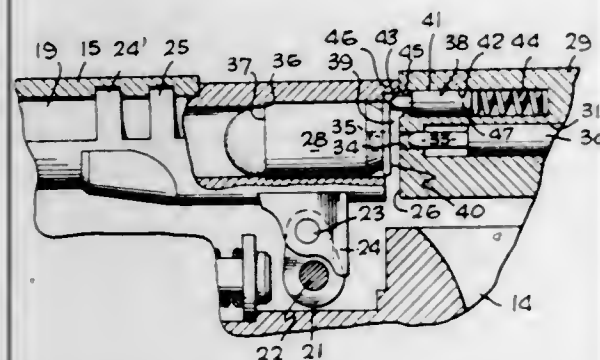
Frank A. Pachmayr and Edward B. Miller, Los Angeles, Calif., assignors to Pachmayr Gun Works, Inc., Los Angeles, Calif., a corporation of California  
Filed Dec. 29, 1966, Ser. No. 605,825  
9 Claims. (Cl. 89-163)



A gun having a hollow slide which recoils relative to the receiver and barrel of the gun, with the breech end of the barrel being connected to the receiver by a link causing downward swinging movement of that end of the barrel during recoil, and with the forward end of the barrel being located by a bushing which is secured to the slide by a pivotal connection, so that the bushing recoils with the slide relative to the barrel and link, and at the same time pivots relative to the slide to enable the downward movement of the breech end of the barrel.

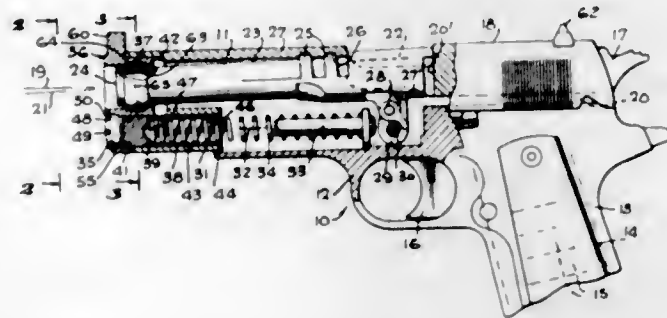
### 3,411,405 GUN HEAD SPACE TAKEUP ELEMENTS

Frank A. Pachmayr and Edward B. Miller, Los Angeles, Calif., assignors to Pachmayr Gun Works, Inc., Los Angeles, Calif., a corporation of California  
Filed Dec. 29, 1966, Ser. No. 605,826  
10 Claims. (Cl. 89-196)



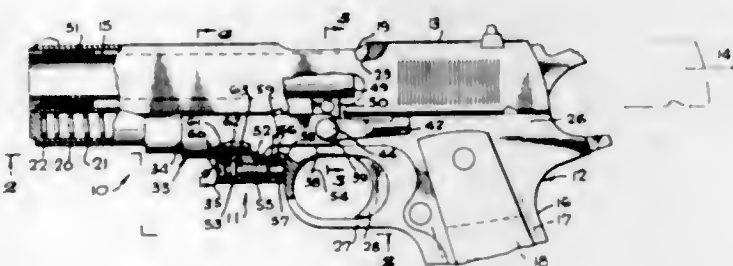
A gun including a barrel having a breech end into which a cartridge is insertible forwardly to a firing position, a shoulder in the barrel engageable with the cartridge and limiting its forward movement into the barrel, a slide mounted to recoil rearwardly relative to the barrel and to feed a cartridge forwardly into the barrel upon returning relative forward movement, and a head space take-up structure carried by the slide and constructed to exert yielding force forwardly against a cartridge in the barrel in a relation urging the cartridge slightly forwardly as far as possible in the barrel.

3,411,406  
GUN BARRELL BUSHING STRUCTURES  
Frank A. Pachmayr and Edward B. Miller, Los Angeles, Calif., assignors to Pachmayr Gun Works, Inc., Los Angeles, Calif., a corporation of California  
Filed Dec. 29, 1966, Ser. No. 605,827  
16 Claims. (Cl. 89-196)



A gun having a slide mounted for recoiling movement relative to the receiver of the gun, and relative to a barrel whose breech end swings slightly downwardly upon recoil, and including a bushing disposed about and locating the barrel and slidable axially therealong upon recoil, and a bushing retaining structure detachably carried by the slide, with the bushing having a radially outer preferably spherical surface movably contacting and located by a mating essentially internal preferably spherical bearing surface formed in the bushing retaining structure, in a relation guiding the bushing for slight pivotal movement as the breech end of the barrel swings downwardly.

3,411,407  
GUN SLIDE GUIDING DEVICES  
Frank A. Pachmayr and Edward B. Miller, Los Angeles, Calif., assignors to Pachmayr Gun Works, Inc., Los Angeles, Calif., a corporation of California  
Filed Dec. 29, 1966, Ser. No. 605,828  
23 Claims. (Cl. 89-196)

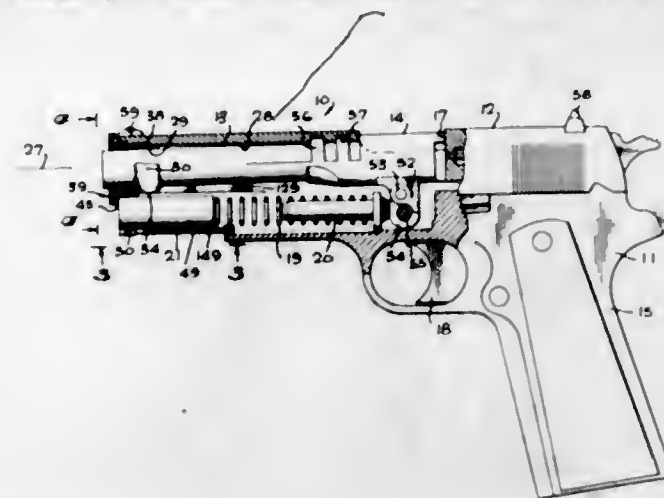


A gun having a slide which is guided for front to rear recoiling movement relative to the receiver and barrel of the gun upon firing, and including an element adapted to displace the slide slightly relative to the receiver and in a direction transversely of the recoil axis in a relation overcoming any looseness in the guideway structure which mounts the slide for its recoiling movement.

3,411,408  
MOUNTING STRUCTURE FOR PISTOL BARRELS  
Frank A. Pachmayr and Edward B. Miller, Los Angeles, Calif., assignors to Pachmayr Gun Works, Inc., Los Angeles, Calif., a corporation of California  
Filed Dec. 29, 1966, Ser. No. 605,829  
14 Claims. (Cl. 89-196)

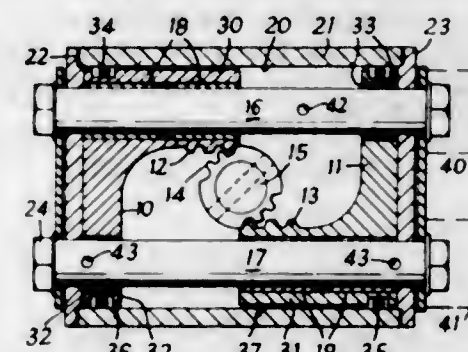
A gun having a barrel mounted within a slide which recoils relative to the barrel, while the breech end of the barrel swings slightly downwardly during recoil, and with the gun including a bushing disposed about the barrel and confined axially between a threadedly mounted adjustable retaining ring and a forwardly facing shoulder surface in

the slide in a relation confining and guiding the bushing for slight pivotal movement relative to the slide in corre-



spondence with the downward swinging movement of the breech end of the barrel.

3,411,409  
PISTON-RACK OPERATED SHAFT  
Alan Donald Bunyard, Burrell Road, Haywards Heath, Sussex, England  
Filed Feb. 24, 1967, Ser. No. 618,539  
Claims priority, application Great Britain, Mar. 5, 1966, 9,733/66; Feb. 2, 1967, 5,052/67  
18 Claims. (Cl. 91-1)

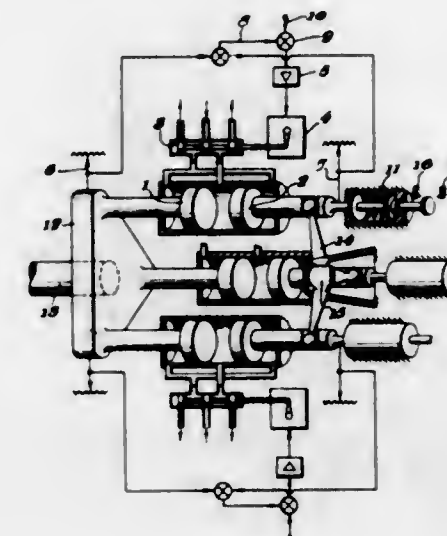


Piston-rack type actuator in which the compressed air or gas is supplied either to the central chamber or to the two end chambers, defined by two pistons located in a cylinder, in order to cause the two pistons to move towards or away from each other and thereby to rotate and output shaft by means of their integral racks meshing with a pinion on the shaft. Each piston is mounted for its reciprocating movements on one of two parallel guides both of which extend through each piston and serve to limit the extent of cocking or skewing of one or both of the pistons and thus to prevent fouling of the cylinder thereby.

3,411,410  
POSITION CONTROL SERVO SYSTEMS  
Roy Westbury, Bridgnorth, Peter John Maltby, Codrall, and Jerzy Leon Courtenay, Wolverhampton, England, assignors to H. M. Hobson Limited, London, England, a company of Great Britain  
Continuation of application Ser. No. 471,507, July 7, 1965. This application Aug. 4, 1967, Ser. No. 658,576  
Claims priority, application Great Britain, July 7, 1964, 28,010/64  
19 Claims. (Cl. 91-1)

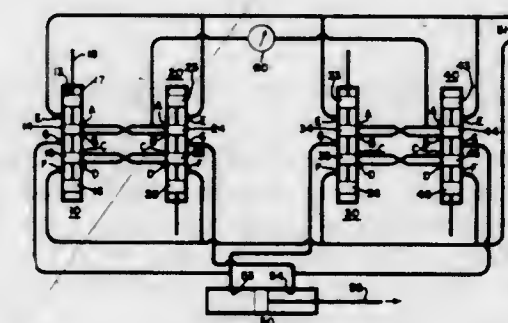
Position control servo especially for aircraft controls having three actuators, each including a relatively movable member which between them provide an output displacement which is a function of an input signal applied

to the actuators. There is a comparison means for comparing the output displacement with the input signal and correcting any discrepancy between them. The present



system provides increased reliability in that if one of the actuators fails the others may still impart the required movement to the aircraft control surface.

3,411,411  
REDUNDANT ACTUATOR VALVING USING PARALLEL AND SERIAL CONNECTED VALVES  
Joel J. Fleck, New York, and David Hogan, Binghamton, N.Y., assignors to General Electric Company, a corporation of New York  
Filed Nov. 2, 1965, Ser. No. 506,058  
6 Claims. (Cl. 91-30)



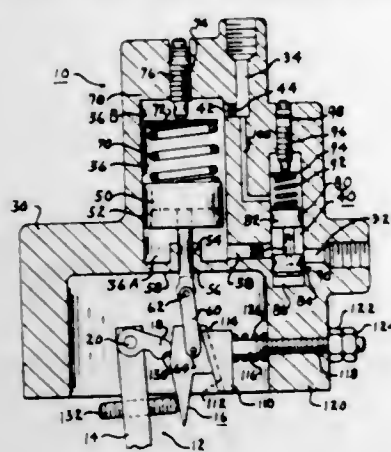
Redundant actuator valving for a ram type reversible hydraulic motor in which redundancy to protect the system against failure to turn on is part of the reversing apparatus and is accomplished by use of separately controlled parallel hydraulic channels and protection against failure to close is accomplished by use of separately controlled series connected valves in each of the parallel hydraulic channels. The specific arrangement includes control of both high and low pressure conduits of one of the parallel channels simultaneously by crossing both conduits through the same pair of valving devices to actuate pairs of series connected valves simultaneously.

3,411,412  
FUEL REGULATING DEVICE  
Jack R. Phipps, St. Clair Shores, Mich., assignor to The Bendix Corporation, a corporation of Delaware  
Filed Apr. 28, 1967, Ser. No. 634,634  
15 Claims. (Cl. 91-52)

A fuel regulating device responsive to variations in fuel viscosity, having a fuel chamber and a member in the chamber forming a laminar flow restriction. A movable wall responsive to differential pressures in said cham-



ber regulates a fuel metering device in accordance with changes in fuel viscosity, the member in the chamber be-

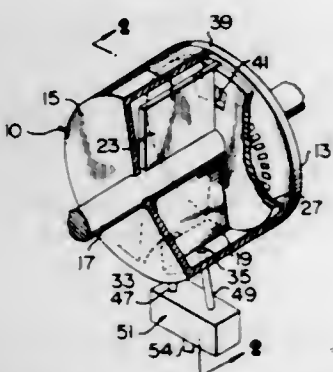


ing adjustable to vary the effective operation of the movable wall on the element.

3,411,413

**FLUID-OPERATED STEP MOTOR**

John H. MacNeill, Indialantic, and Ralph P. Means, Melbourne, Fla., assignors to Soroban Engineering, Inc., Melbourne, Fla., a corporation of Florida  
Filed Nov. 16, 1966, Ser. No. 594,942  
13 Claims. (Cl. 91—357)



A fluid-operated step motor is disclosed comprising a movable member disposed in a housing and dividing the housing into two pressure-isolated compartments, the compartments each being supplied with fluid at equal pressures. A plurality of ports are defined through the housing and are selectively exhausted to a low pressure environment, the member being moved into alignment with a selected exhaust port by the pressure differential developed across the member by the exhausting of fluid from one of the compartments via the selected exhaust ports. Selection of an exhaust port is accomplished by selective actuation of one of only three control valves, one valve controlling flow to the low pressure environment from the first of every three sequentially disposed exhaust ports, a second valve controlling flow to the low pressure environment from the second of every three sequentially disposed exhaust ports, and the third valve controlling flow to the low pressure environment from the third of every three sequentially disposed exhaust ports. A masking disc rotatable with the vane permits only the ports disposed on opposite sides of the vane to communicate with the chamber at any given time.

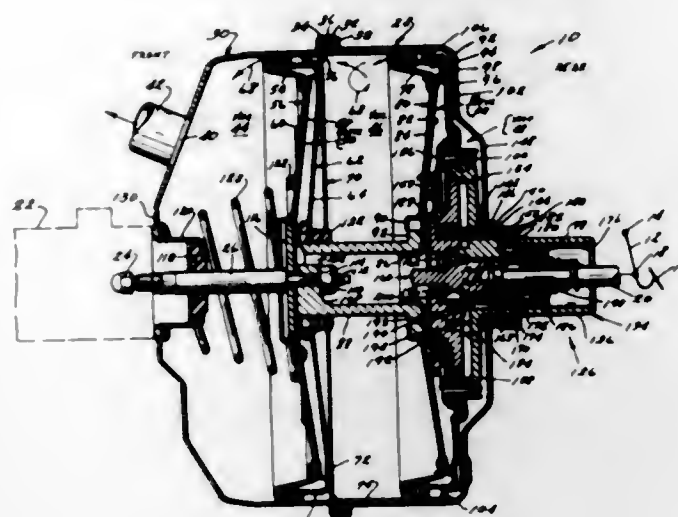
3,411,414

**SERVOMOTOR REQUIRING MINIMUM MOVEMENT OF ACTUATOR**

Curtis L. Brown and Henry Fonckes, Owosso, Mich., assignors to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio  
Filed June 27, 1966, Ser. No. 560,729  
5 Claims. (Cl. 91—391)

A fluid pressure servomotor requiring a minimum amount of movement of a valve actuator and in which a

valve body supports both the control valve and its actuator and also forms a cylinder and piston so that the latter acts on the valve actuator upon pressure variations in the servomotor to produce a reaction, and in which an annu-

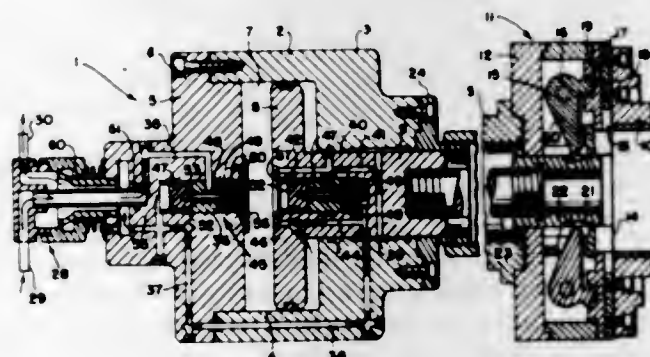


lar diaphragm applies force not only to the piston but also acts on the valve body to maintain it in its initial position in the presence of pressure differentials in the unit.

3,411,415

**FLUID MOTOR AND CONTROL VALVE ASSEMBLY THEREFOR**

Milton L. Benjamin and David D. Walker, Chagrin Falls, Ohio, assignors to Erickson Tool Company, Solon, Ohio, a corporation of Ohio  
Filed Mar. 14, 1966, Ser. No. 534,140  
9 Claims. (Cl. 91—420)



A fluid motor and control valve assembly including a pair of check valve means for permitting flow into opposite ends of said motor and a pair of plunger means associated with said check valve means movable into engagement with the check valve means associated with the end of the motor which is to be vented when high fluid pressure is being admitted to the other end of the motor to unseat the same.

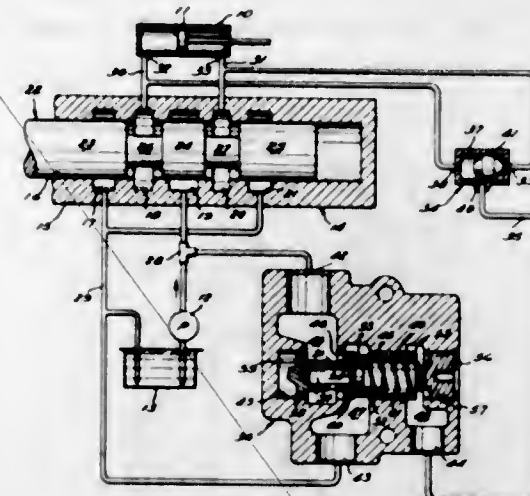
3,411,416

**ADJUSTABLE, METERED, DIRECTIONAL FLOW CONTROL ARRANGEMENT**

Paul W. Herd, Lima, John D. Allen, South Euclid, and Ray G. Holt, Westlake, Ohio, assignors to Eton Yale & Towne, Inc., a corporation of Ohio  
Filed Jan. 29, 1965, Ser. No. 429,064  
3 Claims. (Cl. 91—451)

A directional flow control arrangement for selectively establishing reduced speed operation of a fluid motor com-

prises a spool valve having a spool which is adjustable to determine the direction of operation of the fluid motor and to provide a flow restriction for determining the motor speed, a pressure-compensating valve for bypassing

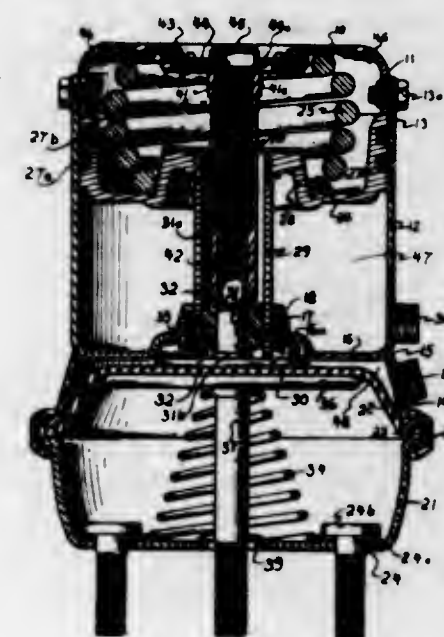


fluid flow around the flow restriction in the spool valve, and a shuttle valve for connecting the outlet side of the flow restriction in the spool valve to a pressure-sensing port in the pressure-compensating valve.

3,411,417

**ADD-ON BRAKE ACTUATOR WITH MECHANICAL RELEASE FEATURE**

Kenneth D. Swander, Overland Park, Kans., assignor to Certain-Teed Products Corporation, Ardmore, Pa., a corporation of Maryland  
Filed Jan. 31, 1967, Ser. No. 612,936  
3 Claims. (Cl. 92—63)

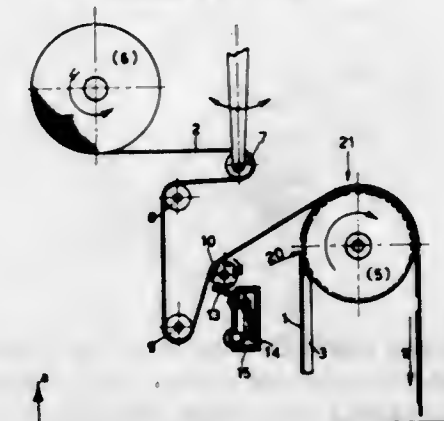


A spring emergency brake of the "add-on" type (the spring chamber exterior or outwards of the service brake chamber) with emergency spring back-off or mechanical release means associated therewith. The spring back-off means requiring correct replacement of same after use to prevent air pressure leakage from the unit. The spring back-off means requiring removal of a plate from the unit and unthreading and rethreading of a release tool co-operating with said plate. The spring back-off means externally visible of the unit when operative and thus a warning to the vehicle operator.

3,411,418

**MECHANISM FOR APPLYING TEAR STRIPS OR SMALL RIBBONS UPON A RIBBON COMPOSED OF A WRAPPING MATERIAL**

Ariosto Seragnoli, Bologna, Italy, assignor to G. D. Società in Accomandita Semplice di Enzo e Ariosto Seragnoli, Bologna, Italy, a corporation of Italy  
Filed Jan. 20, 1966, Ser. No. 521,896  
Claims priority, application Italy, Jan. 26, 1965, 1,581/65  
4 Claims. (Cl. 93—1)

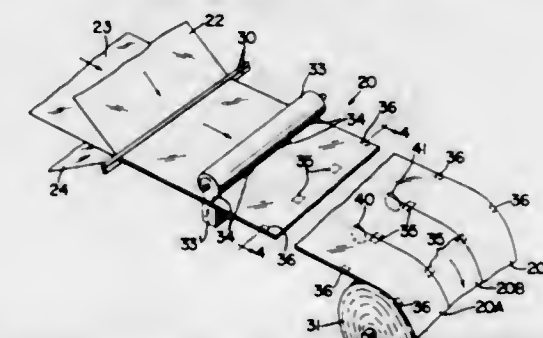


A device for attaching tear strips at intervals to a ribbon of packaging material comprises means for presenting the tear strips successively to a constant speed roller to which they are temporarily adhered by suction, means for passing the ribbon continuously over the roller where it is pressed against the tear strips, and means for applying to said ribbon, in advance of said roller, a moist adhesive material which is applied along a narrow path on the ribbon surface which later contacts said tear strips.

3,411,419

**METHOD OF MAKING A CONTAINER HAVING MULTILAYER WALL MEANS**

William C. Becker, Henrico County, and Frank B. Hart, Jr., Richmond, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware  
Filed Feb. 16, 1966, Ser. No. 527,961  
6 Claims. (Cl. 93—35)



This disclosure relates to a multilayer sheet formed by tacking together a plurality of webs of material in which one of the webs is made of a heat-sealable material. The multilayer sheet is then formed to define container means, for example, which is passed through a heat environment to bond the heat-sealable web to adjoining webs whereby the completed container means has high structural strength.

3,411,420

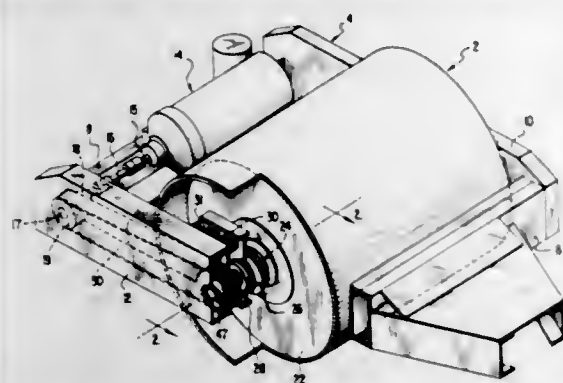
**VIBRATORY EARTH ROLLER**

John E. Martin, San Antonio, Tex., assignor to Tampo Manufacturing Company, San Antonio, Tex., a corporation of Texas  
Filed June 8, 1967, Ser. No. 644,674  
8 Claims. (Cl. 94—50)

A vibratory earth roller includes a chassis having a roller mounted for rotation relative to the chassis by resilient suspension means permitting limited relative translational movement and angular deflection between the chassis and



the axis of rotation of the roller. Vibrator means within the roller includes a vibrator shaft mounted concentrically within the roller for independent rotary motion relative thereto. Motor means resiliently mounted on the chassis drives an output shaft rotatably mounted on the chassis in fixed spaced relation thereto. A driven shaft is rotationally mounted on the chassis in fixed spaced relation



from the output shaft. Driving and driven sheaves, respectively connected with the output and driven shafts, are drivingly connected by endless flexible belt means. The vibrator shaft is drivingly connected to the driven shaft by an axially elongatable, intermediate shaft having universal joint connections to both the driving and driven shafts to isolate vibrational displacements of the roller from the endless belt means.

3,411,421

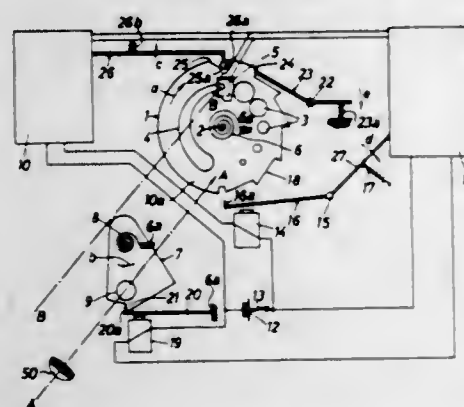
#### AUTOMATIC SHUTTER AND DIAPHRAGM SETTING DEVICE

Fritz Bestenreiner, Grunwald, near Munich, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany

Filed Aug. 24, 1965, Ser. No. 482,042

Claims priority, application Germany, Aug. 27, 1964, A 46,946

21 Claims. (Cl. 95—10)



An exposure control for photographic cameras wherein a first relay is energized with a delay which is a function of scene brightness to thereby stop the movement of a diaphragm in an intermediate position in which the diaphragm furnishes an aperture of appropriate size for the particular scene brightness. A second relay is energized on energization of the first relay and with a delay which is also a function of scene brightness to thereby permit movement of the shutter to closed position.

3,411,422

#### MIRROR REFLEX CAMERA WITH CENTRAL SHUTTER

Edgar Sauer, Stuttgart-Rohr, Germany, assignor to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany, a corporation of Germany

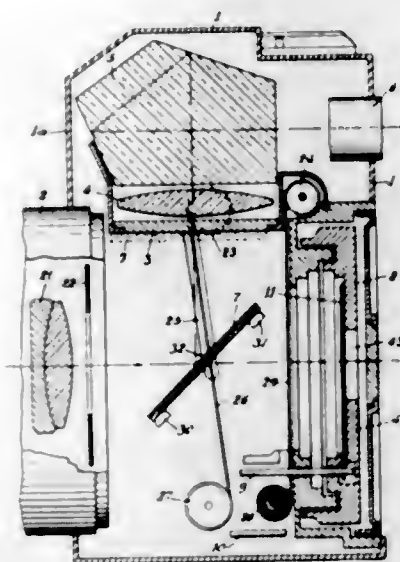
Filed Aug. 24, 1966, Ser. No. 574,655

Claims priority, application Germany, Sept. 1, 1965, Z 11,732

4 Claims. (Cl. 95—42)

1. In a mirror reflex camera provided with a central shutter and a film advancing means, the combination with

a film cartridge provided at its ends with film spool chambers connected with each other by a bridge provided with a picture window, said film spool chambers projecting laterally from said bridge and extend forwardly into the camera when the film cartridge is inserted from the rear into the camera, a light-protective curtain in front of the window in said cartridge, means for moving said curtain



in a direction at right angles to the direction the film in said cartridge is moved by said film advancing means, a reflecting mirror in said camera, and means comprising an elevator mechanism for bodily moving said mirror substantially parallel to said curtain from a light ray reflecting position to a position in which the light rays entering the camera through its objective will reach the film in the picture window in said bridge of said cartridge.

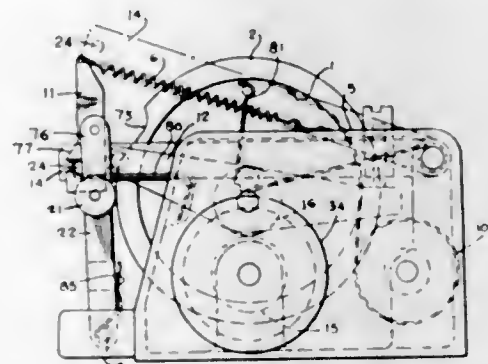
3,411,423

#### DEVICE FOR PROCESSING X-RAY FILM

Frank E. Corbett, Franklin Square, N.Y., assignor to the United States of America as represented by the Secretary of the Army

Filed May 13, 1966, Ser. No. 549,949

7 Claims. (Cl. 95—89)



A photographic apparatus for processing a composite X-ray film assembly of the type embodying pods of processing chemicals which are released by compression and spread throughout an exposed photosensitive area. The apparatus consists of a pair of pressure-bearing rollers between which the X-ray film assembly moves, which rollers supply the necessary compressive force to release the chemicals from the pods. A mechanism consisting of cams, cam followers, and resilient biasing members are provided to separate the rollers and release the pressure therebetween as the trailing edge of the film passes through to prevent smearing of the processing chemicals at the trailing edge.

3,411,424

#### CYLINDRICAL CARRIER FOR PHOTOGRAPHIC SHEET MATERIALS

Werner W. Buechner, 4407 Gladding Court, Midland, Mich. 48640

Application Feb. 4, 1964, Ser. No. 342,459, which is a continuation-in-part of application Ser. No. 23,313, Apr. 19, 1960. Divided and this application Oct. 8, 1964, Ser. No. 402,545

11 Claims. (Cl. 95—100)



Cylindrical drum-type support for photographic sheet materials for wet treatment in photographic treating solutions. The outer convex cylindrical drum surface is provided with protrusions and/or indentations, which permit access of the photographic treating solution to, and contact of these solutions with all areas of the concave side of photographic sheet material, when it is contained on the cylindrical drum surface.

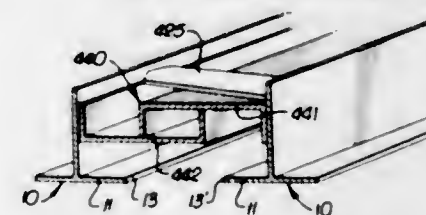
3,411,425

#### AIR DIFFUSION OUTLET WITH LATERALLY ADJUSTABLE WEIR CONTROL

Robert R. Lambert, Glendora, Calif., assignor to Air Factors, Inc., Covina, Calif., a corporation of California

Filed Jan. 9, 1967, Ser. No. 608,094

7 Claims. (Cl. 98—40)



A diffuser outlet for use in suspended ceiling installations including a pair of parallel, spaced ceiling elements, each including an upstanding leg and a bottom flange with the bottom flanges extending toward each other to define a diffuser outlet, means interconnecting the pair of ceiling elements in a predetermined spaced relation with the aforementioned flanges spaced from each other and in the ceiling plane to form the diffuser outlet in the plane of the ceiling, a weir member between the legs of said ceiling elements and means for mounting the weir member in a plane virtually parallel to the ceiling plane, but spaced above the flanges, for lateral movement in said plane to vary the direction of flow of air through the outlet.

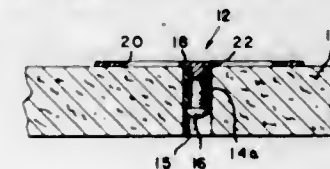
3,411,426

#### AIR VENTILATING PANEL STRUCTURE AND AN AIR CONTROL VALVE THEREFOR

Harry W. Carlson, Palatine, Ill., assignor to Simpson Timber Company, a corporation of Washington

Filed May 29, 1967, Ser. No. 642,019

4 Claims. (Cl. 98—41)



An air ventilating ceiling can be assembled from panels containing dis-continuous air control valves ported air

passages therethrough. The control valves fit into their respective air passages, occupy little space on the plenum chamber side of the panel, and are individually adjustable from below so as to provide precise air circulation through the room.

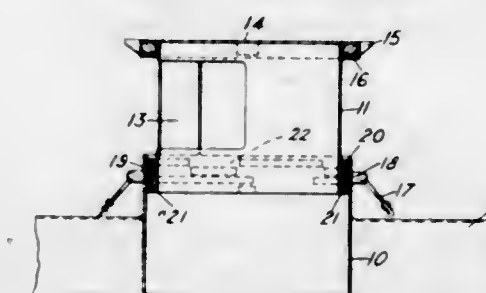
3,411,427

#### TELESCOPING VENTILATOR

Alexander A. Graham and Allan Anderson, both of 4 Brynmor St., Greenock, Scotland

Filed July 11, 1966, Ser. No. 564,159

7 Claims. (Cl. 98—64)



A ventilator comprises a tubular air-intake member which telescopes with a tubular coaming. The intake member may be held in extended position relative to the coaming by means of interengaging rings that are recessed to interfit, after which the intake member is turned relative to the coaming to lock itself in extended position. Special wind scoops are provided, as well as releasable locks for maintaining the intake member in collapsed position.

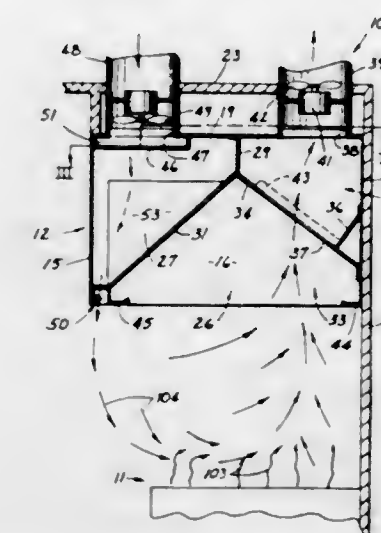
3,411,428

#### VENTILATING HOOD FOR FOOD COOKING DEVICE

Willard K. Ahlrich, 511 Hamilton Road, Parchment, Mich. 49004

Filed June 27, 1966, Ser. No. 560,401

4 Claims. (Cl. 98—115)

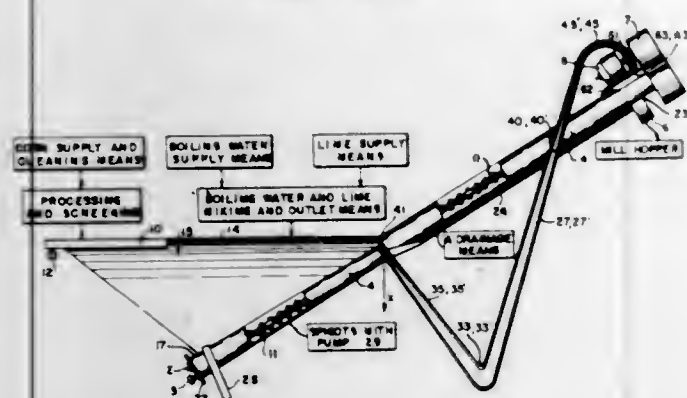


A hood structure for exhausting fumes from a food-cooking device located below the hood structure. An exhaust chamber is connected to a gas-moving assembly to withdraw the fumes released from the food on the cooking device, and an air supply chamber is also connected to said gas-moving assembly for replacing with relatively fresh air most of the air and the fumes which are withdrawn. The air flow velocity and volume are maintained at levels assuring movement of the supply air and fumes in a pattern which will remove the fumes without adversely affecting the temperature or other characteristics of the food being cooked.



3,411,429

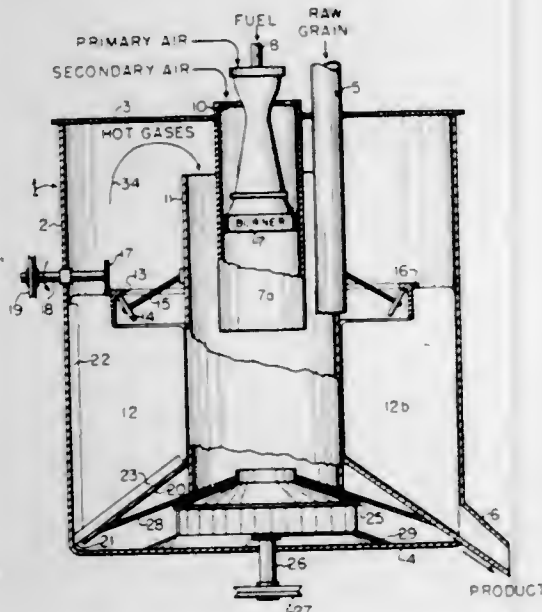
**CONDITIONING AND LIFTING MEANS FOR NIXTAMAL TO FEED A MILL**  
 Jose Pena Cardona and Ignacio Salinas Gonzalez, Sinaloa, Mexico, assignors to Ismael G. Saldana  
 Filed Dec. 9, 1966, Ser. No. 600,667  
 1 Claim. (Cl. 99—237)



A conditioning vat has a tubular housing opening into it on a lower, upwardly slanting wall. The tubular housing extends upwardly from its connection with the vat. Within the housing is a screw conveyor, which is driven by a motor mounted at the upper end of the tubular housing. Means are provided to introduce water into the lower part of the housing and thus into the vat. Drains are provided in the underside of the housing above the vat, in the bottom of the vat and in the upper periphery of the vat. The drain in the upper periphery of the vat is a trough in the wall. Overflow containing refuse floating material is ejected by this trough. Treated material rises in the tubular housing and is finally ejected to a hopper.

3,411,430

**CONTINUOUS GRAIN PUFFER**  
 William C. Rockwell, El Cerrito, Calif., assignor to the United States of America as represented by the Secretary of Agriculture  
 Filed Mar. 22, 1967, Ser. No. 625,916  
 4 Claims. (Cl. 99—238)



Apparatus for treating grain or other particulate material with hot gases for the purpose of puffing, roasting, drying, etc. which includes a cylindrical vessel provided with a rotating assembly of radial vanes. Material is fed into the pockets between adjacent vanes whereby the material is conveyed from a feeding station to a discharge station while it is subjected to a stream of hot air jetting upwardly from an arcuate slot extending about the inner periphery of the vessel. Intimate contact of the material and the hot gas within each pocket is enhanced by the provision of a conical plate which forms a downwardly and outwardly sloping base for the pockets.

3,411,431

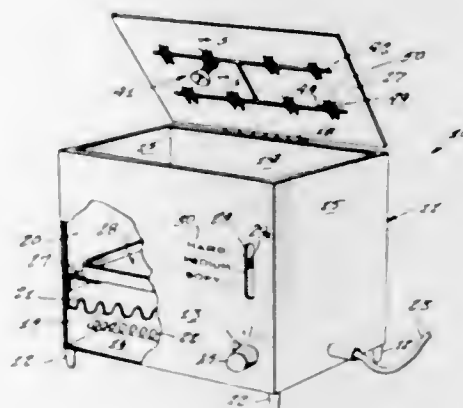
**DEVICE FOR PREPARING A BEVERAGE, IN PARTICULAR COFFEE**  
 Gilbert Eric Moerlini and Renato Moerlini, both of Peseux, Switzerland  
 Filed Sept. 20, 1966, Ser. No. 580,735  
 Claims priority, application Switzerland, Sept. 21, 1965, 13,059/65  
 6 Claims. (Cl. 99—304)



The device according to the present invention is characterized in that it comprises a body having two wings designed to rest on the rim of a utensil and having a hollow portion forming a measuring container and containing a determined quantity of ground coffee or designed to receive a bag of ground coffee tightly enclosed in said hollow portion.

3,411,432

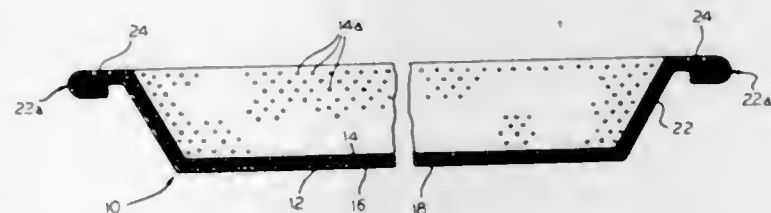
**WEINER AND EGG STEAMER**  
 Mamie Willett, 808 E. Queen, Albany, Oreg. 97321  
 Filed Aug. 1, 1966, Ser. No. 569,380  
 3 Claims. (Cl. 99—355)



A cooker for eggs and frankfurters, including a vessel for holding boiling water, a tray, and a series of adaptors for supporting the eggs or weiners in elevated positions above the tray for steaming purpose and for positioning eggs to be pierced by a piercing unit adjustably mounted on a cover overlying the vessel.

3,411,433

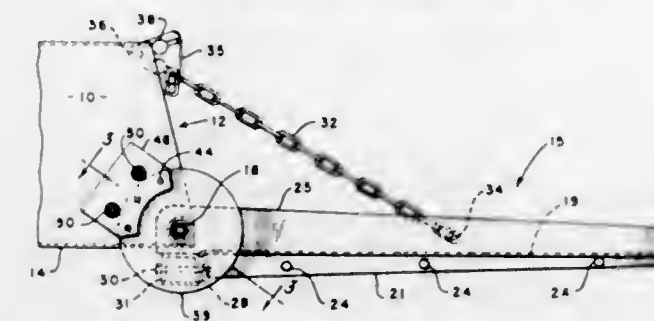
**ALUMINUM FOIL**  
 John A. Christopher, 261 Kenmore Ave., Elmhurst, Ill. 60126  
 Filed Apr. 19, 1966, Ser. No. 543,639  
 4 Claims. (Cl. 99—446)



Baking containers comprised of foil materials. The container has three laminated layers. The top layer is of perforated foil, the bottom layer is of imperforated foil,

3,411,436

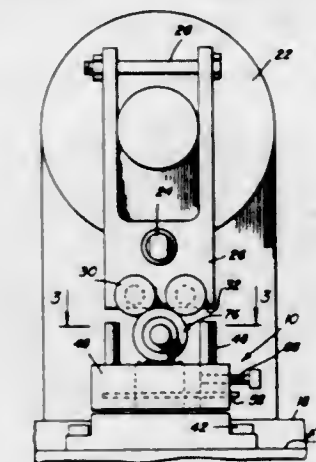
**BALE CHUTE DAMPENER**  
 Raymond E. Fisher, New Holland, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware  
 Filed Jan. 4, 1967, Ser. No. 607,226  
 5 Claims. (Cl. 100—188)



A hay baler bale chute including a friction brake to prevent self-destructive bouncing of the chute relative to a hay baler on which it is mounted.

3,411,437

**STAMPING APPARATUS**  
 Ted J. Targosh, 18065 Mount Elliott, Detroit, Mich. 48234  
 Filed May 24, 1966, Ser. No. 552,594  
 14 Claims. (Cl. 101—3)



A stamping fixture to print indicia on varied contour workpieces by placing the workpiece between the roller and the fixture, or in the fixture itself. The indicia extend completely through the fixture so that pressure is transmitted entirely by the indicia from the pressure exerting member to the workpiece and not through the fixture holding the indicia.

3,411,438

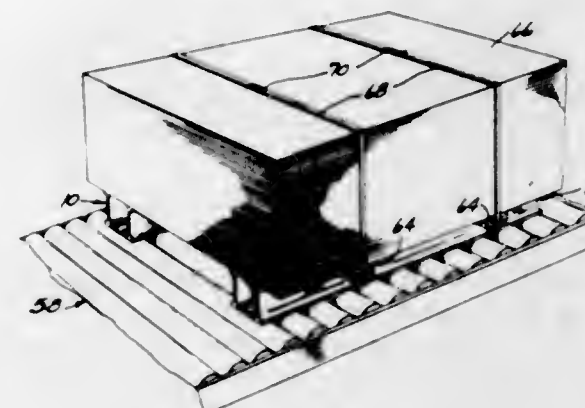
**HOT STAMPING PRESS**  
 Julius F. Reader, Park Ridge, and Edwin W. Johnson, Mount Prospect, Ill., assignors, by mesne assignments, to United States Steel Corporation, Pittsburgh, Pa., a corporation of Delaware  
 Filed Sept. 16, 1966, Ser. No. 580,039  
 9 Claims. (Cl. 101—9)

There is disclosed a hot stamping press for applying indicia to the outer surfaces of the four walls of a substantially rectangular hollow plastic bottle carrying case; the press includes a mandrel for supporting the case and the inner surfaces of the four walls thereof, four heatable dies arranged opposite the four walls of the case and each die carrying thereon raised portions corresponding to the indicia to be applied to the adjacent wall, four feed mechanisms for feeding film carrying a pigment in front of the dies, four drive mechanisms respectively associated with the four dies for moving the dies into and out of engagement with the pigment carrying films and the four walls of the case, and a single drive chain interconnecting

and the center layer is made of a meshed material designed to entrap air and to absorb the grease and moisture flowing during the baking process from the baked goods within the pan, through the perforations of the first layer.

3,411,434

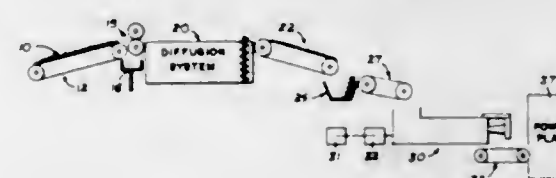
**SUPPORT FOR USE IN STRAPPING LOADS OF MULTIPLE PARTS**  
 Rowland L. Sylvester, 962 Riverside Drive 46616, and Jack H. Morrow, 1020 E. Irvington Ave. 46614, both of South Bend Ind.  
 Filed June 12, 1967, Ser. No. 645,864  
 6 Claims. (Cl. 100—1)



A support for use with like supports in strapping together multiple parts assembled on the supports, said supports carrying skids to be strapped to the parts to produce a package unit. The support is a rigid channel for supporting passage parts and freely receiving a skid and having a longitudinal strap-receiving groove in its base. Opposite cut-outs in channel side walls also freely receive a skid and have bottom strap-receiving notches.

3,411,435

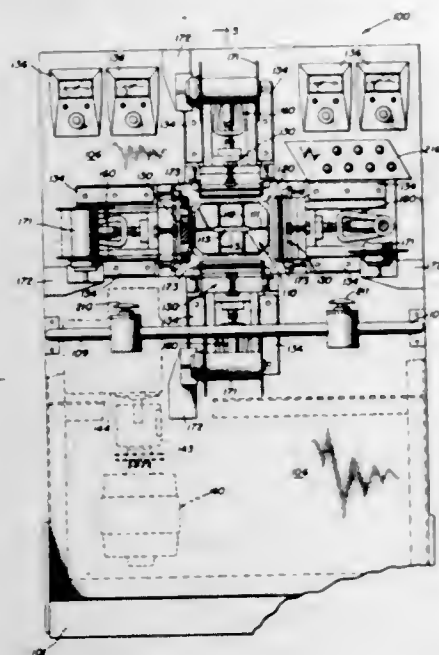
**APPARATUS FOR RECOVERY OF SUCROSE**  
 Alfred W. French and Forest J. Starrett, Jr., Piqua, Ohio, assignors to The French Oil Mill Machinery Company, Piqua, Ohio, a corporation of Ohio  
 Filed Oct. 18, 1966, Ser. No. 587,454  
 5 Claims. (Cl. 100—43)



A continuously operating mechanical screw press receives bagasse from a diffuser with high moisture content in the order of 85-90% moisture and continuously conveys such material through the press while compressing and continuously working the material to reduce its volume by passage through several sections of decreasing diameter while subjected to mechanical working, thereby extracting approximately one half of the moisture from the material. This extracted liquid will contain significant amounts of sucrose which can be recovered from the liquid or returned to the diffusion system for use in the diffusion process. A non-rotatable discharge sleeve in the discharge ring is yieldably held against movement out of the press thereby providing for the creation of pressure on the material and automatically avoiding excessive pressure and strain on the press.



the four drive mechanisms for driving the dies in synchronism and to impart simple harmonic motion thereto immediately before, during and after pressing against the associated walls, opposed pairs of dies striking the ad-

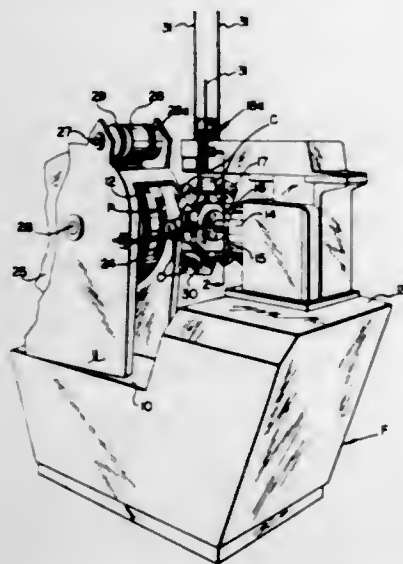


acent walls simultaneously, one pair of opposed dies striking the associated walls shortly after the other. There also is shown mechanism for advancing the pigment carrying film in synchronism with the die drive.

#### 3,411,439 PRINTING OR DECORATING MACHINE

Hendrik A. Moes and Humphrey A. V. van der Roer, Amsterdam, Netherlands, assignors to Van Dam Machine Corporation, New York, N.Y., a corporation of New York

Filed Apr. 3, 1967, Ser. No. 627,929  
11 Claims. (Cl. 101—38)

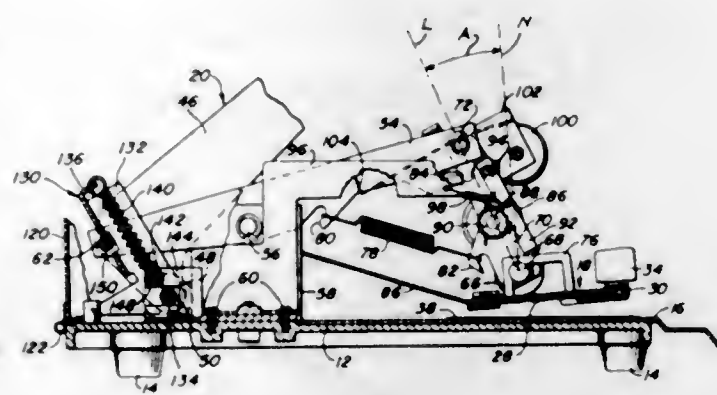


A printing or decorating machine having an orbiting, indexing turret with a plurality of circumferentially spaced, container-receiving arbors thereon which are movable in a path of travel to a continuously revolving decorating or printing drum to present a side wall portion of a container to the drum at a decorating station, the machine having sensing means conditioned to determine whether an arbor proceeding to the decorating station has a container thereon, and mechanism controlled by the sensing means for moving the entire turret and all of the arbors thereon axially away from the printing drum if no container is on the particular arbor approaching the printing station.

#### 3,411,440 MANUALLY OPERATED PRINTING MACHINE INCLUDING TOGGLE SPRING MECHANISM

Merle R. Johnston, Taunton, and Richard M. Gile, Kingston, Mass., assignors to Dymo Industries, Inc., Emeryville, Calif., a corporation of California

Filed Mar. 10, 1967, Ser. No. 622,292  
7 Claims. (Cl. 101—123)

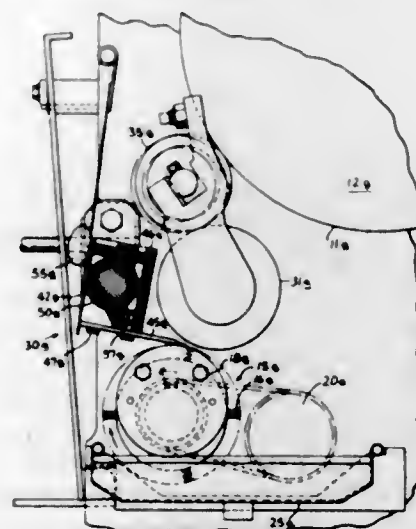


A manually operated stencil printing machine of the type in which a print roll is made to traverse a print-forming stencil in order to transfer ink from the print roll through the stencil to a workpiece, the machine being actuated by at least one operator lever mounted for movement relative to the base of the machine between a rest position, a depressed position and an intermediate position, and including a toggle spring mechanism coupling the operator lever with the base such that the toggle spring resiliently urges the operator lever toward the depressed position when the operator lever is located between the intermediate position and the depressed position to assist in pressing the print roll against the stencil and the workpiece and resiliently urges the operator lever toward the rest position when the operator lever is located between the intermediate position and the rest position to assist in moving the print roll and the stencil away from the workpiece and in returning the operator lever to and retaining the operator lever at the rest position.

#### 3,411,441 BRUSH-TYPE MOISTENING MECHANISM

Carl J. Hermach, Westchester, Richard G. Karch, Hillside, and Louis S. Depa, Harwood Heights, Ill., assignors to Miehl-Gross-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware

Filed June 24, 1966, Ser. No. 560,264  
2 Claims. (Cl. 101—148)



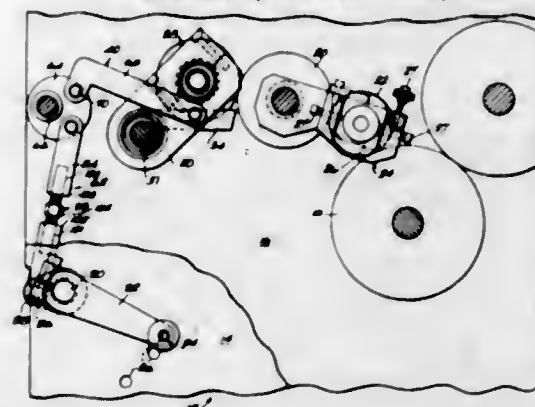
A dampening device for a lithograph press having a brush cylinder, flicking blade, blade mounting, and hydro-

philic roller constructed and arranged to obtain an even distribution of moisture upon the plate cylinder with provisions for facilitating adjustment of rate of flow.

#### 3,411,442 DAMPENER FOR PRINTING PRESS

Erik Fritz Mublich, 675 84th St., Miami Beach, Fla. 33150

Filed Nov. 7, 1966, Ser. No. 592,666  
2 Claims. (Cl. 101—148)

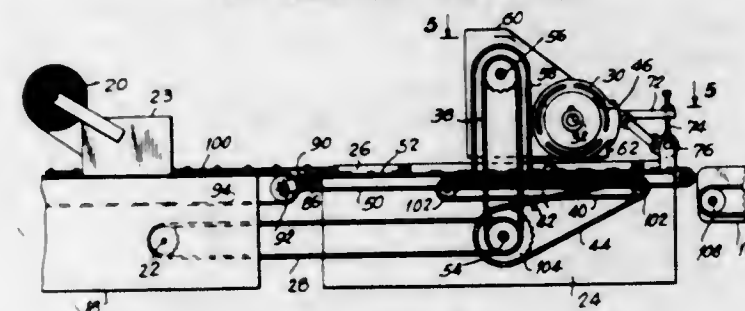


A dampener for dampening a drum including an adjustable transfer roll engaging the drum and a delivery roll which is supported in spaced relation from and rotates in a common direction as a fountain roller peripherally immersed in a supply tray, means for rotating the fountain roller independently of said delivery roll and means for adjustably positioning said fountain roller in different peripheral spacings from said delivery roll to control the amount of moisture directed to said drum.

#### 3,411,443 IMPRINTING ATTACHMENT FOR LABELING MACHINE

Ronald J. Buckholz, Bay Shore, N.Y., assignor, by mesne assignments, to Designed Mailing Accessories, Inc., Farmingdale, N.Y.

Filed Feb. 1, 1966, Ser. No. 524,309  
6 Claims. (Cl. 101—232)



An imprinting attachment for a labeling machine including a synchronized driving connection with the labeling machine, a printing station, a synchronizing chain for feeding labeled pieces to the printing station and friction belt; means travelling at a greater rate than the synchronizing chain and being of a greater length than said chain for feeding the labeled pieces to the synchronizing chain and accelerating the pieces as they leave the imprinting station.

#### 3,411,444 BLANKET WASHING APPARATUS FOR USE WITH PRINTING PRESSES

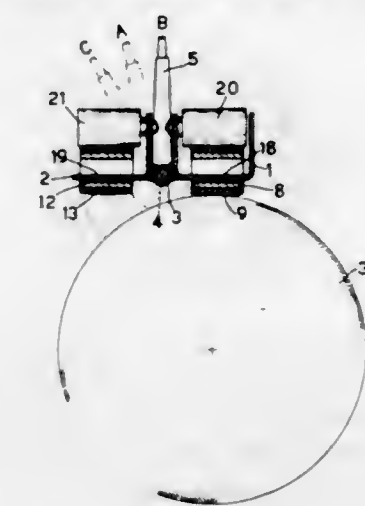
Battista Boneschi, Milan, Italy, assignor to Oxy-Dry International Ltd., Shannon Free Airport, Ireland, a corporation of Ireland

Filed Mar. 7, 1967, Ser. No. 621,260

Claims priority, application Italy, Apr. 22, 1966, 17,074

4 Claims. (Cl. 101—425)

Apparatus for washing and drying the blanket cylinder of offset presses, consisting of two bands covered with



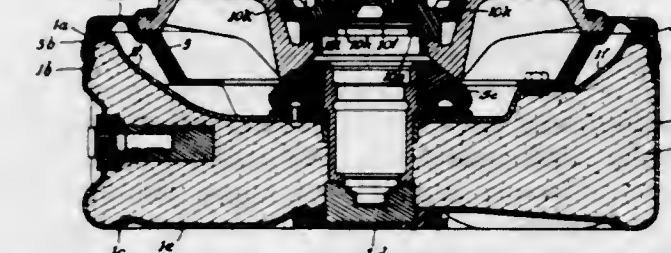
in contact with the cylinder, one of the bands being provided with dampening means.

#### 3,411,445 DETONATOR FOR LAND MINES

Paul Madlener, Karlsruhe-Durlach, Josef Muller, Grotzingen, Baden, and Otto Pecksen, Herrenalb, near Karlsruhe, Germany, assignors to Industrie-Werke Karlsruhe Aktiengesellschaft, Karlsruhe, Baden, Germany, a corporation of Germany

Filed June 10, 1966, Ser. No. 556,637  
Claims priority, application Germany, June 19, 1965, J 28,381

10 Claims. (Cl. 102—8)



A detonator for use in a land mine to be dropped from airplanes, traveling tanks and the like, and comprising an annular member screwed into the center of a pressure-resistant cover attached resiliently to the mine housing, said annular member having a spring-influenced axially slidable member therein which upon removal of a safety pin transmits the pressure acting upon the cover to a pressure ball mounted on one end of an axially movable sleeve in a detonator housing. This last-named sleeve is adapted to be locked in its inoperative position, but when unlocked is adapted, owing to pressure action on the ball in any direction, to transmit an axially directed pressure to the sleeve which latter then during its movement releases an impact bolt mounted for axial movement in a tubular guide centrally arranged within the detonator housing.

#### 3,411,446 IGNITER CORD

Walter F. Michael III, Bloomingdale, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

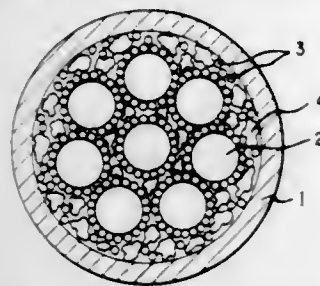
Filed June 9, 1967, Ser. No. 644,872

9 Claims. (Cl. 102—27)

This invention relates to a flame-sensitive igniter cord comprising a sheath of a ductile, malleable metal, e.g. lead, and substantially coaxial thereto and within the sheath a continuous column of a core composition of, by weight, from at least about 20% to less than about 50% lead azide explosive and the balance particulate metal wherein at least about half the particulate metal is mag-



nesium. Particulate metal is present in a size range wherein large particles between about 100 to 250 microns and small particles between about 1 to 75 microns are admixed



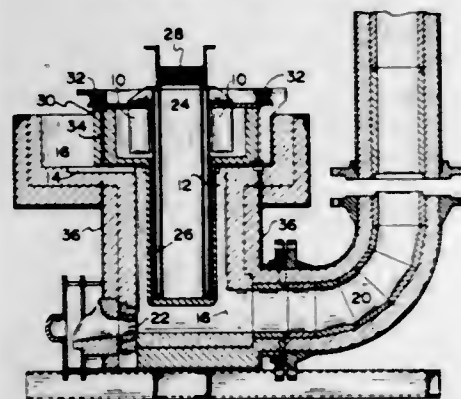
with lead azide. The explosive composition of the igniter cord has a core loading of at least 0.05 grain per foot and the total core composition has a distribution of about from 0.25 to 25 grains per foot of length of said sheath.

3,411,447

## REPULSION INDUCTION PUMP

John D. Fox, Lafayette, and Thomas W. F. Foster, Walnut Creek, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

Filed Apr. 7, 1967, Ser. No. 629,136  
5 Claims. (Cl. 103—1)



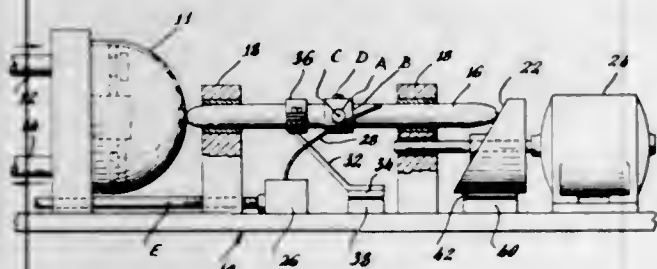
This disclosure relates to an electromagnetic pump for electrically conductive fluids. The pump operates on the repulsion induction principle to pump the fluid. The pump is designed with a high ratio of reactance to resistance in the secondary circuit. Because of this, the pump receives its thrust from the large lagging component of the secondary current which is in phase opposition to the primary flux which passes through it. Thus, the operation of the pump is due to two directly opposed fields, one created by the primary current and one created by the secondary current. The force of the pump is proportional to the product of the two fields and increases at an exponential rate as the secondary is moved toward the primary.

3,411,448

## HUMAN FLUID PUMPING APPARATUS

Charles P. E. von Wrangell, East Norwalk, Thomas F. Helms, New Fairfield, Richard C. Tucker, Newtown, and Henry O. Willrich, Danbury, Conn., assignors to Bio-Medical Systems, Inc., Danbury, Conn., a corporation of Connecticut

Filed Apr. 14, 1967, Ser. No. 630,942  
9 Claims. (Cl. 103—38)



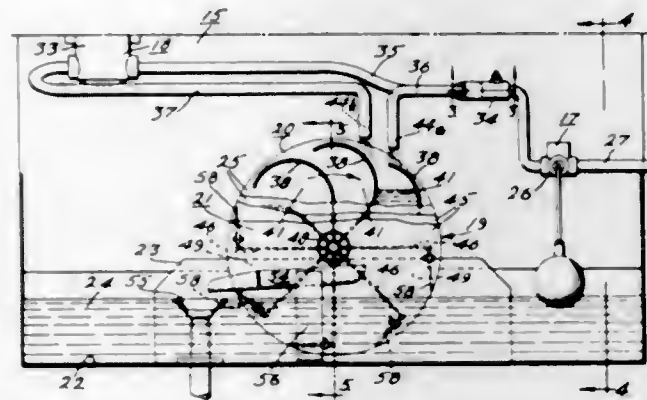
A pumping apparatus for a body fluid carried system wherein human fluid is removed from one position of

the body and infused into the body at a second position. The pump comprises a compressible chamber compressed by a cam operated reciprocating rod on which is located an adjustable force means for maintaining a counterforce on the chamber.

3,411,449

## WATER-POWERED MAKE-UP AND BLEED-OFF SYSTEM

John P. Murdoch, Ardmore, Pa.  
(3630 Haverford Ave., Philadelphia, Pa. 19104)  
Filed Mar. 13, 1967, Ser. No. 622,639  
14 Claims. (Cl. 103—60)

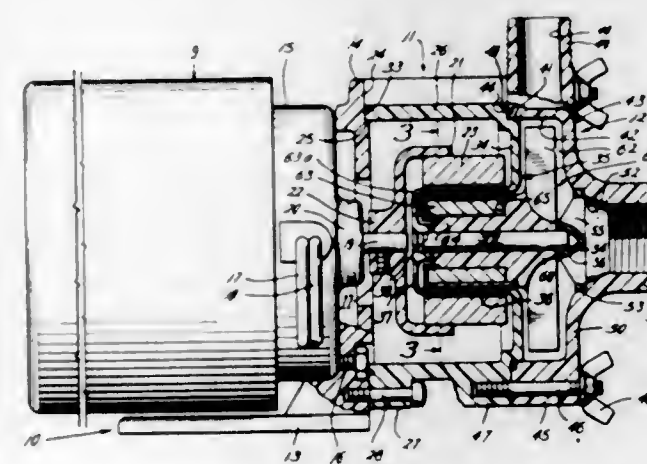


A system for exchanging and replacing cooling sump water in an air-conditioning cooling tower catch basin or sump with a quantity of freshly treated make-up water. The system comprises a float-controlled make-up water valve responsive to the sump water level, a chemical additive unit for feeding a treating chemical into the make-up water entering the catch basin, and a water-powered pump having a turbine section driven by the entering make-up water and a pump section connected to the turbine section to remove a lesser quantity of sump water from the catch basin to a discharge drain.

3,411,450

## PUMP

William H. Clifton, Oklahoma City, Okla., assignor to Little Giant Corporation, Oklahoma City, Okla., a corporation of Oklahoma  
Filed Mar. 7, 1967, Ser. No. 621,297  
16 Claims. (Cl. 103—87)

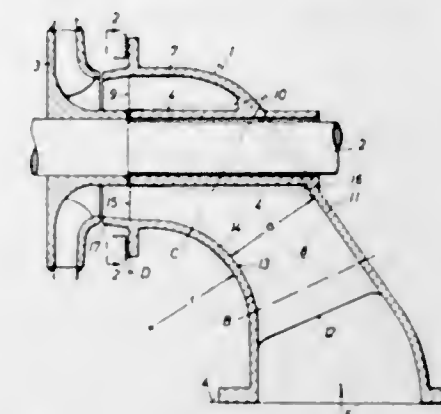


A centrifugal pump is driven by a motor through a radial gap magnetic coupling. A non-magnetic, stovepipe hat shaped separator separates the drive magnet from the driven magnet and closes the pump housing. An integral cylindrical extension from the rim of the separator provides a housing for the coupling. The driven magnet and the pump impeller form a single rotor which rotates on a shaft captured with a slip fit between or integral at one end with bearing means in the crown of the separator and bearing means carried by a spider at the inlet to the pump housing.

3,411,451

## CENTRIFUGAL PUMP INLET ELBOW

Heinz-Bernd Matthias, Hans Offenhäuser, and Walter Schramek, Heidenheim (Brenz), and Michael Strscheletsky, Friedrichshafen, Germany, assignors to Establisements Neyric, Grenoble, France, and J. M. Voith GmbH, Heidenheim (Brenz), Germany  
Filed Feb. 13, 1967, Ser. No. 615,625  
Claims priority, application Germany, Mar. 5, 1966, E 31,168  
15 Claims. (Cl. 103—103)

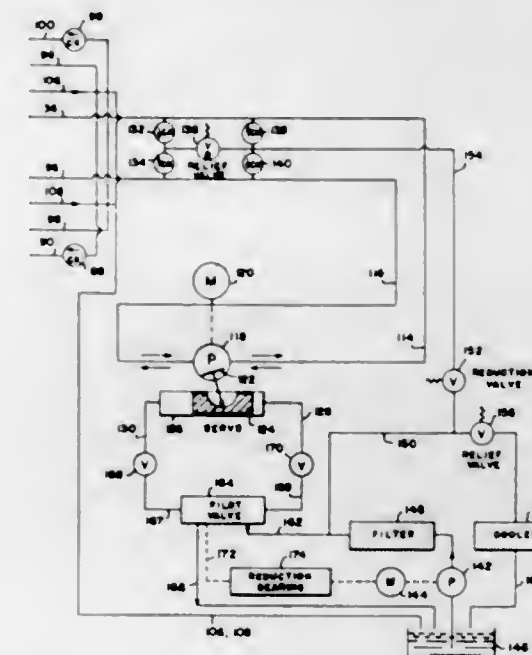


A 90 degree centrifugal pump inlet elbow wherein cross-sectional area of the fluid passageway progressively decreases from inlet to outlet with the middle portion of the elbow having an elliptical cross-section whose minor axis is in the central plane of the elbow and corresponds to the shortest distance in the central plane of the elbow between the inner and outer walls.

3,411,452

## PUMP

Jerzy J. Czarnecki, Princeton, and Peter Arkwright, Pennington, N.J., assignors to De Laval Turbine Inc., Trenton, N.J., a corporation of Delaware  
Filed Oct. 7, 1966, Ser. No. 585,133  
7 Claims. (Cl. 103—152)

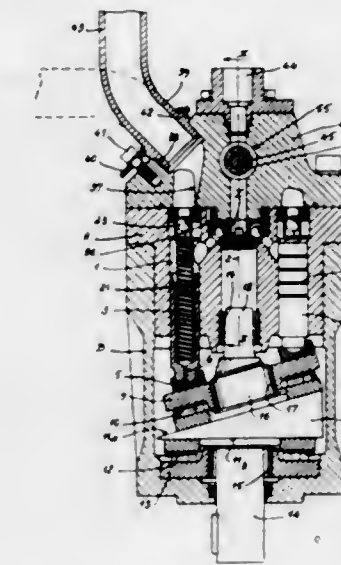


A pulsator pumping system comprising a pair of mechanically connected pulsators is provided with a positive, reversible pump in its driving liquid system, which delivers driving liquid alternately to the pulsators. Make-up liquid is delivered by a second pump to the driving liquid system, and a combination of check valves and a relief valve permits flow of liquid from one side of the reversible pump to the other when the pressure differential becomes too high. Interconnections are provided for prepressurization of a collapsed pulsator by liquid delivered from the expanded pulsator.

3,411,453

SWASH PLATE HYDRAULIC PUMPS HAVING AXIALLY DISPOSED PISTONS  
Roger Chanal, Saint-Etienne, France, assignor to Bennes Marrel, Saint-Etienne, Loire, France, a French joint-stock company

Filed Mar. 25, 1966, Ser. No. 537,331  
Claims priority, application France, Mar. 29, 1965, 45,827, Patent 1,453,856  
5 Claims. (Cl. 103—173)



A hydraulic pump comprising a body having a plurality of cylinders and pistons; individual nonreturn inlet valves for each said cylinder, each inlet valve comprising a ball and a guide therefor; a single outlet valve base serving all said cylinders; means for actuating said pistons; each cylinder discharging through inclined bores respectively into a single outlet channel in the body through said single outlet valve base, and the inner edge of each bore serving as a seat for a ball valve; said single outlet valve base being removably seated in a recess therefor in the body by hydraulic reaction; and means in said outlet valve base for limiting the lift of the related ball valves.

3,411,454

## WIRE-LINE SUSPENDED ELECTRIC PUMP INSTALLATION IN WELL CASING

Armais Arutunoff, Bartlesville, Okla., assignor to Reda Pump Company, Bartlesville, Okla., a corporation of Delaware  
Filed Mar. 9, 1967, Ser. No. 621,924  
8 Claims. (Cl. 103—219)



A wire-line suspended electric pump installation for use in a well casing, including a pump having a vertical discharge tube opening into the casing and supported by said wire-line which includes electrical conductors. A

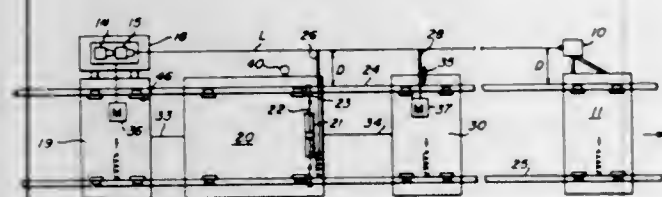


packer embraces the tube below its discharge opening and seals against the casing. A slip unit having expandible slip members is fixed to the tube between the packer and pump, and includes means responsive to fluid pressure for expanding the slip members to support the weight of the pump and a column of fluid above the packer, relieving longitudinal stress on the cable.

**3,411,455**  
**MEANS FOR CONTINUALLY AND SIMULTANEOUSLY SURVEYING AND ALIGNING RAILROAD TRACK**

John Kenneth Stewart, Dorval, and Helmuth Rolf Erich von Beckmann, Chateauguay, Quebec, Canada, assignors, by mesne assignments, to Tamper Inc., Columbia, S.C.

Filed July 12, 1965, Ser. No. 471,285  
Claims priority, application Canada, July 21, 1964, 907,729; Mar. 20, 1965, 926,145  
20 Claims. (Cl. 104—7)

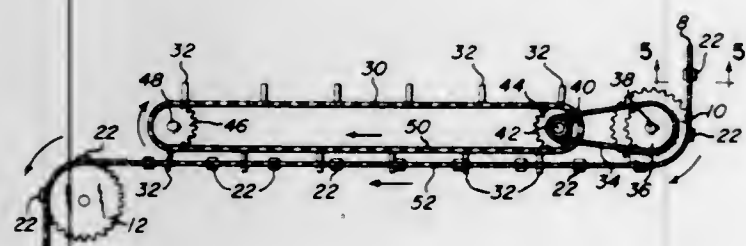


Apparatus for aligning curves and spirals in railroad track by means of an infra-red reference line establishing system comprising a transmitter, a receiver and a shadow board therebetween and a detection system which compares the track condition to the established reference line, which detection system preferably utilizes the same transmitter as the reference line establishing system and comprises a second infra-red beam receiver and a second shadow board (the second beam receiver may physically be the same as the first receiver but operate in a separate mode thereto) and a track aligning jack which is commanded by the receiver of the detection system to throw the track to correct errors in the track as referenced to the reference line system and detected by the detection system.

**3,411,456**  
**DIFFERENTIAL CONVEYOR AND METHOD OF SPACING OBJECTS**

John W. Stevens, Cincinnati, Ohio, assignor to Cincinnati Butchers' Supply Company, Cincinnati, Ohio, a corporation of Ohio

Filed July 1, 1966, Ser. No. 562,227  
7 Claims. (Cl. 104—91)



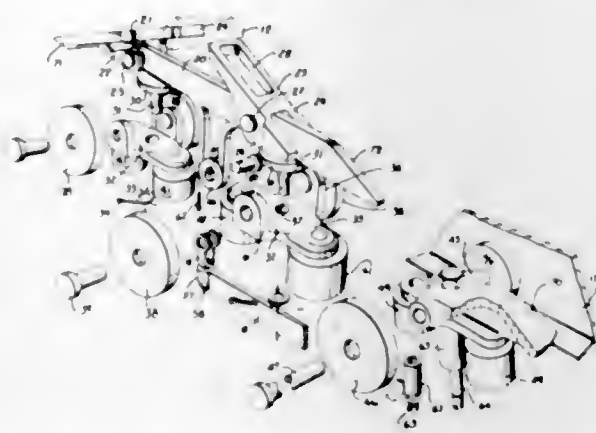
Article-bearing trolleys are moved along a continuous rail by pushers mounted in predetermined spaced relation on an endless conveyor of a certain length traveling at a predetermined speed. Intermediate said certain length a second conveyor having fingers thereon spaced farther apart than said pushers and traveling at an accelerated speed contacts the trolleys and moves them along the rail faster than they were being moved by the pushers and also at greater spaced intervals. Since the second conveyor

is shorter than the first conveyor the trolleys at the end of the second conveyor are again contacted by the pushers and moved thereby in respaced relation.

**3,411,457**  
**FREE TROLLEYS FOR POWER AND FREE CONVEYORS**

John M. Gotsch, Jr., Westfield, N.J., assignor to Mechanical Handling Systems, Inc., Warren, Mich., a corporation of Michigan

Filed June 9, 1966, Ser. No. 556,364  
10 Claims. (Cl. 104—172)

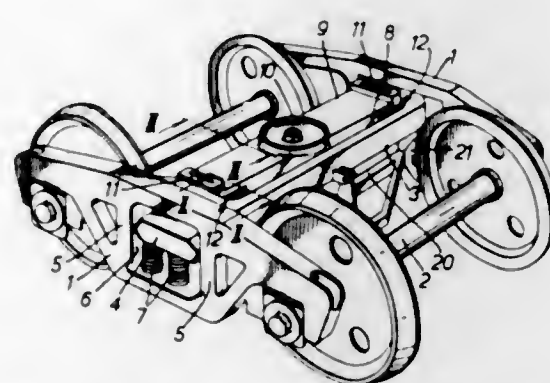


The power and free conveyor system disclosed herein comprises a leading trolley and a trailing trolley interconnected by a tie bar. The leading trolley has a body, a pusher dog pivoted to the body and a hold back dog pivoted to the body. A pair of wheel mounting brackets are pivoted about vertical axes on the body of the leading trolley and wheels and guide rollers are rotatably mounted thereon. The trailing trolley comprises a body and wheels and guide rollers rotatably mounted thereon.

**3,411,458**  
**RAILWAY BOGIE AUXILIARY SPRING BOLSTER**

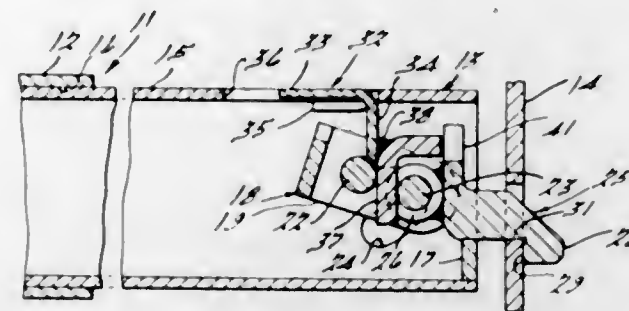
Frederick William Sinclair, Gloucester, England, assignor to Gloucester Railway Carriage & Wagon Company Limited, Gloucester, England

Filed Oct. 24, 1965, Ser. No. 504,444  
Claims priority, application Great Britain, Oct. 27, 1964, 43,703/64  
8 Claims. (Cl. 105—185)



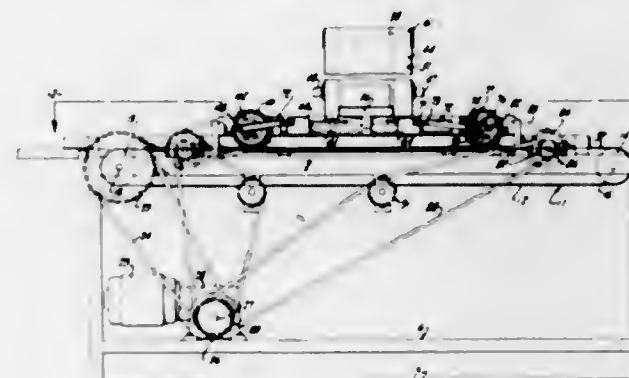
A bogie truck, of the spring plankless type, for a rail vehicle comprises a pair of spaced rigid side frames, a transverse member extending between and interconnecting said side frames, two suspension systems housed in the respective side frames and supporting respective ends of the transverse member to accommodate vertical movement of the latter, and a floating bolster. The transverse member is opened out in plan view making it recessed and the bolster is disposed and supported within the transverse member in a manner which allows substantial relative movement between the bolster and transverse member only in a generally horizontal direction.

**3,411,459**  
**FREIGHT BRACING DEVICE**  
Floyd A. Hyatt, Birmingham, Mich., assignor to Evans Products Company, a corporation of Delaware  
Filed Aug. 24, 1966, Ser. No. 574,737  
7 Claims. (Cl. 105—369)



A freight bracing crossbar including an improved end fitting arrangement. The end fitting includes an attaching member having a hook portion adapted to enter into an aperture in an associated beltrail. The attaching member is pivotally supported at one end of the crossbar on a U-shaped member which is also pivotally supported. A locking member coacts with the U-shaped member and with the attaching member for retaining the attaching member in an engaged position.

**3,411,460**  
**ICEBOX COOKIE MACHINE**  
Ernst Well, San Francisco, Calif., assignor to Fantasia Confections, Inc., a corporation of California  
Filed July 7, 1966, Ser. No. 565,048  
5 Claims. (Cl. 107—1)

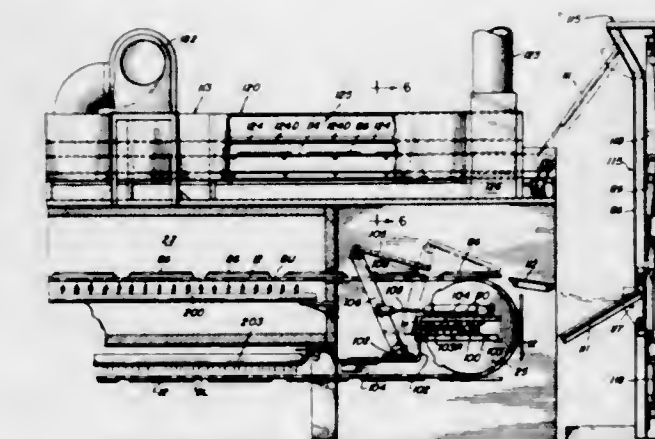
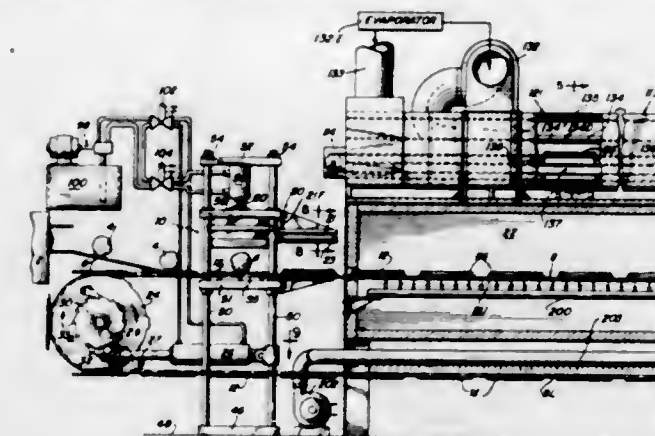


Vertically extending cookie dough guides are arranged in two groups disposed transversely of a subjacent conveyor belt, the groups being spaced apart in the direction of belt travel. Each group has a supporting plate and a cutting plate reciprocating in the direction of belt travel just beneath the cookie dough guides. The supporting plates and cutting plates of the two groups are reciprocated in selectively timed phase relationship to each other and with selected stroke length.

**3,411,461**  
**APPARATUS FOR FORMING PIZZA SHELLS**  
Fred A. Groth, Chicago, Ill., assignor to Pasquale Associates, Inc., a corporation of Illinois  
Continuation-in-part of application Ser. No. 463,521, June 14, 1965. This application May 2, 1966, Ser. No. 546,912  
14 Claims. (Cl. 107—15)

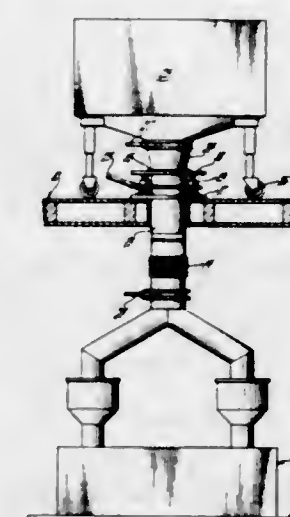
An apparatus is disclosed for transforming a ball of low shortening dough into a flat shell of dough having attributes of high shortening dough. The apparatus includes an indexing conveyor having a set of plates movable therealong to transport the dough to a press, a docker, a tunnel-like oven and then to a transfer mechanism that removes the heated shell and delivers it to

a second conveyor that operates in a cooling tunnel. The indexing conveyor is equipped with a take-up bearing to adjust for slack and tension conditions occasioned by heating effects. A scoop-type transfer mechanism and an



elevator are shown for the discharge end of the indexing conveyor. The cooling conveyor has internal ducting establishing efficient air stream flows therein for optimum cooling effects.

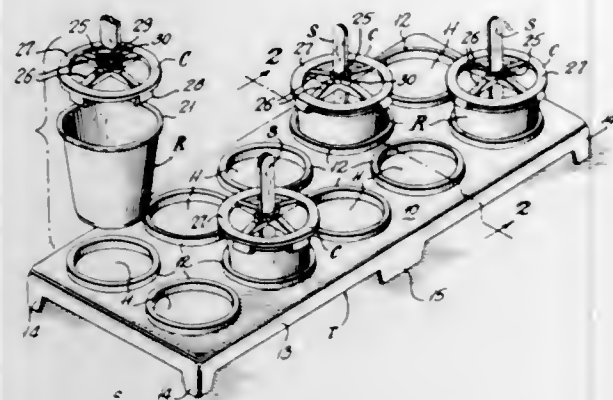
**3,411,462**  
**TABLET PRESS OVERHEAD FEED SYSTEM**  
Harold Richard Mathison, Suffern, N.Y., assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware  
Filed Nov. 22, 1966, Ser. No. 596,308  
4 Claims. (Cl. 107—17)



A tablet press overhead feed system in which a wheel supported bin at an upper floor level is movable to align its conically tapered discharge spout with a delivery conduit located at floor level leading to a tablet press at a lower floor level. A fluid pressure operated coupling means is used to couple the discharge spout with the conduit.

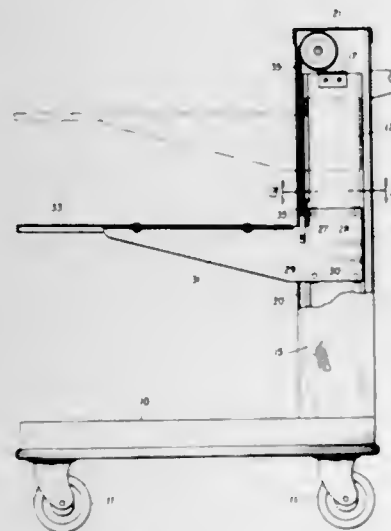


**3,411,463**  
**FROZEN CONFECTION MOLDS**  
 Nestor E. Moseres, Carrera 67, 40-75 Apartado  
 Aereo 2666, Barranquilla, Colombia  
 Filed May 31, 1966, Ser. No. 553,875  
 3 Claims. (Cl. 107-19)



This invention relates to frozen confection molds and primarily to the provision of a stick-holding cap therefor characterized by an apertured stick-holding central hub having spaced spokes radiating therefrom joined by a lug-carrying felly whereby more uniform freezing of the confection is attained and the cap more readily removed from the mold.

**3,411,464**  
**VERTICALLY MOVING CANTILEVER PLATFORM**  
 Robert H. MacKay, Fort Wayne, Ind., assignor to Lincoln Manufacturing Company, Fort Wayne, Ind., a corporation of Indiana  
 Filed June 16, 1966, Ser. No. 558,020  
 7 Claims. (Cl. 108-136)

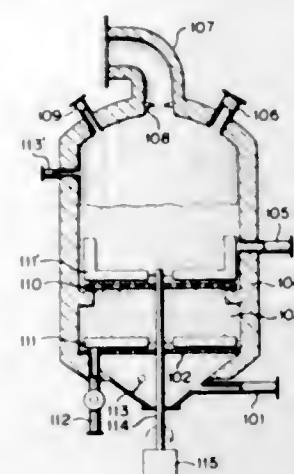


A vertically movable platform is supported by flexible cables wound about a roller that is positioned at a fixed location above the platform. The roller is spring loaded so that dishes on the platform remain at a fixed level.

**3,411,465**  
**METHOD FOR INCINERATING MOIST MATERIALS AND AN APPARATUS THEREFOR**  
 Takashi Shirai, 10-42 2-chome, Ookayama, Meguro-ku, Tokyo, Japan  
 Filed Feb. 23, 1967, Ser. No. 617,980  
 Claims priority, application Japan, Feb. 23, 1966, 41/10,689  
 19 Claims. (Cl. 110-8)

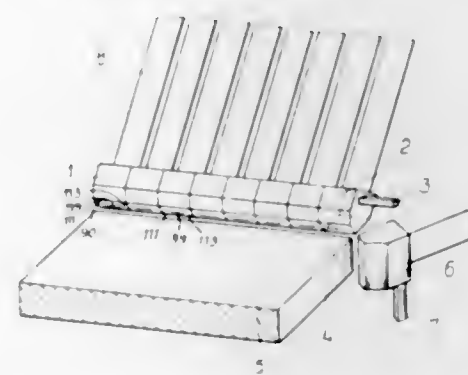
Incineration of moist waste material is performed in fluidized beds of higher melting inert particles in an approximately cylindrical vessel where a slow stirring is applied to the fluidized bed, and, if desired, dehydration

of feed stock is effected in that vessel by passing combusted gas upwardly through a dehydrating bed charged with moist feed material while applying a slow stirring thereto, the gas being flowed upwardly at a sufficiently



high rate relative to that of the particles to prevent down-flow of water, thereby causing free water to become present at the upper end of the vessel, and withdrawing free water.

**3,411,466**  
**SCARFING TORCH**  
 Alfred J. Pfeuffer, Neu Isenburg, Germany, assignor to Messer Griesheim GmbH, Frankfurt am Main, Germany, a corporation of Germany  
 Filed Oct. 25, 1966, Ser. No. 589,417  
 Claims priority, application Germany, Oct. 30, 1965, M 67,127  
 8 Claims. (Cl. 110-22)



A scarfing torch includes a number of side by side scarfing heads which feed a flat wide stream of oxidizing gas therethrough against a workpiece surface. Additionally, the heads include a plurality of fuel gas and preheat passages which terminate adjacent the oxidizing gas passages and various control means for selectively opening and closing the passages of the outer head independently of the other heads.

**3,411,467**  
**SEED DRILLS**  
 Cornelis Van Der Lely, Zug, Switzerland, and Leendert Van Wingerden, Dubbeldam, Netherlands, assignors to C. van der Lely N.V., Maasland, Netherlands, a Dutch limited-liability company  
 Filed Mar. 18, 1965, Ser. No. 440,869  
 Claims priority, application Netherlands, Mar. 25, 1964, 6403163; Feb. 10, 1965, 6501603; Mar. 1, 1965, 6502536  
 17 Claims. (Cl. 111-54)

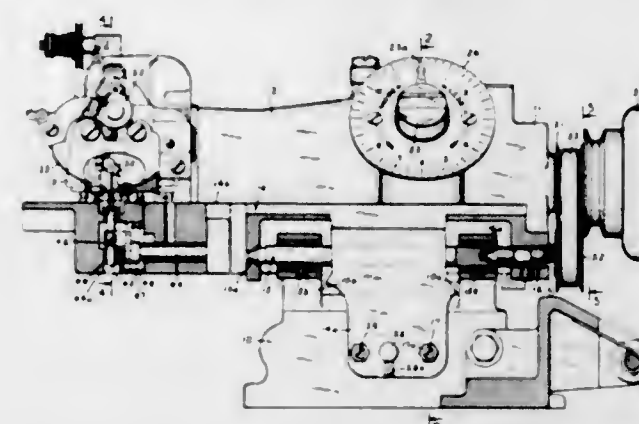
A seed drill machine having a central and two outer portions all with hoppers. The two outer portions are pivotable about nonhorizontal axes to transport position and turnable about horizontal axes to independently move up and down over uneven ground. The machine is connectable to a three point lifting hitch of a tractor. Each

portion has one or more ground wheels. A seed shaft is regulated to dispense seeds to a feed tube under a hopper.



A drive mechanism for the seed shaft controls the speed of rotation of the seed shaft.

**3,411,468**  
**BLINDSTITCH SEWING MACHINE**  
 Gerald C. Roth, Bethpage, N.Y., assignor to Union Special Machine Company, Chicago, Ill., a corporation of Illinois  
 Filed June 15, 1966, Ser. No. 557,718  
 17 Claims. (Cl. 112-178)



A blindstitch sewing machine having a rockable work support over which the material to be stitched is advanced, said work support being disposed substantially forwardly of a vertically extending standard having a horizontally extending arm which carries a main drive shaft, this arm extending in a direction parallel with the work support and the axis about which the work support is rocked. A rotary shaft is provided in the work support for operating a node former, this shaft being driven from the main drive shaft through a toothed belt connecting a toothed pulley on the main drive shaft with a toothed pulley on the shaft within the work support. Any of various node forming devices may be provided in the work support for operation by the rotary shaft therein.

**3,411,469**  
**APPARATUS FOR SECURING ENDS OF FLAT STRIP MATERIAL**  
 William J. De Gain, Detroit, Mich., assignor to Koppy Tool Corporation, a corporation of Michigan  
 Filed Jan. 3, 1966, Ser. No. 518,434  
 10 Claims. (Cl. 113-1)

A hydraulic press apparatus includes a stationary platen and a reciprocal ram adapted to carry a punch and die set between them. The ram is driven by a reciprocal platen which is supported on the opposite side of the

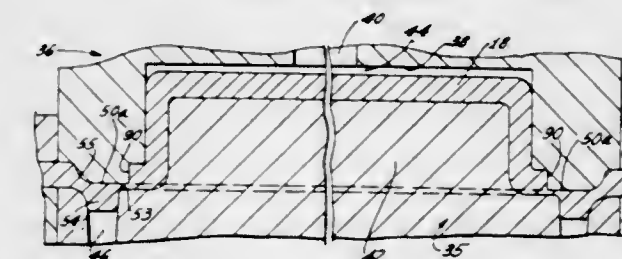
stationary platen from the ram and is connected to the ram by tie rods. A power hydraulic cylinder is disposed between the stationary platen and the reciprocal platen and a pair of return cylinders connect the reciprocal platen to the frame of the press. A fluid control circuit is adapted to connect the power cylinder and the return cylinders so that fluid flows from the return cylinders to the power cylinder during the power stroke and in the opposite direction during the return stroke. Fluid flow out of the return cylinders to the power cylinder is metered until control of a rack and pinion arrangement which detects the relative positions of the ram and the stationary platen so as to maintain parallelism between the two. The fluid system includes means for reversing the flow between



the cylinders upon the occurrence of a sudden pressure increase in the power cylinder at such time as it bottoms on the stationary platen. A latching mechanism prevents movement of the ram towards the stationary platen in the absence of a control signal and the position of the latch is a precondition to the movement of the ram.

The apparatus includes roller means for passing flat stock through the punch and die set, apparatus for securing coil ends together by first punching out tab openings in one strip and then using that strip as a female die, in cooperation with the punch, to form tabs in the other strip and lock them into the female tab openings, and scraper means adapted to remove any scrap material proceeding through the apparatus.

**3,411,470**  
**CAN TOP**  
 Ernal C. Frazee, 355 W. Stroop Road, Dayton, Ohio 45429  
 Original application Jan. 22, 1965, Ser. No. 427,424, now Patent No. 3,291,336, dated Dec. 13, 1966. Divided and this application July 18, 1966, Ser. No. 586,314  
 8 Claims. (Cl. 113-1)



1. In the fabrication of an easy opening container made of sheet material, a method of scoring the sheet material along a line to form a tear strip for manual severance from the container, characterized by the steps of:

subjecting the sheet material to compression across its thickness along said line to reduce the thickness of the sheet material to a residual web defining the tear strip with the thickness of the web less than 50% of the initial thickness of the sheet material; and simultaneously extruding a rib in the sheet material immediately adjacent the residual web to minimize transverse tensioning of the residual web by the compression step.



3,411,471

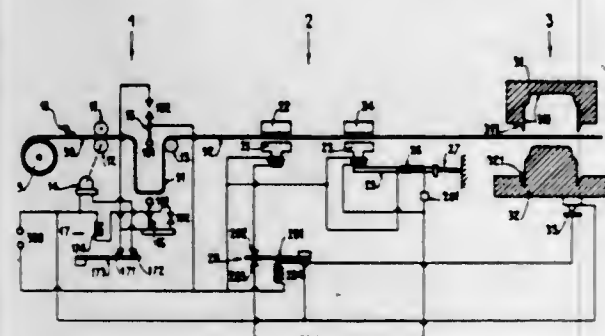
**APPARATUS FOR PRODUCTION OF SEALING CLOSURES FROM METAL STRIPS**

Andre Bereziat, Lyon, Rhone, France, and Armando Podesta, Milan, Italy, assignors to L'Aluminium Francais, Paris, France

Filed Sept. 20, 1966, Ser. No. 580,721

Claims priority, application France, Sept. 22, 1965, 32,187

20 Claims. (Cl. 113—80)



1. In an apparatus for the fabrication of closure caps from strips of metal, including means for preforming and cutting blanks from the strip, means for forming the preformed blanks to the final shape of the closure and means for applying a sealing compound onto the interior surfaces of the formed closure, a feed device for feeding the metallic strip to the means for preforming and cutting blanks from the strip comprising a pair of wind-off rolls operatively engaging the strip therebetween for advancing the strip responsive to turning movement of the rolls and means for driving at least one of the wind-off rolls, a pair of vertically spaced apart switch operating members between which the strip is looped after passage from between the wind-off rolls, means responsive to engagement of the upper of the switch operating members by the strip to effect operation of the driving means for advancing the strip and responsive to engagement of the lower of the switch operating members by the strip to discontinue operation of the driving means to stop advancement of the strip, a gripper assembly in fixed position beyond the loop and embodying elements movable between clamping and unclamping positions with the strip passing therebetween, a gripper assembly having elements movable between clamping and unclamping positions on the strip passing therebetween and means mounting the gripper assembly beyond the fixed gripper assembly for movement linearly between advanced and retracted positions, means responsive to the operation of the means for preforming and cutting blanks from the strip for operation of the fixed gripper assembly to unclamping position when the movable gripper assembly is in clamping position and for operation of the fixed gripper assembly to clamping position when the movable gripper assembly is in unclamping position and for displacement of the movable gripper assembly from retracted position to advanced position while the movable gripper assembly is in clamping position to advance the strip stepwise to the preforming and cutting means while the latter is in open position, and means constantly urging the movable gripper assembly toward its retracted position.

3,411,472

**SUBMARINE CRAFT**

Roger Bajulaz, Genthod-Geneva, Switzerland, assignor to Roger Bajulaz S.A., Genthod-Geneva, Switzerland, a Corporation of Switzerland

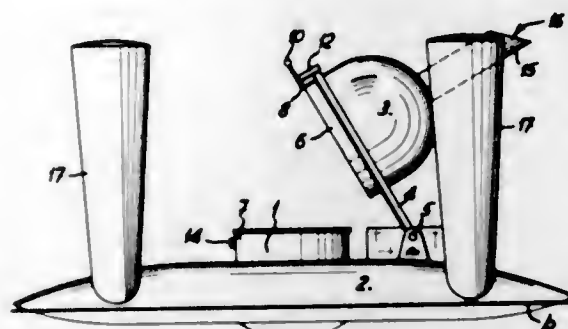
Filed June 12, 1967, Ser. No. 645,180

Claims priority, application Switzerland, June 28, 1966, 9,358/66

15 Claims. (Cl. 114—16)

The invention concerns a safe submarine craft comprising a submersible cabin and an immersion device, said im-

mersion device comprising a duct fastened on said cabin and having one end dipping into the water even in the



surface position of the craft. A motor is used for pumping water into said duct above the water level to submerge the cabin.

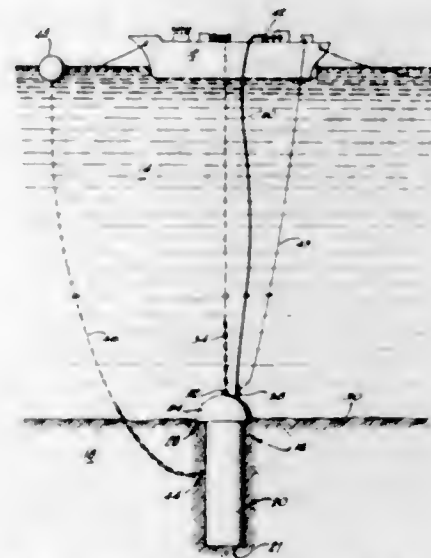
3,411,473

**DEEPWATER ANCHOR**

George E. Mott, Metairie, and John T. Loggins, New Orleans, La., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 19, 1966, Ser. No. 602,706

6 Claims. (Cl. 114—206)



The apparatus consists of an anchor for use in deep water which comprises a tubular member having an open lower end and a closed upper end. A concrete-weight cap is bonded to the top of the tubular member. Means are provided for evacuating and pressurizing the inside of the tubular member so as to aid in inserting and removing the anchor from a relatively soft, penetrable ocean bottom respectively. A pad eye is located at the top of the concrete-weight cap and another is located along the longitudinal length of the tubular member for connecting mooring chains or cables thereto.

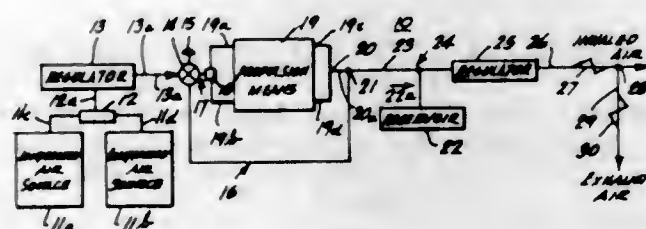
3,411,474

**UNDERWATER PROPULSION SYSTEM**

Daniel L. Curtis, Manhattan Beach, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland

Filed Oct. 11, 1967, Ser. No. 678,149

13 Claims. (Cl. 115—6.1)



An underwater propulsion system for effecting movement of a person through water. A compressed air source

is adapted to regulator apparatus to provide compressed air at a sufficient pressure to operate a propulsion device in a reciprocating motion so as to provide thrust to a person incapable of swimming or to provide additional thrust to a swimmer in addition to the thrust generated by swimming. An air reservoir may be incorporated in this system to provide a linear air flow to the propulsion device.

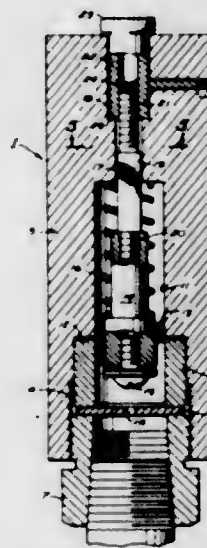
3,411,475

**PRESSURE INDICATOR FOR LUBRICATION SYSTEMS**

Sander D. Sheff, Los Angeles, Calif., assignor to Farr Company, El Segundo, Calif., a corporation of California

Filed Dec. 8, 1965, Ser. No. 512,348

2 Claims. (Cl. 116—70)



A pressure indication device for a lubrication system responds to an overpressure above a pre-selected limit to move an indicator to a fixed position to represent the overpressure condition.

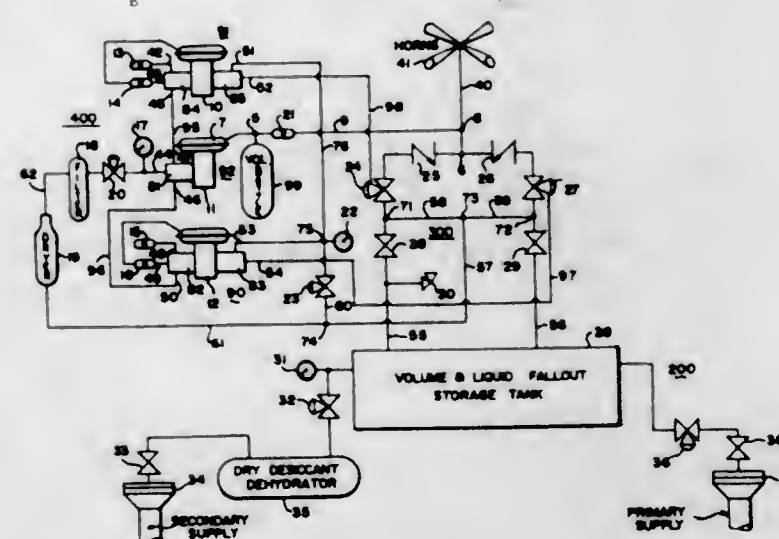
3,411,476

**GAS-POWERED AND CONTROLLED FOGHORN**

Sammie L. Warren and Roscoe H. Boyd, Jr., Cameron, La., assignors to Warren &amp; Boyd Service Company, Inc., Cameron, La., a corporation of Louisiana

Filed Jan. 24, 1966, Ser. No. 522,442

12 Claims. (Cl. 116—70)



1. An acoustical signal device comprising a source of gas under pressure; a gas actuated acoustic transducer; a pair of gas flow paths each interconnecting said source

and said transducer; primary and secondary selectively actuable timer means, each for cyclically passing and blocking flow of pressurized gas between said source and said transducer by a respective one of said pair of gas flow paths; switching means having at least first and second operative states, for rendering said primary timer means actuated and said secondary timer means unactuated in said first operative state and for rendering said primary timer means unactuated and said secondary timer means actuated in said second operative state; and control means responsive to failure of said transducer to be actuated for a predetermined period of time for actuating said switching means to said second operative state.

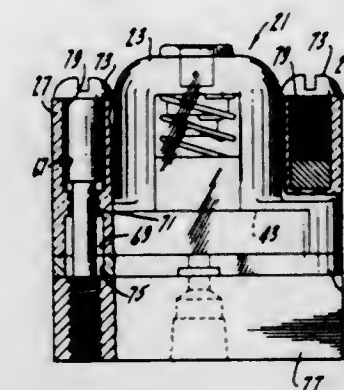
3,411,477

**PRESSURE DIFFERENTIAL INDICATOR**

Walter J. Kudlaty, Elmhurst, Ill., assignor to Marvel Engineering Company, Chicago, Ill., a corporation of Delaware

Filed Aug. 3, 1967, Ser. No. 658,201

8 Claims. (Cl. 116—70)



A fluid pressure differential indicator including a dome-shaped body of transparent material having a floating piston located in a cavity therein with said piston adapted to move between first and second positions in said cavity upon the creation of a fluid pressure differential between opposite sides of the piston and a reference index located exteriorly of said domed body and in alignment with said cavity.

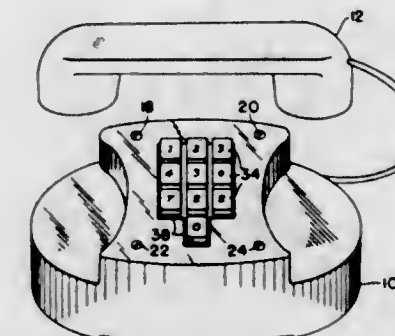
3,411,478

**BELL MECHANISM FOR TOY TELEPHONE**

Jesse P. Rhone, Lorain, Ohio, assignor to Masco Corporation, Detroit, Mich., a corporation of Michigan

Filed May 12, 1966, Ser. No. 549,635

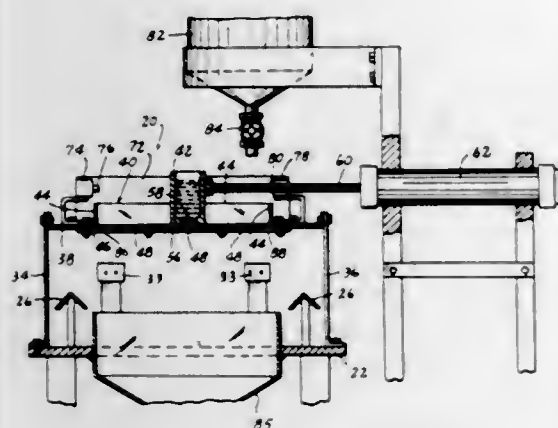
2 Claims. (Cl. 116—160)



A bell ringing mechanism for a toy telephone having a reciprocable actuator plate engageable with a rotary cam plate through a plurality of cams to rotate the cam plate and ring a bell when one of a number of push buttons on the actuator plate is depressed.

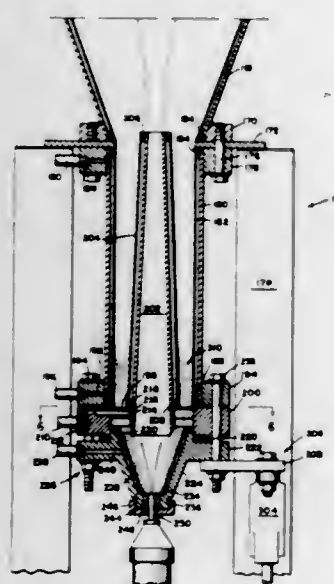


**3,411,479**  
**APPLICATOR INCLUDING VIBRATORY DISPENSER WITH CHARGER**  
 Thomas K. Hutchinson, 4649 Levis Lane, Godfrey, Ill. 62035  
 Filed June 16, 1966, Ser. No. 558,104  
 6 Claims. (Cl. 118—7)



1. A gluing device for dispensing droplets of liquid glue in a controlled pattern upon an article to be glued comprising a station receiving said article, a perforated glue pattern plate overlying said station in registry with said article, a glue container including means to pass said container over the plate whereby to feed a controlled amount of glue to openings in said perforated pattern plate, said openings being of a size to normally retain the glue fed thereto, means for vibrating said pattern plate to dispense the glue in a controlled path through the pattern plate openings upon the article to be glued, and switch means operatively connected to said means for vibrating and disposed in the path of said container whereby at the terminus of the container movement said switch is operated to thereby actuate the vibrator.

**3,411,480**  
**DEVICE FOR COATING FINE SOLIDS**  
 George M. Grass, Jr., Phoenixville, Pa., and Manford J. Robinson, Moorestown, N.J., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania  
 Continuation-in-part of application Ser. No. 138,801, Sept. 18, 1961, now Patent No. 3,237,596, dated Mar. 1, 1966. This application Jan. 31, 1964, Ser. No. 341,512  
 10 Claims. (Cl. 118—24)



A device for coating fine solids has a coating chamber and a casing for containing a bed of solids in communication with the coating chamber with a powder nozzle within the casing. Gas supply means introduces a jet of gas

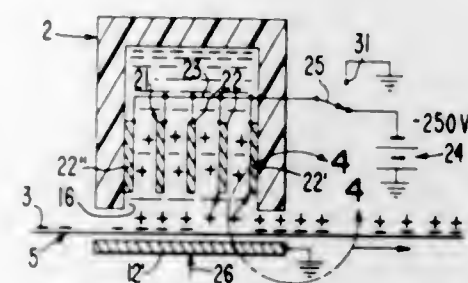
into the casing to entrain solids from the bed into the powder nozzle. A spray nozzle in the coating chamber sprays a coating material onto the solids sprayed into the chamber by the powder nozzle. The gas supply means advantageously includes a nozzle and means to rotate the nozzle. Preferably, at least a portion of the interior of the coating device is lined with a permeable member having a permeability of from about 0.5 to about 6 and there is provided means to supply gas to said permeable member to flow gas into the interior of the device.

**3,411,481**  
**APPARATUS FOR THE INFILTRATION OF TISSUE**  
 Jack Isreell, Mamaroneck, and Richard H. Helmann, Flushing, N.Y., assignors to Technicon Corporation, a corporation of New York  
 Filed Dec. 28, 1964, Ser. No. 421,410  
 11 Claims. (Cl. 118—500)



The invention relates to apparatus used to prepare specimens of tissue for microtoming preparatory to examination and includes a two-piece interlocking specimen holder which cages the specimen for sequential fluid treatment. Mounting means for a plurality of holders, and containers for the treating liquid are also provided.

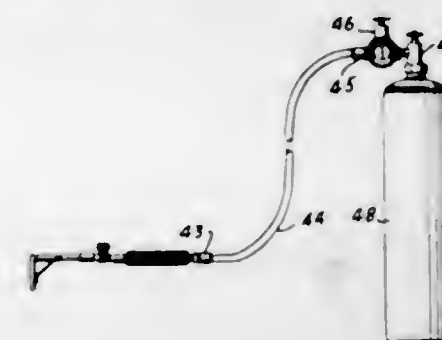
**3,411,482**  
**ELECTROGRAPHIC TONER DEVELOPMENT EMPLOYING A CLEAN-UP ELECTRODE STRUCTURE FOR REMOVING UNWANTED BACKGROUND**  
 Ivor Brodie, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California  
 Filed Jan. 30, 1967, Ser. No. 612,531  
 4 Claims. (Cl. 118—637)



Electrographic toner developers or inkers are disclosed employing a relatively open clean-up electrode structure in the form of one or more slat-shaped electrodes or a metallic screen disposed over the charge image bearing surface of the recording medium being developed such medium being, for example, a strip of electrographic paper. A second electrode, in the form of a plate or the like, is disposed opposite the clean-up electrode structure on the other side of the recording medium. An electrical potential is applied to the clean-up electrodes to establish an electric field adjacent the image bearing side of

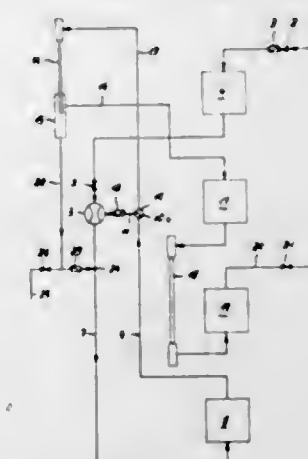
the recording medium to pull charged toner particles from the inked surface of the recording medium which are not electrostatically bound to the charge image to be developed, thereby reducing the background.

**3,411,483**  
**METHOD AND APPARATUS FOR LOW TEMPERATURE BRANDING OF ANIMALS**  
 Albert G. Canoy, 1003 College Circle, Carthage, Tex. 75633  
 Filed Dec. 19, 1966, Ser. No. 602,775  
 8 Claims. (Cl. 119—1)



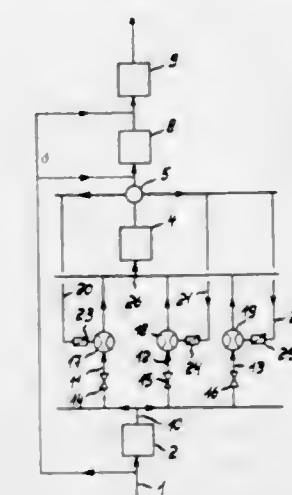
A branding device which brands an animal by changing the color of the hair of an animal growing in an area of predetermined configuration and also scars animal skin in such area without causing depilation by subjecting such area of the hide of the animal to a gas having a very low temperature for a short period of time and a method of branding an animal by circulating cold gas over a predetermined area of the animal hide to produce physiologic changes in the skin in such area.

**3,411,484**  
**METHOD OF AND APPARATUS FOR STARTING AND STOPPING FORCED CIRCULATION BOILERS**  
 Willibald Kraus, Gummersbach, Germany, assignor to L. & C. Steinnmüller, G.m.b.H., Gummersbach, Rhineland, Germany  
 Filed Mar. 3, 1967, Ser. No. 620,425  
 Claims priority, application Germany, Mar. 5, 1966, St. 25,075  
 4 Claims. (Cl. 122—406)



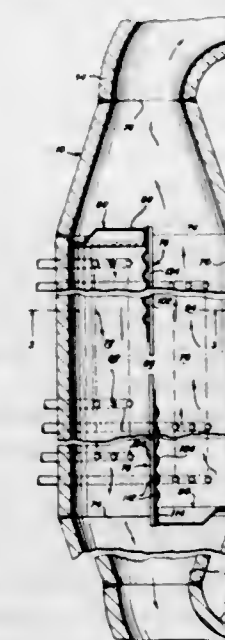
Steam generating installation with wall pipes and superheater having forced circulation of working medium and with means to supply only dry steam to the outlet during firing-up and shutting-down operations, said means comprising: a separator following the wall pipes to remove the liquid phase from the medium discharge from the wall pipes while the vapor phase is directed to the superheater and preferably is passed through another separator prior to reaching the superheater, and a method of operating such an installation.

**3,411,485**  
**STEAM PRODUCING PLANT AND METHOD OF OPERATING SAME**  
 Willibald Kraus, Gummersbach, Germany, assignor to L. & C. Steinnmüller G.m.b.H., Gummersbach, Germany  
 Filed Mar. 3, 1967, Ser. No. 620,434  
 Claims priority, application Germany, Mar. 4, 1966, St. 25,064  
 9 Claims. (Cl. 122—406)



Steam generating installation and method of operation in which working medium is branched off from the exit side of the wall pipe system ahead of the superheater and returned to the inlet side of the pipe system downstream from the preheater and admixed at that point with the supply of working medium from the preheater to the pipe system, with the flow of working medium so branched off being induced by the supply of working medium from the preheater to the pipe system.

**3,411,486**  
**TEMPERATURE MATCHING HEADER**  
 Jacob Cooper, Livingston, N.J., assignor to Foster Wheeler Corporation, Livingston, N.J., a corporation of New York  
 Filed Apr. 13, 1967, Ser. No. 630,680  
 8 Claims. (Cl. 122—476)



A temperature matching header construction for use in a combined steam generator turbine in which a baffle is mounted in the header to provide two substantially uniform vapor supply sections in flow communication with each other.



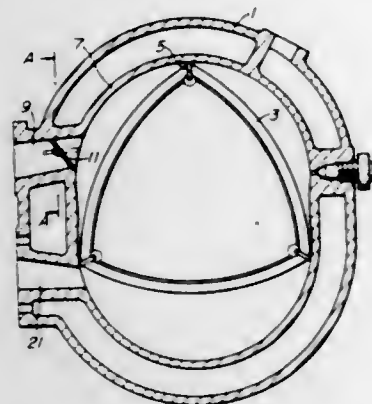
3,411,487

**SUCTION DEVICE FOR ROTARY PISTON INTERNAL COMBUSTION ENGINE**

Hiroshi Tado, Suita-shi, Japan, assignor to Yanmar Diesel Engine Co., Ltd., Osaka, Japan, a corporation of Japan  
Filed Nov. 4, 1966, Ser. No. 592,066

Claims priority, application Japan, Feb. 14, 1966, 41/12,241

2 Claims. (Cl. 123—8)



An automatic suction control valve for preventing blow-back in rotary piston internal combustion engines operating at low speeds comprising a spring biased, rotary valve member mounted in the intake port closely adjacent the inner peripheral surface of the engine. The dynamic pressure of intake gases overcomes the spring force to open the valve an amount corresponding to engine speed. The valve is automatically closed by blow-back of exhaust gases. The valve also includes a notched portion allowing sufficient intake for no load operation.

This invention relates to suction devices for rotary piston internal combustion engines and more particularly for those of the type including sealing elements attached to the respective apex portions of the piston and adapted to open and close the intake and exhaust ports formed in the periphery of the housing body to control gas exchange of the engine. The present invention has for its object to prevent the so-called blow-back phenomenon during engine operation at low speeds. Thereby to increase the stability of such slow-speed operation.

3,411,488

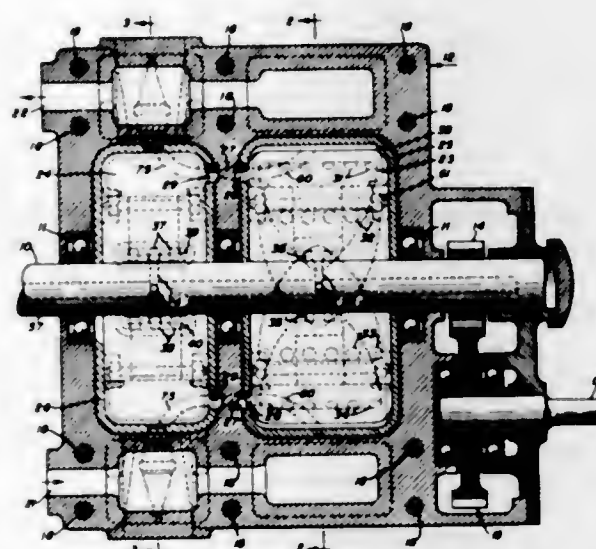
**ROTARY INTERNAL COMBUSTION ENGINE**

Karel Kratina, 20 Williams St., Clifton, N.J. 07014

Filed Jan. 11, 1966, Ser. No. 520,007  
7 Claims. (Cl. 123—16)

1. A rotary internal combustion engine unit comprising,
  - (a) an engine block carrying axially aligned bearings and having a dividing wall,
  - (b) first and second similarly-shaped closed housings disposed on opposite sides of said dividing wall, each housing having an internal surface defined by straight side walls and rounded corners and said housings being angularly offset relative to each other about the common axis of said bearings,
  - (c) a shaft having a central bore formed therein and rotatably supported by said bearings, said shaft extending through axially-aligned holes formed in both housings and the said dividing wall,
  - (d) first and second cylindrical rotors disposed respectively within said first and second housings and secured to the shaft, each rotor having its peripheral surface in sliding engagement with the inner straight side walls of the associated housing thereby defining operating chambers corresponding in number to the rounded housing corners,
  - (e) means forming arcuate-shaped, aligned fuel transfer passageways in the said dividing wall and the proximate end walls of the two housings,

- (f) means forming a plurality of radial slots of rectangular cross-section in each rotor,
- (g) means forming radial holes in said shaft, which holes communicate with said central bore and said radial slots,
- (h) a vane lifter of rectangular cross-section disposed within each of said radial slots,
- (i) a vane of rectangular cross-section positioned within each of said radial slots, each vane having an inner end engageable by the associated vane lifter,
- (j) a sealing band carried by each vane, which sealing bands conform to the contour of the operating chambers,
- (k) a liquid filling the said central bore, radial holes and radial slots to maintain the sealing bands in engagement with the inner walls of the housings during rotation of the shaft,



- (l) fuel inlet ports formed in the wall of the first housing, each inlet port communicating with one of the operating chambers of such housing,
- (m) exhaust ports formed in the wall of the second housing, each exhaust port communicating with one of the operating chambers of such housing,
- (n) spark plugs operatively associated with the operating chambers of the second housing, and
- (o) arcuate passageways formed in each rotor in such manner that upon normal rotation of the shaft the arcuate passageways formed in the first rotor alternately communicate with the operating chambers of the first housing and the said fuel transfer passageways and the arcuate passageways formed in the second rotor alternately communicate with the fuel transfer passageways and the operating chambers of the second housing.

3,411,489

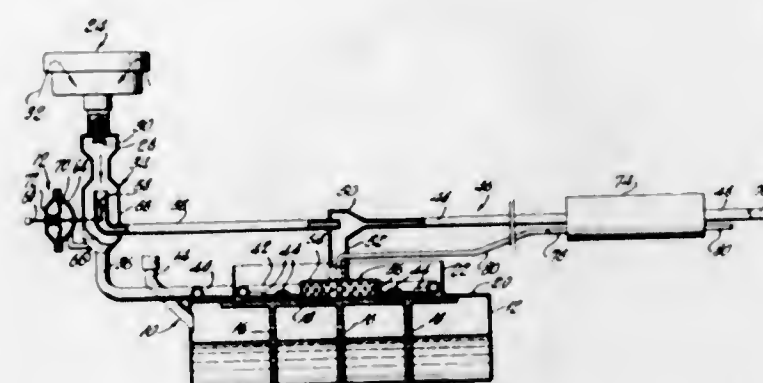
**FUEL SUPPLY SYSTEMS FOR INTERNAL COMBUSTION ENGINES**

Johannes Kruger, Esplanade, Durban, Republic of South Africa, assignor of ten percent interest to Edward B. Hunter, New York, N.Y.

Filed Dec. 22, 1966, Ser. No. 603,954  
29 Claims. (Cl. 123—133)

Systems for supplying fuel-air mixtures to the suction inlet of an internal combustion engine and having controls to regulate the richness of the mixture. Part of the inlet air has intimate contact with the fuel and another part, which does not intimately contact the fuel, is combined with the air which is rich in fuel before reaching the engine. The fuel-air mixture is used instead of water to cool the engine so as to be heated thereby. Part of the

exhaust gases are directed to the air inlet so as to be recirculated through the engine, and the exhaust gases are used to circulate cooling water through the engine before the exhaust gases reach the air inlet so that the exhaust

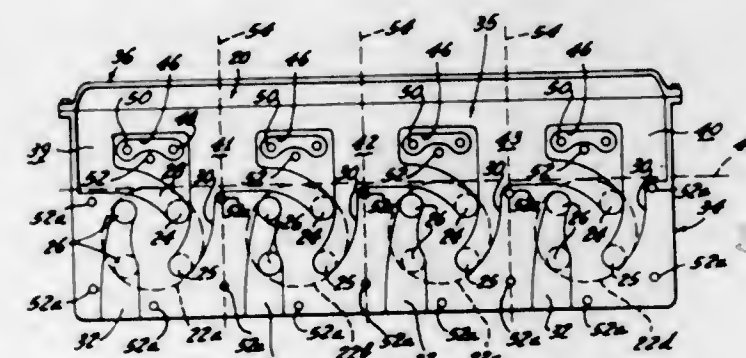


gases have been placed in contact with water before reaching the air inlet. Also an arrangement is provided where a separate supply of water contacts the air before it is directed into contact with the fuel, and before it reaches the suction inlet of the engine.

3,411,490

**INTAKE PORT STRUCTURE FOR INTERNAL COMBUSTION ENGINE**

Lucas L. Akana, Torrance, Calif., assignor to White Motor Corporation, Cleveland, Ohio, a corporation of Ohio  
Filed Dec. 9, 1966, Ser. No. 600,629  
18 Claims. (Cl. 123—193)



The cylinder head of an internal combustion engine is recessed to form one side of an exhaust manifold and is further recessed in spaced regions to form plenum bays of the intake manifold that are much broader than the intake passages to the cylinders. The plenum bays are separated by islands that accommodate push tubes for the intake and exhaust valves. Each cylinder has two intake passages from two different plenum bays to result in a high volume of intake flow to each cylinder.

3,411,491

**MACHINING APPARATUS FOR DRESSING DEVICES**

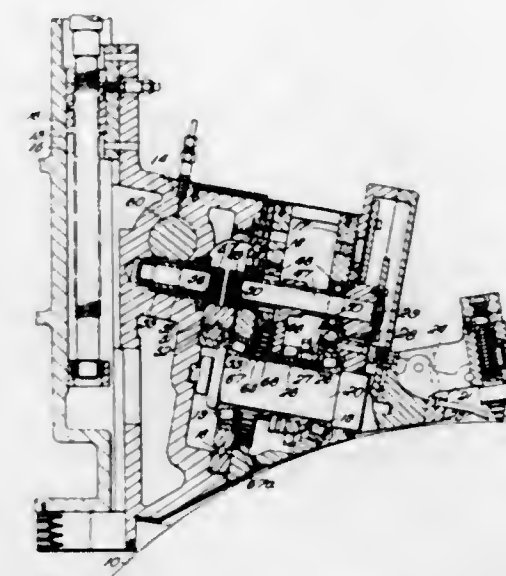
Willfred Keith Temple and Deryck Albert Baker, Peterborough, England, assignors to The Newall Engineering Company Limited, Peterborough, Northamptonshire, England, a British company  
Filed Jan. 25, 1966, Ser. No. 522,959

Claims priority, application Great Britain, Jan. 29, 1965, 4,171/65

3 Claims. (Cl. 125—11)

A dressing device for a grinding wheel having means for traversing a tool along the peripheral surface of the grinding wheel and around the radius at the ends. The

tool is rotatably mounted on a slide and rotated relative to the slide by a spring means to dress the radius and the



slide is moved to carry the tool across and dress the peripheral surface.

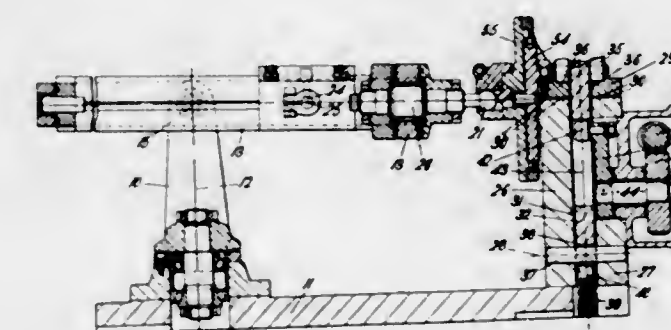
3,411,492

**APPARATUS FOR TRUING GRINDING WHEELS**

Henry E. Merritt, Warwick, England, assignor to Merritt & Co. (Engineering) Limited, Warwick, England, a British company  
Filed Apr. 5, 1966, Ser. No. 540,408

Claims priority, application Great Britain, Apr. 10, 1965, 15,335/65

10 Claims. (Cl. 125—11)



In apparatus for truing the profile of a grinding wheel the truing tool is adjustably mounted on a gimbal arrangement which is connected by a universal joint to the follower of a cam and follower arrangement which generates the form of the desired profile. Movement of the follower is transmitted to the truing tool by the universal joint so that, in use, the tool is maintained normal to the profile of the grinding wheel, and the size of the profile reproduced by the truing tool may be varied by virtue of the tool mounting being adjustably carried on the gimbal arrangement. Grinding wheels for cutting internal and external gear teeth may be trued by the apparatus.

3,411,493

**FORCED AIR OVEN**

George Richard Everson and William James Walter Booker, London, England, assignors to G. R. Everson and Sons Limited, London, England, a company of England  
Filed July 24, 1967, Ser. No. 655,523

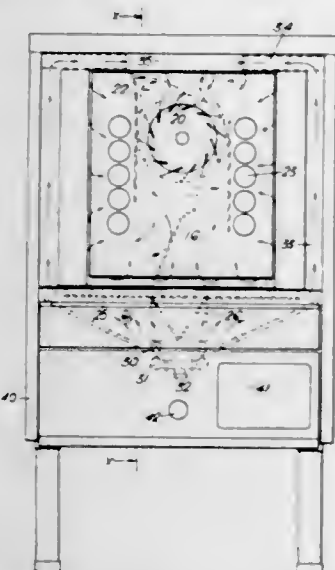
Claims priority, application Great Britain, Aug. 11, 1966, 36,048/66

11 Claims. (Cl. 126—21)

An oven in which the base wall has a centrally arranged V-shaped depression to direct air heated by a

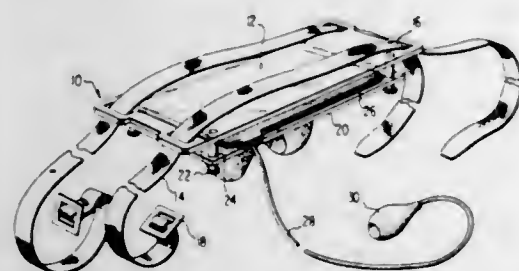


burner through ducts along both sides and the rear of the oven. A fan in the rear circulates the air around the electrodes supported by and extending from a flexible member which is itself supported by a rigid outer mem-



oven in a manner preventing the formation of excessively hot or cold spots.

**3,411,494**  
**URETERAL COMPRESSION DEVICE**  
Marvin J. Friedenber, Desert Hospital,  
1151 Via Miraleste, Palm Springs, Calif.  
Filed Mar. 28, 1966, Ser. No. 537,783  
3 Claims. (Cl. 128—2)

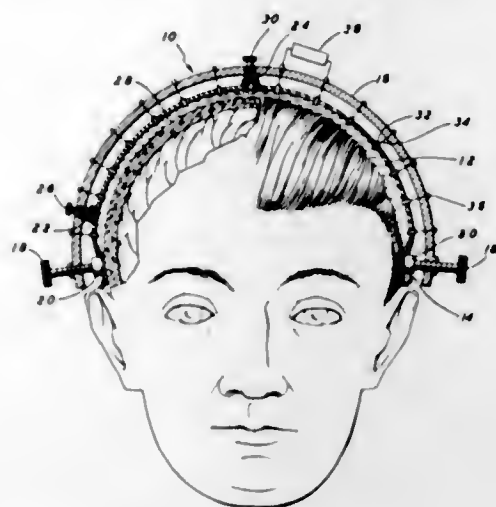


1. A ureteral compression device for use on a patient for oblique roentgenography during intravenous urology, the device comprising:

- a base plate of radiolucent material,
- a flexible strap of radiolucent material and of sufficient length for extending around the patient's body to strap the base plate around a patient's body,
- a movable plate of radiolucent material,
- means mounting the movable plate on the base plate for limited movement toward and away from the base plate,
- an inflatable bag of radiolucent material positioned between the plates, the bag being inflatable to separate the movable plate from the base plate up to the limit of the movable plate's movement,
- and a pair of spaced compression cones of radiolucent material attached to an outside face of the movable plate so that with the base plate strapped to a patient's body by the flexible strap the inflation of the bag will force the movable plate toward the patient's body and the compression cones will compress the ureters within the patient's body.

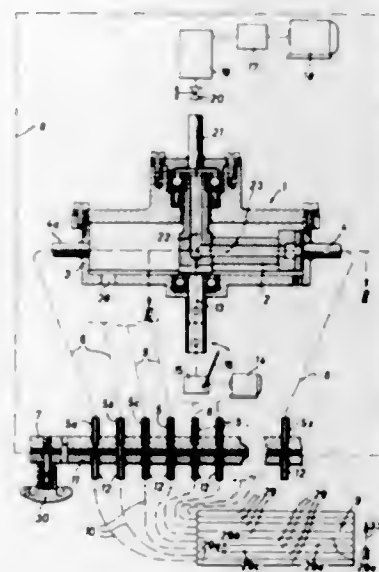
**3,411,495**  
**BIO-ELECTRICAL SENSOR**  
James U. Casby, West Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware  
Filed Dec. 14, 1965, Ser. No. 513,725  
4 Claims. (Cl. 128—2.1)

An electrode assembly primarily useful with an electroencephalograph, the device comprising a plurality



ber. The assembly also comprises means for injecting an electrolyte into the space between the flexible member and subject and for removing air trapped in said space.

**3,411,496**  
**PHYSIOTHERAPEUTIC INSTRUMENT**  
Ernst Heinrich Strehler, Zurich, Switzerland, assignor to Heinrich Schmid, Rapperswil, Switzerland, a firm  
Filed Nov. 23, 1965, Ser. No. 509,338  
Claims priority, application Austria, Nov. 23, 1964, 9,859/64  
7 Claims. (Cl. 128—24)

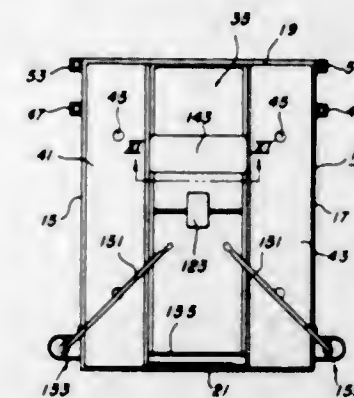


A physiotherapeutic instrument particularly for massage purposes having a sleeve adapted to be laid against the parts of the human body to be treated and which includes a multiplicity of air chambers which can be filled separately and which is connected with a compressor together with a control device having a rotatable distributor and regulating means acting on the control device to change the sequences of the compressed air to the air chamber.

**3,411,497**  
**COMBINED EXERCISER AND BODY-VIBRATING APPARATUS**  
Robert B. Rickey and Hugh B. King, Memphis, Tenn., assignors to Gym-Pak Corporation, Memphis, Tenn.  
Filed June 8, 1966, Ser. No. 556,129  
5 Claims. (Cl. 128—33)

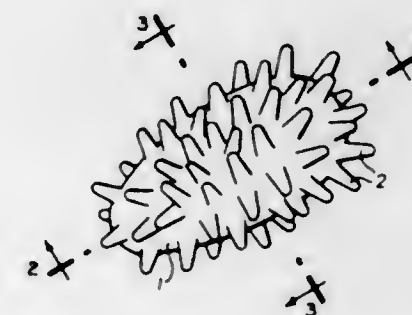
1. A physical fitness apparatus comprising a free standing base having a top and a bottom and being adapted

to rest on a supporting surface, said base including ledge means adjacent the top thereof, a base plate received on said ledge means and removable therefrom, a seat including wheel means for rollingly engaging said ledge means when said base plate is removed for movement back and forth in rowing exercises, a pair of oars pivotally mounted on said base for use in the rowing exercises, said base plate



being provided with a hole therethrough, a plurality of cushion means on the upper side of said base plate, a board resting on said cushion means and supported in a slanting position, vibration means attached to said board on the under side thereof and extending through said hole, stop means on the under side of said board extending into said hole and engaging said base plate for holding said board in position.

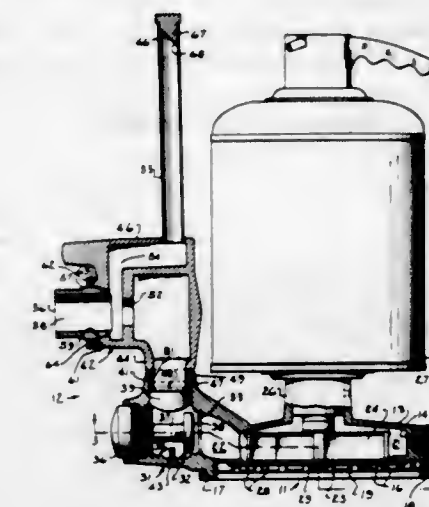
**3,411,498**  
**DEVICE FOR THE DEVELOPMENT OF THE HUMAN FEELING SENSE**  
Adolph Reiter, 210 W. 90th St., New York, N.Y. 10024  
Filed Mar. 14, 1966, Ser. No. 534,077  
3 Claims. (Cl. 128—62)



A device for the development of the human feeling or touching sense, which comprises a carrier means of elastic material and a plurality of longitudinal elastic members tapered down towards the free end and extending from the entire outer surface of said carrier means in different directions. The longitudinal members are adapted to engage any part of the human body and activate the nerves of the human body responsive to touch.

**3,411,499**  
**HYDROTHERAPY APPARATUS**  
Rodolfo Jacuzzi, Lafayette, Calif., assignor, by mesne assignments, to Everest & Jennings, Inc., Los Angeles, Calif., a corporation of California  
Continuation-in-part of application Ser. No. 451,452, Apr. 28, 1965. This application Jan. 17, 1967, Ser. No. 609,875  
23 Claims. (Cl. 128—66)

Hydrotherapy apparatus for producing a whirlpool bath for hydro-massage purposes including pump, or other



means for adjustment of proportions of water and air discharged through the nozzle and adjustment of the direction of discharge from the nozzle.

**3,411,500**  
**ARTICLE OF WEAR FOR APPLYING A STRESS ON THE WEARER**  
James David Gatts, 16 Lake Shore Blvd., Massapequa, N.Y. 11758  
Filed Apr. 30, 1965, Ser. No. 452,204  
11 Claims. (Cl. 128—68)



1. An article for simulating gravitational mass loadings on the body comprising  
a pelvic unit adapted to be worn on the pelvic area, and means operatively connected to such pelvic unit and adapted to be applied to a portion of the body of the wearer to apply a constant longitudinal compressive force to the applied portion of the body of the wearer between the pelvic unit and said means connected thereto,  
and wherein said pelvic unit includes a pelvic belt adapted to completely encircle the waist and leg means connected at each end of said belt and extending therefrom about a respective one of the legs of the wearer,  
said belt resisting longitudinal downward movement of said leg means and said leg means resisting longitudinal upward movement of said belt to stabilize said pelvic unit about the pelvic area.

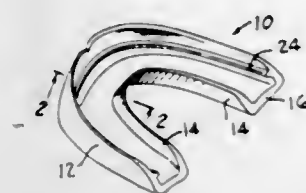


### 3,411,501 THERMOPLASTIC MOUTHPIECE AND METHOD OF MAKING SAME

Samuel Greenberg, 1902 Chestnut St.,  
Philadelphia, Pa. 19103

Continuation-in-part of application Ser. No. 321,560,  
Nov. 5, 1963. This application Mar. 2, 1966, Ser.  
No. 531,123

15 Claims. (Cl. 128—136)

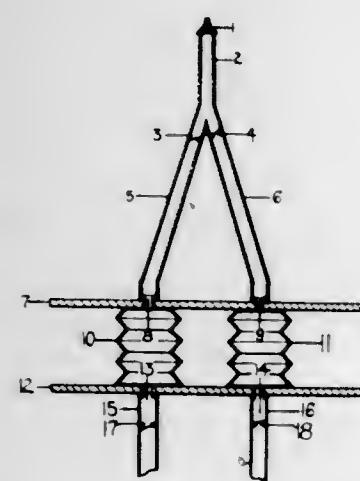


A saddle for use in making a mouthpiece comprised of a substantially U-shaped member of channel cross-section including an outer flange, a lingual flange and a web joining them and made of a plastic such that at a pre-determined temperature range below that of boiling water the saddle will retain its essential shape but will be soft enough to take teeth impressions and to retain the teeth impressions below the softening range; a method by which the saddle is used to take teeth impressions in the mouth so that impressions of one set of teeth will be formed on the inside thereof and the impressions of the bite surface of the opposite set of teeth will be formed in the outside surface of the web to thus form a mouth guard which protects both sets of teeth; and the provision of means whereby a strap for attachment to a face or chin guard is removably attached to the mouthguard so that a strong pull thereon will separate the strap from the mouth-guard and allow the latter to remain in place over the teeth for continued protection.

### 3,411,502 APPARATUS FOR EXCHANGING BODY FLUIDS

Peter C. Hofstra, Paterson, N.J., and Robert W. McKirdy, Scarsdale, and Harvey J. Engelsber, Yonkers, N.Y., assignors to Horizon Industries, Ltd., a corporation of New York

Filed May 5, 1964, Ser. No. 365,096  
1 Claim. (Cl. 128—214)



This invention relates to a method and apparatus suitable for the removal of fluid from vital or non-vital systems and its co-incident replacement therein. Specifically, this disposable device of plastic is suitable for effecting substitution of blood in a new-born infant by uninterrupted procedure. It is an exchange transfuser consisting of a flexible Y-shaped tube having its stem adapted for

connection to the infant and its outflow and inflow branches equipped each with a bellows pump rigidly coupled together and adapted for manual operation.

### 3,411,503 COLLAPSIBLE MIXING SYRINGE WITH EXTRUSION CASING

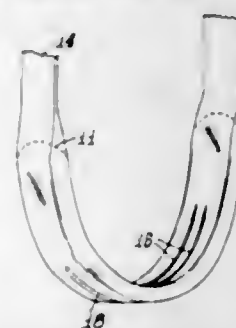
Louis S. Santomieri, Vallejo, Calif.  
(345 W. M St., Benicia, Calif. 94510)  
Filed June 27, 1966, Ser. No. 560,642  
4 Claims. (Cl. 128—216)



A syringe, for medical use, comprising a bellows-type collapsible body containing a diluent and disposed in a case on which a hypodermic needle may be mounted in communication with said body, and a plunger in the case finger-movable in a direction to collapse the body; the plunger including means containing a soluble medicament initially separate from the diluent but which means releases the medicament into the body for mixture with the diluent upon such movement of the plunger prior to mounting of the hypodermic needle on said body.

### 3,411,504 SANITARY NAPKINS

Jacob A. Glassman, 1680 Meridian Ave.,  
Miami Beach, Fla. 33139  
Filed June 24, 1965, Ser. No. 466,710  
2 Claims. (Cl. 128—290)



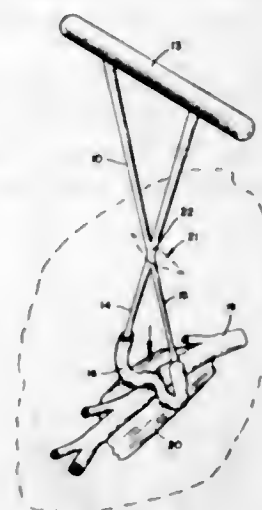
A sanitary napkin including a moisture barrier on one face and flow channels on its other face which is formed into a sharp or tight U-shape to a degree requiring it to be spread apart when worn so as to eliminate lateral wrinkles, creases and folds.

### 3,411,505 DEVICE FOR INTERRUPTING ARTERIAL FLOW

Paul D. Nobis, 490 Post St., San Francisco, Calif. 94102  
Filed Dec. 15, 1965, Ser. No. 514,040  
8 Claims. (Cl. 128—325)

A device for stopping blood flow through an artery wherein a resilient link is coupled to a pair of spaced legs of a holding member so that the link can be forced against an artery to block the flow of blood therethrough.

The link will adapt to and conform with the shape of the artery when it is held thereagainst. A handle on the

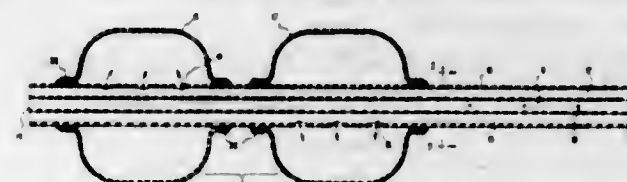


holding member facilitates the application of hand pressure to the link.

### 3,411,506 METHOD AND APPARATUS FOR HEMOSTASIS

Adolfo Guevara Velasco, Av. Tacna 543, of. 63,  
Lima, Peru

Filed Apr. 11, 1966, Ser. No. 541,796  
11 Claims. (Cl. 128—325)

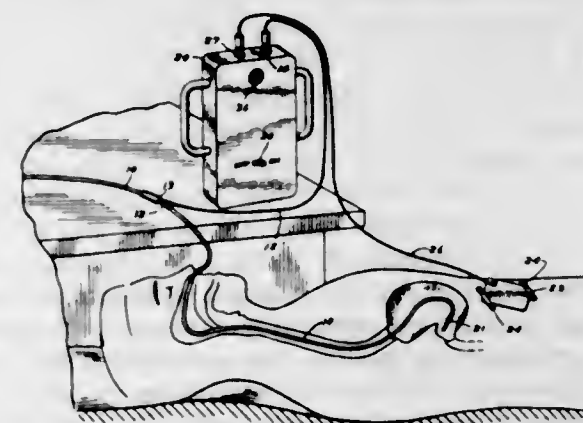


1. A method for inducing hemostasis in hemorrhaging duodenal ulcers comprising inserting an inflatable hemostatic catheter through the esophagus to the region of the pyloric valve; inflating said hemostatic catheter on both sides of pyloric valve, said inflated catheter pressing on blood vessels in pyloric region and maintaining said expansion for a sufficient period of time for thrombosis of the blood vessels to occur.

### 3,411,507 METHOD OF GASTROINTESTINAL STIMULATION WITH ELECTRICAL PULSES

Robert C. Wingrove, New Brighton, Minn., assignor to Medtronic, Inc., Minneapolis, Minn., a corporation of Minnesota

Filed Apr. 1, 1964, Ser. No. 356,590  
4 Claims. (Cl. 128—422)



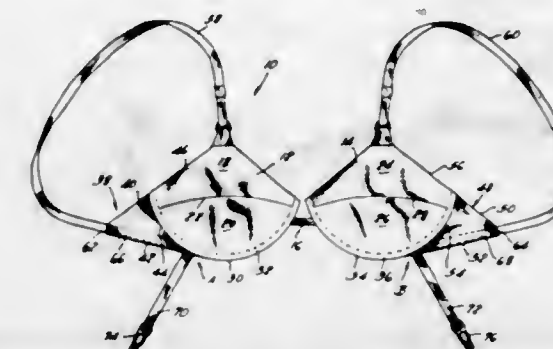
1. A method of treatment of paralytic ileus in the bodies of animals including humans including the steps of positioning a first electrode in the antral region in proximity to the pylorus in such a body, positioning a

second electrode in spaced relation to the first electrode and in contact with said body, generating a series of electrical pulses and impressing said series of impulses between said electrodes for a first finite time period, allowing a second finite time period to elapse without any electrical impulses being impressed, and repeating the impulse and non-impulse steps until positive signs of restored peristaltic activity are observed; wherein said first time period is approximately five seconds and said first and second time periods together are approximately one minute.

### 3,411,508 BRASSIERE

Lillian H. Sayers, New York, N.Y., assignor to Kops Bros. Inc., New York, N.Y., a corporation of New York

Filed Sept. 8, 1966, Ser. No. 577,857  
1 Claim. (Cl. 128—430)



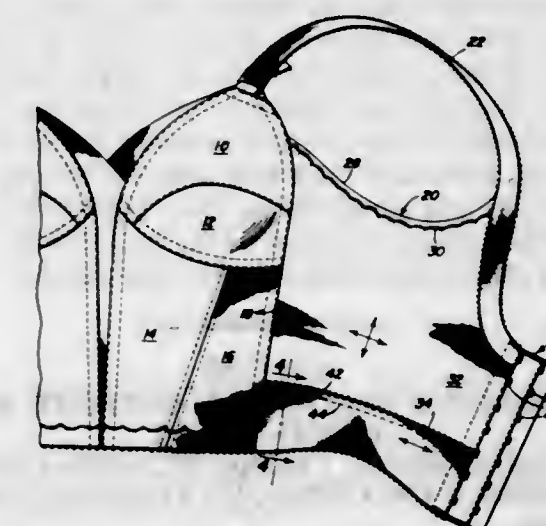
A brassiere comprising a pair of bust cups secured together in side by side relation with each bust cup having a side member extending laterally therefrom and terminating in a free end. A pair of shoulder straps have their upper ends secured to the top of the bust cups, respectively, and their lower ends secured to the free ends of the associated side members, respectively. A strap extends downwardly from a point immediately below the lower edge of each bust cup and terminates in securing means for attachment to a waistband of another garment.

The present invention relates to a brassiere especially suited for wear in association with a dress of the type which leaves the back of the wearer exposed substantially in its entirety.

### 3,411,509 ANTI-CREASE BRASSIERE

Charles M. Sachs, Fort Lee, N.J., assignor to International Playtex Corporation, a corporation of Delaware

Filed July 1, 1965, Ser. No. 468,693  
5 Claims. (Cl. 128—494)



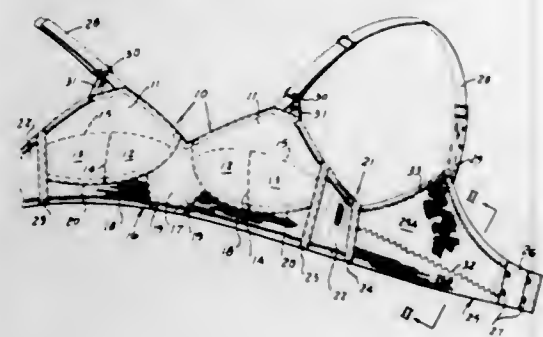
A brassiere construction having dorsal panels connected to breast cups and means connected to the dorsal panels for releasably holding the brassiere on the body, with the



dorsal panels each comprising a body portion and a bottom section, the bottom edge of each body portion and the top edge of each bottom section being dissimilar with at least one of the edges curved so that the top edge joined together in a girthwise seam with the bottom edge produces a flare in the bottom section in each dorsal panel with the seam lying in the vicinity of the waistline of the wearer.

### 3,411,510 BRASSIERE

Marian Elaine Child, New Haven, Conn., assignor to The Strouse, Adler Company, New Haven, Conn., a corporation of Connecticut  
Filed Aug. 12, 1966, Ser. No. 572,104  
4 Claims. (Cl. 128—494)



1. A brassiere adapted to anchor at the shoulder blades for movement therewith when in position on the body of the wearer comprising

- (a) a front supporting member
- (b) a pair of cups mounted in said front supporting member for receiving and supporting the bust of the wearer
- (c) a pair of body-encircling members extending laterally from the sides of said front supporting member and having means at the terminal ends thereof for releasably securing the brassiere at the back of the wearer
- (d) said body-encircling members each including a stiffening bone extending transversely thereof and an elastic back panel with its inner end adjacent said stiffening bone
- (e) said back panels each being formed with an extra length of material folded under at the bottom thereof, an elastic tape stitched diagonally thereto along the juncture of said under-folded fabric and the outer fabric of said panel from a point adjacent the top of said bone at the inner end thereof to a point adjacent the bottom of the outer end of said panel, whereby, when said brassiere is secured to the body of the wearer, the upper portions of said back panels above said diagonal tapes overlies and tightly grip the wearer's shoulder blades for upward movement therewith, said diagonal tapes tightly contact the body immediately under and near the shoulder blades for downward movement therewith and the bottom portions of said back panels below said diagonal tapes lightly contact the smaller part of the back for free upward and downward movement relative thereto.

### 3,411,511 COMBINED MATERNITY SUPPORT AND GARTER BELT

Nicholas A. Marino, Chicago, Ill., assignor to Sears, Roebuck & Co., Chicago, Ill., a corporation of New York

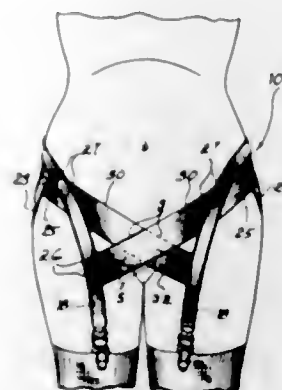
Filed Nov. 4, 1966, Ser. No. 592,079  
4 Claims. (Cl. 128—579)

1. A combination body-supporting garment and hose supporter, comprising,

- (a) a longitudinally elastic waistband,

(b) a first pair of elastic garter-supporting straps extending forwardly and downwardly in continuation of said waistband and adapted to engage the hose adjacent the front median portion of the wearer's thighs,

(c) a second pair of elastic garter-supporting straps secured to said first pair generally over the wearer's hip joint, adjacent the side-upper thigh and at a height intermediate the wearer's waist and crotch, and



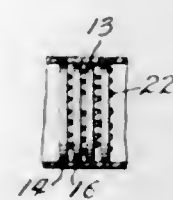
(d) a pair of longitudinally elastic bands of substantial width adapted to extend over the lower abdomen for supporting the latter, said bands being in X-formation and each of said bands being secured at its upper end to one each of said first and second pairs of garter straps adjacent their juncture point and secured at its lower end to one of said first pair on the opposite side of the wearer's body from said upper end.

### 3,411,512 ELECTROLYTIC TOBACCO SMOKE FILTER

Wayne A. Johnson, 501 Dana Lane, Houston, Tex. 77024

Continuation-in-part of application Ser. No. 129,054, Aug. 3, 1961. This application May 31, 1966, Ser. No. 553,802

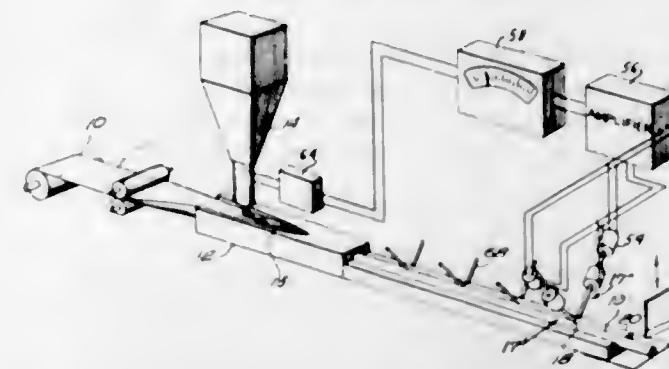
8 Claims. (Cl. 131—10.5)



1. In combination with an elongated portion of tobacco comprising a combustible tobacco outer end with smoke passage space therethrough, the improvement including an inner, expendable filter end comprising a non-metallic, insulative mouthpiece for connection in rearward extension of the combustible tobacco outer end, said mouthpiece having at least two dissimilar metals adapted in disposition therein across the path of smoke movement rearwardly into the mouth of the smoker, said dissimilar metals comprising metals relatively higher and relatively lower in the electrochemical series, said dissimilar metals having elements thereof substantially alternately disposed to provide equivalent opposed perforate plate surfaces slightly separated by integral extensions to admit smoke passage through a substantial succession of electrolytic filter cells thus provided by said elements, whereby the tars, nicotine, and other injurious components of the smoked tobacco are precipitated upon said elements by the electrolytic and catalytic action thus occurring and substantially purified smoke passes into the mouth of the smoker.

### 3,411,513 METHOD AND APPARATUS FOR GAUGING AND CONTROLLING FIRMNESS IN CIGARETTES AND THE LIKE

Max Knobel, 453 Beacon St., Boston, Mass. 02169  
Filed Nov. 18, 1966, Ser. No. 595,458  
13 Claims. (Cl. 131—21)



An air follower device in which a movable nozzle directs a jet of air against the cylindrical surface of a moving cigarette rod. A loosely filled section of the rod will not be firm and the paper wrapper will form a depression under the air jet. The nozzle of the follower is adapted to maintain a constant gap with the cigarette surface and will move inwardly towards the cigarette where a depression is formed. This movement can be measured and signals can be employed in a feedback system for adjusting the tobacco feeding apparatus.

### 3,411,514 METHOD OF MAKING IMPROVED SHREDS FROM ROLLED TOBACCO STEMS

John D. Hind and James W. Leik, Richmond, Va., assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 21, 1966, Ser. No. 603,422  
4 Claims. (Cl. 131—140)

This disclosure relates to rolled tobacco stems. It is known that tobacco stems may be passed between rollers in order to break up the structure of the same and to produce rolled tobacco stems which can thereafter be shredded and blended with shredded tobacco leaf. The present invention involves the addition to the tobacco stems, either before, during or after rolling the stems, of an ammonium phosphate, for example of diammonium phosphate, whereby improved rolled tobacco stems are produced. The improved stems yield a more satisfactory smoke when incorporated in a tobacco product.

### 3,411,515 METHOD OF PREPARING A RECONSTITUTED TOBACCO SHEET EMPLOYING A PECTIN ADHESIVE

John D. Hind and Robert B. Seligman, Richmond, Va., assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia

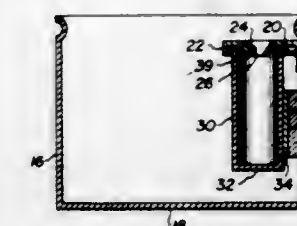
No Drawing. Application June 16, 1966, Ser. No. 557,903, now Patent No. 3,353,541, dated Nov. 21, 1967, which is a continuation-in-part of abandoned application Ser. No. 336,009, Jan. 6, 1964. This application Apr. 28, 1967, Ser. No. 647,278

1 Claim. (Cl. 131—140)

This disclosure relates to a process for producing a binder composition for use in the manufacture of reconstituted tobacco. The binder is made from tobacco plant parts and involves the use of the naturally occurring tobacco pectins, which are obtained by a process in which an alkali metal phosphate is employed to treat the tobacco plant parts. The treatment involves the destruction of the alkaline earth metal cross-links of the tobacco pectins, the release of the resulting tobacco pectins by a washing action and the depositing of the released tobacco pectins on the treated plant parts.

### 3,411,516 CIGARETTE EXTINGUISHER

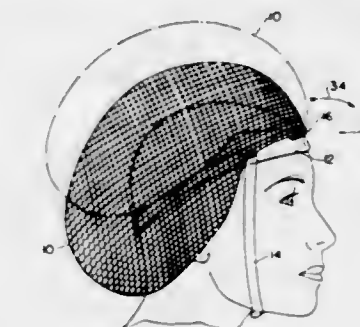
James McWilliams, Oak Hill and Sherwood Roads, Baltimore, Md. 21212  
Filed Mar. 14, 1967, Ser. No. 623,001  
9 Claims. (Cl. 131—235)



A cigarette snuffing device for use within conventional open-topped ash trays. An upstanding right cylinder is removably mounted in the tray. The cylinder has a conically depressed top surface terminating in an aperture having a diameter slightly less than that of a cigarette. A conventional snuffing tongue having a conical depression and aperture may serve as the said top surface.

### 3,411,517 HAIR GUARD

Thomas M. Batchelor, 18060 Conant, Detroit, Mich. 48234  
Filed May 12, 1966, Ser. No. 549,693  
9 Claims. (Cl. 132—49)



The hair guard for protecting the hair of the user comprises a cage support having a head strap adapted to be mounted in a substantially fixed position on the head of the user so as to extend across the forehead and having a chin strap connected to the sides of the head strap and adapted to extend under the chin of the user. A yieldable substantially self-supporting open mesh cage having air circulation openings is shaped to fit closely around the coiffure to retain the hair in proper position. A hinge connection is provided between the cage and the front of the head strap to permit movement of the cage between a raised position exposing the coiffure and a lowered position surrounding and protecting the coiffure. The hinge connection also includes key and lock elements for holding the cage in raised and lowered position.

### 3,411,518 CLEANING DEVICE AND STRUCTURAL MEMBERS

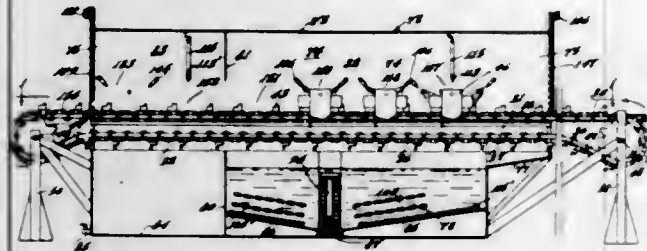
Franklin G. Fisher and Luther L. Bollinger, Sr., Reading, Pa., assignors to Reading Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Nov. 23, 1966, Ser. No. 596,699  
5 Claims. (Cl. 134—72)

1. In a cleaning device for structural members, a housing including at the bottom thereof a sump, conveyor means extending horizontally through the housing and



having means thereon for mounting a succession of structural members to be cleaned, said structural members including exterior surfaces to be cleaned and a hollow interior to be cleaned, said hollow interior being open from above, means for advancing the conveyor and structural members to respective stations inside the housing, spray means in the housing for applying liquid spray



to the exterior of the structural members, second spray means located initially above the structural members and means for reciprocating the second spray means to make it enter into the hollow interior of a structural member so as to wash the said hollow interior, and means for retracting the second spray to clear the said structural member for advance of the conveyor means.

3,411,519

**TELESCOPIC COLLAPSIBLE UMBRELLA FRAME**  
Heinz Weber, Hilden, Germany, assignor to Bremshey & Co., Solingen-Ohligs, Germany, a corporation of Germany

Filed June 30, 1967, Ser. No. 650,340  
Claims priority, application Germany, Nov. 18, 1966,  
B 89,879

6 Claims. (Cl. 135—26)

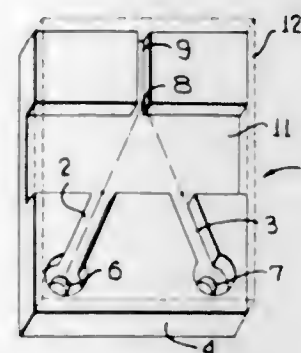


Telescopic collapsible umbrella frame includes a stick, a plurality of roof-supporting ribs each having a hollow innermost portion pivotally connected to an end of the stick, a hollow center portion telescopically slideable within the innermost portion and an outermost portion telescopically slideable within the center portion. The outermost portion is received with clearance within the center portion and is tiltable therein. A runner is slideably mounted on the stick and a plurality of struts are provided, each pivotally linked with the center portion of one of the supporting ribs. Also included are means for locking the outermost and the innermost rib portions together in extended condition thereof, the locking means comprising a head disposed at an end of the outermost rib portion located within the center rib portion, the head being tiltable in the extended condition

of the rib so as to be at least partly inserted in a recess formed in the center rib portion, and biasing means operatively engageable with the head in the extended condition of the rib for maintaining the head in latching engagement within the recess of the center rib portion and for preventing subsequent tilting of the outermost rib portion being telescopically slideable over the center rib portion so as to operatively engage the biasing means for disengaging the biasing means from the head whereby the outermost rib portion is again tiltable so as to remove the head from the recess and thereby unlatch the center and outermost rib portions one from another.

3,411,520

**MAXIMUM PRESSURE SELECTOR**  
Romald E. Bowles, 12712 Meadowood Drive,  
Silver Spring, Md. 20904  
Filed July 31, 1964, Ser. No. 386,492  
23 Claims. (Cl. 137—81.5)



1. A pure fluid maximum pressure selector for providing a fluid output signal having a pressure which is always substantially equal to the highest pressure of a plurality of input pressure signals comprising:
  - at least first and second input passages having egress orifices;
  - means for connecting said input passages to receive respective ones of said input pressure signals;
  - an output passage for conducting said fluid output signal located downstream of said input passages and having an ingress orifice;
  - said ingress orifice of said output passage being located downstream of said egress orifices of said input passages by a distance of between two and six times the width of said egress orifices;
  - the angular relationship between said input passages being such that their centerlines intersect in the region of said ingress orifice of said output passage; and
  - the region between said input and output passages having sufficient volume to maintain ambient pressure in said region.

3,411,521

**HYDRAULICALLY STABILIZED DOUBLE-ACTING PILOT-OPERATED LOAD CHECK VALVES**  
Howard L. Johnson, Joliet, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California  
Filed July 14, 1966, Ser. No. 565,249  
3 Claims. (Cl. 137—99)

3. In a double-acting load check valve assembly operably responsive to a first force acting along a first passage and tending to open the valve and to a second force, consisting of hydraulic pressure, acting along a second passage and tending to close the valve, and having a main valve element which is disposed for reciprocal movement in a bore in the assembly housing and which is spring biased to oppose the first force, and also having a pilot

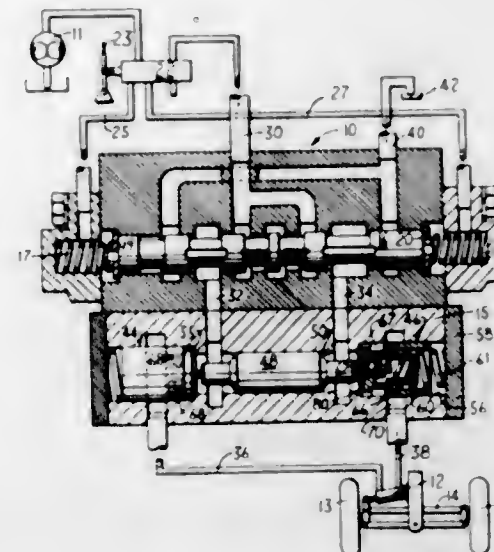
valve element which is disposed for reciprocal movement inside the main valve element in association with an opening in the face of the main valve element and which is also spring biased to oppose the first force, the combination comprising: a first cylindrical wall portion of the main valve element containing a single radial opening in constant communication with the second passage

curate and infinite selection for the desired vacuum condition with the adjusting means having utility in arts other than the vacuum regulator field.

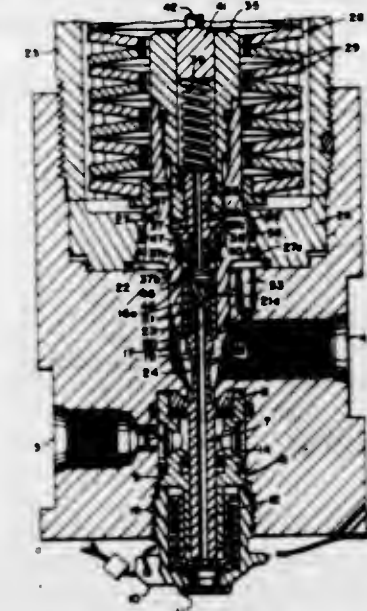
3,411,523

**PRESSURE REGULATOR**  
Dominic J. Lapera, Chardon, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio

Filed July 26, 1965, Ser. No. 474,907  
13 Claims. (Cl. 137—116.5)



through which a first hydraulic pressure force, forming one part of the second force is admitted and a second cylindrical wall portion of the main valve element containing a plurality of apertures in communication with the second passage when the main valve element is sufficiently opened to register with the second passage and through which a second hydraulic pressure force, forming the other part of the second force, is admitted.



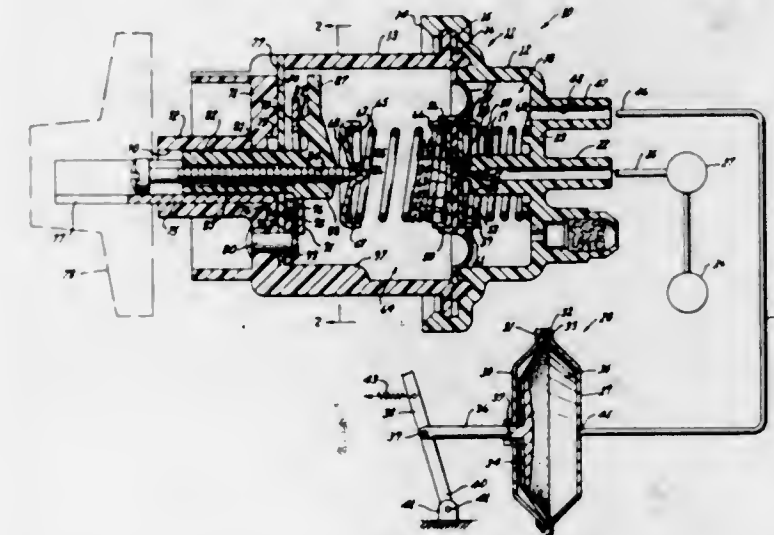
A pressure regulator including an inlet valve for controlling the flow of fluid between inlet and outlet ports, a vent port, and a vent valve carried by a piston which vent valve is movable into engagement with the inlet valve for closing the vent port and opening the inlet valve.

3,411,524

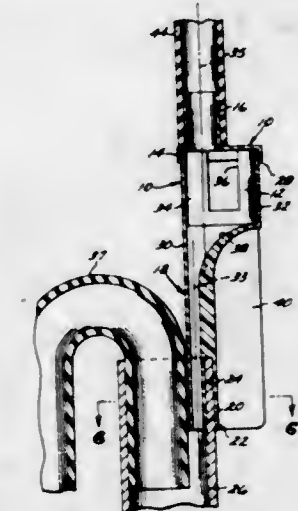
**VACUUM BREAKER**  
Robert E. Raine, 27666 Eldena Drive, and Paul L. Traylor, 27669 Eldena Drive, both of San Pedro, Calif. 90732

Filed Oct. 7, 1966, Ser. No. 585,076  
5 Claims. (Cl. 137—216)

**VACUUM REGULATOR MEANS AND PARTS THEREFOR**  
Robert L. Golden, 151 Chestnut Drive, Greensburg, Pa. 15601, and Harvey J. Shopsky, R.D. 31, Box 371, Latrobe, Pa. 15650  
Filed Dec. 27, 1966, Ser. No. 604,733  
24 Claims. (Cl. 137—116.5)



This invention relates to improved means for selectively adjusting a vacuum regulator within its limits to tend to maintain a selected vacuum condition in a vacuum operated actuator interconnected to such regulator, the improved adjusting means of this invention permitting ac-



1. A vacuum breaker for connection in the discharge line of an appliance, water softener or the like, and mountable upon the upper end of a drain standpipe, said vacuum breaker comprising:
  - a casing including a chamber having air gap openings, said casing being adapted for connection to the discharge line of an appliance to receive liquid in said chamber;
  - a discharge portion depending from said casing for receiving liquid from said chamber, said casing and said discharge portion including a transition section



therebetween having a curving surface for directing liquid flow inwardly, said discharge portion further having a wall adapted to fit against the inner surface of a standpipe in compact relation therewith; and

an elongated skirt located adjacent said wall and defining a space therebetween for receiving the upper end of the standpipe.

3,411,525

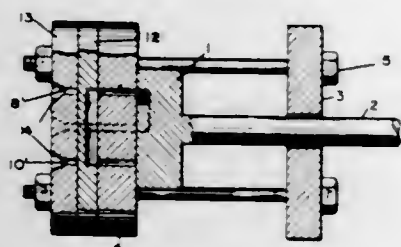
## FLUID SAMPLING VALVES

Frank Pawley Auger, Surbiton, Surrey, England, assignor to The Distillers Company Limited, Edinburgh, Scotland, a British company

Filed Mar. 26, 1965, Ser. No. 442,938

Claims priority, application Great Britain, Apr. 28, 1964, 17,527/64

1 Claim. (Cl. 137—270)



A multiport valve assembly has a rotor and a stator with at least one groove in the rotor which may be selectively registered with different ports in the stator. A key plate affixed to the side of the stator away from the rotor is provided with holes and at least one groove in registry with the ports in the stator. A connecting block abutting the key plate on the side away from the stator is further provided. The connecting block has ports for introducing to and withdrawing fluid streams from the valve assembly. Furthermore, the connecting block is easily removed to permit the insertion of new key plates with different arrangements of grooves and holes in order to change the fluid circuit.

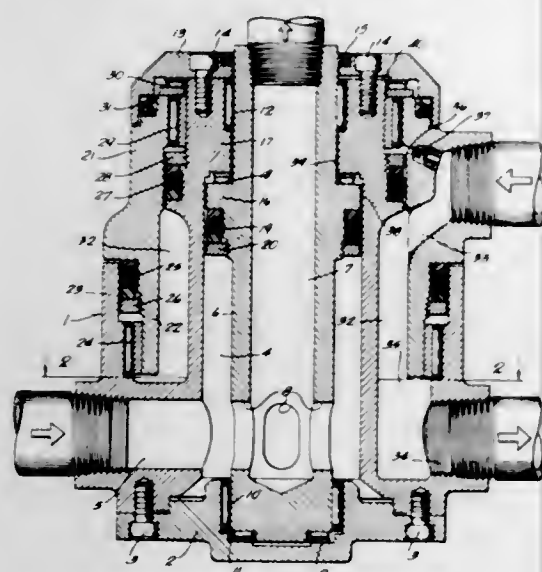
3,411,526

## HYDRAULIC COUPLING

John W. Schaefer, Barrington, Ill., assignor to A. O. Smith Harvestore Products, Inc., Arlington Heights, Ill., a corporation of Delaware

Filed Mar. 9, 1967, Ser. No. 621,902

12 Claims. (Cl. 137—312)



The invention is directed to a hydraulic coupling for connecting the hydraulic system of a stationary member to the hydraulic system of a rotating member. A portion of the high pressure fluid passing through the coupling is permitted to leak by controlled action directly into the low pressure return stream of fluid and the leaking

high pressure fluid is directed through the bearing assemblies to lubricate the bearings as it passes to the low pressure fluid stream.

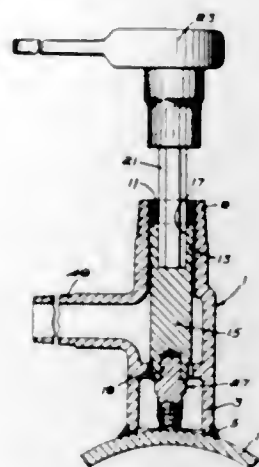
3,411,527

## BITS FOR PIPE PUNCHES

Anker J. Nielsen, Jr., Holden, Mass., assignor to Omco Inc., Worcester, Mass., a corporation of Massachusetts

Filed June 24, 1966, Ser. No. 560,209

12 Claims. (Cl. 137—318)



A punch T welded to a gas main. Screw-threadedly engaged with the inside of the T is an elongated punching bit having a socket portion at one end for receiving an extension shaft of a ratchet wrench which rotates and feeds the bit into the gas main. The punching bit forms the hole in the gas main by means of a hollow punching end formed as a cam with two lobes on the end opposite the socket portion. Axially spaced from the punching end is a second cam of larger diameter also having two lobes for enlarging the punched hole by a swaging action. A beveled portion of larger diameter than the second cam and spaced axially further in from the punching end than the second cam serves as a valve for shutting off the flow of the gas via the T. The punching bit forms the hole and enlarges it by a punching and swaging action as opposed to a cutting-by-chip-removal action. The thus punched coupon or slug works its way into the bore of the hollow punch end by cold flow of the metal and is packed so tightly in the bore that it is retained with certainty.

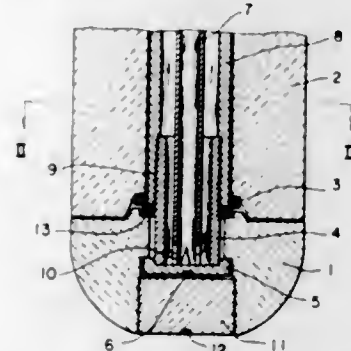
3,411,528

STOPPER FOR LADLE WITH AIR-COOLED HEAD  
Katsuhide Machiyama and Yoshiro Yanagida, Hikari Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan, a corporation of Japan

Filed June 1, 1966, Ser. No. 554,394

Claims priority, application Japan, June 3, 1965, 40/44,281

5 Claims. (Cl. 137—340)



A stopper for a ladle for a molten metal. The stopper has a cylindrical hollow sleeve with a first tubular member in said sleeve and having a flange on the outside thereof overlapping at least a portion of the sleeve. A second tubular member is threadedly connected with said first tubular member and has a flange at its lower end. A head

is provided around the second tubular member and is engaged with the first tubular member and is held in engagement by the flange on the lower end of the second tubular member. A cooling air introducing pipe extends into the space within the tubular members with a passage left from the returning cooling air.

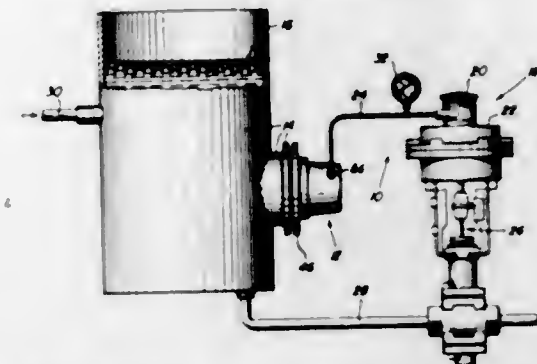
3,411,529

## FLUID REGULATING APPARATUS

William W. Bassett, Wyncote, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed June 24, 1964, Ser. No. 377,562

14 Claims. (Cl. 137—403)



1. A fluid pressure transmitter, comprising a series of chambers including a first chamber open to atmospheric pressure and having a flexible wall thereof constructed to produce movement in response to the application of pressure thereto, a second flexible wall forming an opposite end surface of the first chamber, a second chamber adjacent the first chamber having opposite wall portions formed by the second flexible wall and a third flexible wall, separate passageways adapted to transmit an output fluid pressure signal generated by the transmitter into and out of the second chamber, a third chamber formed by the third flexible wall and an opposite fourth flexible wall, said third chamber being connected by a passageway to atmospheric pressure, a mechanical operating connection positioned to extend through a central wall portion of the second, third and fourth flexible walls into the first chamber at one end and positioned to extend out of the third chamber at its other end, a plate positioned in the first chamber and operably connected to transmit movement of the first flexible wall to said mechanical connection, a stationary outer ring-shaped plate positioned within the second chamber, an associated ring-shaped plate positioned in spaced relation within the second-mentioned plate and being operably connected for movement with the mechanical connection, a biasing means positioned in the third chamber to apply a preselected force to the mechanical connection in a direction that will oppose a preselected magnitude of the force being applied to the mechanical connection by way of the first flexible wall, a bleed valve positioned adjacent said other end of the mechanical connection to generate the output fluid pressure signal and a spring-biased mechanical link operably connected at one end for movement with the mechanical operating connection and at its other end to the valve to regulate the magnitude of the output fluid pressure being transmitted by way of the aforementioned passageway to and from the second chamber.

3,411,530

## PRESSURE OPERATED POP VALVE

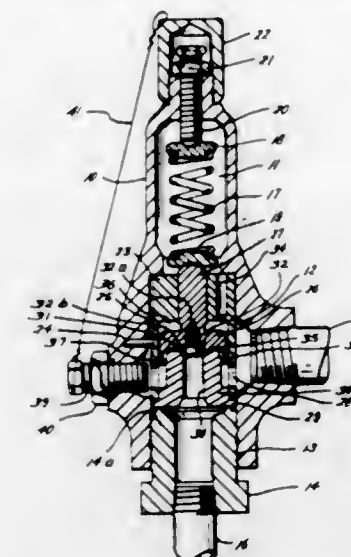
Walter W. Powell, Houston, Tex., assignor to Anderson, Greenwood & Co., Houston, Tex., a corporation of Texas

Filed July 6, 1965, Ser. No. 469,614

10 Claims. (Cl. 137—475)

This specification discloses a pressure responsive valve having a seat and a valve member adapted to move to and from the seat and includes at least one port through which

fluids flowing through the valve must flow to be discharged from the valve and an adjustable control for the port to control blowdown of the valve. This abstract is



neither intended to define the invention of the application which, of course, is measured by the claims, nor is it intended to be limiting as to the scope of the invention in any way.

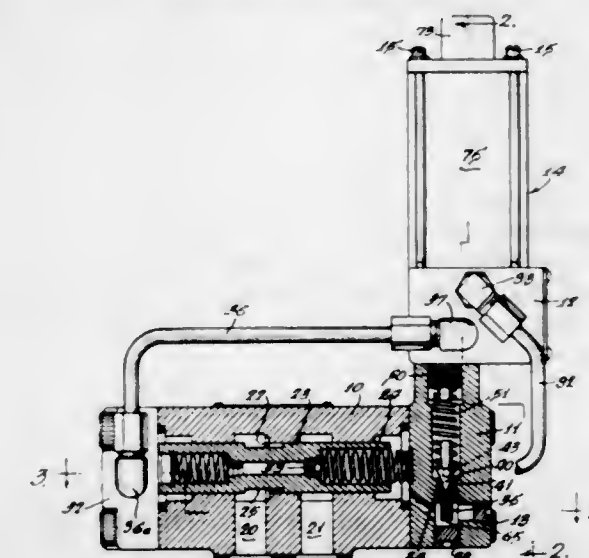
3,411,531

## REMOTELY CONTROLLABLE VALVES

Richard J. Clark, Racine, and Howard J. Wirtz, Sturtevant, Wis., assignors to Racine Hydraulics & Machinery, Inc., a corporation of Wisconsin

Filed Apr. 26, 1966, Ser. No. 545,412

7 Claims. (Cl. 137—491)



An electrically controlled valve particularly suitable for servo control wherein a valve member is yieldably urged toward a seat by a solenoid mechanism and the degree of solenoid energization determines the force applied against the valve member with the restriction to flow through the seat controlled by the valve member determining a control pressure utilizable in operating a valve to be controlled.

3,411,532

## CONSTANT FLOW RATE ORIFICE DEVICES

Frank H. P. Sully, La Mirada, Calif., assignor to Western Brass Works, Los Angeles, Calif., a corporation of California

Filed Aug. 9, 1965, Ser. No. 478,235

3 Claims. (Cl. 137—517)



An apparatus to provide a constant flow rate over a wide range of varying pressures by using flexible and

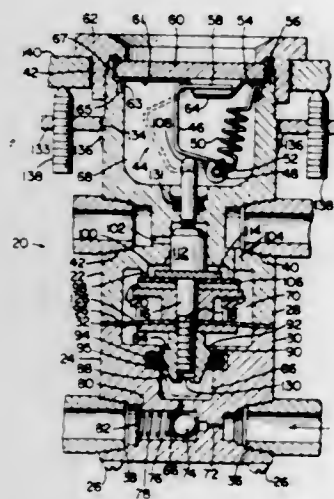


fixed disc orifices. A modified form of the apparatus permits control of flow in opposite directions.

### 3,411,533 CONTROLLING AND INDICATING UNIT AND SYSTEM

Louis M. Puster, Knoxville, Tenn., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Feb. 8, 1967, Ser. No. 614,598  
14 Claims. (Cl. 137-557)

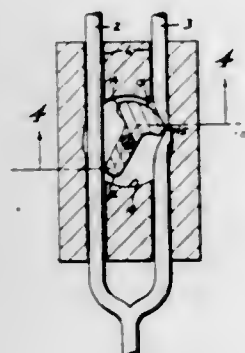


A controlling and indicating unit has a supply port and a transmitter port adjacent one end, a control port and a vent port in a central zone and indicating means at the other end of the casing. A single diaphragm operates the indicating means under conditions produced in such ports. A snap action detent also controls the movement of the diaphragm which requires certain differentials on each side of the diaphragm before the diaphragm and the indicator are snapped from one position to the other.

One end of the casing is provided with a vision lens. An opaque disc has a signal tab that is covered and uncovered by the indicator. The indicator displays one signal, and the tab displays the other.

### 3,411,534 FOUR-WAY VALVE

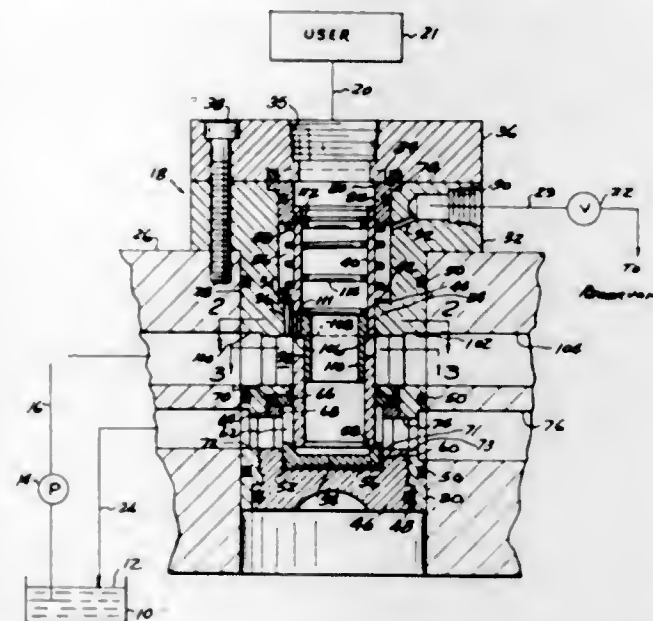
Frank L. Rose, Cleveland Heights, Ohio, assignor to Tracor, Inc., Austin, Tex., a corporation of Texas  
Filed Dec. 28, 1966, Ser. No. 605,350  
8 Claims. (Cl. 137-595)



A four-way valve having two flexible tubes mounted in a housing, a cam element mounted for rotation in said housing and said cam having operative portions for selective pinching contact with either one, none, or both of said tubes to control fluid flow.

### 3,411,535 CARTRIDGE VALVES

Nils O. Rosaen, Bloomfield Hills, Mich., assignor of one-half to Borje O. Rosaen, Ann Arbor, Mich.  
Continuation-in-part of applications Ser. No. 371,884, May 28, 1964, and Ser. No. 390,510, Aug. 9, 1964.  
This application Aug. 17, 1966, Ser. No. 572,934.  
17 Claims. (Cl. 137-596.14)

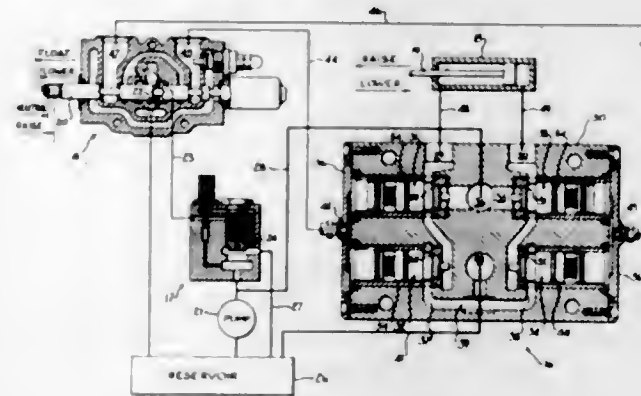


A pilot operated cartridge valve having an outer piston movable between a first position opening fluid flow from an inlet through the piston and to a port adapted for connection to a fluid user and a second position closing the inlet and opening fluid flow from the port through the piston and to an outlet adapted for connection to the reservoir. An inner spring loaded piston carried within the outer piston momentarily maintains the inlet closed upon movement of the outer piston to the first position to provide a sufficient pressure build up within the valve assembly to insure operation of the valve movement actuating means.

### 3,411,536

PILOT OPERATED CONTROL VALVE MECHANISM  
Francis H. Tennis, Hartland, Wis., assignor, by mesne assignments, to Koehring Company, Milwaukee, Wis., a corporation of Wisconsin

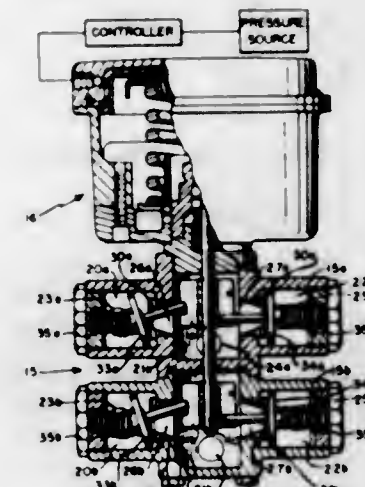
Filed July 6, 1966, Ser. No. 563,196  
45 Claims. (Cl. 137-596.15)



Fluid pressure actuable supply and exhaust poppets control communication of a service line with either a supply line or an exhaust line. Depending upon pressure conditions at a pilot controlled port common to said poppets, either or both poppets can be held closed in response to the pressure of fluid obtaining in the service line, while the supply poppet can also be held closed by fluid in the supply line at a pressure exceeding that of fluid in the service line. Pressure fluid can also be delivered to the service line from the pilot controlled port in bypass relation to the supply poppet.

### 3,411,537 FLUID DIVERTING VALVE

Roland A. Gladstone, Chicago, and Richard C. Mott, Harwood Heights, Ill., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware  
Filed Dec. 15, 1966, Ser. No. 601,944  
10 Claims. (Cl. 137-597)

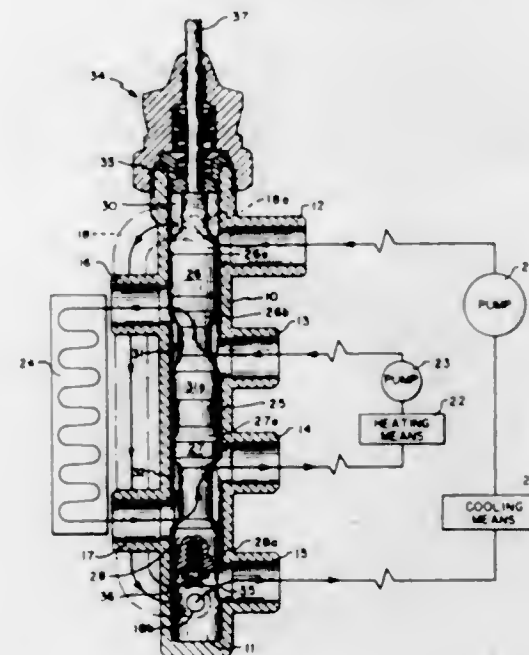


A four-pipe temperature conditioning system including heating and cooling fluid supplies, each with its own return, and a common heat exchanger utilized for both heating and cooling, and further including a unitary six-port fluid diverting valve having a plurality of tilting poppet valves selectively and sequentially operable by a single valve actuator to connect the heat exchanger across either the heating fluid supply and return or the cooling fluid supply and return, or to completely interrupt fluid flow to the heat exchanger.

### 3,411,538 FLUID DIVERTING VALVE

Karl F. Gruner, Offenbach am Main, and Heinrich K. Lau, Bischofsheim am Main, Germany, assignors to Honeywell G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

Filed Apr. 5, 1967, Ser. No. 628,719  
Claims priority, application Germany, Apr. 16, 1966,  
H 55,284, H 59,137  
9 Claims. (Cl. 137-625.29)



A four-pipe temperature conditioning system including heating and cooling fluid supplies, each with its own return, and a common heat exchanger utilized for both heating and cooling, and further including a unitary six-port fluid diverting valve of the spool or slide-valve type,

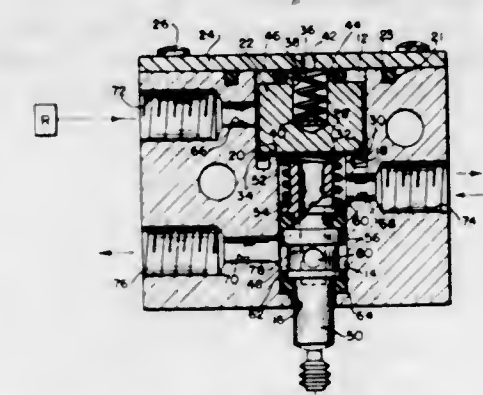
operable to connect the heat exchanger across either the heating fluid supply and return or the cooling fluid supply and return while simultaneously connecting the fluid supply which is not connected to the heat exchanger directly to its return, and further operable to completely interrupt fluid flow to the heat exchanger and to bypass each of the fluid supplies directly to its return.

### 3,411,539

#### PNEUMATIC VALVE

John S. Machado, Woburn, and Nicholas L. De Meo, Medford, Mass., assignors to United Electric Controls Company, Watertown, Mass., a corporation of Massachusetts

Filed July 30, 1965, Ser. No. 475,993  
2 Claims. (Cl. 137-627.5)

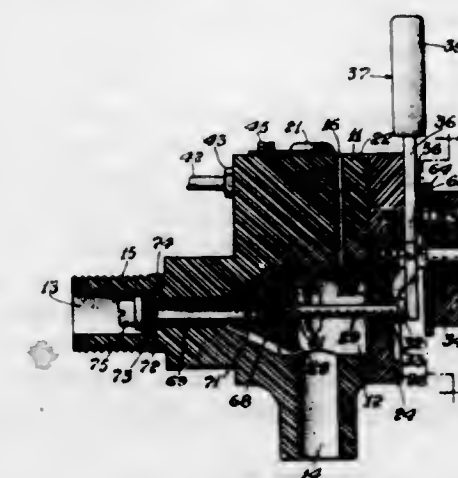


A refrigeration valve containing inlet, outlet and exhaust passages and a valve and valve actuator movable in response to a rise in temperature in a refrigeration chamber to supply refrigerant to the chamber until a predetermined low temperature is reached and then to shut off the refrigerant and connect the chamber to the atmosphere.

### 3,411,540

#### MIXER DISPENSING VALVE

Frank M. Iannelli, 5 Penwood Road, Livingston, N.J. 07039  
Filed Oct. 20, 1965, Ser. No. 498,318  
3 Claims. (Cl. 137-635)



3. A liquid mixer comprising a casing having a port therein formed with an inlet and an outlet for a liquid, a valve controlling said port, valve operating means, a device for connecting the valve and said valve operating means to operate the valve, a mixing and discharge passage communicating with the valve port outlet and having at one end a supply inlet for a mixing liquid and an outlet for the mixture, said supply inlet having a valve seat, and a discharge and mixing valve having a gasket cooperative with said valve seat to open and close said supply inlet and being operable by said valve-operating means providing for opening of the first-mentioned valve and opening of said mixing and discharge valve by one

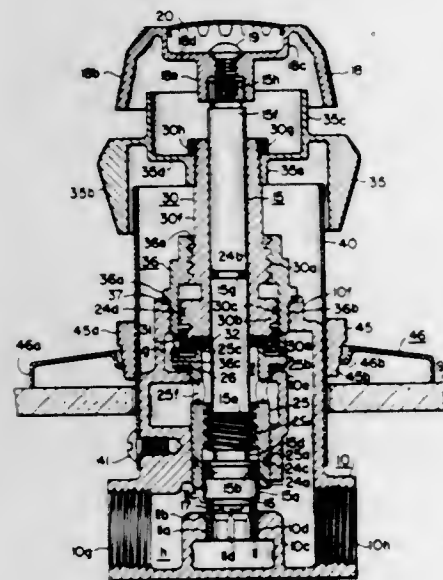


and the same operation of said valve-operating means, said discharge and mixing valve having a frusto-conical body in said mixing and discharge passage with its smaller end facing toward said valve seat, there being a tubular extension carrying said gasket at the opposite side of said valve seat from said body and having lateral ports adjacent said gasket and adjacent said frusto-conical body, respectively, connecting the interior of said extension to its exterior to cause mixing liquid when the gasket is spaced from said valve seat to pass from said supply inlet over said frusto-conical body and become diffused into the first mentioned liquid.

3,411,541

## DUAL CONTROL VALVE

Clarence B. Hindman and James P. Junkins, Morgantown, W. Va., assignors to Sterling Faucet Company, Morgantown, W. Va., a corporation of West Virginia  
Filed Feb. 28, 1966, Ser. No. 530,312  
6 Claims. (Cl. 137-637.2)



A unitized dual control valve device is provided for supplying hot, cold or a mixture of hot and cold fluids, such as water, to one or more outlets. The device has a pair of valve means operated by a pair of coaxial spindles, with an inner spindle positioning an outer spindle. Operating knobs are mounted in an axially adjacent relationship on the spindles in order that an operator may turn the knobs separately or simultaneously to control the temperature and amount of water flow. A housing defines a common fluid outlet chamber and two fluid inlet chambers to receive fluid from the two different sources; it carries bushings for rotatably-mounting the coaxial spindles. Groups of fluid inlets and outlets are provided along the spindles in a manner to simplify the construction, to provide a maximum of operative efficiency with a minimum of space requirements, and to enable two fluid inlet and two fluid outlet bosses to be positioning on the same transverse plane.

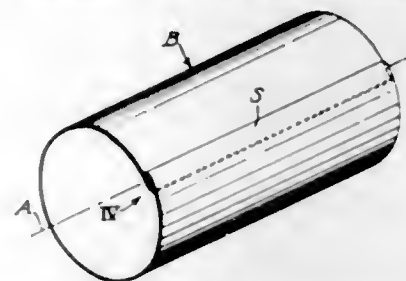
3,411,542

## LAP SEAMED TUBULAR CONTAINER BODIES AND METHOD FOR MAKING SAME

John E. Walsh and Frederick S. Sillars, Beverly, Mass., assignors to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey  
Filed May 17, 1965, Ser. No. 456,322  
14 Claims. (Cl. 138-170)

A lap seam container body and a method of making it are disclosed, the body comprising a tube of sheet material with opposite marginal portions of the sheet formed into a side seam of overlapping layers, the edge of at least one of the layers being deflected toward and engageable with the other layer along a line spaced from the edge of said other layer to create a circumferentially

elongated separation having a relatively substantial transverse axial width between the layers. Adhesive material in



the separation between the overlapping layers seals the seam.

3,411,543

## REINFORCED CONCRETE PIPE

Paul L. Osweiler, Dayton, Ohio, assignor to Price Brothers Company, Dayton, Ohio, a corporation of Michigan  
Filed June 28, 1966, Ser. No. 561,150  
2 Claims. (Cl. 138-175)

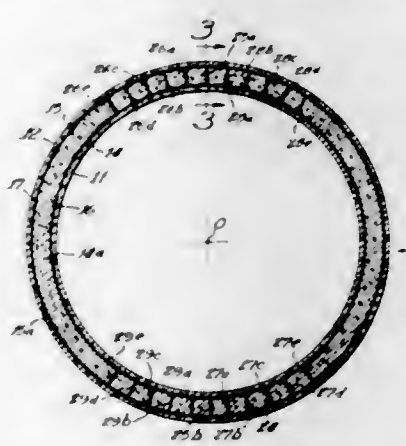


Large diameter concrete pipe has two generally cylindrical steel concentric cages for reinforcement within the concrete wall near the inner and outer pipe surfaces for the length of the pipe. Sinuous steel stirrups secured to the inner cage extend outwardly toward but short of the outer cage along about 60° or 70° of crown and invert regions of the pipe. The stirrups extend at an angle to the radii from the axis of the pipe toward the outer cage away from the vertical dividing plane of the horizontally installed pipe and symmetrically disposed with reference to said vertical plane. The tilt angle of each stirrup is about 35° or 45°.

3,411,544

## REINFORCED CONCRETE PIPE

Lewis R. Keyser, Dayton, Ohio, assignor to Price Brothers Company, Dayton, Ohio, a corporation of Michigan  
Filed June 28, 1966, Ser. No. 561,272  
5 Claims. (Cl. 138-175)



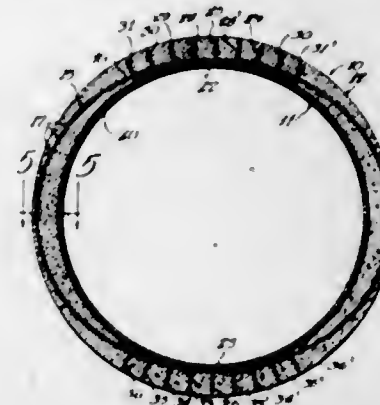
Large diameter concrete pipe has two concentric cylindrical inner and outer steel cages disposed within the pipe wall near the inner and outer pipe surfaces. Sinuous steel stirrups extend along the pipe length, each stirrup being rigidly anchored to the inner cage and extending radially toward but short of the outer cage. The

regions of such stirrup reinforcement, as seen in transverse pipe section, subtend substantially equal angles of between about 60° and 70° at the crown and invert, symmetrically to the vertical plane between crown and invert.

3,411,545

## REINFORCED CONCRETE PIPE

Lewis R. Keyser, Dayton, Ohio, assignor to Price Brothers Company, Dayton, Ohio, a corporation of Michigan  
Filed Aug. 18, 1966, Ser. No. 573,272  
3 Claims. (Cl. 138-175)

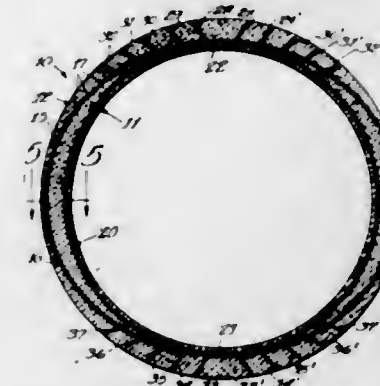


Large diameter concrete pipe has a cylindrical steel reinforcing cage extending the length of the pipe disposed within the concrete wall adjacent the inner pipe surface. An elliptical steel reinforcing cage extending along the length of the pipe is disposed entirely within the concrete. At the crown and invert pipe regions, the elliptical cage is secured to the circular cage. At the region of spring line, the elliptical cage is adjacent the outer surface of the pipe. Additional steel reinforcement in the form of stirrups extend radially from the circular cage along the length of the pipe. Such additional stirrups are disposed at the crown and invert regions of the pipe, symmetrically with respect to the vertical plane in the installed position of the pipe. The additional reinforcing stirrups for a reinforced region subtend a total angle of about 60° to 70° at the crown and invert regions of the pipe.

3,411,546

## REINFORCED CONCRETE PIPE

Paul L. Osweiler, Dayton, Ohio, assignor to Price Brothers Company, Dayton, Ohio, a corporation of Michigan  
Filed Aug. 18, 1966, Ser. No. 573,273  
3 Claims. (Cl. 138-175)



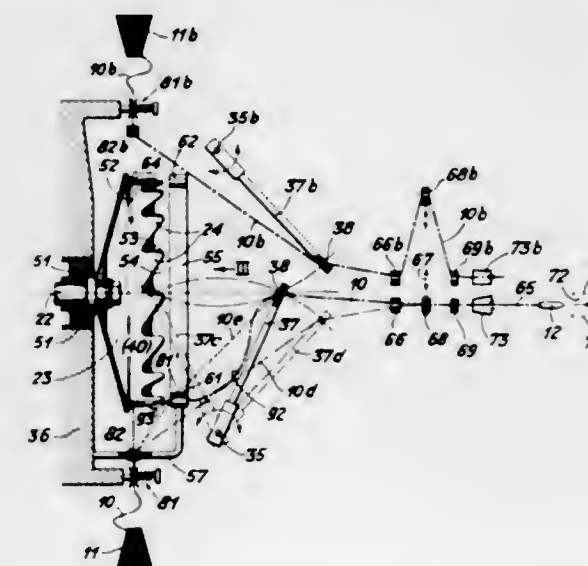
Large diameter concrete pipe has a cylindrical steel cage extending along the length of the pipe disposed within the concrete adjacent the inner pipe surface. An additional steel reinforcing cage of elliptical cross-section is provided within the concrete wall. The elliptical cage has its small diameter at the crown and invert of the pipe and the large diameter at the spring line of the pipe. The elliptical cage is within the concrete and at the spring line is adjacent to the outer pipe wall and at the crown and invert, the elliptical cage is near the inner pipe surface in contact with the circular cage. Disposed at the crown of

the pipe, each subtending a total angle of about 60°-70° is a group of steel stirrups rigidly anchored to the circular cage and extending toward the outer pipe wall. The stirrups extend the full length of the pipe and are symmetrically disposed with respect to the exact crown and invert of the pipe. On one side of the crown the stirrups tilt at about 35° to 45° away from a radii from the pipe axis. Similarly the stirrups on the other side of the crown tilt away at equal angles from radii from the pipe axis. The invert of the pipe is provided with corresponding two groups of stirrups disposed in the same fashion.

3,411,547

## WEFT THREAD SUPPLY APPARATUS FOR LOOMS

Robert Bucher, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss Company  
Filed Sept. 22, 1966, Ser. No. 581,226  
Claims priority, application Switzerland, Oct. 6, 1965, 13,753/65  
3 Claims. (Cl. 139-122)



There is disclosed an intermediate weft thread storage apparatus for looms of the type in which the weft supply bobbin remains outside the shed. This storage apparatus includes a rotatable winder having a ring-shaped array of axially extending fingers and at least two pairs of thread eyes, one eye of each pair being fixed and the other being movably supported on a lever to be movable between a first position in which a thread stretched between the two eyes will be engaged by the fingers of the winder, a second position in which such a thread is clear of the winder, and a third position in which such a thread is moreover outside a split ring supported coaxially of the winder to limit the thread balloon formed when thread wound up on the winder is pulled off thereof. The ring is split adjacent each of the movable eyes to permit operation successively with wefts from separate bobbins.

3,411,548

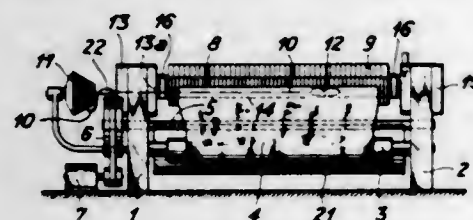
## WEFT THREAD SUPPLY APPARATUS FOR GRIPPER SHUTTLE LOOMS

Erwin Pfarrwaller, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company  
Continuation-in-part of application Ser. No. 534,473, May 9, 1966. This application Oct. 4, 1966, Ser. No. 584,131  
Claims priority, application Switzerland, June 25, 1965, 8,946/65  
12 Claims. (Cl. 139-122)

There is disclosed an intermediate weft thread storage device for looms in which the weft bobbin remains outside the shed, including a rotating flyer or thread guide



having a hollow shaft through which the thread is passed to an arm on the flyer, and a drum supported on and rotatably with respect to that shaft. By rotation of the flyer the thread is wound onto the drum, at a portion



thereof of conical shape sloping radially inward toward the free end of the drum. Weights or magnets are provided to hold the drum against rotation without interfering with pulling of the thread off the free end of the drum as the thread is picked through the shed of the loom.

### 3,411,549 WEFT YARN TYING DEVICE FOR NEEDLE LOOMS

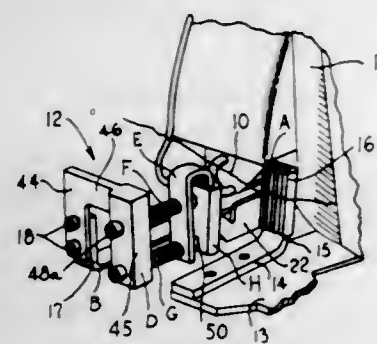
Jakob Müller, Frick, Aargau, Switzerland  
Filed Nov. 21, 1966, Ser. No. 596,018  
Claims priority, application Switzerland, Nov. 20, 1965,  
15,938/65  
10 Claims. (Cl. 139—124)



Two weft yarns are alternately inserted into warp sheds from one side of the warp by one weft inserting member, and are alternately tied on the other side by loops formed with or without an auxiliary yarn by two alternately operated latch needles.

### 3,411,550 TRANSFER-TAIL-CLAMPING APPARATUS

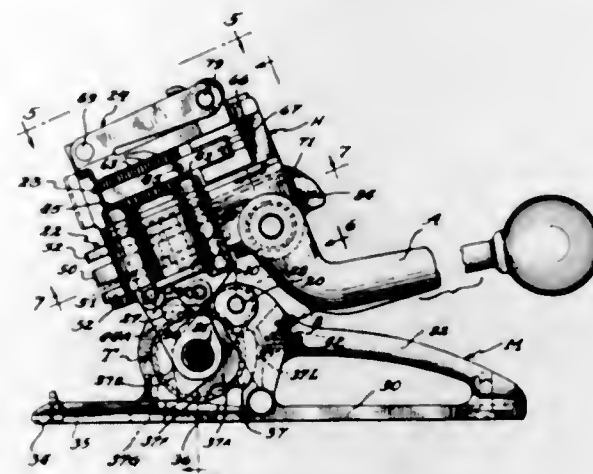
Johnny W. Jenkins, Jr., 2 Prosperity Court,  
Greenville, S.C. 29605  
Filed Nov. 2, 1966, Ser. No. 591,542  
3 Claims. (Cl. 139—247)



A clamping device for clamping the end of the transfer tail of yarn carried in a bobbin during the maiden or first voyage of the shuttle across a loom. The clamping device is manipulated by the mechanism carried within a loom winder.

### 3,411,551 MANUAL STRAPPING TOOL

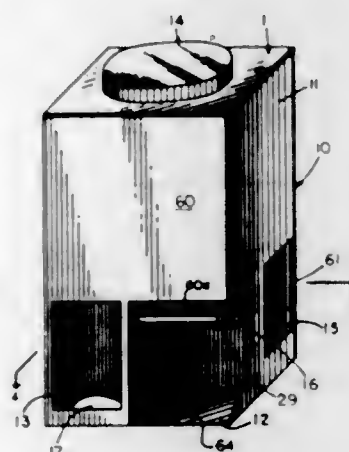
Robert F. Plattner, Chicago Heights, Ill., assignor to Interlake Steel Corporation, Chicago, Ill., a corporation of New York  
Filed Mar. 17, 1965, Ser. No. 440,462  
18 Claims. (Cl. 140—93.4)



A strapping tool for tensioning overlapping ends of a strap loop encircling an object having mechanism permitting single handle operation of both strap tensioning and joint forming mechanisms thereon.

### 3,411,552 FLUID DISPENSER FOR AUTOMOTIVE USE

Budd D. Love, 10175 Sunland Blvd.,  
Sunland, Calif. 91040  
Filed Mar. 21, 1966, Ser. No. 535,899  
8 Claims. (Cl. 141—198)



A fluid dispenser for use in automobiles is disclosed including an insulated fillable fluid container as one compartment therein, a double acting valve actuated by pressing a cup upward thereagainst providing dispensing means for discharging fluid from said container into said cup and also including storage and discard compartments for fresh and used cups respectively.

### 3,411,553 DISPENSER FOR FILLING A BOTTLE WITH A LIQUID

Taiji Seto, 54 Otsu, Isahaya,  
Nagasaki Prefecture, Japan  
Filed Apr. 25, 1966, Ser. No. 544,871  
Claims priority, application Japan, Feb. 9, 1966,  
41/8,039  
3 Claims. (Cl. 141—230)

A dispenser for liquids comprising a U-shaped pipe, one end of which is inserted into an outer cylinder slidable on the pipe. The said one end terminates in a por-

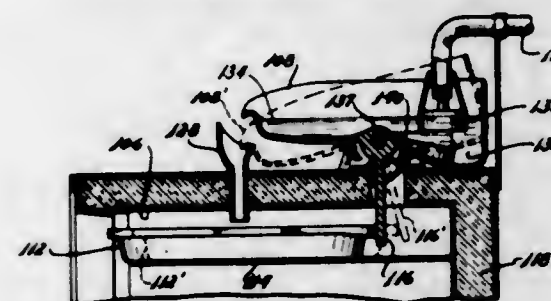
tion of larger diameter which is provided with radial holes. Downward sliding movement of the cylinder covers



and upward sliding movement uncovers these holes. The cylinder is biased downwardly.

### 3,411,554 REFRIGERATOR TRAY FILLING DEVICE

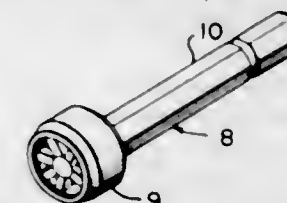
William E. Wilson, Detroit, Mich., assignor, by mesne assignments, to Kelvinator, Inc., Cleveland, Ohio, a corporation of Delaware  
Filed Sept. 27, 1965, Ser. No. 490,491  
3 Claims. (Cl. 141—351)



A water filling device for an ice cube tray having a water transferring arrangement whereby upon the removal of the tray from its stored position within a freezer section of a refrigerator it readies a measured amount of water for subsequent transfer to the tray upon the return of the tray to its stored position.

### 3,411,555 DRIVER FOR SCREW

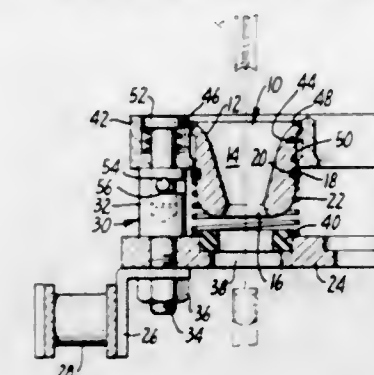
William M. Herpich, Litchfield, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine  
Filed July 22, 1966, Ser. No. 567,236  
10 Claims. (Cl. 145—50)



There is disclosed a driver for a screw, the driver having a shank portion and a head portion terminating in an annular ring portion, the head portion also having a recess in an end thereof, a centrally positioned protruding portion inwardly of the recess, a plurality of ribs defined by side walls extending radially from the protruding portion to an interior of the ring portion, said ribs having end surfaces which slope away from the central protruding portion toward the ring portion and also slope transverse-ly of the thickness of the ribs.

### 3,411,556 OLIVE HOLDER FOR OLIVE PITTER

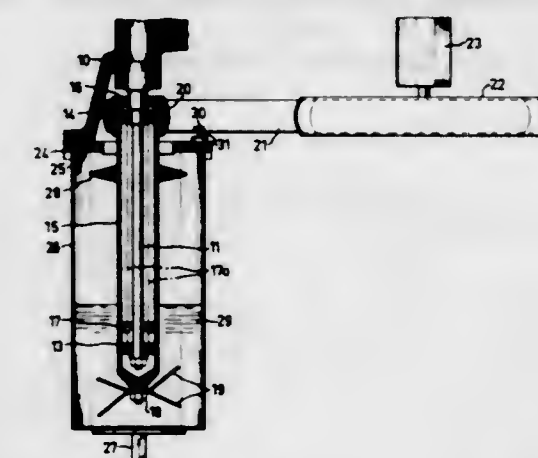
John L. Margaroli, Oakland, Calif., assignor to Geo. W. Ashlock Co., San Leandro, Calif., a corporation of California  
Filed Dec. 29, 1966, Ser. No. 605,905  
4 Claims. (Cl. 146—27)



For an automatic, high speed olive pitting machine of the general type disclosed in U.S. Letters Patent No. 2,407,126, there is provided olive holders, or cups, so mounted that their longitudinal axes may be tilted through an acute angle so that the upper ends of said axes may be directed to any point along a given circular path. With cups of this type, olives, which are deposited therein with their longitudinal axes tilted at an acute angle with respect to the vertical, may, under the joint action of the upper pitting and the lower coring knife, be pitted essentially along a vertical path to minimize lower end break-out during pit removal.

### 3,411,557 APPARATUS FOR DISPERSION OF SOLID PARTICLES IN LIQUIDS

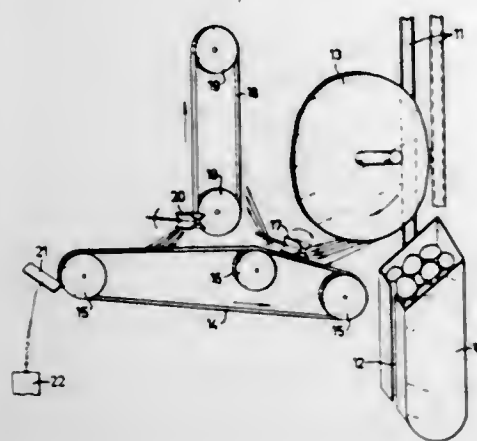
Nils R. M. Weibull, Malmö, Sweden, assignor to Ingenjorsfirman Nils Weibull AB, Malmö, Sweden  
Filed Oct. 31, 1966, Ser. No. 590,687  
5 Claims. (Cl. 146—68)



1. An apparatus for dispersion of solid particles in a liquid, comprising a spindle, means mounting said spindle for rotation in a substantially vertical position, the lower end of said spindle projecting downwardly from said mounting means, a drive gear for rotating said spindle, an open-top container for material to be treated comprising solid particles in a liquid, a cover for said container supported by said mounting and traversed by said spindle which extends downwardly from the lower side of said cover, means for applying said container at its open end against the lower side of said cover with said spindle projecting into the container and having its lower end near the bottom thereof, means on said spindle at the lower end thereof for dispersing said particles in said liquid when said spindle is rotated in said container, and an annular flange on said spindle rotatable therewith, said flange being disposed beneath the lower surface of said cover.

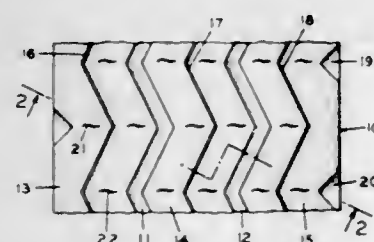


**3,411,558**  
**METHODS AND APPARATUS FOR PREPARING A HOMOGENEOUS MASH OF ROOT-CROPS**  
 Nils R. M. Weibull, Malmö, Sweden, assignor to Ingeniörsfirman Nils Weibull AB, Malmö, Sweden  
 Filed Oct. 31, 1966, Ser. No. 590,686  
 5 Claims. (Cl. 146—225)



1. A method of preparing a homogeneous mash of root-crops, which is suited for laboratory use, comprising cutting a limited volume of root-crops, particles thereby being torn from the root-crops, thrown said particles against a moving surface to deposit such particles thereon as a mash, throwing said mash from said moving surface against a second moving surface to deposit said mash thereon, and wiping off and collecting the mash for the desired use.

**3,411,559**  
**TREAD FOR A GIANT PNEUMATIC RADIAL TIRE**  
 Henri Verdier, Beauregard-l'Eveque, France, assignor to Compagnie Generale des Etablissements Michelin, raisin societe Michelin & Cie, Clermont-Ferrand, Puy-de-Dome, France  
 Filed Apr. 28, 1966, Ser. No. 545,972  
 Claims priority, application France, Apr. 29, 1965, 15,254  
 6 Claims. (Cl. 152—209)



The tread of a giant pneumatic radial tire for use on heavy-duty road vehicles is divided by two wide circumferential grooves into three wide circumferential ribs. The wide ribs are substantially free of grooves therein interrupting their circumferential continuity and of wide circumferential grooves.

**3,411,560**  
**SELF-SUPPORTING PLEATED SLAT CLOSURE**  
 Paul T. Haury, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York  
 Filed Mar. 29, 1966, Ser. No. 538,395  
 1 Claim. (Cl. 160—33)

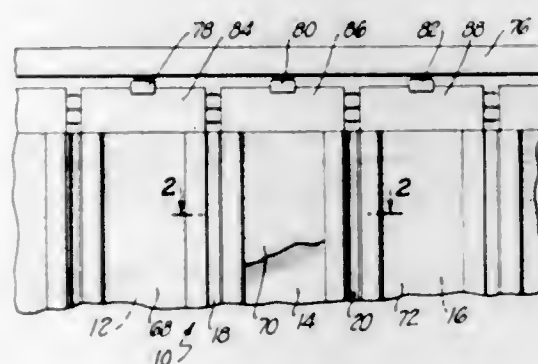
A pleated slat closure for apertured structures is formed of a number of individual slats longitudinally hinged to one another by specially formed edges. An angled edge on one slat engages a partially curled edge of another in

a fashion such that positional stability is assured in a channeled guide without external support. Moreover, a



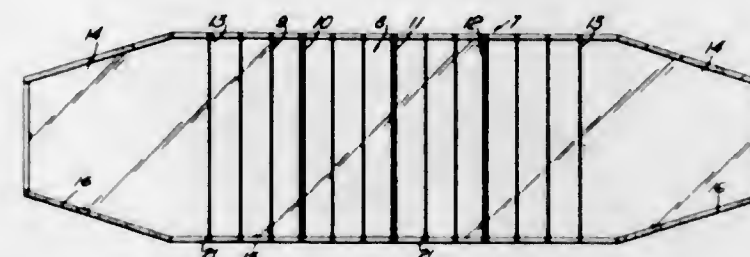
pleating memory is developed so that the slats may be stored without additional attention.

**3,411,561**  
**THREE-PIECE DRAPERY STRUCTURE**  
 Donald E. Mock, Covina, Calif., assignor to Anjac Plastics, Inc., El Monte, Calif.  
 Filed Dec. 29, 1966, Ser. No. 605,789  
 5 Claims. (Cl. 160—231)



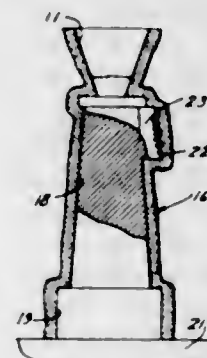
This invention is directed to a three-piece drapery structure, and particularly to a three-piece drapery structure in which three different parts are attached together in such a way as to provide drapery panels which fold on vertical lines. The drapery structure of this invention comprises a drapery panel with appropriate members thereon for the attachment of a soft polymer composition material hinge and a retainer. The retainer is arranged to retain the hinge with respect to the drapery panel and preferably includes a retaining finger which is adapted to retain a decorative panel with respect to the drapery panel. Each of the three parts is preferably of uniform cross section so that they can be inexpensively manufactured by extrusion. Each of the parts is interrelated in such a manner that when attached together, all parts are retained in appropriate relationship. The drapery panel has a channel therein and a bulbous edge of the soft hinge is positioned in the channel. The retainer snaps over the edge of the channel to partially close the open side thereof and retains the bulbous rib on the hinge. The retainer includes a snap edge which snaps onto the drapery panel to be retained thereon and thus retain the hinge in position. The hinge is necessarily relatively flexible. The retainer is necessarily resilient while the drapery panel is preferably more rigid. These parts may be made of the same, suitable material, with wall thickness determining resiliency, or may be made of different materials of different resiliency.

**3,411,562**  
**TEMPORARY WINDSHIELD**  
 Kenneth John Garrett, Chartridge, Chesham, England, assignor to Humphrey Thompson Enterprises Limited, Middlesex, England, a British company  
 Filed July 8, 1966, Ser. No. 563,851  
 Claims priority, application Great Britain, July 19, 1965, 30,655/65  
 3 Claims. (Cl. 160—327)



A temporary windshield for a motor vehicle, the permanent windshield of which has been broken. The temporary windshield includes a sheet of transparent plastic material which can be rolled up for convenient transport in the trunk of a vehicle, the sheet having a series of parallel transfer aluminium reinforcing rods to support the plastic sheet over the opening within the windshield frame.

**3,411,563**  
**ELIMINATION OF EQUIAXED GRAIN SUPERIMPOSED ON COLUMNAR STRUCTURES**  
 Donald G. Fleck, Alliance, Ohio, assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio  
 Filed Aug. 26, 1965, Ser. No. 482,799  
 1 Claim. (Cl. 164—69)

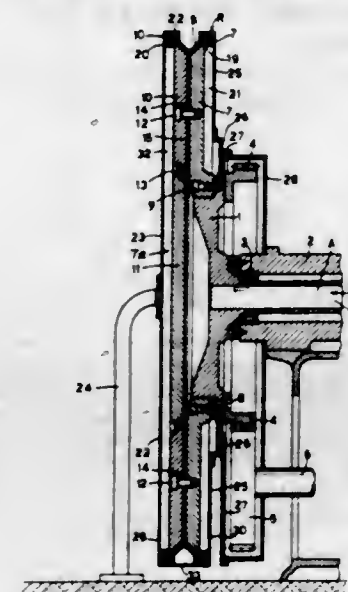


Method and apparatus for eliminating equiaxed grain defects from columnar castings wherein a secondary cavity is provided at the portion of the casting where such defects ordinarily occur, so that upon directional solidification any inclusions are carried into the secondary cavity by the advancing solidification front to form an appendage which can be readily severed from the columnar casting.

**3,411,564**  
**CONTINUOUS CASTING OF STEEL**  
 Eldon D. Miller, Jr., Bridgeville, Pa., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware  
 No Drawing. Continuation-in-part of application Ser. No. 615,077, Feb. 10, 1967. This application May 17, 1967, Ser. No. 639,013  
 3 Claims. (Cl. 164—73)

A high-temperature liquid-solid lubricant suitable for using in the continuous casting of molten steel comprising submicron spheroidal oxides not susceptible to phase changes at temperatures up to 1600° F. and a carrier having a high flash point and a low carbon residue on burning.

**3,411,565**  
**COOLING SYSTEM OF A CASTING DRUM BELONGING TO A MACHINE FOR THE PRODUCTION OF METAL RODS**  
 Ilario Properzi, Via Cosimo del Fante 10, Milan, Italy  
 Filed Mar. 8, 1966, Ser. No. 532,767  
 Claims priority, application Italy, Mar. 20, 1965, 6,195  
 5 Claims. (Cl. 164—276)

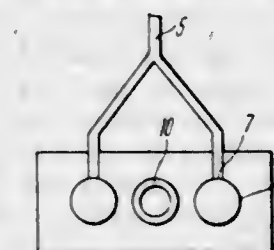


A rotatable casting wheel for a continuous casting machine includes an annular wall having an outer circumferential surface which bounds a casting groove and an inner circumferential surface which is at least substantially coextensive with said outer circumferential surface. A pair of supporting discs are connected to the annular wall member and are located within the confines of the inner circumferential surface. The discs define with one another an interior gap and have respective peripheral edge faces which define with the inner circumferential surface an unobstructed circumferential channel coextensive with the inner circumferential surface and communicating with the gap. The channel is provided with outlets. Supply means communicates with the gap and discharges thereinto a stream of cooling liquid which circulates into and through the channel and leaves the same through the outlet, cooling the inner circumferential surface by intimate engagement therewith.

**3,411,566**  
**DEVICE FOR SUPPLYING POWDERED MATERIAL INTO A MOLD OF A CONTINUOUS CASTING MACHINE**

Evgeny Ivanovitch Astrov, Moskovskoe Chaussee 135, kv. 52, Gorky, U.S.S.R.; Vyacheslav Vasilievitch Vostokov, Ul. Scherbakovskaya 57, kv. 257; Dmitry Petrovitch Evteev, Sirenevsky Blvd. 27, korp. 3, kv. 45; and Boris Nikolaevitch Katomine, Sirenevsky Blvd. 27, korp. 3, kv. 51, all of Moscow, U.S.S.R.; Anatoly Dmitrievitch Klipov, Ul. Gastello 15, kv. 12; Nikolai Alexeevitch Pakhomov, Ul. Lyadova 38-a, kv. 13; and Nikolai Alexandrovitch Polushkine, Moskovskoe Chaussee 89, kv. 30, all of Gorky, U.S.S.R.; and Victor Sergeevitch Pravdine, 13 Parkovaya ul. 38, korp. 1, kv. 7; and Victor Savellievitch Routes, 7 Parkovaya ul. 15, kv. 12, both of Moscow, U.S.S.R.

Filed Feb. 20, 1967, Ser. No. 617,354  
 1 Claim. (Cl. 164—281)



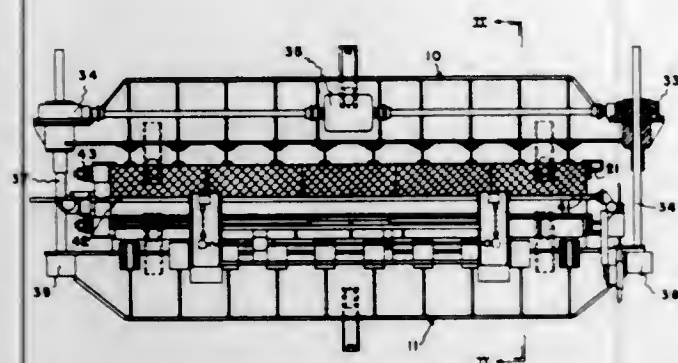
Powdered slag material is delivered to a mold by a gaseous carrier the speed of which is decreased at de-



livery by an enlargement of the pipe through which the carrier flows.

### 3,411,567 MOLD SUPPORTING STRUCTURE FOR CASTING MACHINE

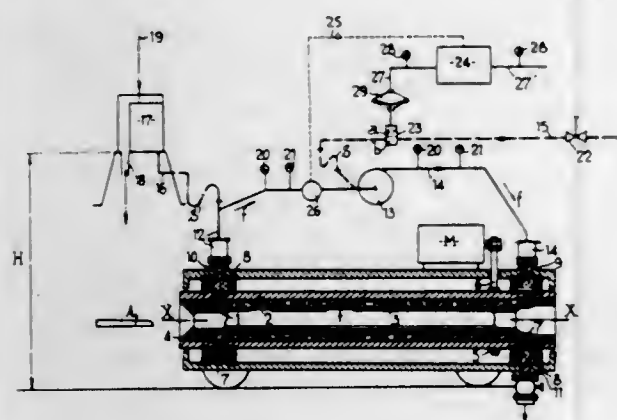
Maurice Paul Sieger, Upper St. Clair Township, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed June 13, 1966, Ser. No. 557,089  
7 Claims. (Cl. 164—341)



The present disclosure relates to an article-casting machine and, more particularly, to an improved construction for supporting one or more molds thereof. The present disclosure provides a mold clamping arrangement that includes a mechanical arrangement for maintaining the molds in their operative casting position which is not subject to power failure, and wherein the construction compensates for the substantial differential between the pressure at the bottom and at the top of the molds.

### 3,411,568 ROTATING MACHINE STRUCTURE WITH RECYCLING COOLING CIRCUIT

Pierre Edouard Lorang, Nancy, France, assignor to Centre de Recherches de Pont-a-Mousson, Cavalier, France, a French body corporate  
Filed Oct. 14, 1966, Ser. No. 586,705  
Claims priority, application France, June 28, 1966, 67,168  
6 Claims. (Cl. 165—40)



A machine which has a rotating part surrounded by water in a water jacket, the machine being movable in translation, and a unit for cooling the jacket water. This unit comprises a cooling water recycling circuit connected to the jacket, means for cooling the recycled water in accordance with regulating means, a recycling pump in the recycling circuit, the pump and the recycling circuit being carried by the machine. A water tank is fixed on the ground and located above the water jacket and connected

### 3,411,569 PULL-OUT COOLING SECTION FOR COMBINED HEATING-COOLING UNIT

Thomas L. Hildreth, Bellevue, Ohio, assignor to Johnson Corporation, Bellevue, Ohio, a corporation of Ohio  
Filed Nov. 2, 1966, Ser. No. 591,555  
13 Claims. (Cl. 165—63)



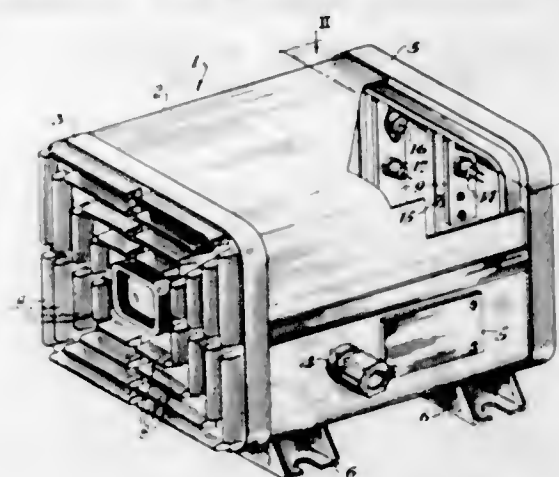
A combined heating-cooling unit comprising a housing having a cooling section and a heating section disposed in the housing with the cooling section being mounted on a movable chassis which is readily slidable into and out of the housing for expeditious replacement and/or repair of the cooling section. The cooling section includes an air channeling or directing chute extending generally vertically upwardly from the chassis and transversely of the chassis, which chute is adapted for coaction with an opening in an upper air receiving chamber to which the air from the cooling section is adapted to pass, prior to movement of the air from the housing to the predetermined area to be cooled. The air channeling or directing means is adapted for coaction with the side walls of the housing and with said opening, for separating the cooling coils of the cooling section from the condenser coils of the heating section, both of which are mounted on the chassis on opposite sides of the air channeling or directing chute, so that when the cooling section is disposed in operative position in the unit's housing, the cooled air from the cooling coils of the cooling section is directed upwardly through said opening to the upper air receiving chamber, and the cooled air is maintained separate from the condenser coils.

### 3,411,570 ELECTRICALLY INSULATED THERMAL DISSIPATOR

Edward J. Kleinhample, Jr., Allison Park, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania  
Filed May 6, 1966, Ser. No. 548,143  
7 Claims. (Cl. 165—80)

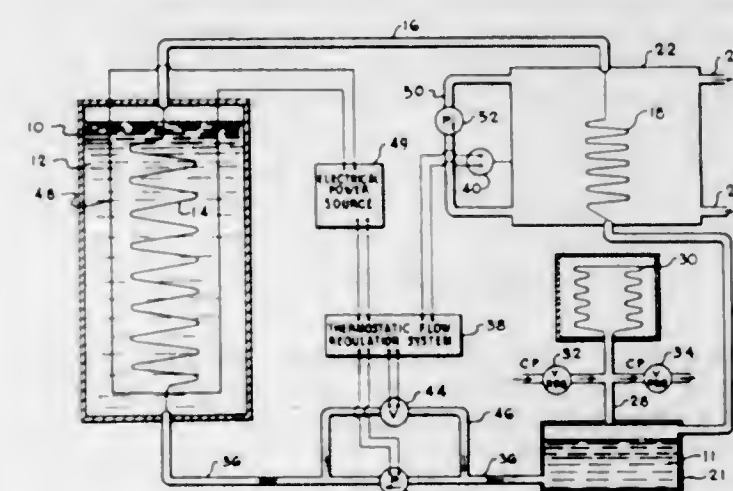
The present invention relates to an improved heat transfer mechanism having a heat radiating member exposed to the ambient surrounding, a support member for mechanically carrying and thermally engaging electrical components and a thermal-conductive electrical-insulated epoxy layer securely bonding the radiating and support member in spaced relationship for dissipating thermal energy produced by the electrical compo-

nents, for reducing the effects of extraneous vibrations and short-term thermal shock on the electrical components



and for protecting the electrical components against high voltage transients.

3,411,571  
HEAT STORAGE EXCHANGE APPARATUS AND METHOD THEREFOR  
Willis Thompson Lawrence, Arlington, Mass., assignor, by mesne assignments, to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York  
Filed Nov. 7, 1966, Ser. No. 592,476  
8 Claims. (Cl. 165—107)

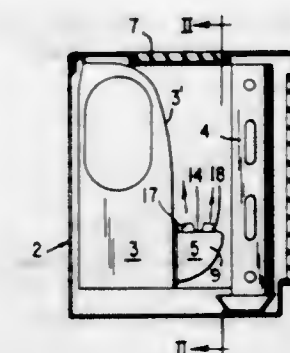


A heat transfer system comprising a thermally stable heat storage medium capable of storing heat at widely varying temperatures, a thermally stable heat exchange fluid, a vaporizing passage means for said heat exchange fluid through said heat storage medium, a heat exchange means exterior to said heat storage medium for transfer of heat from the heat exchange fluid to a second fluid, conduit means for said heat exchange fluid extending from the passage through the storage medium to the heat exchange means, a reservoir for said heat exchange fluid connected by conduit means to said heat exchange means and to said vaporizing passage in the heat storage medium, and means in communication with said heat exchange fluid for maintaining a uniform pressure on said heat exchange fluid.

3,411,572  
NOZZLE CONSTRUCTIONS  
Fred V. Honnold, Jr., North Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware  
Filed Sept. 2, 1966, Ser. No. 576,940  
5 Claims. (Cl. 165—123)

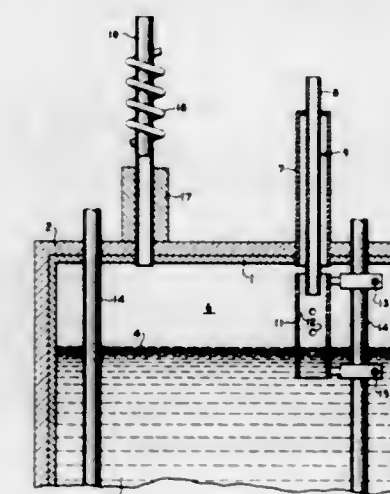
An induction type air conditioning unit adapted for discharge of primary air therethrough from a plurality of

nozzle members, each nozzle member having two discharge nozzles for discharging air through the induced air passage of the unit in a substantially vertical direction, the



nozzles in each nozzle member being canted away from each other to a degree sufficient to prevent air stagnation along the surfaces of the induced air passage in the unit.

3,411,573  
AIR REPLACEMENT IN HEAT-STORAGE CONTAINERS  
Willis Thompson Lawrence, Arlington, Mass., assignor, by mesne assignments, to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York  
Filed Nov. 7, 1966, Ser. No. 592,475  
6 Claims. (Cl. 165—134)



Natural breathing apparatus for a heat storage assembly which involves tubes extending from a space above the heat storage material, through the container to air. The breather tubes are adapted to provide a substantially unidirectional flow of air in one tube and out another. This breathing action is created by heating one tube and not another tube or by extending one tube to a height above the other tube to create a chimney effect. Heating for one tube may be provided by known means or through insulation or a heating coil. The breather tube through which air enters the heat storage container is constructed to prevent any air blocking formation of carbonate within the breather by providing a tubular carbonate trap below the point at which air enters the space above the heat storage material. Likewise the creeping action of the heat storage material is blocked by providing an external tube about the breather which extends away from the heat storage apparatus to a sufficient distance to solidify the creeping storage material and/or carbonate before it can pass into the inlet breather.

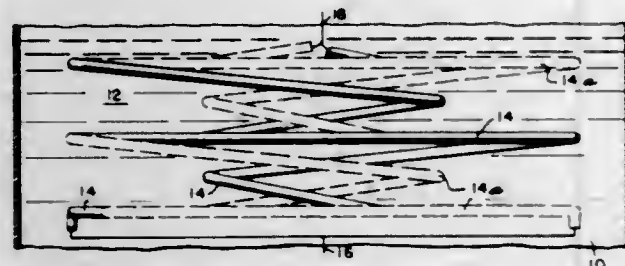


3,411,574

**APPARATUS FOR TRANSFERRING HEAT TO AND FROM A MASS**

Gerrit De Vries, Altadena, Horace E. Karig, Pasadena, and Gary D. Drage, Alhambra, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed Sept. 30, 1966, Ser. No. 584,062  
6 Claims. (Cl. 165—145)

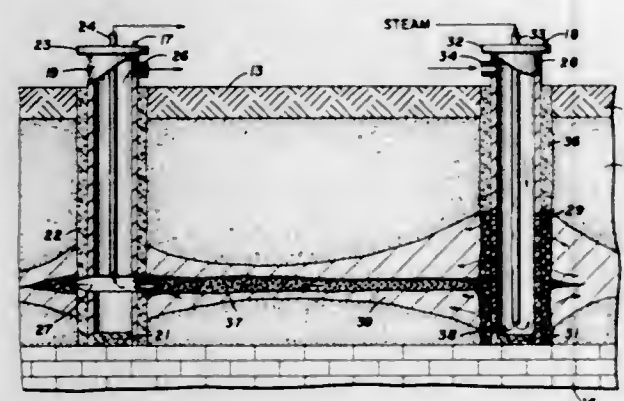


Water tube type steam boiler in which a plurality of parallel connected angularly indexed identical tubes are disposed in a molten salt bed, the tubes being so interlaced in layers to transfer heat uniformly from the salt bed in progressive layers from bottom to top as the salt bed solidifies.

3,411,575

**THERMAL RECOVERY METHOD FOR HEAVY HYDROCARBONS EMPLOYING A HEATED PERMEABLE CHANNEL AND FORWARD IN SITU COMBUSTION IN SUBTERRANEAN FORMATIONS**

Carl Connally, Jr., Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York  
Filed June 19, 1967, Ser. No. 646,859  
5 Claims. (Cl. 166—2)



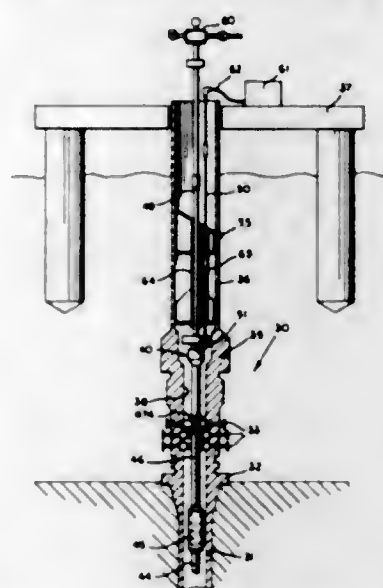
A method using forward in situ combustion for the recovery of heavy, viscous-nonflowing hydrocarbons from subterranean formations. Initially, a permeable flow channel, e.g., a propped fracture, is formed between spaced-apart first and second wells. Bidirectional steam flows from the wells heat the flow channel. An oxidizing material, or combustion-supporting gas, is passed from the first well through the flow channel to the second well to effect a forward in situ combustion front. This front moves toward the second well and displaces formation fluid via the flow channel into the second well from which it is produced. Hydrocarbons are then recovered from the produced formation fluid. If desired, certain steps may be practiced: to secure maximum production of recoverable hydrocarbons from a minimum flow of the combustion-supporting gas, to control the temperature created in the second well means for optimum hydrocarbon recovery, to inject water with the combustion-supporting gas to control heat flow from the combustion front, and to periodically interrupt fluid production from the second well to reduce the elevated temperatures which exist in the well.

3,411,576

**WELL TOOLS**

Donald F. Taylor, Jr., Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware

Filed July 2, 1965, Ser. No. 469,978  
26 Claims. (Cl. 166—5)



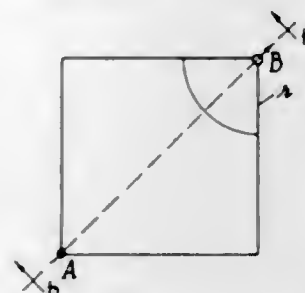
An apparatus and method for controlling flow in a well after the same has been drilled, particularly adaptable for submarine wells.

The invention is directed toward well flow conductor installation utilizing equipment, such as blow-out preventers, installed on the well during the drilling thereof to support a flow conductor and flow control valve for controlling flow and performing operations on the well after the same has been drilled, together with an improved flow conductor support, connector and flow control valve, which are designed to provide means to quickly close in the well to prevent undesired flow from the well, and to provide automatic blow-out prevention.

3,411,577

**INCREASING THE VOLUMETRIC SWEEP EFFICIENCY OF SECONDARY RECOVERY PETROLEUM PRODUCTION OPERATIONS**

Anthony F. Altamira, Houston, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware  
Filed June 23, 1967, Ser. No. 648,354  
10 Claims. (Cl. 166—9)



The volumetric sweep efficiency in secondary recovery is increased by locating the production wells in the thinner zone of a reservoir and the injection wells in the thicker zone.

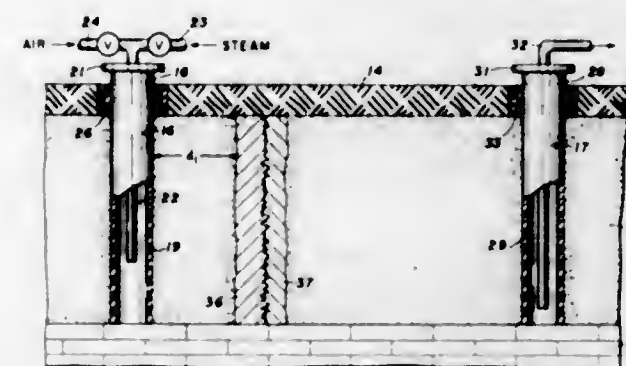
3,411,578

**METHOD FOR PRODUCING OIL BY IN SITU COMBUSTION WITH OPTIMUM STEAM INJECTION**

Billy G. Holmes, Lancaster, Tex., assignor to Mobil Oil Corporation, a corporation of New York  
Filed June 30, 1967, Ser. No. 650,272  
3 Claims. (Cl. 166—11)

A method for producing oil from a subterranean formation by forward in situ combustion combined with

optimum steam injection. A forward in situ combustion front is passed by a flow of air through a formation between input and output wells. Oil is produced from the output well. Injection of steam with the air is begun when the combustion front is stabilized, and before the front-traversed formation is sufficiently cooled that the injected



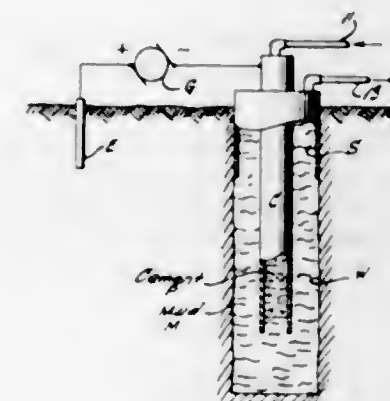
steam is condensed into a liquid bank of water. About 240 barrels of water converted into steam are used for each one million standard cubic feet of air concurrently injected into the formation. Steam injection ends when steam is produced with the displaced oil through the output well.

3,411,579

**WELL CEMENTING**

Jack H. Kolaian and Jack H. Park, Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 12, 1965, Ser. No. 479,205  
9 Claims. (Cl. 166—21)



A method for cementing a length of metal casing in a well filled with drilling mud wherein a D.C. electric potential of from 0.01 to 2 volts is applied to the casing to cause the solid mud particles in the area to be cemented to migrate away from the casing by electrophoresis and the water content of the mud to migrate toward the casing by electroosmosis so that the surface of the casing wall is clean and water wet. A cement slurry is then displaced into the treated region into contact with the clean surface of the casing. The application of a D.C. potential may be discontinued, the voltage may be reduced or it may be continued with a reversed polarity until the cement has set.

3,411,580

**MUD REMOVAL METHOD**

Oscar B. McKinney and Charles E. Roberts, Arlington, Tex., assignors to Byron Jackson, Inc., Long Beach, Calif., a corporation of Delaware  
No Drawing. Filed Sept. 28, 1966, Ser. No. 582,528  
11 Claims. (Cl. 166—22)

A method of displacing drilling mud in a well having a pipe, such as well casing, extending longitudinally

therein and forming an annulus between the pipe and the wall of the well. A preflush fluid is prepared, the fluid including water, a polysaccharide, and a cross-linking agent, such as boric acid, for the polysaccharide. The preflush fluid is circulated into contact with drilling mud in the well, and the circulation is continued to displace the drilling mud from the well. Thereafter, cement slurry may be circulated into the annulus behind the preflush fluid and maintained in a quiescent condition in the annulus until it has set to bond the pipe to the wall of the well.

3,411,581

**LOST CIRCULATION SLURRIES**

Smith Alpha, Berwick, La., assignor to Silver Lining, Inc., Morgan City, La., a corporation of Louisiana  
No Drawing. Filed Mar. 21, 1966, Ser. No. 535,686  
7 Claims. (Cl. 166—29)

A high water loss slurry for forming a cake to plug fractures in formations in which bore holes are being drilled and circulation has been lost which is essentially an aqueous dispersion of ground oyster shells in a suspending medium.

3,411,582

**CONSOLIDATION OF EARTH FORMATIONS**

Orland Orien Dale, Long Beach, Calif., assignor to Byron Jackson Inc., Long Beach, Calif., a corporation of Delaware  
No Drawing. Filed June 28, 1966, Ser. No. 561,002  
5 Claims. (Cl. 166—29)

A method for consolidating an earth formation, such as one traversed by an oil well, which involves injecting into the formation a gelable liquid composition containing water, sodium silicate, and a gelling catalyst therefor, the composition also containing hydrated and swollen powdered attapulgite dispersed therein, and allowing the composition to set in the earth formation. Particulate filler materials may be incorporated in the composition.

3,411,583

**PETROLEUM RECOVERY METHOD**

Le Roy W. Holm and Byron B. Woertz, Crystal Lake, Ill., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California  
No Drawing. Filed Dec. 2, 1965, Ser. No. 511,226  
15 Claims. (Cl. 166—42)

A method for recovering oil from an oil-bearing formation in which a fluid comprising carbon dioxide is injected through a well and into the formation under conditions whereby carbon dioxide is absorbed by the oil, and a sparingly oil-soluble gas is subsequently injected to establish a gas phase in the formation that provides a driving force to displace fluids towards the well on the subsequent production of fluids from this same well. As the production of oil becomes diminished, the process can be repeated to recover additional quantities of oil.

3,411,584

**WELL TOOLS**

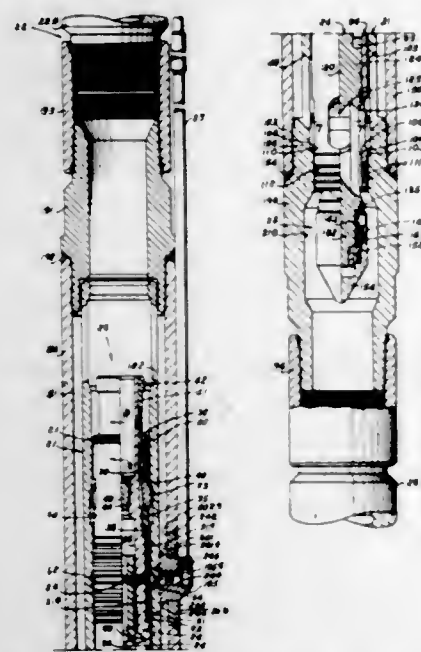
Phillip S. Sizer, John V. Fredd, and Turner G. Garwood, Dallas, Tex., assignors to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware  
Continuation-in-part of application Ser. No. 471,995, July 14, 1965. This application Jan. 3, 1967, Ser. No. 606,707

32 Claims. (Cl. 166—72)

This application discloses subsurface safety valves for controlling fluid flow in a well conduit. The valves are biased toward open position by control fluid pressure sup-



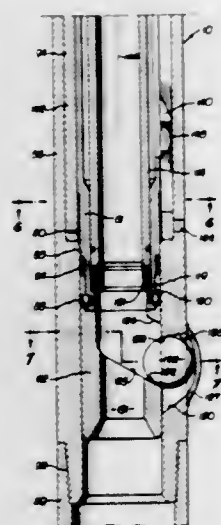
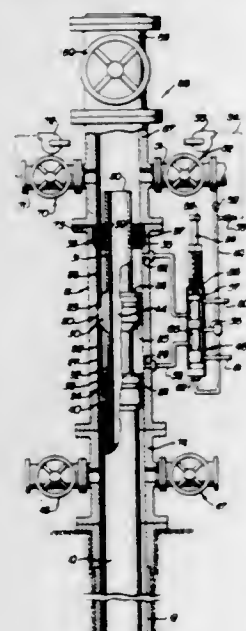
plied from the surface. Systems are shown for supplying control fluid through a central flow passage in a tubing



string, an annular flow passage in the string, and a separate small line supported along the tubing string.

### 3,411,585 SURFACE CONTROL OF SUB-SURFACE WELL VALVING USING FLOW PASSING TUBING LINK

John S. Page, Jr., 3260 Val Verde Ave.,  
Long Beach, Calif. 90808  
Filed Apr. 28, 1966, Ser. No. 546,054  
22 Claims. (Cl. 166—73)

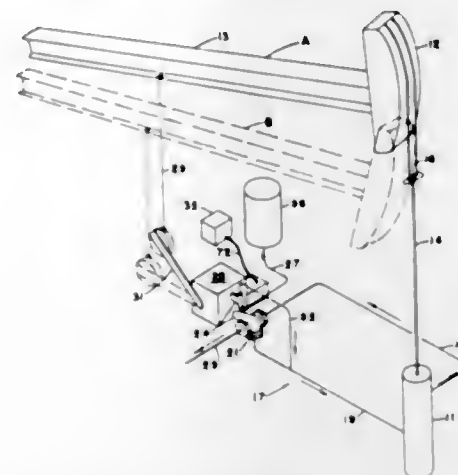


The disclosed invention concerns a sub-surface well valve that is mechanically operable by vertical movement

of flow tubing carrying the valve and actuated at the surface, the valve in open position providing a vertically uninterrupted flow passage through the flow tubing, and the valve being upwardly retrievable through the installed flow tubing for seal replacement.

### 3,411,586 APPARATUS FOR COMBINING THE FLOW OF TWO FLUIDS

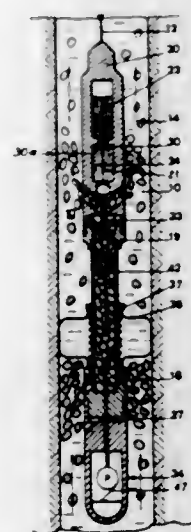
Wilbur T. Butler, Borger, Tex., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware  
Filed Aug. 26, 1966, Ser. No. 575,932  
10 Claims. (Cl. 166—75)



1. An apparatus for combining the flow of two fluids which comprises:  
a first fluid conduit;  
a valve assembly in said first fluid conduit;  
a positive displacement pump assembly communicating with a source of fluid;  
a secondary flow line leading from said pump assembly to a point on said first fluid conduit at a point downstream from said valve assembly;  
power means;  
a power arm carried by and movable relative to a portion of said power means for operating said valve assembly and said pump assembly alternatively; and  
control means for moving said power arm into a position to engage said valve assembly and said pump assembly.

### 3,411,587 WELL SAMPLER

Claude Lucien Bournazel, Cernay-la-Ville, France, assignor to Societe de Prospection Electrique Schlumberger, S.A., Paris, France, a corporation of France  
Filed Jan. 4, 1967, Ser. No. 607,280  
6 Claims. (Cl. 166—165)

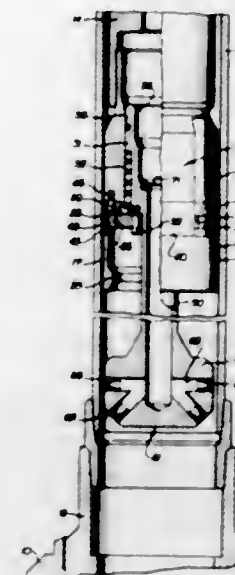


A well fluid sampling device includes a central conduit which is small in cross section compared to the well

bore. A packer isolates fluid flow to the conduit. One end of a sample tube projects axially into the conduit and communicates at its other end with the sample chamber. A valve operable from the surface permits fluids flowing through the conduit to divert through the sample tube into the sample chamber. Another valve operates automatically in response to filling of the sample chamber to close off fluid flow into the sample chamber.

### 3,411,588 HANGER APPARATUS FOR WELL PIPE

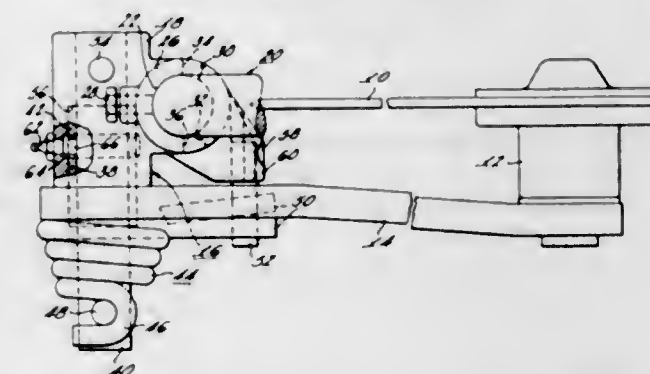
James W. E. Hanes, Ventura, Calif., assignor to Ventura Tool Company, Ventura, Calif., a corporation of California  
Filed Dec. 28, 1966, Ser. No. 605,468  
22 Claims. (Cl. 166—208)



1. In apparatus for suspending pipe in a well bore: a head having a circumferential recess therein; an inherently expandable hanger seat adapted to expand into said recess to provide a seat for supporting a string of pipe in the well bore; a running tool connectible to a tubular running-in string for lowering toward said head; means releasably connecting said hanger seat in retracted condition to said running tool; and means for releasing said hanger seat from said running tool to enable said hanger seat to expand inherently into said recess upon being lowered into transverse alignment therewith.

### 3,411,589 COULTER MOUNTING

Richard G. Moe, New Berlin, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.  
Filed Aug. 31, 1966, Ser. No. 576,346  
8 Claims. (Cl. 172—572)

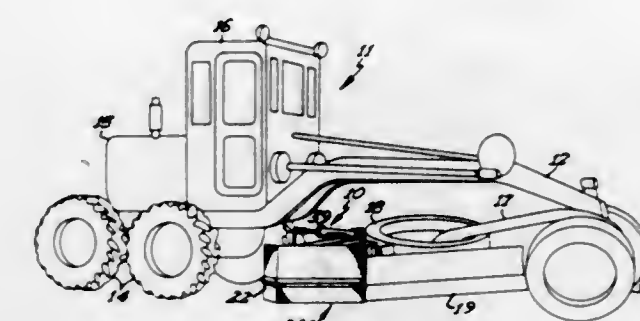


1. A coulter mounting comprising a support arranged to be carried by a plow structure and providing a substantially horizontally disposed bore arranged transversely of the direction of travel of the plow, a pintle rigidly supported in said support and disposed coaxially within said

bore, a coulter arm structure including a sleeve journaled on said pintle and also journaled in said bore and extending outwardly of said support, a coulter arm fixed on said sleeve outwardly of said support and carrying a coulter secured to said arm at a point spaced from said sleeve, and means yielding urging said coulter arm in a downward swinging direction.

### 3,411,590 SNOW RETAINING GATE FOR MATERIAL MOVING BLADE

Adam D. Batko, Anoka, Minn., assignor to Village of Edina, Edina, Minn., a corporation of Minnesota  
Filed Oct. 24, 1965, Ser. No. 504,825  
5 Claims. (Cl. 172—777)



1. In combination with a mobile grading machine of the type having an annular revolvable blade mounting structure, and a blade mounted on said annular mounting structure for movement therewith, an attachment device including a generally rectangular gate,

means mounting said gate on said blade mounting structure for revolving movement therewith and for swinging movement relative thereto between an elevated inoperative position above the blade and a lowered operative position, the lower peripheral edge of the gate being disposed in substantially coplanar operation with the lower edge of the blade when the gate is in the lower operative position and said gate being positioned in transversely extending obstructing relation with respect to the discharge end of the blade when in the lower operative position to thereby prevent the discharge of material from the blade, said means including a gate mounting structure having an inner end pivotally connected with said blade mounting structure for swinging vertical movement relative thereto about a substantially horizontal axis, said gate mounting structure projecting outwardly from said blade mounting structure and having an attachment member affixed to the outer end thereof, means pivotally connecting said gate to said attachment member for limited pivotal movement therebetween about an axis disposed substantially parallel to the axis of pivot of said gate-mounting structure, said attachment member having a first guide surface thereon engaging said gate when the latter is in the operative position, and a second guide surface on said attachment member angularly related with respect to said first guide surface and engaging said gate when the latter is in the inoperative elevated position, said first guide surface cooperating with the outer vertical edge of the blade to guide and restrain the gate against pivotal movement relative to said gate mounting structure whereby the gate is vertically translatable between the lower operative position and then intermediate position when the lower edge thereof is in engaging relation with the upper edge portion of the blade,

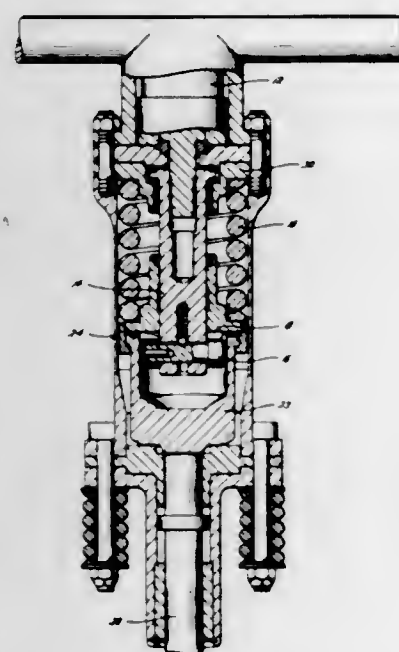


and actuating means extending between and interconnected with the gate mounting structure and said blade-mounting structure for power shifting said gate between the elevated inoperative position and the lowered operative position.

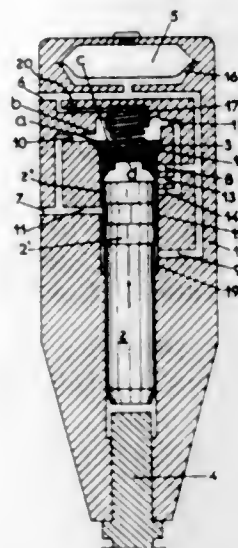
3,411,591

**COIL POWER SPRING IMPACT MECHANISM**

Jack A. Roll, Charles H. Samson, Jr., Lee L. Lowery, Jr., and James E. Anderson, Bryan, Tex., assignors, by mesne assignments, to Hughes Tool Company, Houston, Tex., a corporation of Delaware  
Filed Mar. 3, 1966, Ser. No. 531,627  
20 Claims. (Cl. 173-119)



unblocking a channel (13) for the release of the distributor from its retracted position whereupon the high-pressure

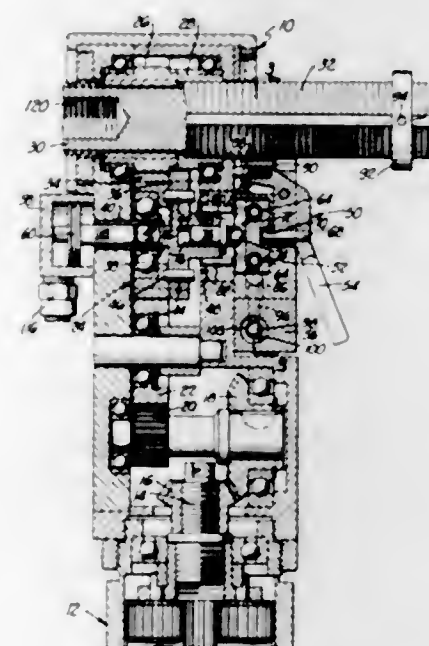


sure port (8) is again blocked (FIG. 7) and the piston is once more retracted under fluid pressure acting continuously upon its small-area forward face.

3,411,593

**TOOL INCORPORATING POSITIVE FEEDING STRUCTURE**

Robert C. Quackenbush, Glendale, Calif., assignor of one-half to Arthur B. Quackenbush, Glendale, Calif.  
Filed July 20, 1967, Ser. No. 654,793  
15 Claims. (Cl. 173-145)



A coil power spring and method of operation in which the parameters of the spring are selected to overcome both static and dynamic overloading. An improved coil power spring in which the dimensions of the spring are selected to avoid all modes of failure. An improved coil power spring utilizing dead or preloaded closed coils which are selected to avoid spring failure. An improved power spring which is sized to overcome harmonic stress by properly sizing the coil spacing at zero load. A coil power spring wherein the spring which is alternately compressed and released to provide a power impact of at least 25 foot pounds in which the spring parameters are selected to overcome the loads to which the spring is subjected.

3,411,592

**PERCUSSION APPARATUS**

Roger Montabert, 41-43 Rue Bataille, Lyons, France

Continuation-in-part of application Ser. No. 521,036, Jan. 17, 1966. This application Jan. 25, 1968, Ser. No. 707,349

Claims priority, application France, Jan. 28, 1965, 45,558

8 Claims. (Cl. 173-137)

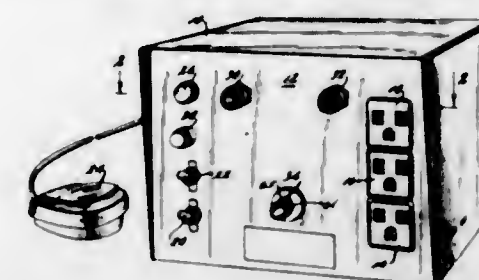
The piston (2) of a hydraulically operated percussion implement moves jointly with a juxtaposed distributor (3) in a cylinder bore to block the admission of operating fluid into a cylinder portion (18) behind the large-area rear face of the piston head from a high-pressure port (8) until both the piston and the distributor have reached a fully retracted position (FIG. 3). Thereafter, a reduced forward pressure is exerted upon the piston head through a valve-controlled conduit (24) to separate the piston from the distributor just enough to unblock the said high-pressure port (FIG. 5) whereupon the piston is propelled at high speed toward a tool bit (4), finally

A peripherally threaded spindle mounting a working tool is rotated by a drive gear during feed and retraction strokes. A main differential gear continuously rotates said drive gear during said strokes. A feed gear is threadably engaged with the spindle periphery and is constantly engaged by an axially shiftable secondary differential gear. When the secondary differential gear is shifted to "feed," it pin connects to the main differential gear rotating the feed gear in the same direction and faster than the spindle feeding the spindle axially, and when shifted to "retract," pin engages a frame retaining a feed gear stationary and causing the rotating spindle to retract axially. Various automatic and manual means are provided for shifting the secondary differential gear.

3,411,594

**MAINTENANCE UNIT**

William Jordan Siegel, 814 E. Franklin Ave., Silver Spring, Md. 20901  
Filed Mar. 31, 1966, Ser. No. 539,168  
7 Claims. (Cl. 173-170)

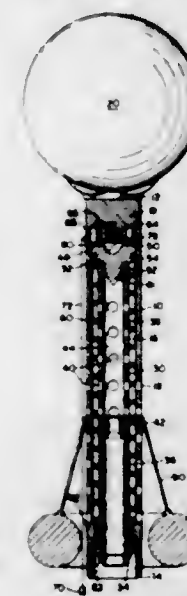


The invention is equipment adapted for use in electronic repair and consists of a unitary source of vacuum, pressure and mechanical drive, the source being an electric motor-blower combination. The unitary source is associated with a panel face, a pressure tap thereon connecting to the blower outlet, a suction tap thereon leading to the blower inlet, and a mechanical drive outlet thereon connecting to the motor drive shaft.

3,411,595

**HARD FORMATION OCEAN BOTTOM SAMPLING DEVICE**

Andre M. Rosfelder, La Jolla, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy  
Filed June 28, 1967, Ser. No. 649,751  
12 Claims. (Cl. 175-6)



The invention is a hard formation ocean bottom sampling device which may use an explosive charge or environmental sea pressure to provide a penetration force and a spring which becomes biased during penetration to provide a pullout force from the ocean bottom. Penetration may be more effective by having perforations in the body of a sampling tube so as to pass water from its interior to the environmental sea while an expendable core cutter may be provided to facilitate pullout.

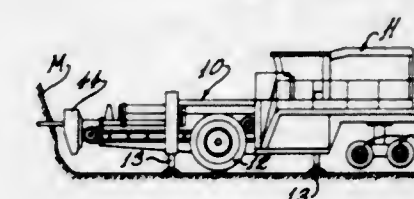
3,411,596

**DRILLING APPARATUS**

Davis B. Robbins, P.O. Box 2664, Birmingham, Ala. 35202  
Filed June 5, 1967, Ser. No. 643,688  
11 Claims. (Cl. 175-85)

Drilling apparatus having an elongated frame and a rotary drive head movable longitudinally thereof with longitudinally spaced arms for supporting drill rod sec-

tions at selected parallel positions relative to the axis of rotation of the drive head. Longitudinally spaced transfer arms are mounted on the elongated frame to engage

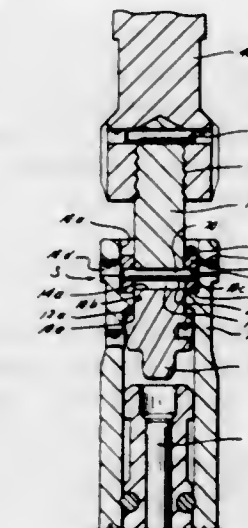


and move drill rod sections selectively to a first position in axial alignment with the drive head and a second position on the supporting arms.

3,411,597

**SAFETY SHEAR PIN ASSEMBLY**

Myron M. Kinley, Chickasha, Okla., and Clifford E. Anderson, Houston, Tex., assignors to J. C. Kinley Co., a corporation of Texas  
Filed July 18, 1967, Ser. No. 654,264  
8 Claims. (Cl. 175-294)

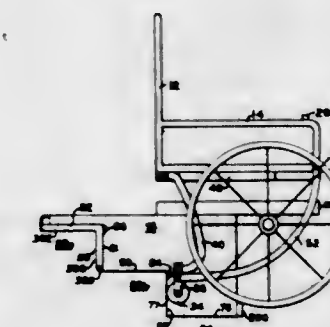


A safety shear pin assembly for use with any well tool or other device in which a downward force may be imparted thereto, and wherein a shear pin is severed by such downward force with the sheared ends of the pin kept confined within the tool to prevent entry into the well.

3,411,598

**STAIRCLIMBING WHEELCHAIR**

Rufus J. Weaver, 14 East St., New London, Conn. 06320  
Filed Apr. 29, 1966, Ser. No. 546,242  
16 Claims. (Cl. 180-8)

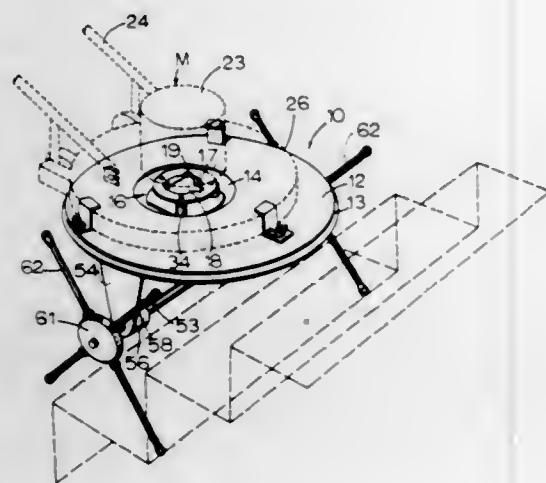


Wheelchair constructed to ascend and descend a staircase with a person sitting in it, generally comprising a pair of track members, each eccentrically driven to ascend and descend a staircase stepwise.



3,411,599

**STAIR CLIMBER FOR CLEANING MACHINE**  
Christopher H. Kahlmorgan, Cooper Township, Kalamazoo County, and Raymond M. Harris, Covert Township, Van Buren County, Mich., assignors to Eder-Baile Corporation, South Bend, Ind., a corporation of Indiana  
Filed Dec. 16, 1966, Ser. No. 602,219  
10 Claims. (Cl. 180—8)



1. A stair-climbing apparatus attachable to a heavy, motor-driven, portable machine having a motor-driven rotatable drive element, comprising:

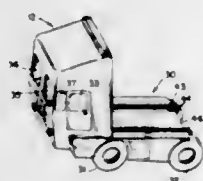
- a coupling unit adapted to be drivingly coupled to said drive element for being rotated thereby;
- gear means drivingly connected to said coupling unit;
- shaft means drivingly connected to said gear means for being rotated in response to rotation of said coupling unit;
- spaced-apart spiders mounted on said shaft means and comprising a series of circumferentially spaced arms extending away from said shaft means and adapted for engaging stair steps for lifting and advancing the stair-climbing apparatus and the machine connected thereto up the stairs in response to rotation of said shaft means.

3,411,600

# INTEGRATED TRACTOR AND TRAILER OF THE SEPARABLE TYPE

George L. Loving, Denver, and Walter P. Lestoque, Aurora, Colo., assignors to The American-Coleman Company, Littleton, Colo., a corporation of Nebraska

Filed July 7, 1966, Ser. No. 563,500  
7 Claims. (Cl. 180—14)



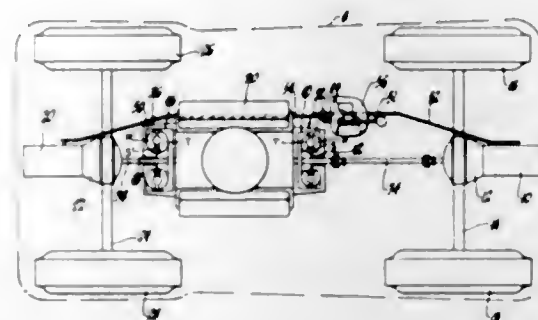
An integrated tractor and trailer having a self-contained prime mover and a detachable follow frame with means for rigidly attaching the two together, including forwardly extending runner portions integral with the trailer frame and telescoping into mating open top channel members mounted on the frame of the tractor. A support member, extending above the runner portions, guides each runner into the channel, and cam locks secure the parts tightly together.

3,411,601

# PLURAL DRIVE AXLE VEHICLES WITH A SEPARATE TORQUE APPORTIONING DRIVE TRAIN TO EACH AXLE

Zora Arkus-Duntov, Grosse Pointe Shores, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 23, 1966, Ser. No. 559,830  
9 Claims. (Cl. 180—44)



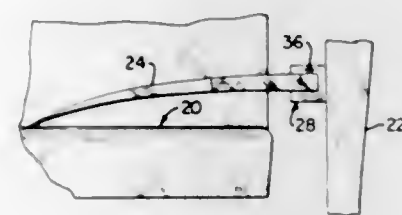
A drive train for a vehicle having multiple driving axles which drive train in the preferred embodiment has a separate drive path from the engine to each driving axle. Each drive path includes a hydrodynamic torque converter with the converters having torque capacities sized to apportion torque to the vehicle's front and rear wheels in relation to their load at a predetermined vehicle acceleration and with regard to vehicle aerodynamic effect.

3,411,602

# AUTOMATIC SAFETY BELT APPARATUS FOR VEHICLES

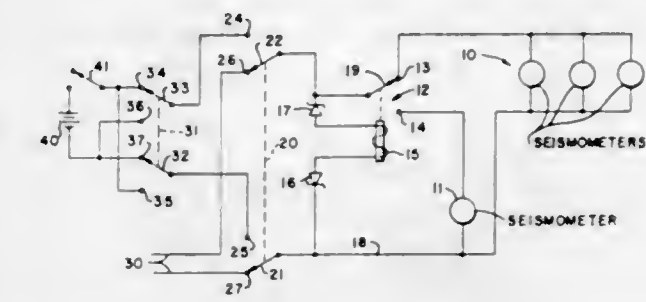
Robert E. Royce, 4345 S. Santa Fe, Englewood, Colo. 80110

Filed Nov. 26, 1965, Ser. No. 509,819  
15 Claims. (Cl. 180—82)



This invention relates generally to a safety belt apparatus for persons riding in vehicles and more particularly to a safety belt apparatus which is automatically disposed in partial encompassing engagement about a seated passenger, and which also has actuatable means for securing the passenger to the seat. The seat belt assembly of this invention comprises a seat belt, a first part of which is constructed to be securely anchored relative to one side of a vehicle seat and a second part of which is constructed to be intercoupled with an inner portion of the vehicle door wherein said second part is securely anchored relative to the other side of the vehicle seat and a portion of the other seat belt disposed intermediate said first and second part thereof is uninterrupted in extent and adapted generally to overlie continuously a portion of the vehicle seat for any open or closed position of the vehicle door. The seat belt assembly includes means constructed to be securely attached to a portion of the vehicle for biasing the seat belt in a predetermined manner and means constructed to be securely attached to a portion of a vehicle releasably securing at least a part of the seat belt relative to the vehicle portion. The seat belt assembly includes actuatable means constructed for mounting on a vehicle and maintaining in a closed position a vehicle door disposed adjacent to the vehicle seat over which the seat belt is adapted to overlie. The seat

belt assembly also includes means constructed for gimbal mounting on a vehicle door or in a coupling the second part of the seat belt to a portion of the vehicle door. The seat belt assembly includes means for intercoupling the actuatable means and the seat belt securing means wherein in one position thereof the seat belt securing means secures the seat belt relative to a portion of the vehicle while the actuatable means is disposed to prevent opening of a vehicle door, and in another position thereof the seat belt is freely movable relative to the seat belt securing means and the actuatable means is disposed to permit opening of the vehicle door. The seat belt of this seat belt assembly may also include a third part which is securely anchored relative to one side of a vehicle seat wherein a portion of said seat belt disposed intermediate said second and third parts is uninterrupted in extent and adapted to be disposed generally in spaced-apart relation to a generally vertically disposed portion of a vehicle seat for any open or closed position of the vehicle door.



seismometers so that the relay coil does not load the seismometers.

**3,411,603**  
**CONTROL FOR SELF-GUIDED VEHICLE**  
James P. Kohls, Detroit, Mich., assignor to Jervis B. Webb Company, a corporation of Michigan  
Filed July 20, 1966, Ser. No. 566,571  
17 Claims. (Cl. 180—98)

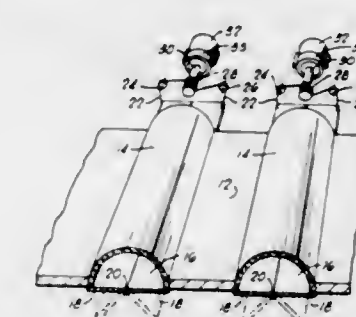


A control for causing a self-guided vehicle to perform selected functions at locations along a guide path route network. Each location is coded by a plurality of permanent magnets mounted adjacent the guide path in a pattern, and magnetic sensitive circuit controlling devices are mounted on the vehicle in each position of the pattern. The circuit controlling devices for each code are connected to corresponding code lines of a matrix type circuit together with programmed connections to the code lines from selector switch means on the vehicle. Each code line is connected to a relay controlling the function to be performed as the vehicle passes the location identified by the code of such line, a circuit to the relay being completed in response to the combination of the information given by the circuit controlling devices and the information from the selector switch means.

**3,411,604**  
**REMOTE SWITCHING CIRCUIT FOR SEISMOMETERS**  
Thorwald J. Tvedt, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware  
Filed July 21, 1967, Ser. No. 655,066  
3 Claims. (Cl. 181—5)

A switching circuit for coupling either a single seismometer or a plurality of seismometers to a recording

**3,411,605**  
**ACOUSTIC CONTROL UNITS**  
Moody L. Coffman, 1832 NW. 17th St., Oklahoma City, Okla. 73106, and Foey M. Shiflet, 1466 Tanglewood St., Abilene, Tex. 79605  
Filed Mar. 27, 1967, Ser. No. 626,242  
21 Claims. (Cl. 181—30)



Three-dimensional acoustic control devices which are movably mounted in a supporting structure adjacent, or forming part of, a wall or ceiling, and which include a sound reflecting surface and a sound absorbing surface. The devices are movable to expose to varying degrees, either the sound absorbing surface, or the sound reflecting surface, or selected portions of each of these surfaces. In some forms, the entire acoustic control device, including both surfaces, is moved to different positions to vary the acoustic properties in a room in which the device is used. In other forms, either the sound absorbing or sound reflecting surface is moved and the other of two surfaces is maintained stationary.

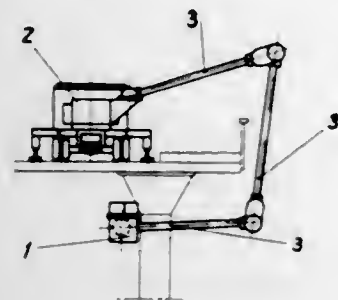
**3,411,606**  
**MOBILE SUPPORT WITH A PLATFORM OF CHANGEABLE POSITION MAINTAINED PARALLEL AT ANY POSITION**  
Stefan Oldakowski and Wladyslaw Bortkiewicz, Warsaw, Poland, assignors to Centralne Biuro Konstrukcyjne Urzadzen Budowlanych, Warsaw, Poland  
Filed May 9, 1966, Ser. No. 548,573  
Claims priority, application Poland, May 10, 1965, 108,755

2 Claims. (Cl. 182—2)

1. A mobile support comprising:
  - a support rotatable about a vertical axis;
  - a first arm pivoted to said support on a horizontal axis;
  - a second arm pivoted to the end of said first arm and a third arm pivoted to the end of said second arm about axes parallel to said horizontal axis;
  - a platform pivoted to the end of said third arm on an axis parallel to said horizontal axis;

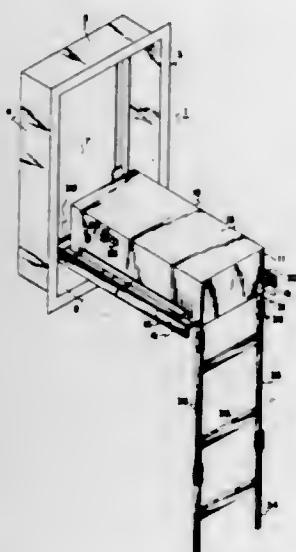


motive means on one said arm; means driven by said motive means and operatively connected with the next said arm for rotating said next arm through substantially 360 degrees relative to said one arm, comprising a first gear rotatably carried by a said arm and a second gear of smaller



diameter than said first gear and in mesh therewith fixed to a second said arm; and means responsive to the rotative movement of any said arm to maintain said platform in a predetermined orientation through the said rotation of the said arm.

**3,411,607**  
**STOWABLE EMERGENCY LADDER**  
Rene Otten, 1623 S. Avenida Planeta,  
Tucson, Ariz. 85710  
Filed May 15, 1967, Ser. No. 638,290  
2 Claims. (Cl. 182—76)

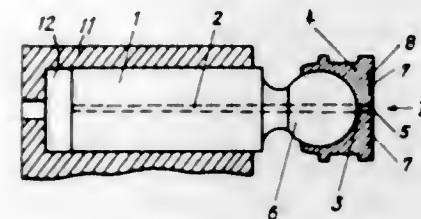


An emergency device having a multiple-section, foldable ladder stowed within an enclosure and adapted to fit into a building or structure. The ladder is held under spring tension by retaining means and, when actuated from within the building, ejects and unfolds, extending to the ground to provide safe exit through an adjacent upper story window onto the ladder.

**3,411,608**  
**HYDRAULIC PUMP OR MOTOR**  
Hans Thoma, 25 Bellvueweg, Zug, Switzerland  
Filed Jan. 27, 1965, Ser. No. 428,418  
7 Claims. (Cl. 184—5)

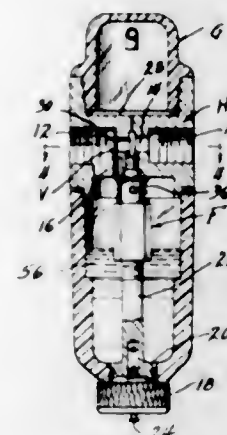
An improved axial piston hydraulic pump or motor arrangement of the type in which reciprocating pistons have bearing pads having faces engaging in relative sliding contact with the surface of an inclined swash plate wherein means are provided to maintain an oil film between the relative sliding surfaces which include an unrestricted

intercommunicating throughflow passage in the respective pistons and bearing pads and at least one narrow, relatively deep throttling groove of reduced cross-section relative to said throughflow passage in at least one of each of said bearing pad faces and said swash plate surface arranged to be in communication with said throughflow passage at least during a portion of the relative rota-



tion of said pads and swash plate, and in which said passages are free of throttling means. In a particular form the arrangement includes a central recess in each bearing pad surface, communicating with the passage in said pad, an annular oil-distributing groove near the outer periphery of each pad and the throttling groove is of spiral configuration communicating at its inner end with such recess and at its outer end with the annular groove.

**3,411,609**  
**AIRLINE OILER**  
Dale F. German, Bryan, Ohio, assignor to The Aro Corporation, Bryan, Ohio, a corporation of Delaware  
Filed Oct. 29, 1965, Ser. No. 505,611  
1 Claim. (Cl. 184—55)



Airline oiler employing Venturi action for charging a stream of air through the oiler with oil fog. An automatic regulator for oil in proportion to air is provided in the form of a wall between the inlet and outlet of the oiler through which there is an air passageway normally closed by a valve plate engaged against the downstream surface of the wall by spring means.

**3,411,610**  
**LUGGAGE**  
Walter Bialo, 76 Seacord Road,  
New Rochelle, N.Y. 10804  
Filed Mar. 14, 1967, Ser. No. 622,990  
7 Claims. (Cl. 190—49)

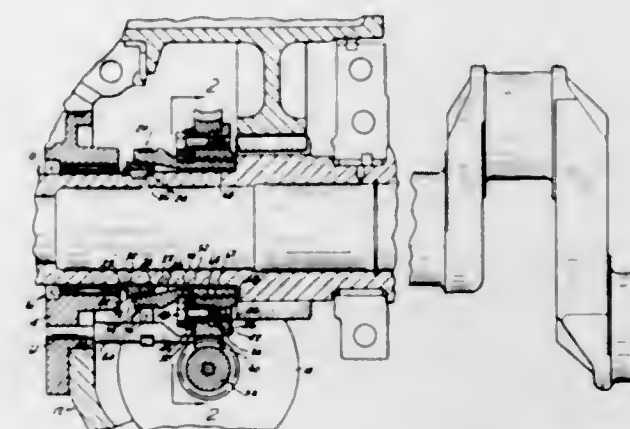
An article of luggage including a container section and a cover section each bounded by substantially rectangular frame members and having enclosure means secured thereto. The cover section includes an elongated strip of extruded synthetic plastic material which is sewn to the frame member and has a binding sewn thereto. The cover panel of the cover section is sewn to the binding and

pulls on the strip to bow the strip thereby rigidifying the entire cover section. The strip may include a plurality of



different colored bands which are integrally united with the strip and serve to further reinforce the luggage.

**3,411,611**  
**STARTER CLUTCH WITH SLIP COUPLING**  
Robert J. Powell, deceased, late of Muskegon, Mich., by Ruth B. Powell, administratrix, Muskegon, Mich., assignor to Continental Motors Corporation, Muskegon, Mich., a corporation of Virginia  
Filed Nov. 3, 1966, Ser. No. 591,929  
5 Claims. (Cl. 192—42)

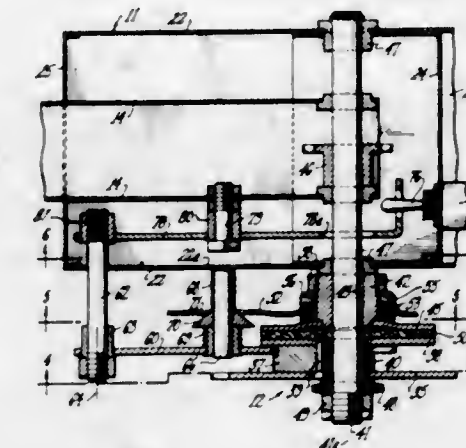


A friction clutch assembly for connecting an engine to a starter motor including a male friction member having a frusto-conical outer surface and mounted to the crankshaft of the engine. A female friction member is provided with a frusto-conical inner surface and is movable into engagement with the male friction member upon operation of the starting motor to thereby drive the engine. When engine speed exceeds the speed of the starter motor the friction members separate to disconnect the starting motor from the engine. The connection between the starting motor and the female friction member includes frictional means to permit relative rotation between these members in the event of excessive torque being produced by reason of engine backfire.

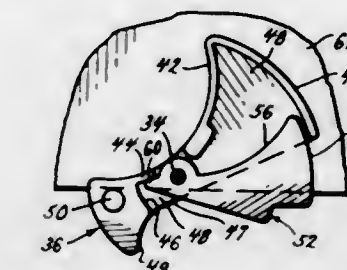
**3,411,612**  
**LOAD LIMITING POWER TRANSMISSION SYSTEM AND RELATIVE SPEED-CHANGE**  
Moscow K. Richmond, 2819 Butler Ave.,  
Los Angeles, Calif. 90064  
Filed June 12, 1964, Ser. No. 374,768  
16 Claims. (Cl. 192—139)

A mechanical load transmission system includes a speed-change sensing device to sense a change in speed or load in case of overload or stoppage of a driven element or reaching a limit stop or the like. The mechanism shuts

off power to the prime mover under these conditions and may also reverse the prime mover, particularly when the prime mover is an electric motor, so that the system acts

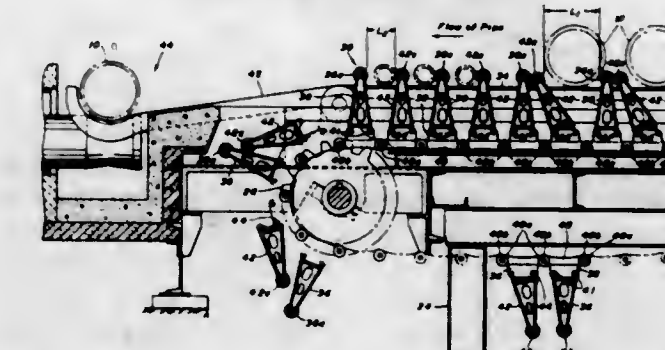


**3,411,613**  
**MONEY-HANDLING DEVICE**  
Gordon C. Andreas, St. Louis, Mo., assignor to National Rejectors, Inc., St. Louis, Mo., a corporation of Missouri  
Filed Apr. 25, 1967, Ser. No. 633,628  
10 Claims. (Cl. 194—97)



A coin-handling device has a "flipper" that alternately directs coins of the same denomination into a first chute and into a second chute; and that flipper is equipped with a counterweight which can move with that flipper but which also can move relative to that flipper, and which can keep blows that are applied to that coin-handling device from causing that flipper to shift into position to direct coins into that second chute.

**3,411,614**  
**CONVEYOR**  
Robert C. Schell, Penn Hills Township, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of Delaware  
Continuation of application Ser. No. 543,370, Apr. 18, 1966. This application June 6, 1967, Ser. No. 644,030  
12 Claims. (Cl. 198—173)

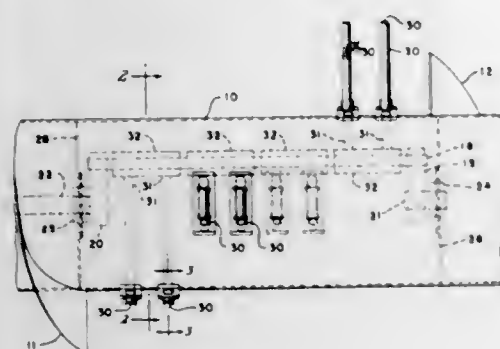


This invention relates to conveyors and more particularly to improved work spacing means for conveyors which spacing means include a first fixed means and a



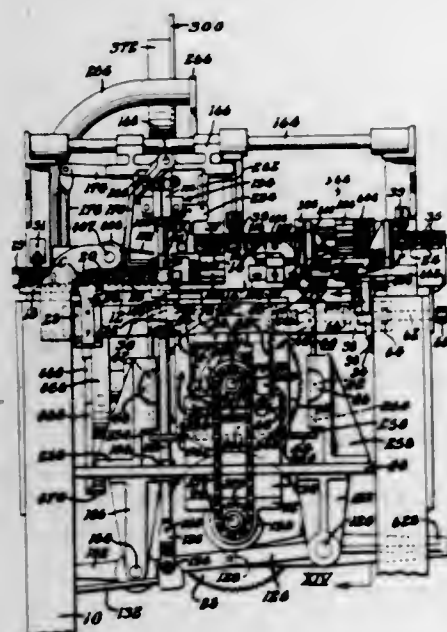
second pivotable means, the pivotable means having a first portion engageable with the conveyor and a second portion engageable with a fixed means to limit pivotable movement of the pivotable means.

**3,411,615**  
**BRACKET FOR RETRACTABLE FINGER CROP FEEDING DRUM**  
Bruce D. Schwalm, Leola, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware  
Filed Jan. 30, 1967, Ser. No. 612,451  
1 Claim. (Cl. 198—211)



A retractable feed finger bearing bracket having striping flanges to prevent forage crops from wrapping about a feed drum.

**3,411,616**  
**CIGAR OVERWRAPPING AND BANDING MACHINE**  
Dale R. Smith, York, Pa., assignor to York Production Engineering Co., Inc., Windsor, Pa., a corporation of Pennsylvania  
Filed July 26, 1965, Ser. No. 474,754  
9 Claims. (Cl. 198—218)



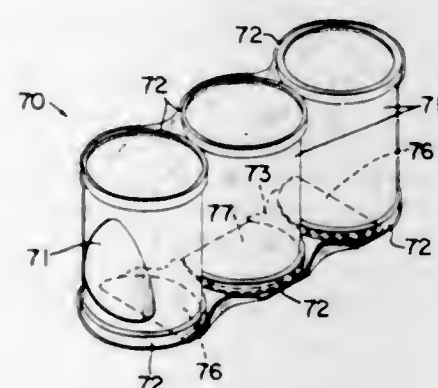
A cigar overwrapping and banding machine is disclosed in which a square-motion finger rack is employed to advance cigars, in a steady stream in spaced-apart relation to each other and without rolling, over an infeed platform, from which the cigars are successively elevated to the higher level of a discharge platform. A square-motion transfer mechanism transfers the cigars to the discharge platform over which the cigars are then advanced by the square-motion finger rack in a steady stream in spaced-apart relation without rolling. Wrapping of the cigar begins at the elevator position.

**3,411,617**  
**FABRIC-DECORATING PACKAGE**  
I. Kingdon Hirsch, Beverly Hills, Calif., assignor to Patrice, Inc., a corporation of New York  
Filed Feb. 8, 1968, Ser. No. 704,099  
8 Claims. (Cl. 206—1.7)



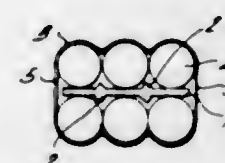
Package includes stretcher, paint tubes, and cover. Stretcher comprises base having circular wall and upstanding peripheral wall, and a ring tightly surrounding peripheral wall. Tubes of paint rest on inner face of circular wall. Transparent plastic cover carries formations retaining tubes in predetermined locations, and has peripheral wall surrounding the ring. Cover peripheral wall may have projection which snaps beneath bead of ring or base to hold cover and stretcher together.

**3,411,618**  
**PACKAGE MEANS AND METHOD FOR MAKING SAME**  
Nicholas J. Pilger, Thousand Oaks, Calif., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware  
Filed July 7, 1966, Ser. No. 563,472  
10 Claims. (Cl. 206—65)



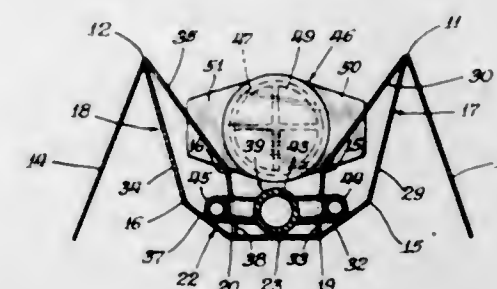
This disclosure relates to a package construction for a plurality of cans which utilizes a can holder which associates with only one end portion of said cans and has a corresponding plurality of extension flaps each nesting within the chime end of an associated can and tabs which engage the outside surface of the chime end of each can to lock each can against the can holder to prevent chime ride. The can holder and associated cans have a plastic material overwrapped and shrunk in position therearound to define an integral package construction.

**3,411,619**  
**PACKAGE**  
Tokuji Saito, Kikuo Kubo, and Kim Kato, Uotsu-shi, and Hachiro Nagashima, Kodaira-shi, Tokyo, Japan, assignors to Nippon Carbide Kogyo Kabushiki-Kaisha, Tokyo, Japan, a corporation of Japan  
Filed Nov. 21, 1966, Ser. No. 595,921  
Claims priority, application Japan, Nov. 27, 1965, 40/96,040  
5 Claims. (Cl. 206—65)



A package for an even number of cylindrical articles arranged in rows comprising a plastic support member which is a flat elongated sheet between the rows of the articles running along the length thereof but slightly shorter than the entire length of the rows. There is a hand grip at one end with a plurality of projections protruding perpendicularly to the plane of the support member and slidable lengthwise within the package. The hand grip may be pulled out and is accessible in that position. The device is completed by a heat shrinkable plastic film wider than the width of the articles in a row which is wrapped around the entire assembly (including the support member) whereby on heat sealing and heating the film shrinks to provide a tight grip on the article.

**3,411,620**  
**COMBINATION CATHETER TRAY AND PACKAGE**  
Fred C. Steinbock, Chicago, Ill., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts  
Filed May 15, 1967, Ser. No. 638,206  
8 Claims. (Cl. 206—63.2)

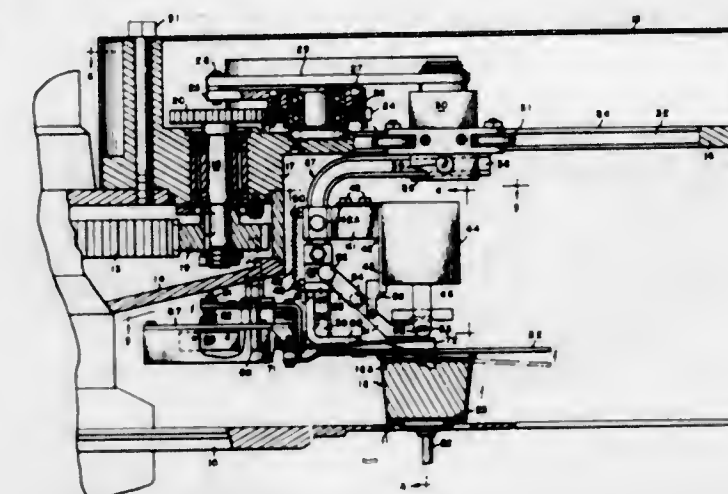


A tray functioning first as a package for a catheter and syringe and secondly as a sterile field for the catheter and syringe as these devices are used in the treatment of patients.

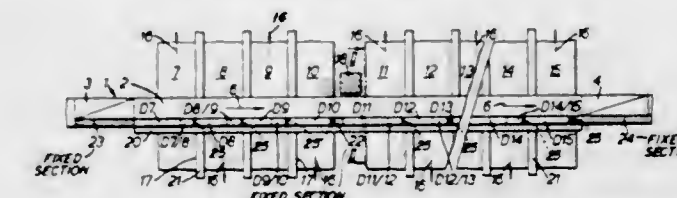
**3,411,621**  
**LID DETECTOR**  
Ralph D. Gerben, Baltimore, Md., assignor to Maryland Cup Corporation, Owings Mills, Md., a corporation of Maryland  
Filed Oct. 6, 1966, Ser. No. 584,704  
10 Claims. (Cl. 209—72)

A lid detector is provided for containers normally having lids at the top of the containers prior to discharge from a container filling machine. The machine includes an inspection station where the containers are vertically moved on an elevator from a normal position to a position above the normal position. Two resiliently yieldable feelers are disposed in the vertical path of movement, one for the lid and the other for the container. The rejection

mechanism rejects the containers from the inspection station. This mechanism is normally inoperative but is rendered operative when the container feeler is actuated in the absence of actuation of the lid feeler.

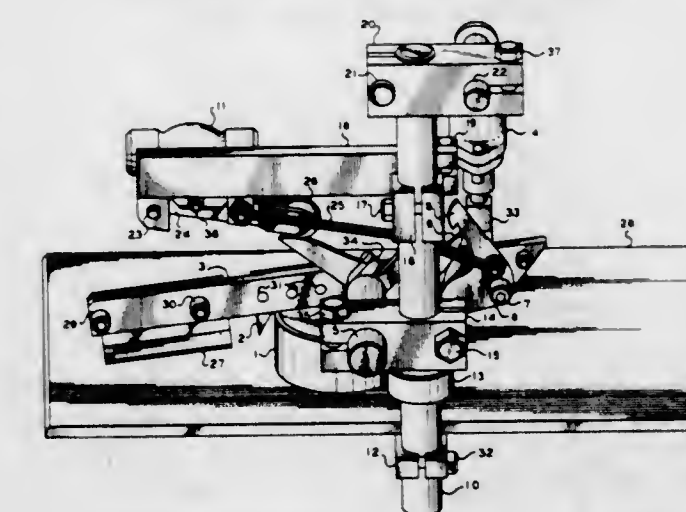


**3,411,622**  
**PARCEL SORTING INSTALLATIONS**  
William Dickle, Lancing England, assignor to Her Majesty's Postmaster General, London, England  
Filed Feb. 10, 1966, Ser. No. 526,503  
Claims priority, application Great Britain, Feb. 15, 1965, 6,497/65  
10 Claims. (Cl. 209—74)



Parcel sorting apparatus employing a tilted band conveyor. Movement of parcels and packets from the tilted band conveyor to other cross conveyors is controlled by discharge doors which are grouped together for operation in combinations. Each combination of doors controls the discharge to one only of the cross conveyors.

**3,411,623**  
**INSPECTION APPARATUS**  
Guy L. Kelly, Kansas City, Kans., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed Apr. 3, 1967, Ser. No. 627,936  
10 Claims. (Cl. 209—80)



An inspection apparatus for ring shaped objects comprising (a) lever means having a stop at one end for blocking movement of an object along a path, (b) means for moving the stop into, and out of, the path of the object, (c) means for actuating an ejecting device for ejecting an ob-

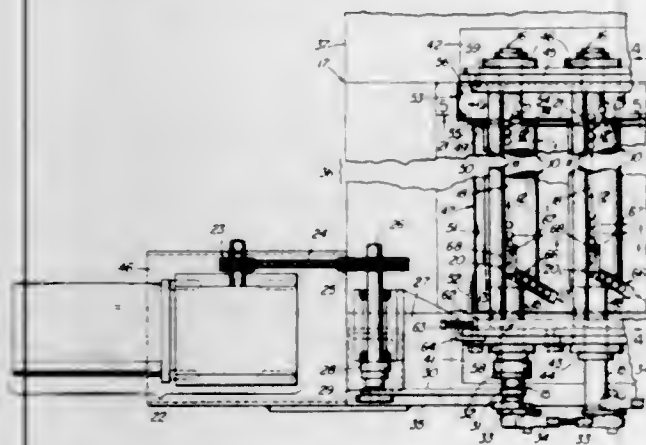


ject not passing inspection, and (d) biased means connected to the other end of said lever means and so positioned that it actuates said ejection device when an improperly shaped object is being inspected.

3,411,624

# MARBLE SORTER SELECTIVELY REJECTABLE OF MISSHAPEN MARBLES AND FRAGMENTS THEREOF

Saul Warsaw, New York, Winton Loveland, Freeport, and Frank A. Denchick, Lake Ronkonkoma, N.Y., assignors to The Loveshaw Corporation, Farmingdale, N.Y., a corporation of New York  
Filed Apr. 11, 1967, Ser. No. 629,992  
10 Claims. (Cl. 209-101)

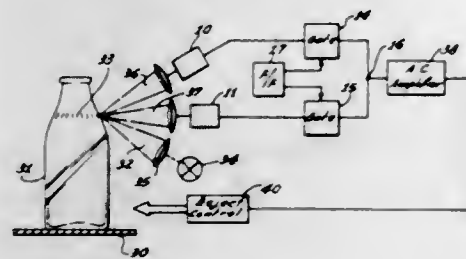


A sorter or sorting feeder for marbles of certain diameter which selectively sorts them and rejects those excessively misshapened as well as marble fragments. A canted trough down which the supplied marbles may roll is defined by an elongated rotatable roller and an elongated guide member mounted to one side of and transversely spaced from the top portion of the roller. Driving means arcuately oscillates the roller back and forth so that it kicks rejects sideways out of the trough and permits good marbles to roll out from the lower end of the latter. Gravity operated marble supply means for the trough is equipped at the trough with guard means to prevent marbles from bouncing out over either the roller or guide member into rejects collecting means.

3,411,625

# PATTERN RECOGNITION DEVICE

Fredrick L. Calhoun, Torrance, Calif., assignor to Industrial Dynamics Company, Ltd., Torrance, Calif., a corporation of California  
Filed Aug. 12, 1965, Ser. No. 479,121  
15 Claims. (Cl. 209-111.7)



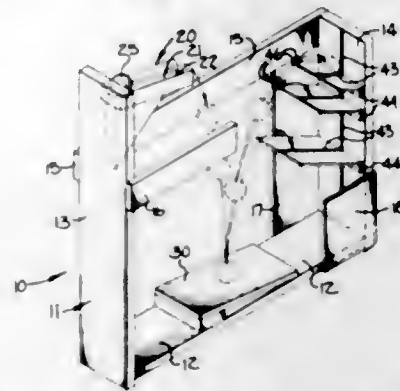
This invention relates to a system for sequentially activating a plurality of energy-sensitive members on a repetitive basis to determine the presence or absence of a particular phenomenon or pattern in an object such as a container. Each of the energy-sensitive members in the plurality is positioned to receive the energy from an individual portion of a particular area on the object such that the energy-sensitive members receive energy from all of the particular area on a composite basis. When the energy-sensitive members are sequentially activated, a

particular signal is produced to indicate the presence or absence of the particular phenomenon or pattern. This signal may constitute an oscillatory signal having a particular frequency.

3,411,626

# MECHANISM FOR GRADING AND CULLING GOLF BALLS

William H. Kreamer, 219 Hodgson Road, Charlotte, N.C. 28211  
Filed Mar. 1, 1967, Ser. No. 619,714  
7 Claims. (Cl. 209-119)

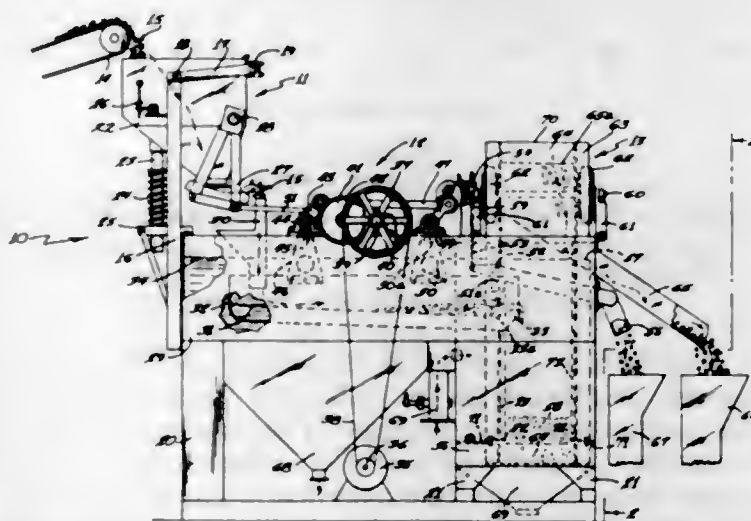


A mechanism for grading and culling golf balls and the like according to their compression and balance characteristics. The mechanism comprises a forwardly extending inclined means adapted to successively receive balls impart under the force of gravity an equal, constant velocity and straight-line, forward motion to each ball, and release each ball to travel under the force of gravity in a forward, downward, arcuate path of travel; inclined striking plate means disposed below the inclined means in the downward path of travel of the balls released therefrom and adapted for striking by the released balls so that the balls will rebound in variable, predetermined, spaced, upward, arcuate paths of travel, the rebound paths of travel being determined by and directly related to variable compression and balance characteristics of the balls; and a plurality of shelf means disposed at predetermined spaced positions in the variable, rebound paths of travel of the balls and adapted to receive and retain the balls from the particular rebound paths of travel. The compression characteristics of the balls are readily indicated by the particular shelf upon which a ball is received and retained and the balance characteristics of the balls are readily indicated by the position of a ball within the shelf.

3,411,627

# MATERIAL CLEANING APPARATUS

Theodore F. Garland, 1226 N. 1st, Fargo, N. Dak. 58102  
Filed Mar. 15, 1966, Ser. No. 534,495  
4 Claims. (Cl. 209-427)



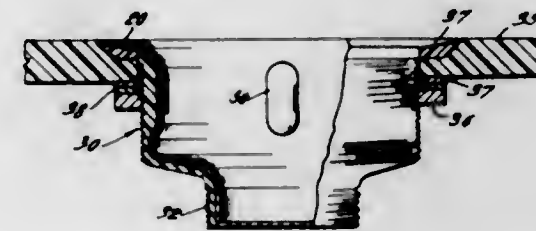
Apparatus for cleaning particulate material, such as gravel or the like, comprising a stratifying and classifying

oscillating screen submerged in a liquid confining tank and causing stratification of gravel and non-gravel material which is positioned thereon. A dewatering wheel revolvably positioned in one end of the tank and projecting upwardly beyond the water level thereof and being operable to remove the cleaned gravel from the tank with a minimum loss of water.

3,411,628

# COMBINATION PLASTIC-STAINLESS STEEL SINK STRAINER

Richard A. Mason, Orange, Conn., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia  
Filed Feb. 21, 1966, Ser. No. 528,897  
3 Claims. (Cl. 210-163)

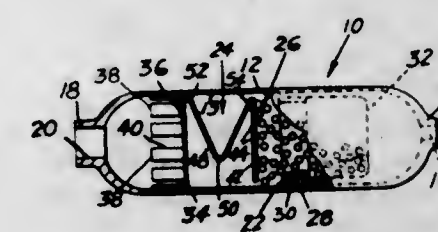


A composite sink strainer comprising a thin stainless steel inner body including axially aligned upper and lower tubular portions, the upper portion being of greater diameter than the lower portion and having a plurality of inwardly extending spaced protrusions formed therein, the outer surface of each protrusion providing a complementary depression, and an annular plastic body of greater thickness molded upon said inner body in intimate surrounding relationship, the upper and reduced lower peripheral surfaces of said plastic body having screw threads molded therein. The material of the molded plastic body fills the depressions in the outer surfaces of the protrusions in the steel inner body and provides a unitary and inseparable association between the stainless steel inner body and the surrounding plastic body.

3,411,629

# DESICCANT DRYER AND SPRING HOLDER THEREFOR

Ronald M. Wilber, Lyons, and Norman H. Segel, Syracuse, N.Y., said Segel assignor to All-State Stamping Corporation, Syracuse, N.Y., a corporation of New York, and said Wilber assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio  
Filed Dec. 20, 1966, Ser. No. 603,343  
10 Claims. (Cl. 210-282)

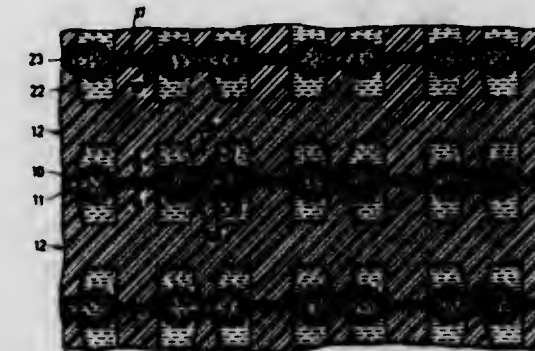


1. A desiccant dryer comprising a tubular shell having an opening at each end thereof and a bore extending between said ends, a perforated desiccant retainer anchored with said bore spaced from one of said ends, a quantity of desiccant particles within said bore, and resilient means within said bore biasing said particles toward said retainer, said resilient means including anchoring means having a plate configured to conform to said bore forming a central aperture, said plate carrying a plurality of resilient fingers

3,411,630

# DIALYSIS DEVICE FOR PURIFYING BLOOD OR OTHER LIQUIDS

Nils Alwall and Lennart Östergren, Lund, Sweden, assignors to AB Gambro, Lund, Sweden, a Swedish joint-stock company  
Filed June 27, 1966, Ser. No. 560,432  
Claims priority, application Sweden, July 21, 1965, 9,598/65  
6 Claims. (Cl. 210-321)

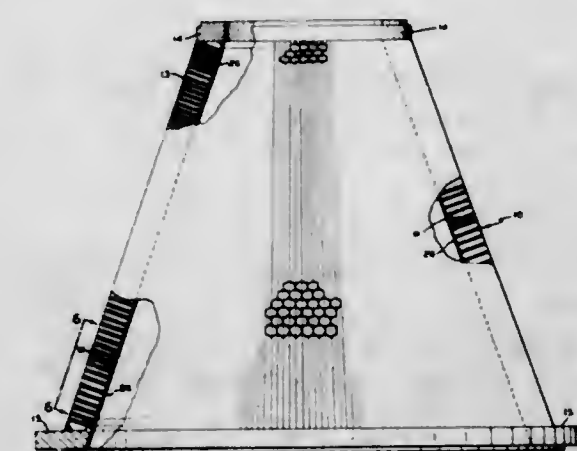


An artificial kidney consisting of a plurality of pairs of semipermeable membranes defining a plurality of generally flat, parallel spaces for the blood to be purified, each space being connected to an inlet and an outlet for the blood to be purified, said pairs of semipermeable membranes being held in spaced relation by spacing members which by their surface configuration support said membranes in shapes that provide a high ratio of area of membranes to the enclosed volume of the space enclosed by them and at the same time provide spaces between adjacent pairs of membranes for the purifying liquid.

3,411,631

# SCREENING CENTRIFUGES

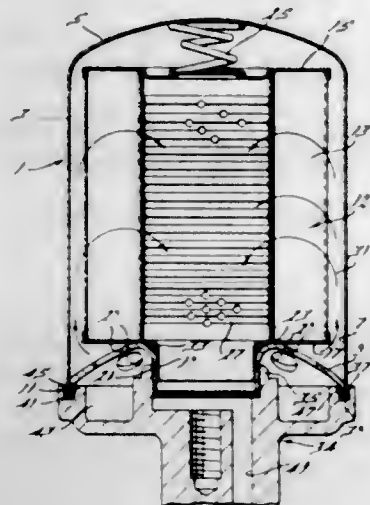
James C. Elsken, Elmhurst, Ill., and Haakon C. F. Oyen, Stamford, Conn., assignors to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware  
Filed Sept. 9, 1966, Ser. No. 578,404  
4 Claims. (Cl. 210-374)



A screen type centrifuge having a honeycomb-like cage as a support and backing wall for the separating screen.

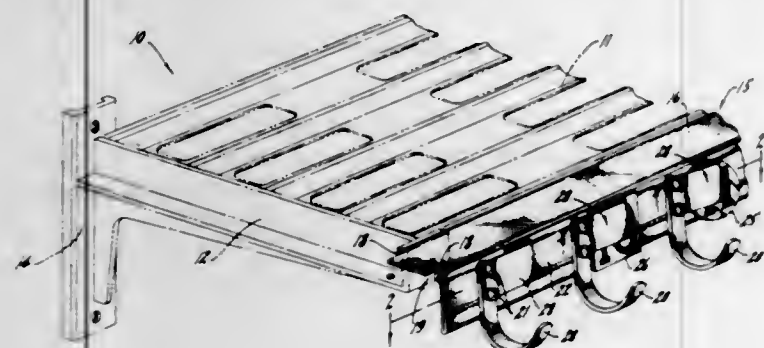


**3,411,632**  
**THROWAWAY FILTER WITH DOME-SHAPED BOTTOM PLATE**  
 Robert J. Offer, Racine, and Glenn F. Minnick, Janesville, Wis., assignors to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware  
 Filed Aug. 3, 1966, Ser. No. 569,965  
 3 Claims. (Cl. 210-440)



A disposable oil filter having an outer shell with a base plate at one end that is of a dome shape and which has a reversely bent joint connection at its outer periphery with the shell that serves as a means for sealing the filter on the filter mounting.

**3,411,633**  
**CHECKING APPARATUS FOR GARMENT RACKS AND THE LIKE**  
 Raymond A. Magnuson, Hinsdale, Ill., assignor to Vogel-Peterson Co., Elmhurst, Ill., a corporation of Illinois  
 Filed May 5, 1966, Ser. No. 547,996  
 8 Claims. (Cl. 211-13)

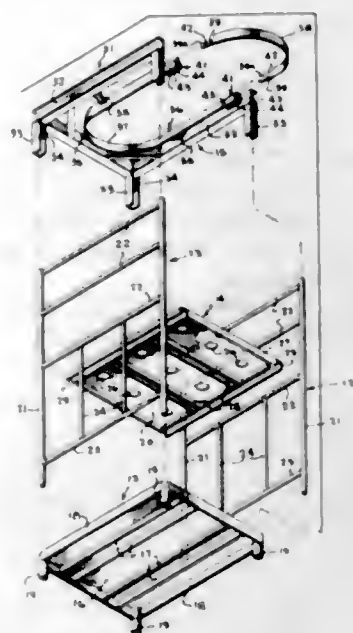


A garment rack having a plurality of garment support hooks and including a resiliently biased check retaining arm mounted in close proximity to each hook for retaining a garment identification check in a manner such that the hook and garment supported by the hook may be readily identified.

**3,411,634**  
**MEAT HANDLING APPARATUS**  
 Daniel M. Pesce, 9731 SW. 157th Terrace, Miami, Fla. 33157  
 Filed Nov. 29, 1966, Ser. No. 597,732  
 8 Claims. (Cl. 211-162)

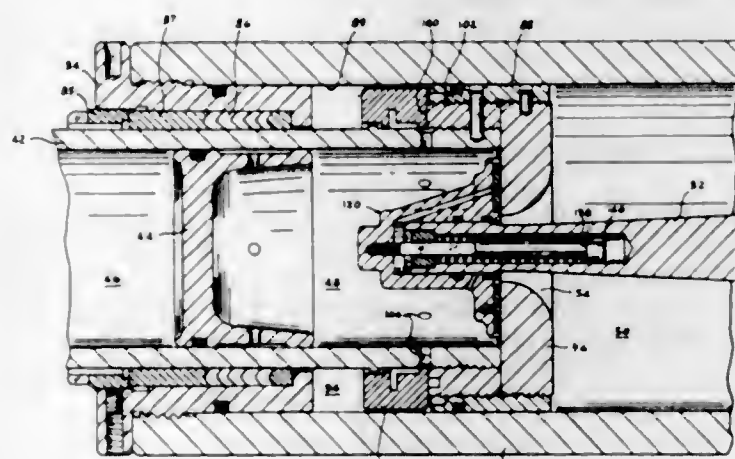
A stackable meat hanging and supporting structure in which a lower base member is provided with vertical standards supporting horizontal removable shelves with the upper ends of the vertical standards being formed so that either track means supporting roller supporting meat

hanger means or another base member of an upper identical apparatus are attachable with the track means being U-shaped and with straight track portions being provided



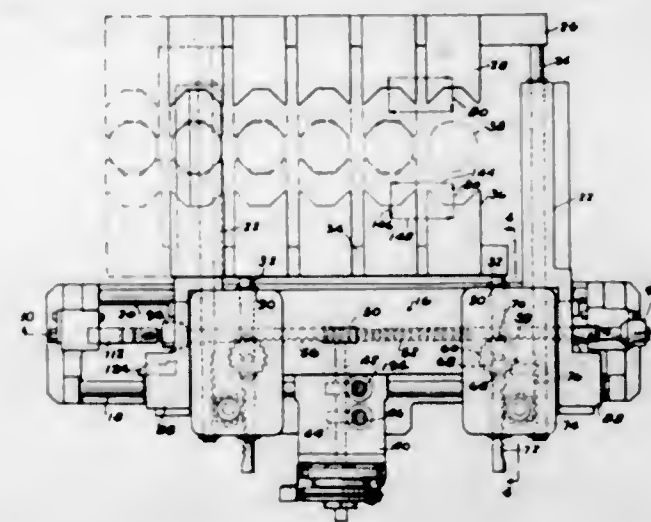
to enable connection between two of the U-shaped tracks of two different structures in facing relationship to provide a composite construction of enhanced storage capability

**3,411,635**  
**RAILWAY CAR CUSHIONING DEVICE**  
 Richard G. Powell, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey  
 Filed Apr. 1, 1966, Ser. No. 539,384  
 16 Claims. (Cl. 213-8)



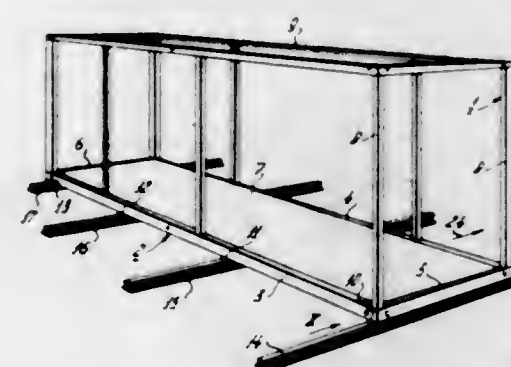
An oleo-pneumatic cushioning device for railway cars which collapses and achieves internal metered transfer of hydraulic fluid between a pair of hydraulic chambers in addition to achieving compression of a compressible fluid within the unit to dissipate energy applied thereto. The unit includes a lockup device which is operative to prevent the interchange of hydraulic fluid between the hydraulic chambers upon the application to the unit of forces of low magnitude, but which is responsive to a predetermined increase in fluid pressure within one of the hydraulic chambers developed by the application of forces in excess of a predetermined magnitude to unlock and allow the interchange of hydraulic fluid between the hydraulic chambers thereby allowing the unit to collapse and dissipate energy.

**3,411,636**  
**TRANSFER DEVICE**  
 Bernard J. Wallis, 25200 Trowbridge Ave., Dearborn, Mich. 48124  
 Continuation of abandoned application Ser. No. 418,179, Dec. 14, 1964. This application Apr. 12, 1966, Ser. No. 542,073  
 15 Claims. (Cl. 214-1)



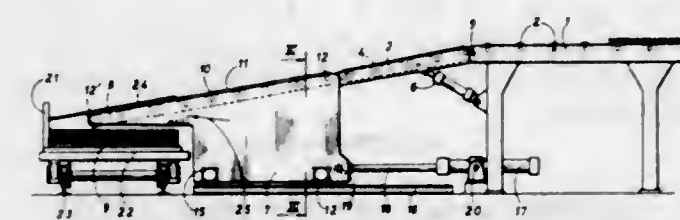
A device for indexing workpieces progressively through a plurality of stations in the form of a carriage mounted on a base for reciprocation in a straight path and having a plurality of work-gripping fingers projecting from one side thereof in a direction transverse to the reciprocating path of the carriage with means for actuating the work-gripping fingers toward and away from each other so as to grip and release workpieces as the carriage reciprocates between successive stations.

**3,411,637**  
**CONSTRUCTIONAL ASSEMBLIES FOR USE IN BUILDINGS**  
 Cornelis Van der Lely, Zug, Switzerland, assignor to C. Van der Lely, N.V., a limited-liability company of the Netherlands  
 Continuation of application Ser. No. 408,160, Nov. 2, 1964. This application Mar. 8, 1967, Ser. No. 621,711  
 Claims priority, application Netherlands, Nov. 5, 1963, 300,151  
 8 Claims. (Cl. 214-1)



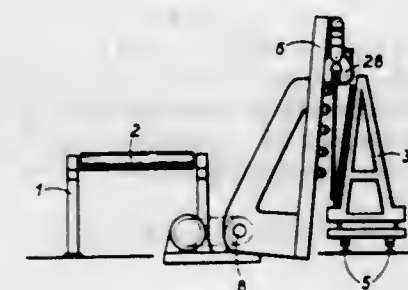
The combination of an elongated box-shaped pre-fabricated building element having a metal framework with four supporting iron sliders permanently secured to the bottom of the framework, metal rails at the manufacturing plant receiving the framework of the element via the sliders, the framework being pulled along the rails on the sliders for assembly, and foundation beams at the building site adapted to receive the sliders for moving the element along the foundation beams to its desired position, the sliders thereafter permanently supporting the element on the foundation beams.

**3,411,638**  
**APPARATUS FOR THE HORIZONTAL STACKING OF SHEETS OF RIGID MATERIAL**  
 Jacques Max Charles Dryon, Auvelais, Belgium, assignor to Ateliers Heuze, Malevez et Simon Reunis Societe Anonyme, Auvelais, Belgium, a Belgian company  
 Filed Dec. 13, 1965, Ser. No. 513,255  
 Claims priority, application Belgium, Dec. 14, 1964, 6,614  
 2 Claims. (Cl. 214-6)



An apparatus for the horizontal stacking of sheets of rigid material such as glass sheets in which the sheets are delivered one by one onto a descending inclined portion of a mobile carrier movable toward and away from a stack defining means. The inclined portion is provided with means for moving a sheet therealong and a lower end which projects over the stack defining means when the carrier is moved towards the stack defining means and away from the stack defining means when the carrier moves away therefrom. The carrier has means associated therewith for moving the carrier toward and away from the stack defining means and a mechanical connection between the carrier moving means and the sheet moving means functions to impart a movement to the sheet moving means for compensating for the movement of the carrier as it moves away from the stack defining means whereby the sheet undergoes no displacement caused by such movement of the carrier and is correctly deposited onto the stack.

**3,411,639**  
**DEVICE FOR HANDLING SHEET MATERIALS**  
 Jacques Dryon, Auvelais, Belgium, assignor to Ateliers Heuze, Malevez et Simon Reunis Societe Anonyme  
 Filed May 14, 1965, Ser. No. 455,789  
 Claims priority, application Belgium, May 25, 1964, 520,740  
 5 Claims. (Cl. 214-6)



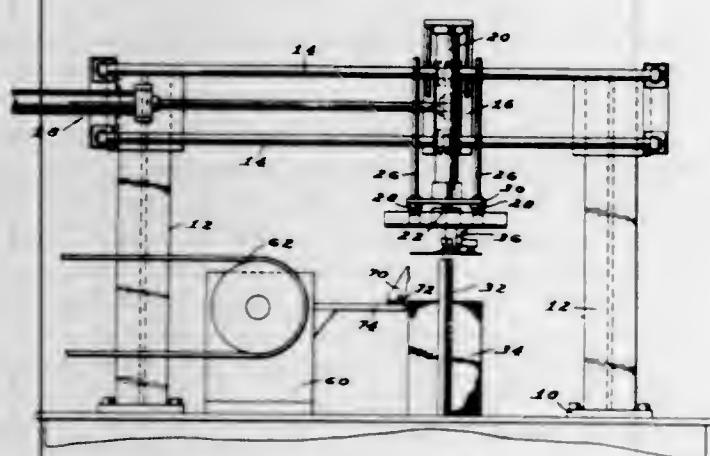
The invention consists of a mechanism for handling sheet material such as glass and selectively manipulating the separate sheets from a conveyor to deposit the same on either a stand which receives the sheets in upright position or a packing case or the like which accommodates the sheets in a horizontal position. The handling mechanism includes a frame having a plurality of mutually spaced bar means each carrying rollers thereon, the axes of which are parallel to the longitudinal axis of the conveyor, pivot means to one side of the conveyor for supporting such frame for tilting or swinging movement from a material receiving position overlying the conveyor and capable of receiving a plate or sheet, to a position past an upright or vertical position, clamp or gripping means on the frame on the side thereof remote from the pivot means for holding a plate or sheet during such swinging



movement whereby a plate may be lifted and swung upwards by the frame to a position past the vertical where the plate can be released for deposit on the stand in a generally upright condition, and the frame includes extendable support means likewise provided with similarly oriented rollers, extendable between an inner position where the pivoting frame receives a plate and an extended position, so that upon partial upward swinging movement of the frame, a plate elevated thereby can roll off the rollers on the extendable support means for deposit in a packing case or the like in a horizontal position. The mechanism also includes means for swinging the frame and means for extending and retracting the extendable support means.

### 3,411,640 DE-STACKING DEVICE FOR SHEET METAL BLANKS

Bernard J. Wallis, % Livernois Engineering Co.,  
25200 Trowbridge Ave., Dearborn, Mich. 48124  
Filed Mar. 8, 1966, Ser. No. 532,755  
12 Claims. (Cl. 214-8.5)

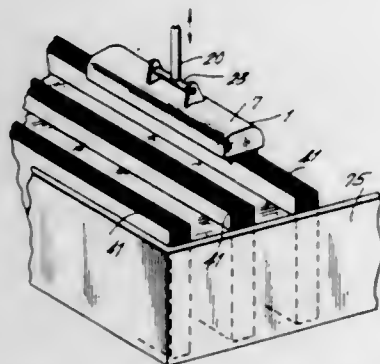


A de-stacking device for sheet metal blanks in the form of a vertically reciprocating head on which a lever is pivotally supported between its ends for rotation about a generally horizontal axis, the lever having suction cups at opposite ends and an intermediate stop member for engaging the topmost blank on a stack of sheet metal blanks for peeling the topmost blank from the stack.

### 3,411,641 APPARATUS FOR HANDLING SHEETS

George A. Dean, Overland Park, Kans., assignor to Dean Research Corporation, a corporation of Missouri  
Continuation-in-part of application Ser. No. 565,650,  
July 6, 1966. This application Dec. 1, 1967, Ser.  
No. 690,368

22 Claims. (Cl. 214-8.5)



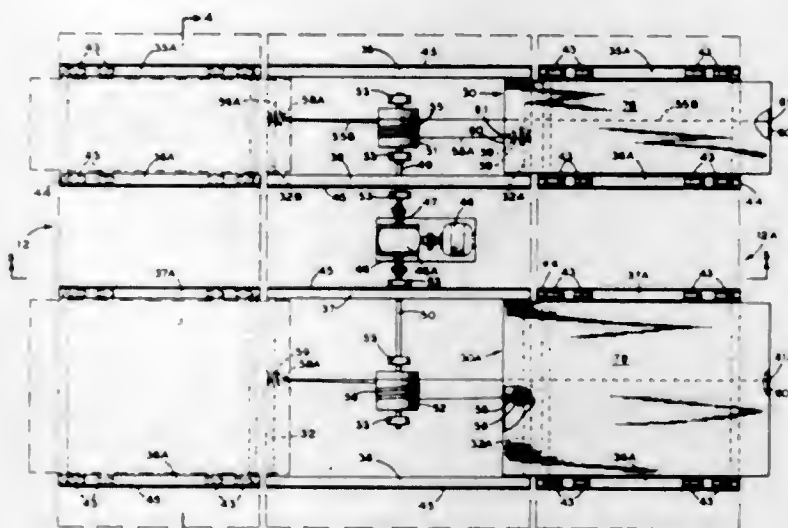
Method and apparatus for handling stacked sheets of material wherein a head is provided for engaging the flat sides of the sheets, a vacuum is applied thereto causing the sheets to adhere to one another, moving the sheets to a desired location, and releasing the vacuum whereby the stack of sheets is also released.

Method and apparatus for upending stacks of sheets to feed them into the head. The area of the apparatus subjected to the vacuum is substantially larger than the area in contact with the sheets whereby a mechanical advantage in clamping pressure is achieved.

### 3,411,642 OBJECT STORAGE AND RETRIEVAL FACILITY

Mihai Alimanestianu, Upper Nyack, N.Y., assignor to Speed-Park, Inc., New York, N.Y., a corporation of New York

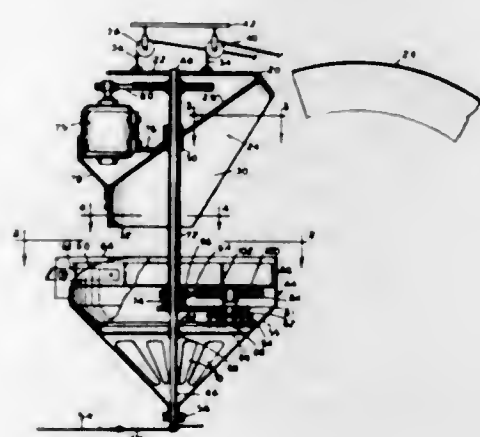
Filed Jan. 11, 1967, Ser. No. 608,643  
1 Claim. (Cl. 214-16.4)



A storage facility of the stall type, having at least two vertical tiers of stalls in opposed relation to each other. Each stall is subdivided into storage zones of different dimensions. An elevator means is movable in the passageway between tiers of stalls. Plural transfer means of dissimilar dimensions are mounted on the elevator means to selectively transfer items between the elevator means and the storage zones of related dimension on either side of the elevator means.

### 3,411,643 SILAGE DISTRIBUTOR

Hermann K. Cymara, R.F.D. 2, Newfield, N.Y. 14867  
Filed July 15, 1966, Ser. No. 565,545  
9 Claims. (Cl. 214-17)



Silage distributor having a vertical support rod with an inverted chute on its upper end for receiving silage from a silage supply spout and deflecting silage received in the chute downwardly, and a distributor disposed below the spout in a position to receive deflected silage the distributor having a rotary impeller mounted on a tubular drive shaft rotatable on the rod and a rotary housing co-

axially disposed around the impeller and having a discharge opening tangentially disposed in relation to the impeller, a motor at the upper end of the rod to rotate the impeller and pin wheel gearing to rotate the housing at a lower speed than the impeller.

### 3,411,644 BOAT LOADER AND CARRIER

Roy W. Cook, Green River, Utah, assignor to Duchess Corporation, Green River, Utah, a corporation of Utah

Filed July 7, 1966, Ser. No. 563,421  
16 Claims. (Cl. 214-450)

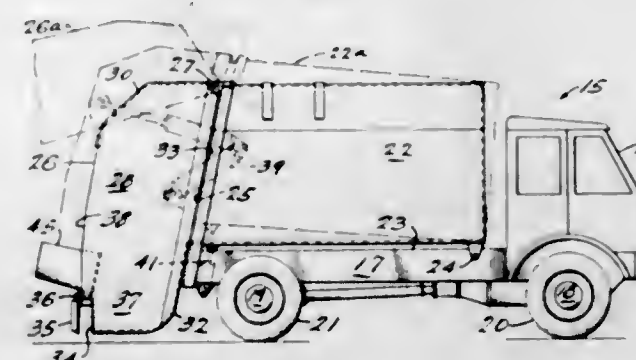


A boat loader and carrier for hoisting small boats onto trucks and for lowering such boats from the trucks. A sloping trackway is provided for secure placement on the load-carrying portion of a truck, and a rear-wheeled boat carrier is mounted for longitudinal forward movement onto and backward movement from the trackway. The trackway structure is provided with a longitudinally extending rail that serves to retain a trolley assembly to which the forward end of the boat carrier is adapted to be articulatively attached. A winch that may be either manually or power operated is provided for pulling the boat carrier onto the trackway and for lowering it therefrom.

### 3,411,645 REFUSE COLLECTING VEHICLE FORWARD TILT BODY

William A. Herpich and George W. Palmer, Gallon, Ohio, assignors to Hercules Gallon Products, Inc., Gallon, Ohio, a corporation of Delaware

Filed June 9, 1966, Ser. No. 556,343  
4 Claims. (Cl. 214-503)

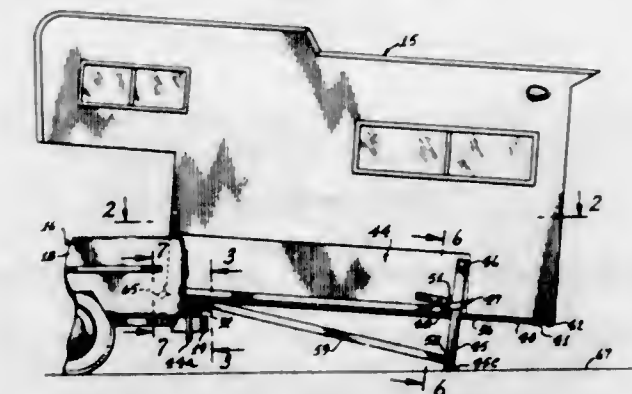


A rear loading refuse vehicle that has a chassis with front and rear axles and wheels and that has a hollow body pivotally connected to the chassis at the front lower end of the body. A tailgate is pivotally mounted at the upper rear end of the body and extends downwardly across the open rear end of the body. The tailgate has a hopper in its lower end and mechanism for moving refuse out of the hopper into the body. The bottom of the hopper depends below the level of the rear axle and the hopper has a rear wall which extends upwardly and terminates at a level low enough relative to the ground so as to minimize the elevation to which containers must be lifted for dumping them into the hopper. Power means are connected between the chassis and the body for tilting

### 3,411,646 CAMPER MANIPULATING APPARATUS FOR MOTOR VEHICLE

Caryl H. Emery, 1823 N. 70th St., Scottsdale, Ariz. 85257, and Roger P. Weckwerth, 2249 W. Main, Mesa, Ariz. 85201

Filed Jan. 26, 1967, Ser. No. 611,897  
3 Claims. (Cl. 214-517)

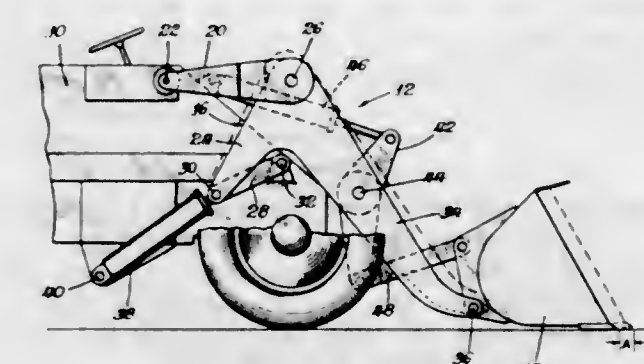


An apparatus for manipulating a camper on to and off of a motor vehicle with particular regard to picking up a camper from the ground surface and raising it and pulling it forwardly on to the flat bed of a pickup truck including linkage and apparatus operable with a minimum of effort and without skill and force being required on the part of the operator of the mechanism.

### 3,411,647 BOOM ASSEMBLY FOR TRACTOR LOADER

Richard F. Zimmerman, Waukegan, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Feb. 23, 1967, Ser. No. 617,904  
3 Claims. (Cl. 214-770)



A boom assembly for a tractor loader vehicle providing straight vertical lift for an implement and improved crowding characteristics through operation of the boom ram. The boom assembly incorporates a four-bar linkage in which the boom ram is connected in a toggle configuration with an arm of the linkage to achieve the improved lifting and crowding characteristics.

### 3,411,648 ANTICOLIC NURSING DEVICE

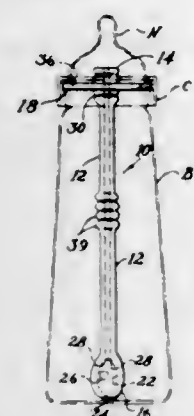
William C. Tichy, Westbury, N.Y.  
(861 Harbor Drive, Key Biscayne, Fla. 33149)  
Filed Oct. 6, 1966, Ser. No. 584,775

5 Claims. (Cl. 215-11)

An infant's feeding bottle having an elongated siphon tube extending from a nipple at the open end of the bot-



tle to a position near the bottom of the bottle. A plug connects the tube to the nipple. The tube is axially, ad-

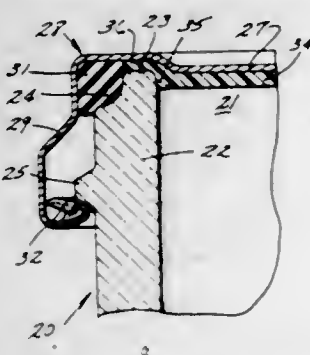


justably connected to the plug and has flow control means at the end near the bottom of the bottle.

3,411,649

### CLOSURE FOR REDUCING HEAT TRANSFER TO PRODUCT DURING PROCESSING

George V. Mumford, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio  
Filed Sept. 19, 1966, Ser. No. 580,481  
8 Claims. (Cl. 215-40)

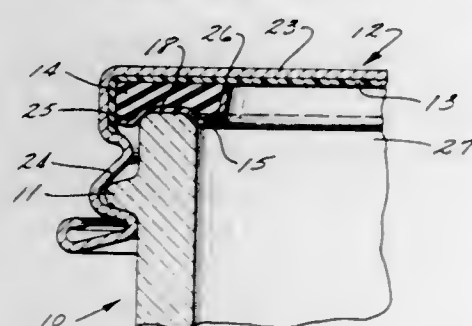


A thermal barrier of plastic for closures to reduce axial heat transfer through the closure to a packaged heat sensitive product. The thermal barrier is attached to the internal closure panel surface and covers the mouth opening of the container to which the closure is applied. The barrier has a preferred axial thickness dimension of from 0.010 to 0.065 inch and a maximum thermal conductivity of 0.02 B.t.u. per hour per square foot per Fahrenheit degree per foot.

3,411,650

### CLOSURE AND SEALING MEDIUM FOR GLASS JARS AND OTHER CONTAINERS

George V. Mumford, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio  
Filed Sept. 19, 1966, Ser. No. 580,483  
7 Claims. (Cl. 215-40)



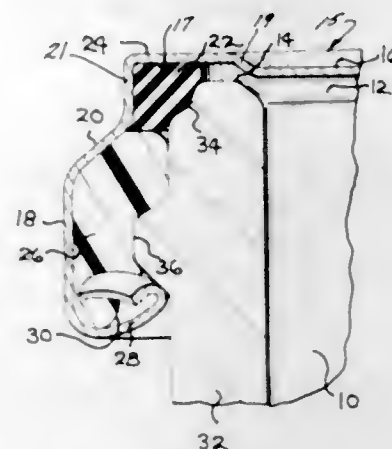
A gasket of composite fabrication for sealing closures onto containers such as bottles or jars. The gasket comprises an elastomeric component and bonded thereto an enveloping viscoelastic component, the latter being internally disposed in the closure relative to the elastomer; and both are exteriorly disposed relative to the container

sealing surface. The sealing interface is to be disposed between the container sealing finish and the elastomeric component and within and in contact with the viscoelastic component.

3,411,651

### BARRIER FOR CLOSURES

George V. Mumford, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio  
Filed Oct. 31, 1966, Ser. No. 590,909  
13 Claims. (Cl. 215-40)

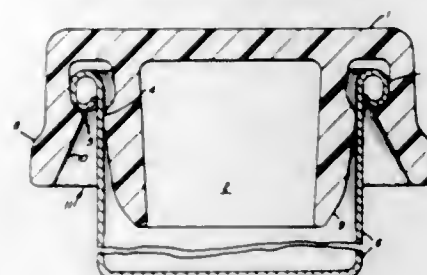


An infestation barrier for lug-type closures on baby food and like containers, the barrier being comprised of a soft and resilient cellular plastisol affixed to the closure skirt to substantially occupy the region disposed intermediate said skirt and container finish, downwardly of the gasket.

3,411,652

### CAPS FOR CONTAINERS

Anthony Leir Shuffrey, London Borough of Harrow, and Charles Norman Tebbutt, London Borough of Southall, England, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
Filed Oct. 21, 1966, Ser. No. 588,533  
Claims priority, application Great Britain, Nov. 16, 1965, 48,654/65  
5 Claims. (Cl. 215-41)



A snap-on cap for closing a container the mouth of which is defined by an outwardly rolled edge, said cap being made of resilient thermoplastic material and comprising a crown from which depend inner and outer concentric skirts having opposed swellings on the facing walls thereof, one of which swellings snaps beneath the rolled edge of the container to hold the cap in place and the other of which engages the inner wall of the container below the top to provide a hermetic seal.

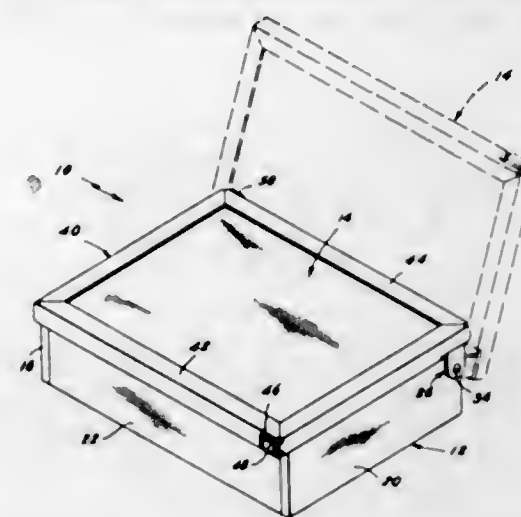
3,411,653

### HINGED CLOSURE

Richard J. Pearce, Lincoln, R.I., assignor to International Packaging Corporation, Central Falls, R.I., a corporation of Rhode Island  
Filed Oct. 31, 1966, Ser. No. 590,783  
8 Claims. (Cl. 217-57)

A box construction having a top cover secured to a bottom section by hinge members, each of which in-

cludes a tongue that extends through a slit formed in a rear corner of the top cover, and a channel-shaped rim

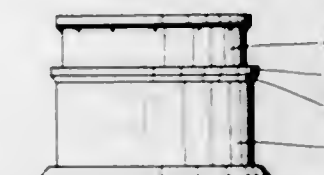


received on the peripheral edge of the top cover and locking the hinge members to the top cover.

3,411,654

### LIQUID STORAGE TANK INSTALLATION

Herbert Grabner, Vienna, and Karl Schwarz, Linz, Austria, assignors to Vereinigte Österreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria  
Filed July 29, 1966, Ser. No. 568,518  
Claims priority, application Austria, Aug. 3, 1965, A 7,149/65; Nov. 18, 1965, A 10,371/65  
9 Claims. (Cl. 220-1)

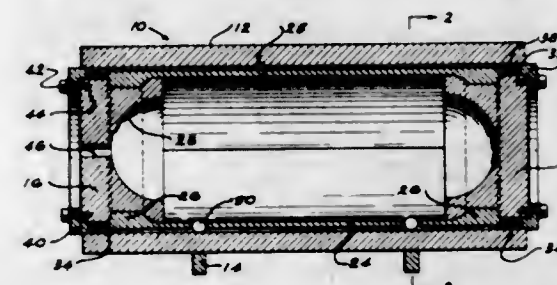


A storage installation for flammable liquids in which a steel tank is arranged in a pan having a steel bottom and an annular upright steel wall spacedly surrounding the tank. The periphery of the tank bottom is spacedly sealed to the pan bottom by a peripheral weld, and the cavity so formed is connected to a leakage detector. A hollow annular float between the tank and upright wall of the pan restricts the area of a potential fire in liquid leaking laterally from the tank.

3,411,655

### HIGH PRESSURE VESSEL HAVING HOOP LOADED OUTER CYLINDER AND AXIALLY LOADED SPLIT INNER CYLINDER

Albert L. Gaines, Simsbury, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware  
Filed Sept. 27, 1966, Ser. No. 582,347  
13 Claims. (Cl. 220-3)



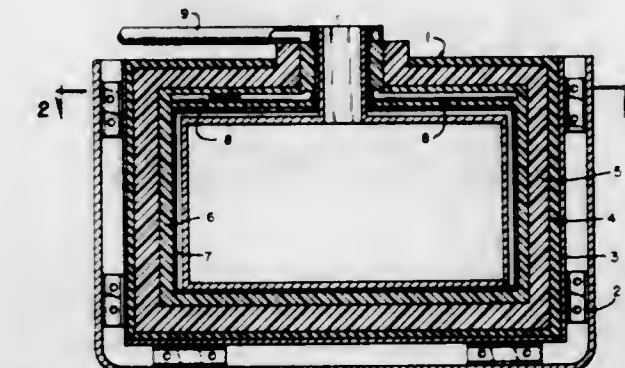
A rapidly disassemblable pressure vessel comprising an open ended cylinder and a subassembly consisting of a pair of end plugs for closing the ends of the cylinder and

a plug tie in the form of a segmented hollow cylinder extending between and interconnecting the plugs. The subassembly is slidably insertable into the cylinder and incorporates radially expandable seals between the facing surfaces of the plugs and cylinder for sealing the ends of the vessel.

3,411,656

### THERMALLY INSULATED CONTAINER FOR A LIQUEFIED GAS

Robert Glover Jackson, Hornchurch, England, assignor to Conch International Methane Limited, Nassau, Bahamas, a Bahamian company  
Filed June 21, 1965, Ser. No. 465,321  
Claims priority, application Great Britain, July 24, 1964, 29,753/64  
7 Claims. (Cl. 220-9)

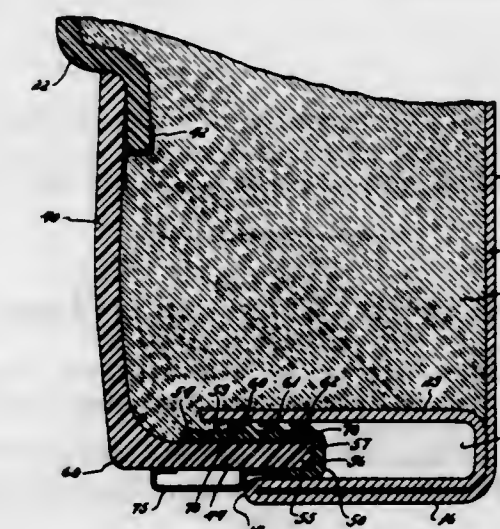


An insulated large-scale container for cryogenic liquids such as liquefied methane comprising an outer wall of substantially fluid-impermeable heat insulating material, a fluid-permeable insulating inner layer adjacent to the inner surface of said outer wall and a thin non-self-supporting lining or membrane of very low permeability completely covering the inner surface of the inner layer and supported thereby. The permeability of the inner layer is such that any small amount of cryogenic fluid leakage or penetration through the inner membrane is vaporized within the permeable layer and is allowed to vent out of the permeable layer so that no build up of cryogenic fluid or its vapor takes place in the permeable layer.

3,411,657

### REFRIGERATOR CABINET CONSTRUCTION

William P. Gobeille, Farmington, Mich., assignor, by mesne assignments, to Kelvinator, Inc., Cleveland, Ohio, a corporation of Delaware  
Filed Oct. 10, 1966, Ser. No. 585,477  
2 Claims. (Cl. 220-9)



A refrigerator cabinet construction for containing the plastic insulation during the foaming process from seepage through the interconnection of the terminable ends of the

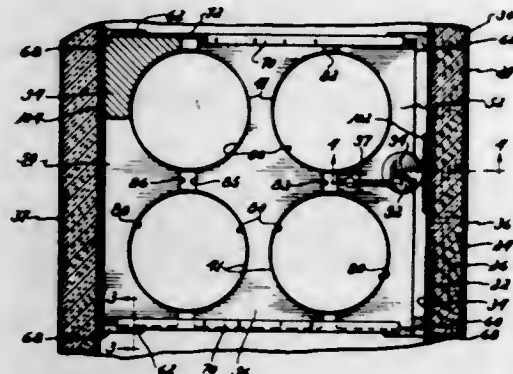


inner and outer shells by assembling therewith a resilient sealing member extending therealong and having ribs biased therebetween for a fluid tight seal connection.

3,411,658

**CONTAINER CLAMPING ASSEMBLY**

Richard H. Swanson, Manitowoc, Wis., assignor, by mesne assignments, to Kelvinator, Inc., Cleveland, Ohio, a corporation of Delaware  
Filed Apr. 13, 1967, Ser. No. 630,652  
8 Claims. (Cl. 220—15)

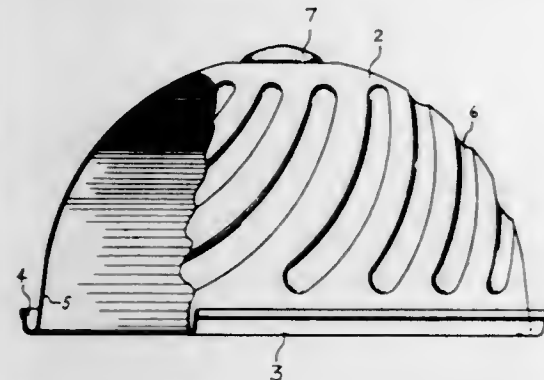


A clamping assembly holding containers adjacent an access opening of a compartment and comprising co-extending planar bodies each being recessed in complement to the recess of an adjacent body to form spaced apart reception areas each to receive a respective container. The clamping is effected by wedging the bodies together between the compartment walls in its planar arrangement and clamping the containers thereby.

3,411,659

**GARBAGE CAN COVER**

Arthur Seifert, P.O. Box 41, Sound View Station, New York, N.Y. 10472  
Filed Oct. 2, 1967, Ser. No. 672,198  
7 Claims. (Cl. 220—24)



The cover of this invention is a plastic dome-shaped cover having a tapered lower edge or rim and provided with a handle capable of being gripped in any direction.

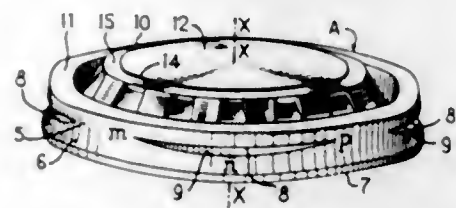
3,411,660

**CONTAINER COVER AND METHOD OF APPLICATION**

Bernard Nicolas Lafarge, Bellevue-Meudon, France, assignor to Societe Centrale des Emballages Aluminium "Cebal," Paris, France  
Filed Sept. 15, 1966, Ser. No. 579,625  
Claims priority, application France, Sept. 21, 1965, 32,066  
16 Claims. (Cl. 220—46)

A container cover for sealing the open mouth of a container comprising an outer rim forming a side wall, a top wall integral with the outer rim, an inner wall extending downwardly from the top wall and a central frusto-

conically shaped portion. The combination of the side wall and inner wall provides a groove, and a displaceable sealing compound is located within the groove. When the cover is put into place, the top rim of the container is re-

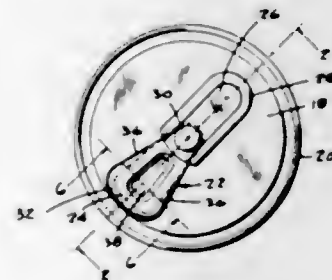


ceived within the groove, and the central frusto-conical portion is then pressed downwardly to press the sealing compound into sealing engagement with the adjacent wall of the container.

3,411,661

**CONTAINER WITH OPENABLE SEGMENT**

Walter M. Perry, 76 Locust Hill Road, Darien, Conn. 06820  
Filed Oct. 23, 1965, Ser. No. 502,904  
14 Claims. (Cl. 220—54)

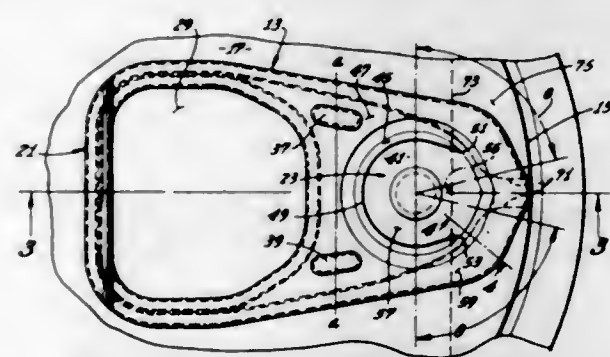


A can, typically for a beverage, has an end, usually aluminum, with an easily openable segment defined by a score line. A lift tab is connected to one end of the segment. The other end of the segment has a reverse fold which overlies the scored surface and which projects beyond the score line, as an extension which provides a lifting leverage to facilitate the last part of the opening operation. The sides of the segment may have the reverse fold to stiffen the segment, or stiffening ribs may be provided. The parts may be so designed that there is a bias or twist during the opening operation in order to further reduce the force needed to open the can.

3,411,662

**REINFORCED TAB**

Francis M. Silver, Dayton, Ohio, assignor, by mesne assignments, to Eral C. Frazee, Dayton, Ohio  
Filed Mar. 27, 1967, Ser. No. 625,993  
16 Claims. (Cl. 220—54)



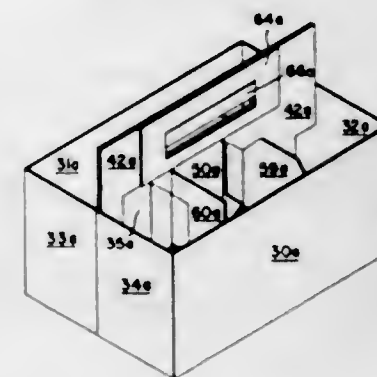
This disclosure describes a reinforced tab of the type which is particularly adapted for use on an easy-opening container. The specific embodiment described herein includes a handle portion at one end, an attachment portion at the other end having a bottom wall with an aperture therethrough, and a sloping wall surrounding the bottom

wall and extending upwardly therefrom radially outwardly of the aperture. A U-shaped lance is formed in the bottom wall and partially surrounds the aperture. Marginal portions of the tab are turned inwardly to form a bead that extends substantially completely around the tab. The bead is widened adjacent the attachment portion so that it is engageable with the sloping wall of the attachment portion to support the latter.

3,411,663

**BASKET STYLE CARRIER AND METHOD FOR FORMING SAME**

Norman H. Moore, Palo Alto, Ernest C. Pellaton, Larkspur, and Thomas W. Foster, Palo Alto, Calif., assignors to Fibreboard Paper Products Corporation, San Francisco, Calif., a corporation of Delaware  
Filed May 19, 1966, Ser. No. 551,263  
36 Claims. (Cl. 220—115)



A one piece blank is formed into a basket style carrier by having the integrally connected major panels thereof folded at least three times along a common line and secured together. The completed carrier comprises vertically disposed and parallel side panels connected together by end panels and a centrally disposed partition having a handle portion formed thereon. Dividers for the retained articles may be formed integrally with the carrier or may comprise a separate member.

3,411,664

**ARTICLE DISPENSING DEVICE WITH CELLULAR MAGAZINE AND EJECTING MEANS**

Ralph R. Davis, Rte. 4, Canton, Ga. 30114  
Filed Jan. 6, 1967, Ser. No. 607,809  
3 Claims. (Cl. 221—88)



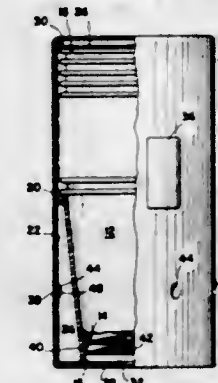
An article dispensing device including a magazine with a plurality of slots for horizontally supporting articles in vertically spaced apart relationship, a plurality of pivotal ejectors associated with the slots, a movable cam for successively pivoting each ejector to thrust the articles from

the slots, and a ratchet-type advancing mechanism for incrementally advancing the cam from one ejector to another.

3,411,665

**DISPOSABLE CONTAINER, CONTAINER PACKAGE AND DISPENSING STRUCTURE**

Milton Blum, New York, N.Y., assignor to Ultra Custom Pak, Inc., New York, N.Y., a corporation of New York  
Filed May 6, 1966, Ser. No. 548,170  
1 Claim. (Cl. 221—282)

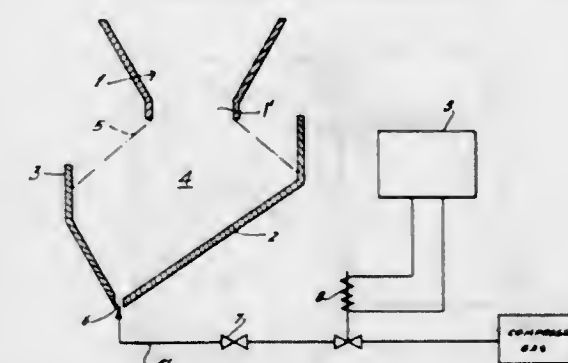


Container dispensing structure comprising a stack of frusto-conical cup-like containers, each of said containers comprising a closed bottom portion and wall means extending generally upwardly and outwardly thereof, each of the containers being nested with an adjacent container of the stack with the bottom portion thereof being spaced apart to define a chamber therebetween; a quantity of soluble material disposed within each chamber, the wall means of each container being in closely overlying relationship with the wall means of the adjacent container to retain the quantities of material within the chambers; and means for retaining the containers in stacked relationship with the wall means in such closely overlying relationship and for enabling sequential removal of the containers and the associated quantity of soluble material from the stack.

3,411,666

**METHOD AND APPARATUS FOR SUCCESSIVELY METERING IDENTICAL QUANTITIES OF PARTICULATE MATERIAL**

Gerhard Schmeling, Cologne-Dellbrück, Germany, assignor to Bergwerksverband GmbH, Essen, Germany  
Filed June 8, 1966, Ser. No. 556,136  
Claims priority, application Germany, June 9, 1965, B 82,320  
11 Claims. (Cl. 222—1)



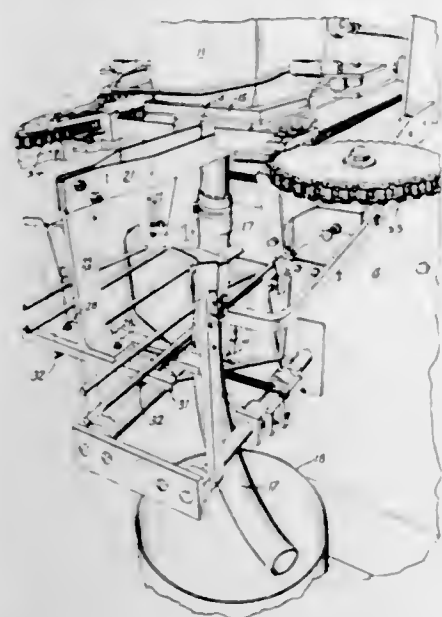
An apparatus for successively metering identical quantities of particulate material includes a container having an upper open end and an edge portion which at least partly defines this open end. Feed means is arranged for feeding particulate material through the open end into the container so that the material will substantially fill the same and form in an upper portion of the container a cone having a cone angle coincident with the natural angle of repose of the material. Fluidizing means is asso-



ciated with the container for temporarily fluidizing the material therein so that a predetermined quantity of the material will flow, while the material is in fluidized state, over the edge portion out of the container.

### 3,411,667 METHOD OF AND DEVICE FOR FILLING ICE CREAM AND THE LIKE INTO PACKAGING RECEPTACLES

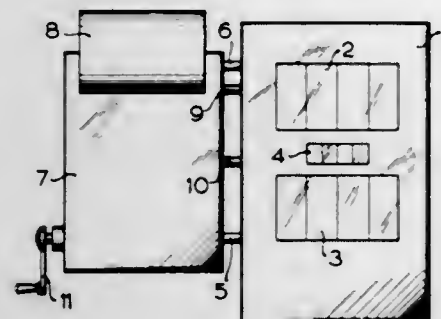
Frank M. Lefief, Palo Alto, Calif., assignor to Kliklok Corporation, New York, N.Y., a corporation of Delaware  
Filed Jan. 23, 1967, Ser. No. 610,995  
5 Claims. (Cl. 222—1)



In the filling of ice cream cartons through a conventional filler nozzle the present improvement provides, at the beginning of a filling operation, for a restriction, at the nozzle, of the flow therefrom for a period sufficient to cool the nozzle and its supply duct. The restricted outflow by-passes cartons. The nozzle restriction is removed, and carton filling commences, when the nozzle and duct are sufficiently cooled.

### 3,411,668 PRINTING ARRANGEMENT FOR FLUID DISPENSING APPARATUS

Manfred Bottling, Villingen, Germany, assignor to Kienzle Apparate GmbH, Villingen, Black Forest, Germany  
Filed Oct. 24, 1967, Ser. No. 677,524  
Claims priority, application Germany, Oct. 25, 1966, K 60,552  
10 Claims. (Cl. 222—30)

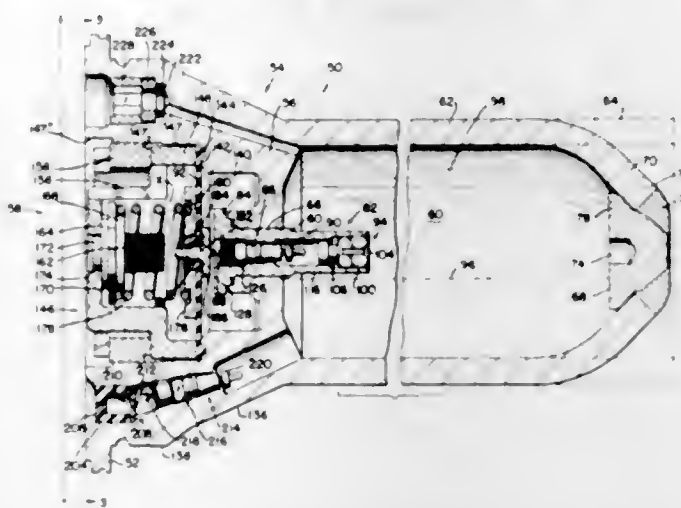


A printer for printing and discharging receipts of the amount paid for gasoline at a tank station has printing registers connected with the price calculating register and fluid volume register by couplings which are disengaged before the printing and during clearing of the printing registers. A switch actuating lever controlling the switch of the pump motor is inoperative when the discharge nozzle rests on the tank column, assumes a position of readiness when the nozzle is removed from its rest, and

moves to an operative position closing the switch and starting the pump motor when the clearing of the printing register is completed. Foolproof locking devices prevent a wrong sequence of operation due to improper handling of the discharge nozzle.

### 3,411,669 BEVERAGE DISPENSER REGULATION AND THE LIKE

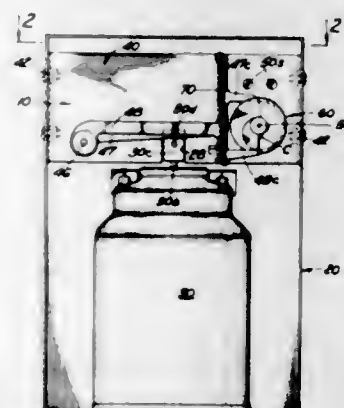
Louis M. Puster, Knoxville, Tenn., assignor, by mesne assignments, to Reynolds Metals Company, Henrico County, Va., a corporation of Delaware  
Continuation-in-part of applications Ser. No. 481,656, Aug. 23, 1965, and Ser. No. 551,126, May 26, 1966. This application Sept. 8, 1966, Ser. No. 578,947  
23 Claims. (Cl. 222—61)



This application discloses a beverage dispenser having a high pressure gas container supported at one end. The gas container has a massive end wall with a homogeneous extruded high pressure liquefied cylindrical gas chamber which has its free end curling inwardly to form a reduced size free end which receives a sealing plug. The massive end wall has a gas expansion valve with a gas inlet extending toward the high pressure gas chamber and an expanded discharge outlet discharging into a reduced pressure chamber in said massive end wall. An expanded gas check valve is provided in the side of the massive end wall. The gas container is made from an aluminum slug and is formed by cold extrusion and by machining operations into a massive body having an intermediate wall with an expanded gas side in one direction and with a high pressure liquefied side in the opposite direction.

### 3,411,670 AUTOMATIC DISPENSER FOR PRESSURIZED LIQUID

John J. Mangel, Riverside, Calif., assignor to Edward L. Brown, Riverside, Calif.  
Filed Sept. 11, 1967, Ser. No. 666,856  
4 Claims. (Cl. 222—70)

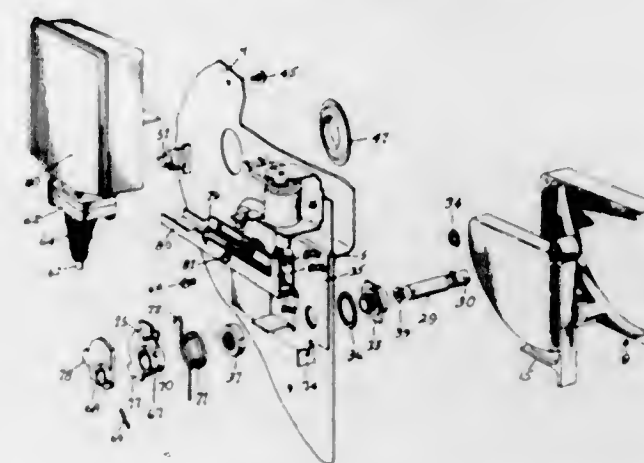


An automatic dispenser for periodically depressing the valve stem of a pressurized aerosol container, comprising

clockwork mechanism driving a cam which acts against upper and lower cam followers to move the same in opposite directions. A tension spring has its ends connected to the two cam followers, so that it is stretched as the followers are spread apart. The upper cam follower engages the end of the valve stem, and is released first by the cam and is pulled downwardly by the tension of the stretched spring, to depress the stem. The lower follower is then released by the cam, relaxing the spring so that the valve stem can return to its normal position.

### 3,411,671 DISPENSING MECHANISM FOR A LIQUID AND A POWDER

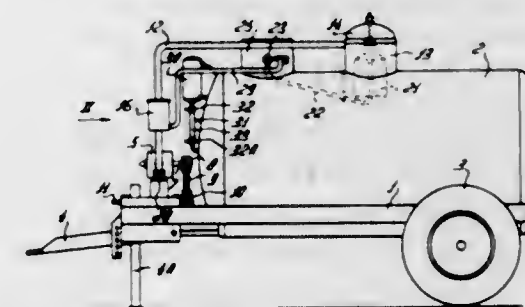
William F. Harvey and Thomas W. Duncan, Fayette County, Ind., assignors to Design and Manufacturing Corporation, Connersville, Ind., a corporation of Indiana  
Filed Sept. 13, 1967, Ser. No. 667,498  
9 Claims. (Cl. 222—70)



A dispensing mechanism for appliances such as clothes and dishwashing machines comprising a cam operated dispenser unit for powdered or granulated materials and a plunger operated dispenser unit for metered amounts of liquid materials. Pivotal arm means extend between the liquid dispenser unit plunger and the powder dispenser unit cam. A single solenoid actuates the arm means to bring about a simultaneous dispensing action by both the liquid and the powder dispensing units.

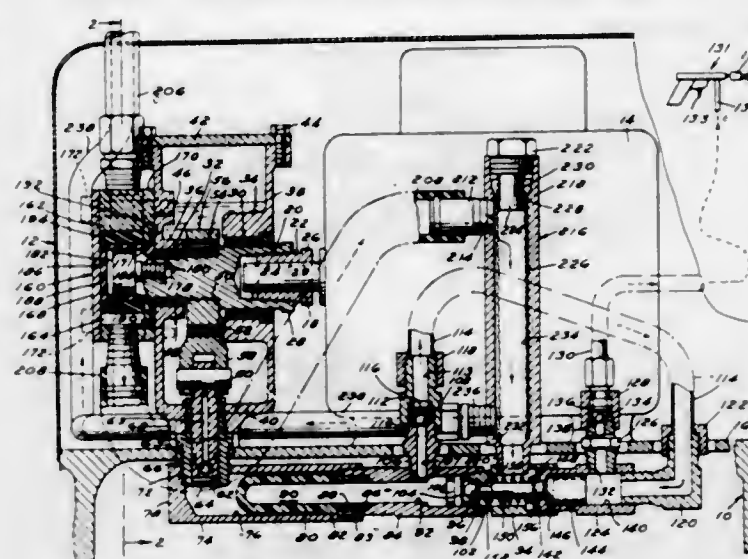
### 3,411,672 DEVICES FOR SPREADING LIQUID SUBSTANCES SUCH AS MANURE

Ary van der Lely, 10 Weverskade, Maasland, Netherlands, and Cornelis J. G. Bom, 36 Esdoornlaan, Rozenburg, Netherlands  
Filed Jan. 13, 1967, Ser. No. 609,219  
Claims priority, application Netherlands, Feb. 7, 1966, 6601507  
13 Claims. (Cl. 222—136)



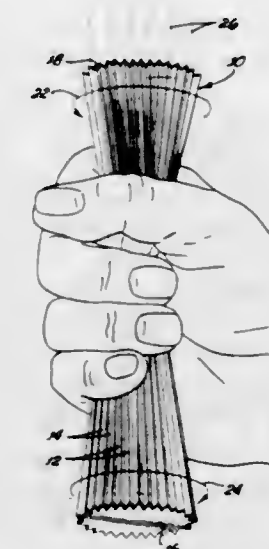
This device is a liquid fertilizer spreader in which a suction-pressure pump evacuates or pressurizes the supply vessel to draw in or force out the liquid. A float in the vessel automatically discontinues suction by opening the suction duct to the atmosphere when a predetermined level in the vessel is reached.

### 3,411,673 LIQUID SPRAYING APPARATUS Carl Mann, 1228 Yorkshire, Grosse Pointe Park, Mich. 48230 Filed Nov. 16, 1966, Ser. No. 594,843 19 Claims. (Cl. 222—189)



Improved high pressure airless liquid spraying apparatus incorporating several features including a diaphragm operated plunger which senses output line pressure to unload the high pressure pump in response to a predetermined increase in downstream pressure as when the trigger of the spray gun is released to halt spraying. A high volume, low pressure supply pump is also provided which includes a flexible hat-shaped seal which envelopes the impeller of the pump and isolates the same from the abrasive materials such as paint being pumped to the input side of the high pressure pump. The low pressure side of the system also includes a self-cleaning filter. Modifications of the pump unloader are also disclosed which operate as an adjustable pressure regulator. Further details of these and other features will be found in the description.

### 3,411,674 DEFORMABLE PLASTIC DISPENSER Jerome Gould, Encino, Calif., assignor to Design Properties, Inc., Los Angeles, Calif., a corporation of California Continuation of application Ser. No. 457,347, May 20, 1965. This application Mar. 1, 1967, Ser. No. 619,871 8 Claims. (Cl. 222—215)

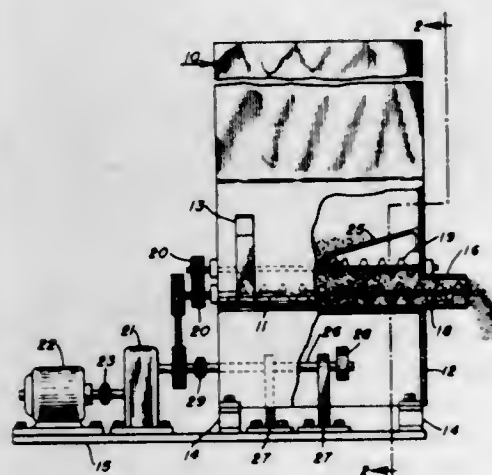


This invention relates to a seasoning dispenser which is formed from a pair of oppositely disposed rigid ends and a corrugated body between the ends. Holes are provided



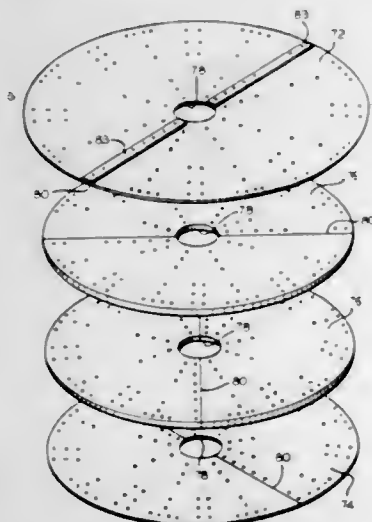
in one of the ends to dispense the seasoning. The dispenser is operated by pressing the corrugated portion. This causes the body portion to become collapsed on the corrugations and the opposite end portions to become rotated in opposite directions without deforming the end portions and without changing the distance between the end portions.

**3,411,675**  
**POWDER FEEDING APPARATUS**  
Eugene A. Wahl, 294 Forest Ave.,  
Glen Ridge, N.J. 07028  
Filed June 23, 1966, Ser. No. 559,813  
5 Claims. (Cl. 222-238)



Apparatus for discharging particulate material at a constant rate. A pair of vertically-spaced augers are disposed at the bottom of a supply hopper and simultaneously rotatable to move the material in opposite directions. The lower auger moves the material directly from the hopper to a discharge opening and the upper auger moves excess material away from the discharge opening, thereby to maintain a constant head load on the material as it passes to the opening. A baffle member is positioned to prevent direct flow of the material from the hopper to the upper auger.

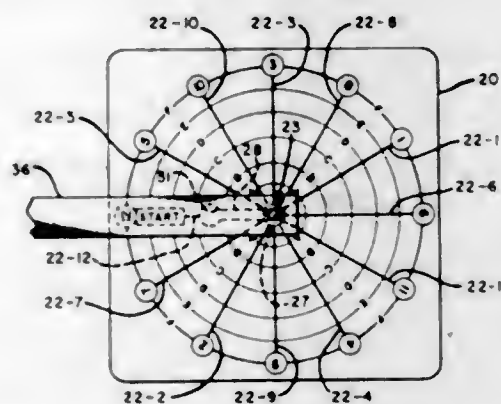
**3,411,676**  
**LOAD TRANSFER DEVICE**  
Anthony R. Biedess, Chicago, Ill., assignor to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed July 19, 1967, Ser. No. 654,620  
9 Claims. (Cl. 222-410)



A high capacity load transfer device having a turntable assembly adapted to accept large surge loads of material from a batch carrier and to feed the material onto continuous carry away means at a generally uniform reduced rate. The turntable assembly, being of large diameter, is

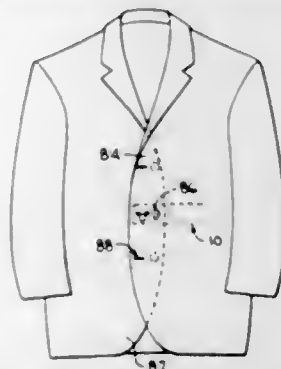
designed for maximum strength and minimum weight with a knock-down construction to facilitate transporting the device.

**3,411,677**  
**APPARATUS FOR MAKING ORNAMENTAL BOWS**  
Clarence T. Bickner, 957 Manor Road,  
El Sobrante, Calif. 94803  
Continuation-in-part of application Ser. No. 396,923,  
Sept. 16, 1964. This application Oct. 21, 1965, Ser.  
No. 505,589  
2 Claims. (Cl. 223-46)



Apparatus for making ornamental bows from tape or ribbon, such apparatus being in the form of a flat base formed with means to detachably secure a bow pin with its spike projecting upwardly and permitting removal of the bow pin when a bow has been formed, such base being also formed with concentric guide circles and/or radial guide lines centered on or radiating from such attachment means, such guide means serving as an aid in making bows.

**3,411,678**  
**GARMENT FORM RETAINER**  
Frank Y. Sherbondy, P.O. Box 10236,  
San Antonio, Tex. 78210  
Filed Aug. 28, 1967, Ser. No. 663,662  
9 Claims. (Cl. 223-71)

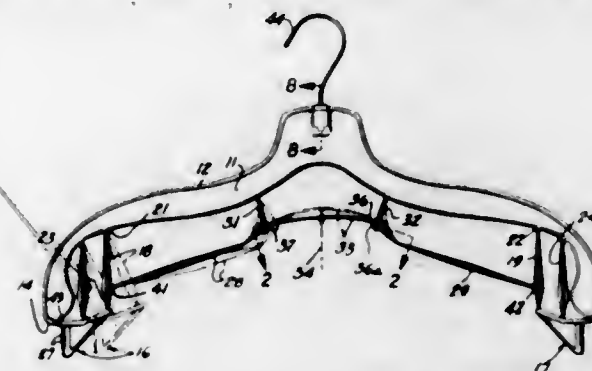


A form retainer for interconnecting the overlapping front panels of coat type garments which includes a tab portion insertable through a buttonhole in one front panel of the garment and a button retaining means for engaging a button on the other front panel thereof. The button retaining means is formed by a pair of closely spaced slit lines which set off between them a web which extends across the forward face of the button while the side edges of the button project through the slit lines.

**3,411,679**  
**GARMENT HANGER CONSTRUCTION**  
William B. Roos, 36 Portola Ave.,  
Daly City, Calif. 94015  
Filed Aug. 30, 1966, Ser. No. 576,083  
6 Claims. (Cl. 223-95)

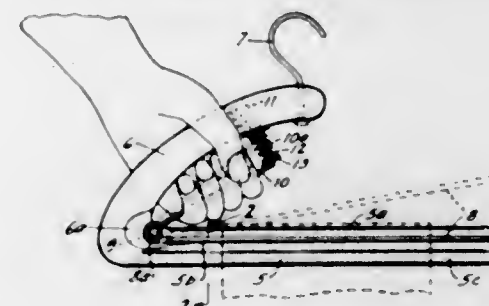
A garment hanger construction for supporting garments of a type having an end opening includes downwardly depending feet for engaging the inner margin of

the end opening. The downwardly depending feet move independently toward each other from elongated lever arms which are hinged to the frame. Connection is made to the lever arms and movement applied thereto in a manner



so as to amplify the amount of retraction obtainable from the slight upward movement of a yielding connection member. The yielding connection member absorbs and thereby interrupts any force applied at either of the two feet so that the other foot remains in place.

**3,411,680**  
**GARMENT HANGER**  
Lloyd A. Lundeen, 5232 York Ave. S.,  
Minneapolis, Minn. 55410  
Filed Sept. 9, 1966, Ser. No. 578,320  
4 Claims. (Cl. 223-96)



A hanger for folded garments, particularly trousers and skirts, which through its structure enables a user, with one hand, to grasp and support the hanger structure, and with the other hand smoothly slip a folded pair of trousers or skirt upon a horizontal garment-supporting bar. The hanger structure has an opening or throat at one side thereof to facilitate slipping the garment smoothly upon the supporting bar and requires no manipulation or affixation of a retaining device or end of the supporting bar. It is featured by a garment-clamping rod or bar which is urged against the support bar but smoothly engages the garment below the supporting edge with clamping effect to not only support the garment but to actually attach it below the upper supporting edge by a shear like action of the swingable garment-clamping bar against an appropriately inclined, longitudinal surface of the support bar.

**3,411,681**  
**STAND FOR THREAD BOBBINS, PARTICULARLY FOR SEWING MACHINES IN CLOTHING PRODUCING WORKSHOPS**

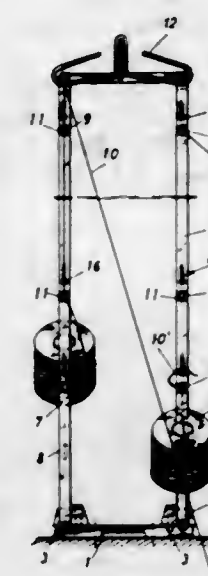
Bengt Alfred Bergman, Gnepvagen 9 50263, and Karl Rudolf Nordin, Hedvigsborgsgatan 25 50255, both of Boras, Sweden

Filed June 30, 1966, Ser. No. 561,834  
Claims priority, application Sweden, July 6, 1965, 8,885/65

7 Claims. (Cl. 225-38)

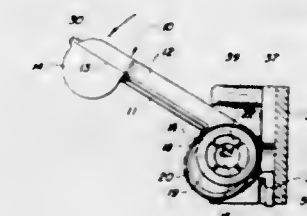
A thread bobbin stand having a stand attached on a base plate. The stand is a rectangular frame with two long and two short sides standing on one of its short sides. Holders for the thread bobbins are arranged on

one longitudinal side and thread passage openings are arranged in the opposite longitudinal side for guiding the thread running off a bobbin. The center axes of the thread bobbins are directed towards its associated thread guiding



opening and a thread clamping device is arranged adjacent each thread guiding opening. The thread clamping device on one hand serves for cutting off the thread and on the other hand for retaining the end of the thread cut off.

**3,411,682**  
**FIXTURE FOR BREAKING OPEN EXPENDABLE ROLL FILM CARTRIDGES**  
Norman R. Leader and Karl K. Kolva, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
Filed Nov. 3, 1966, Ser. No. 591,741  
5 Claims. (Cl. 225-93)



1. A fixture for breaking open a frangible film cartridge having a take-up spool rotatably mounted therein at one end thereof, said spool having a core whose opposite ends are accessible from the outside of the cartridge, and comprising,

a stationary support including a guideway open at one end to receive a film cartridge slid thereinto take-up spool end first and open at the side opposite the support so that a cartridge slid thereinto can be pivoted about the spool axis away from the support,

means movably mounted on said support adjacent said guideway and responsive to the insertion of a cartridge into said guideway for gripping the ends of the core of said take-up spool so that the free end of said cartridge can be pivoted about the axis of said spool and away from said support, and

at least one breaker point fixed to said support and extending into said guideway to engage and break said cartridge at a point adjacent said take-up spool during the first part of the pivotal movement of said cartridge about said spool axis and thereafter hold that part of the cartridge engaged thereby while the remaining part of the cartridge is pivoted away therefrom to break open that part of the cartridge

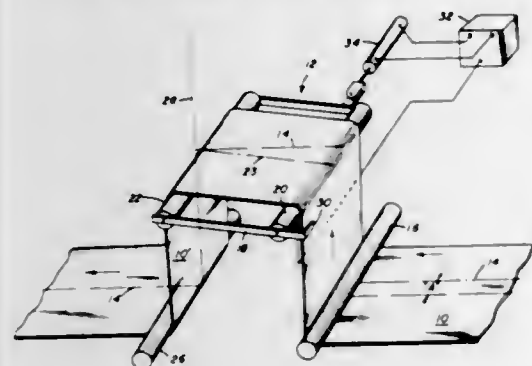


surrounding said spool sufficiently to allow removal of the cartridge from said spool while it remains captured by said core gripping means.

3,411,683

**WEB GUIDING APPARATUS**

Edward C. Bartles and William A. Torpey, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
Filed Aug. 8, 1966, Ser. No. 570,916  
9 Claims. (Cl. 226—21)

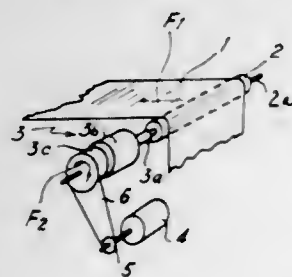


A tilt frame-type guiding apparatus to guide a traveling web without imposing unbalanced stresses on the web. The tilt frame is pivoted about an axis which is in the plane of and directionally aligned with the web leaving the guiding apparatus. An edge sensor is arranged to detect the edge of the web and to actuate a motor to pivot the tilt frame.

3,411,684

**PAYING OUT UNDER TENSION OF PRODUCTS IN SHEET FORM, PARTICULARLY PAPER SHEET**

Eric Tison, Paris, and Roger Blanchin, Stains, France, assignors to Societe anonyme dite: Seailles & Tison, Paris, France, a company of France  
Filed July 11, 1966, Ser. No. 564,259  
Claims priority, application France, July 12, 1965, 24,321  
6 Claims. (Cl. 226—25)



Improvements in paying-out under tension sheets in which there is a device for controlling the supply tension of a flexible continuous sheet traveling to a machine, such as a printing machine, including a guide assembly with at least one roll or roller disposed in the path of the sheet and driven by it, a torque transmitting device establishing a mechanical connection between the assembly motor which tends to drive the guide assembly with at least one roller in the opposite sense to that in which it is effectively driven by the sheet.

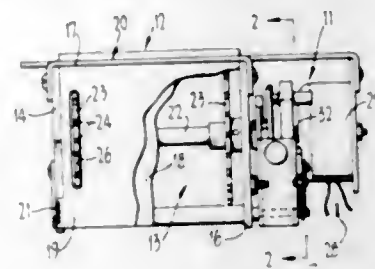
3,411,685

**INTERMITTENT ANGULAR STROKE DRIVING MECHANISM**

Mario De Gennaro, Castro Valley, Calif.  
(25029 O'Neil Ave., Hayward, Calif. 94544)  
Filed Apr. 4, 1967, Ser. No. 628,350  
13 Claims. (Cl. 226—76)

A mechanism for intermittently driving a rotary member through a predetermined angle. The mechanism is particularly useful in effecting angular feed strokes for intermittently advancing a continuous strip or web of

material through a predetermined distance. The mechanism includes a rotary solenoid which upon energization rotates a shaft through a predetermined angle and returns the shaft to its initial rest position. A rotary element mounted in eccentric relation to the shaft is locked in a

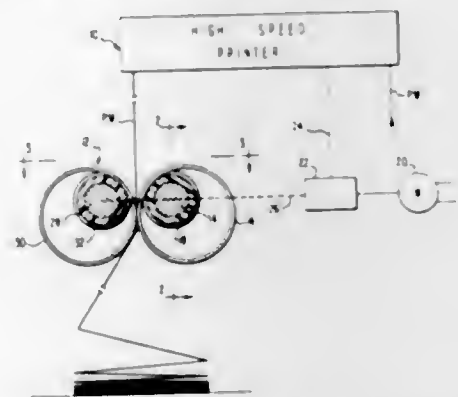


cogging position by a latch for engagement with an arm secured to the shaft when the shaft rotates through the predetermined angle. The latch at this time releases the rotary element which is rotated by the arm through an angle greater than the predetermined angle during the return stroke of the shaft to its rest position.

3,411,686

**PAPER PULLER**

Harold W. Bender, Beverly, Mass., assignor, by mesne assignments, to Mohawk Data Sciences Corporation, East Herkimer, N.Y., a corporation of New York  
Filed May 25, 1966, Ser. No. 552,967  
4 Claims. (Cl. 226—185)

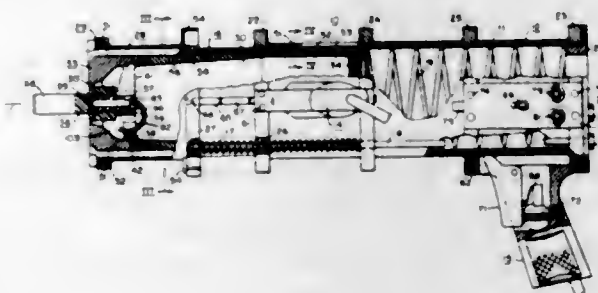


A paper puller which applies a controlled frictional force to pull a paper web emerging from a high speed printer includes a plurality of rings hanging loosely from parallel drive shafts of much smaller diameter than the inside diameter of the rings. The drive shafts are positioned such that loosely hanging rings on each shaft contact and apply a small force to opposite sides of the web. The shafts are driven at a speed so that the rings' outside periphery travels faster than the paper.

3,411,687

**EXPLOSIVE TUBE WELDING TOOL**

George R. Riley, Grove City, and Robert H. Wittman and Ronald L. Legue, Columbus, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Mar. 7, 1967, Ser. No. 621,323  
14 Claims. (Cl. 228—3)



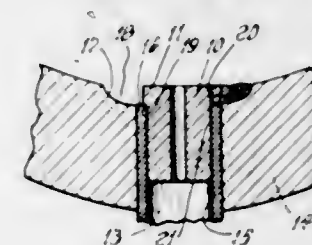
A manually held explosive welding tool includes a cylinder slidably mounted on a piston sleeve contain-

ing a hollow piston. Reaction force springs are preloaded by the operator upon moving the cylinder to compress the springs before the explosive charge can be fired. The piston head is biased against the surface of a workpiece by a recoil spring. The explosion gases expand into the hollow piston which is driven to compress the recoil spring, thereby absorbing the recoil energy.

3,411,688

**WELDING CORE FOR TUBES**

Julius C. Ritter, Lexington, Mass., assignor to the United States of America as represented by the Secretary of the Navy  
Filed Jan. 20, 1967, Ser. No. 610,693  
3 Claims. (Cl. 228—50)

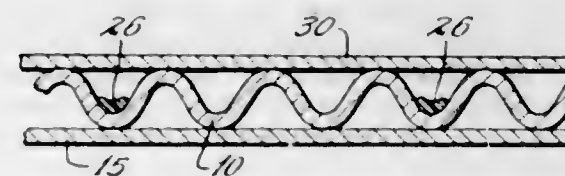


A ceramic ferrule or core is used in the welding of tubes. The core is fabricated of a magnesium aluminum silicate ceramic also termed "industrial stoneware" in the form of a hollow cylinder having an outwardly extending flange at one end thereof. The tube to be welded to a header or other structure is placed into a hole therein with the walls defining the opening abutting the outer surface of the tube and with the end of the tube being slightly below the header surface. The header hole is somewhat enlarged so as to form a recess about the end of the tube. With the ferrule inserted into the tube and said flange disposed in the recess, the welding operation is accomplished in a defined sequence. The flange of the core is destroyed in the welding operation and the resulting opening at the juncture of the tube and header requires only a minimum of tooling. Thereafter the ceramic core is broken away and removed leaving an extremely good weldment. The specific composition of the core is completely defined.

3,411,689

**REINFORCED CORRUGATED PAPERBOARD AND PRODUCT**

John C. Brackett, St. Paul, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota  
Filed Oct. 24, 1965, Ser. No. 504,575  
3 Claims. (Cl. 229—3.5)



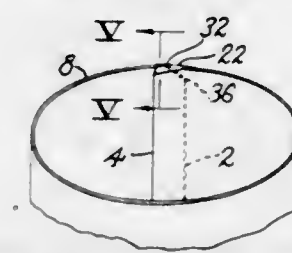
This invention relates to a means of reinforcing corrugated paperboard, and the product produced thereby. Single face corrugated paperboard is formed, and then elongated strips of thermoplastic material are dropped into the valleys formed between the corrugations of spaced intervals. The second liner is adhered to the corrugated medium to enclose the strips. The double face corrugated board is heated to dry the adhesive and render the reinforcing strips tacky to adhere to the corrugated medium. The corrugated paperboard may then be creased transversely of the flutes while the thermoplastic material is soft, and made into container blanks.

856 O.G.—28

3,411,690

**CONTAINER BODIES**

John E. Walsh and Frederick S. Sillars, Beverly, Mass., assignors to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey  
Filed July 29, 1966, Ser. No. 568,507  
4 Claims. (Cl. 229—4.5)

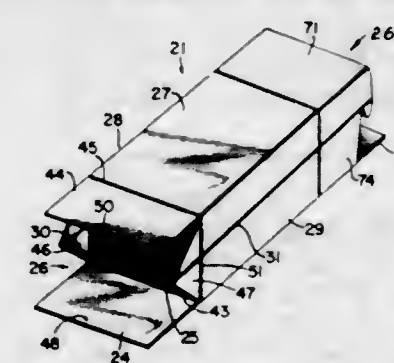


A container body comprising a tube of sheet material with opposite marginal portions of the sheet forming a side seam including an end lap in which opposite marginal portions are in overlapping relationship. The outer overlapping marginal portion of the end lap is notched to provide a tapered end portion and the inner overlapping marginal portion of the end lap is deflected outwardly to engage said outer marginal portion to establish a predetermined spacing between the end lap marginal portions and to facilitate flanging the end of the container.

3,411,691

**LINED, COLLAPSIBLE CONTAINER STRUCTURE WITH AUTOMATICALLY ACTUATED END CLOSURE MEANS**

William C. Whitaker, Chesterfield County, and Edward H. Kane, Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware  
Filed May 31, 1966, Ser. No. 553,842  
7 Claims. (Cl. 229—14)



This disclosure relates to a fluid-tight container means which is readily collapsible for storage and handling and expandable for use and comprises an outer structural carton and an inner sleeve liner which has a pair of opposed walls fastened against associated walls of the carton. One end of the sleeve liner is fin-sealed closed and bonded to the terminal inner end surface of a comparatively long closure flap of the carton. A short extension flap provided in a wall of the carton arranged opposite the closure flap, upon being folded inwardly, automatically starts the inward folding action of the closure flap to enable easy assembly of the container means and conceal and protect the inner sleeve liner beneath such closure flap.

3,411,692

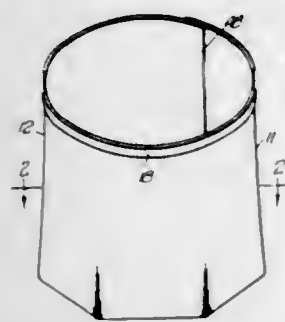
**CONTAINER**

Edward Gilbert Mathews, Guilford, Conn., assignor to Federal Paper Board Company, Inc., Bogota, N.J., a corporation of New York  
Filed Nov. 8, 1965, Ser. No. 506,769  
6 Claims. (Cl. 229—21)

A collapsible container formed from a cut and scored blank of paperboard or similar foldable sheet material which is characterized by a tubular body, when set up,



having an open top with a circular cross section and a bottom wall structure which comprises panels integrally

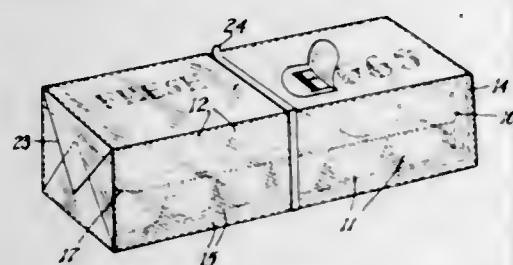


hinged along straight lines to the bottom edge of the body and automatically foldable inwardly between the body side walls when the latter are collapsed.

### 3,411,693 CONTAINER

Eugene E. Macchi, Ho-Ho-Kus, N.J., assignor to Continental Packaging Corp., Kenilworth, N.J., a corporation of New Jersey

Filed Feb. 15, 1967, Ser. No. 616,210  
5 Claims. (Cl. 229-29)

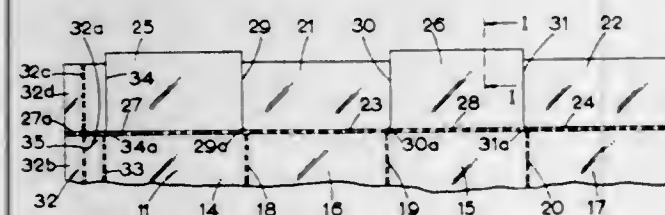


A container the interior of which may be viewed from opposite sides throughout the length of the container, but with the contents of the container adequately protected from breakage, said container including a tray retained from inadvertent displacement from either open side of the strap-like carton which longitudinally enwraps the tray.

### 3,411,694 CARTONS FOR MOISTURE AND GAS BARRIER PACKAGING

Stanley Milton Silver, 10 Blenheim St.,  
London W. 1, England

Filed June 6, 1967, Ser. No. 644,763  
Claims priority, application Great Britain, June 7, 1966,  
25,288/66  
22 Claims. (Cl. 229-37)



This invention relates to blanks and cartons for moisture and gas barrier packaging, and to a method of securing a barrier membrane as a means of positively sealing the ends and side seams of a tubular carton.

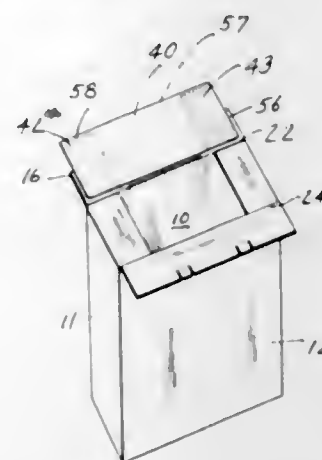
### 3,411,695 BOX CLOSURE WITH FLEXIBLE INSERT

William J. Cupo, 935 N. Wood Ave.,  
Linden, N.J. 07036

Filed July 17, 1967, Ser. No. 653,978  
7 Claims. (Cl. 229-37)

The disclosure of the present application is directed to a carton having an improved seal in its end closure. The carton is of the type having four serially connected rectangular panels and four flaps at the end of the carton

with each flap being hinged to a panel. Such cartons normally have two of such flaps oppositely positioned bent inwardly, and the remaining two flaps oppositely positioned bent inwardly over the first two flaps. In accordance with the present invention a flexible sheet insert is positioned above the first flaps and below the last two

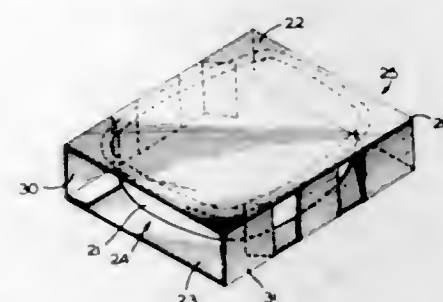


mentioned flaps thereby to improve the seal. In this way the last mentioned (outer) flaps may be shorter and need not overlap. By reason of the presence of the flexible sheet insert, a tight closure is obtained with significantly shorter end flaps, thereby realizing a significant saving in the cost of the carton board material.

### 3,411,696 CARTON AND BLANKS FOR MAKING SAME

Ronald M. Ayer, Indianapolis, Ind., and Melville T. Farquhar, Bon Air, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Oct. 11, 1966, Ser. No. 585,931  
8 Claims. (Cl. 229-40)



This disclosure relates to a substantially tubular carton for supporting dish-like container means having peripheral flange means within such carton. The carton has a pair of vertical side wall means arranged in parallel spaced apart relation and has foldable flap means provided in each side wall means and adapted to be folded inwardly within the carton so that the top edges of such flap means are arranged essentially horizontally and support the dish-like container means in suspended relation with the peripheral flange means resting on the horizontally extending top edges.

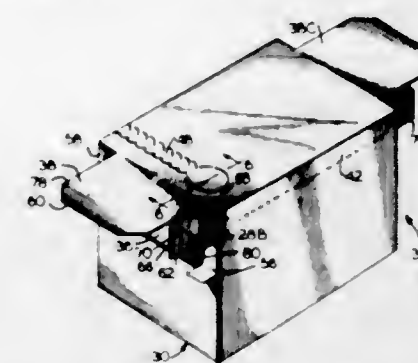
### 3,411,697 RECLOSABLE CARTON FOR QUICK COOLING BEVERAGES

Ross T. Hightower, Decatur, Ga., and Grant V. Mack, Makati, Rizal, Philippines, assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Jan. 28, 1965, Ser. No. 428,736  
9 Claims. (Cl. 229-51)

This disclosure relates to a carton construction which in its normally sealed closed condition has spaced apart means in the wall means thereof that can be moved to an open position without destroying the container to provide

an air flow path through such container for cooling the product means therein, the container having means for positively closing such openable portions by moving the same to their closed positions to prevent ventilation or circulation through such container, one such reclosing means

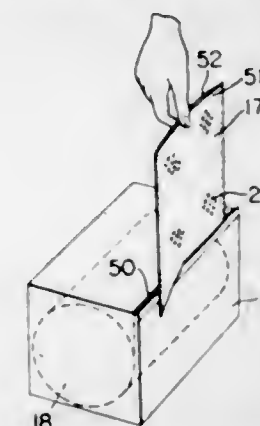


comprising the product means itself being disposed against the openable portions to hold the same in their closed positions and another reclosing means being interlocking portions on the openable portions and the remainder of the wall means.

### 3,411,698 BAG-LIKE CONTAINER MEANS

William G. Reynolds, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Sept. 9, 1966, Ser. No. 578,294  
9 Claims. (Cl. 229-53)



This disclosure relates to a pouch construction made of metallic foil and made from elongated substantially flattened tubular wall means having a plurality of integral projection means extending outwardly therefrom wherein the projection means hold surface means of the wall means which comprise the projection means spaced apart from oppositely arranged surface means of the flattened tubular wall means to reduce the interface friction between the surface means and enable easy sliding movement therebetween to enable easy grasping and expanding of the flattened wall means to form such pouch construction.

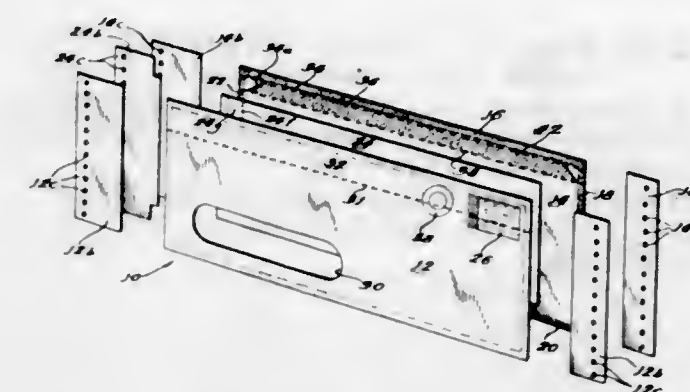
### 3,411,699 MULTIPLE USE ENVELOPE ASSEMBLY

Robert M. Pine, Des Plaines, and Donald H. Koepke, Elgin, Ill., assignors to Uarco Incorporated, a corporation of Illinois

Filed June 24, 1966, Ser. No. 560,144  
13 Claims. (Cl. 229-69)

A continuous form envelope assembly of the type having front and back continuous plies and at least one intermediate ply, the front and back plies being secured in marginal areas and secured together along transverse lines adjacent transverse separation lines of weakening to define individual envelope units with individual envelope pockets having insert material in each pocket, the insert material being extractable following opening of the envelope, characterized in that one of the exterior plies

is provided with an access line of weakening which divides the ply into a removable portion and a reusable portion, the removable portion being releasably associated with the remainder of the envelope to create an

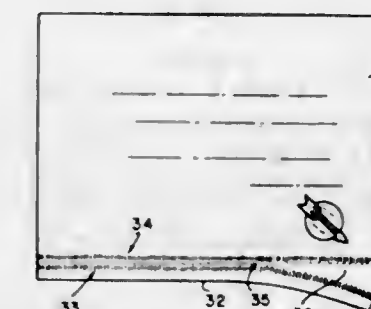


opening for gaining access to the envelope pocket and extracting the insert material therefrom, and also to create a re-enclosing flap on the other ply which may be folded over to cover the opening for reuse of the envelope.

### 3,411,700 READILY OPENABLE ENVELOPE HAVING AN INTEGRALLY FORMED TEAR STRIP

Joseph Mela, 27 Ave. de la Victoire 06, Nice, France

Filed Aug. 28, 1967, Ser. No. 663,655  
Claims priority, application France, Sept. 9, 1966,  
75,843; July 20, 1967, 114,987  
6 Claims. (Cl. 229-85)



This invention is the integral formation in an envelope of a tear strip by means of which the envelope may be readily opened. The term "envelope" not only includes envelopes for letters and other papers, but also bags, generally small bags, sachets, etc. which are made of tearable material and which are generally sealable or sealed to hold their contents until they are to be opened. The tear strip is integrally formed by embossing one or more rows of small bars, or elongated pimples, somewhat adjacent one elongate edge of the envelope, and preferably stopping the row short of one or both ends of the envelope. The bars may be embossed from either or both faces of the envelope, and, when from both faces, the embossed bars will alternate, and preferably be contiguous. In another form, two rows of embossed bars may have their confronting ends offset and interengaging. In other forms, two parallel rows, slightly spaced apart are provided, and in another form, a row of perforations is provided parallel to and between the two rows. The embossed bars may extend at right angles to the row, or may extend parallel to each other but at an acute angle to the row or rows. In the single row form, the tear line develops between the ends of the bars. In the two row forms, the tear line develops between the two rows, and if a row of perforations is present therebetween, then the tear line develops along the row of perforations. Further, the row of embossed bars serves to hold the front and back sides of the envelope locked

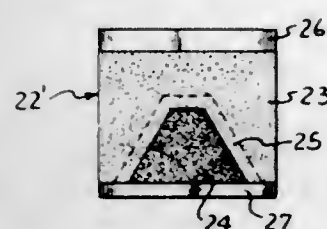


together so that the contents, such as a letter or pieces of paper, cannot extend between the front and back of the envelope, and thus cannot be accidentally torn when the envelope is opened.

### 3,411,701 END LABELS COATED WITH HEAT-SEALABLE ADHESIVES

Philip A. Nussbaumer and Charles James Johnson, Dallas, Tex., assignors to St. Regis Paper Company, New York, N.Y., a corporation of New York  
Continuation-in-part of application Ser. No. 339,237, Jan. 21, 1964. This application Jan. 30, 1967, Ser. No. 621,093

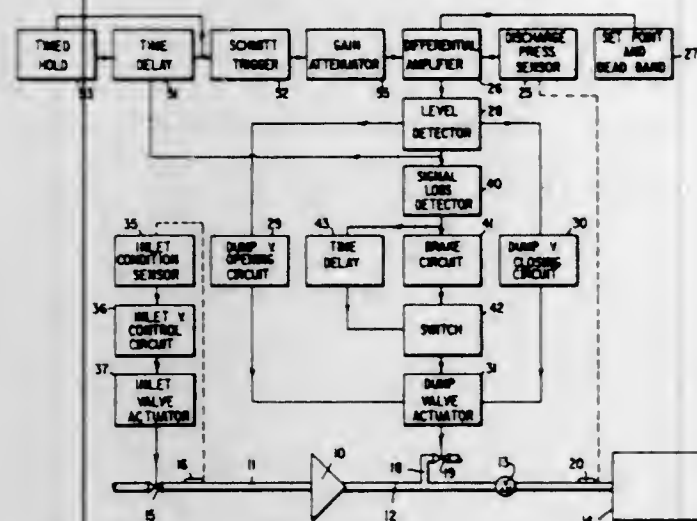
7 Claims. (Cl. 229—87)



Labels for sealing the overlapping end flaps of an over-wrapped package are coated with a film of a heat-sealable adhesive composition, which labels, when applied to the package adhere more tenaciously to the outermost flap than to the underlying flaps. In the area of the label that corresponds to the outermost flap, the film of the adhesive composition is heavier or thicker than on the other area, or the film has a different composition than the film in the other area.

### 3,411,702 CONTROLLING GAS COMPRESSION SYSTEMS

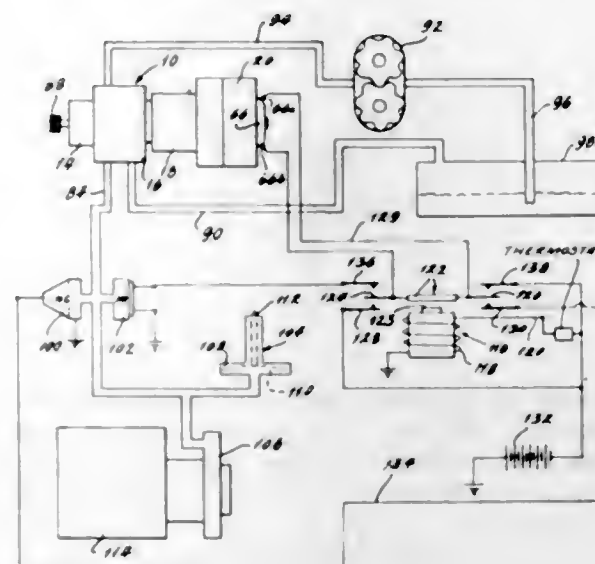
Melvin O. Metot, Canastota, and Henry P. C. Gregor, Syracuse, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware  
Filed Mar. 13, 1967, Ser. No. 622,545  
10 Claims. (Cl. 230—7)



A gas compression system having a control system for maintaining a constant discharge gas pressure. The control employs circuitry for positioning a discharge gas dump valve in a manner to maintain the required discharge gas pressure. A motor controlling the dump valve is continuously operated for large deviations from the set point gas pressure and is intermittently repositioned with a full voltage signal for smaller deviations from the set point pressure. The length of the control signal pulses to the motor may be reduced as a function of the closeness to the set point pressure in order to slow the average speed of the adjustment as the control point is reached.

### 3,411,703 CONTROL MEANS FOR ENGINE DRIVEN SYSTEMS AND THE LIKE

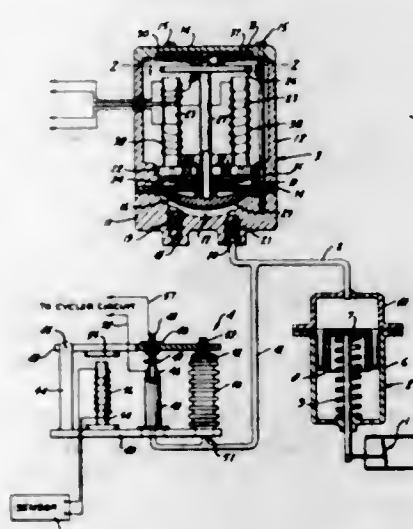
Wayne W. Zengel, Jefferson County, Mo. (88 Delores Drive, Fenton, Mo. 63024)  
Filed Dec. 23, 1966, Ser. No. 604,291  
15 Claims. (Cl. 230—15)



Means for controlling the engagement of engine driven systems such as engine driven air conditioning systems and the like including valve means for controlling communication between a source of engine pressure and the means for engaging the air conditioning system to the engine, said valve means being movable between two self-maintainable operating positions one of which establishes communication between the source of engine pressure and the system engine engaging means and the other preventing said communication and relieving pressure that may be present at the system engaging means, said valve means requiring small amounts of operating power only at times when moving between its operating positions.

### 3,411,704 PNEUMATIC CONTROLLER

Adolph J. Hilgert, Mequon, and James R. Bailey, Milwaukee, Wis., assignors to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin  
Filed Sept. 26, 1966, Ser. No. 581,815  
15 Claims. (Cl. 230—20)



An electromagnetically driven air compressor includes four pulsed driving coils on four equidistantly spaced cores to reciprocate an armature and diaphragm pump.

A signal coil is wound on one core to provide a continuously variable signal.

A leak port servo valve controls the exhaust of the compressor and the load operator. The terminal end of the valve nozzle is a resistance, the value of which is determined by the pressure engagement of the valve lid.

The compressor is controlled by the resistance and the signal from the signal coil.

### 3,411,705 REFRIGERATION COMPRESSOR

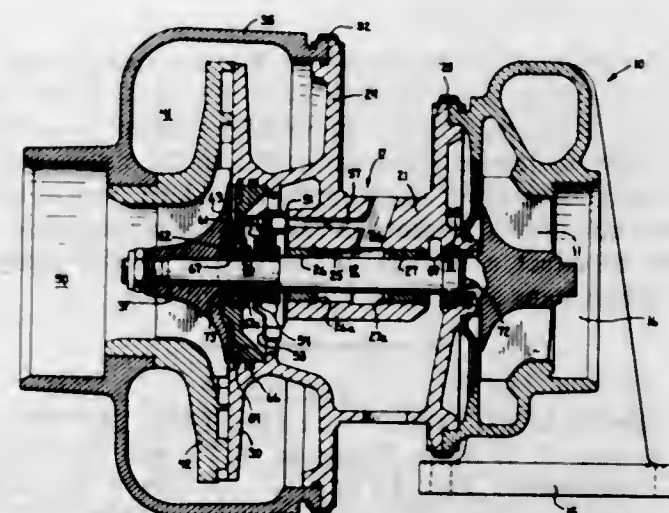
Elliott E. Grover, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Nov. 29, 1966, Ser. No. 597,675  
5 Claims. (Cl. 230—29)



Hermetic refrigeration compressor of the low-side type having Bourdon-tube valve means in the suction line leading from the suction space inside the hermetic compressor shell to the inlet of the compressor, the Bourdon-tube valve having a substantially closed position in the absence of compressor operation and being operatively connected to the intake of the compressor for operating the Bourdon-tube valve gradually from a closed to an open position upon startup of the compressor means for reducing the initial rate of pressure reduction in the suction space upon the startup of the compressor.

### 3,411,706 BEARING DURABILITY ENHANCEMENT DEVICE FOR TURBOCHARGER

William E. Woollenweber, Jr., Columbus, Kurt A. Beler, Morgantown, and Karl L. Kleimnighagen, Indianapolis, Ind., assignors to Wallace-Murray Corporation, New York, N.Y., a corporation of Delaware  
Filed Aug. 24, 1966, Ser. No. 574,619  
3 Claims. (Cl. 230—116)

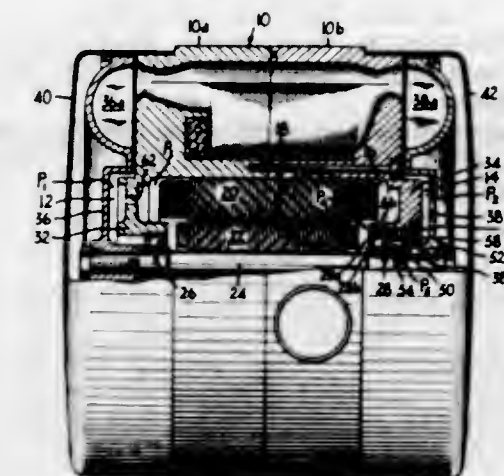


A bearing arrangement for high speed shafts in which spaced, journal bearings support the shaft on an oil film at high shaft speeds and having additional tilt limiting bearings positioned outwardly of the non-opposed ends of the spaced journal bearings which limit the shaft tilt

which occurs at high shaft speed but before the oil film has formed at the journal bearings.

### 3,411,707 APPARATUS FOR PREVENTING GAS FLOW THROUGH BEARINGS

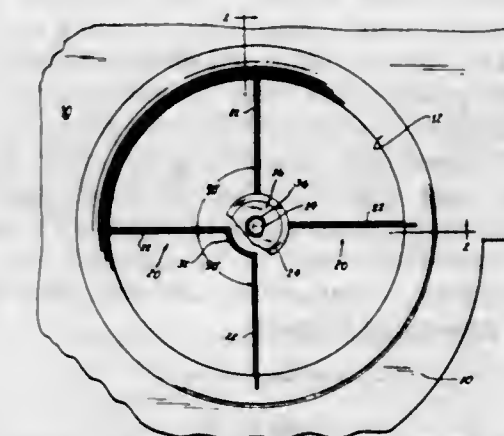
Gunther Zoehfeld, West Hurley, N.Y., assignor to Rotron Manufacturing Company, Inc., Woodstock, N.Y., a corporation of New York  
Filed Mar. 23, 1967, Ser. No. 625,423  
7 Claims. (Cl. 230—130)



An arrangement for preventing gas flow through bearings subject to differential pressures to prevent lubricant blowout comprising a pressure balance zone in free gas communication with one side of the bearing and freely communicated to the other side of the bearing. The pressure balance zone is otherwise substantially closed. Thus, the pressure balance zone and the said one side of the bearing are maintained at substantially the same pressure as the zone on the other side of the bearing, and gas flow through the bearing is substantially eliminated.

### 3,411,708 BEARING BRACKET CONSTRUCTION FOR BLOWER WHEEL HOUSING

Kenneth G. Crowe, Rhode-Saint-Genese, Belgium, assignor to The Torrington Manufacturing Company, Torrington, Conn., a corporation of Connecticut  
Filed Mar. 31, 1967, Ser. No. 627,357  
10 Claims. (Cl. 230—132)



Two brackets engage opposite sides of a cup in which a bearing is received for rotatably supporting a blower wheel drive shaft. Each bracket is formed from a strip of resilient sheetmetal and has two leg portions, each of which terminates in a tab which is received in a slot defined for this purpose in the inlet opening of the blower



wheel housing. The leg portions are arranged radially in the opening when assembled with the cup. An inner portion of each bracket is arcuately shaped to fit the exterior surface of the cup and engages a radially outwardly turned flange on the cup to restrain the cup against axial movement in one direction. A radially inwardly turned flange on the opposite end of the cup restrains the bearing against movement in said one direction and a thrust washer on the blower wheel drive shaft engages the bearing on assembly to restrain the cup and bearing against movement in the opposite axial direction.

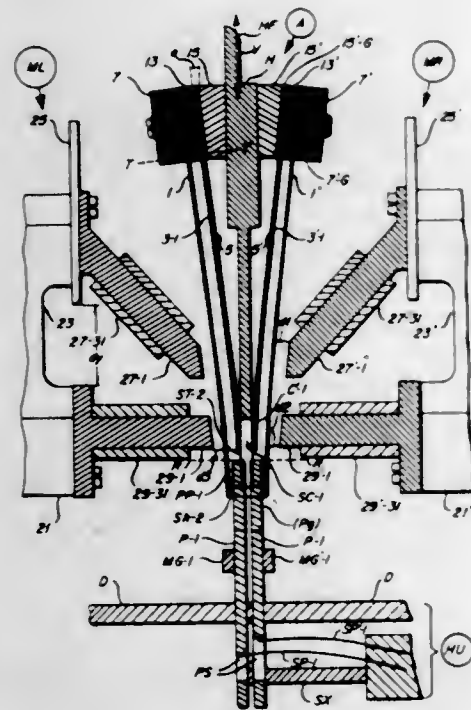
3,411,709

**FLEXURE-INTERPOSER**

Earl E. Masterson, Newtonville, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Continuation-in-part of application Ser. No. 402,412, Oct. 8, 1964. This application July 14, 1966, Ser. No. 565,309

19 Claims. (Cl. 234—115)



In a selectively-actuated bent-flexure interposer arrangement, the improvement therewith of guide sheet means together with cooperatively engaged stripper means, with the flexure being mounted on a reciprocating bail and the stripper made a part thereof, these together with such particular design improvements as: forming a set of flexures from a single, multi-fingered sheet; arranging opposed pairs of interposed/guide sheet combinations on opposite sides of a single bail, together with symmetrically arranged pairs of "stripper-feet"; specifying an inner guide as a continuous, bent sheet, notched to clear punches; pre-bending co-acting guide sheets together with their intermediate flexure-interposers to be clamped onto the bail with a U-clamp arrangement; and dimpling the guide sheets to a prescribed flatness.

3,411,710

**CONTROL SYSTEM AND PARTS THEREFOR OR THE LIKE**

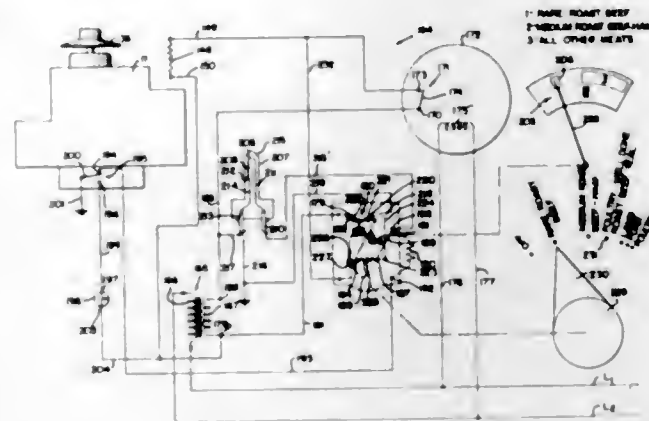
James R. Willson, Waynesboro, Tenn., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Sept. 17, 1965, Ser. No. 487,981

15 Claims. (Cl. 236—15)

This disclosure relates to a control system for an oven or the like wherein a meat probe is utilized to sense the

internal temperature of meat being cooked in the oven and, after sensing a predetermined temperature of doneness of the meat, the meat probe will cause the heating means of the oven to be automatically reduced to a



warmth retaining and non-cooking temperature, the meat probe controlling a temperature indicating means that will not be readily viewed by the housewife until the meat reaches a degree of doneness after the meat probe has automatically reduced the temperature of the oven.

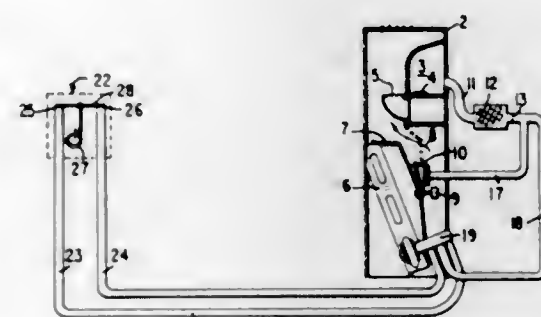
3,411,711

**CONTROL MECHANISM**

Arthur C. O'Hara, Syracuse, N.Y., and Richard C. Dreibelbis, Fair Lawn, and Arthur C. Homeyer, Essex Fells, N.J., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 559,825, June 23, 1966. This application Aug. 25, 1967, Ser. No. 663,256

12 Claims. (Cl. 236—87)



A temperature regulator having a cooling bleed port and a heating bleed port on opposite sides of the regulator. A centrally located bimetallic element, movable in response to temperature variations in the area being regulated acts to block the appropriate bleed port to thereby build up control pressure in the line communicating therewith to effect a change in the output of the heating or cooling means associated with the regulator.

3,411,712

**BIMETALLIC DISC VALVE FLOW DIVERTER**

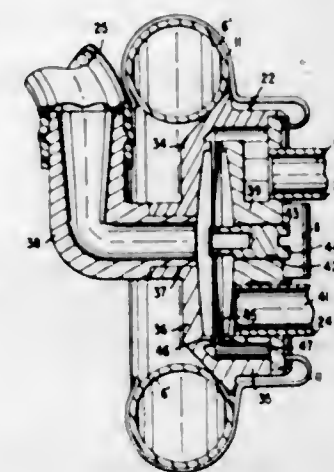
Arthur C. O'Hara, Syracuse, N.Y., and Richard C. Dreibelbis, Fair Lawn, N.J., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed June 23, 1966, Ser. No. 559,967

1 Claim. (Cl. 236—93)

A valve mechanism employing a bimetallic disc, responsive to the temperature of the fluid flowing through the valve, to divert the fluid through one of two valve outlets. The valve is adapted for connection to a return bend of a heat exchanger in a room air conditioning unit to di-

vert control air to the heating or the cooling portion of the room thermostat according to the temperature of the



heat exchange medium flowing through the heat exchanger.

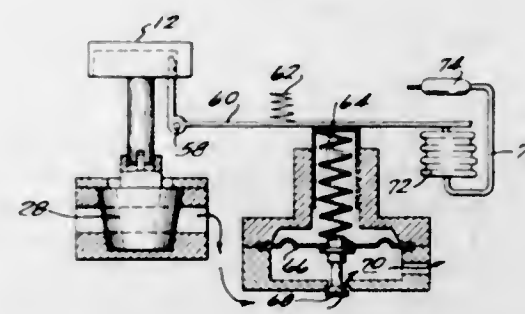
3,411,713

**MANUAL KNOB FOR CONTROLLING GAS COCK AND ADJUSTING THERMOSTAT**

Elmer E. Wallace, Fullerton, and Ferdinand F. Helser, Riverside, Calif., assignors to Controls Company of America, Melrose Park, Ill., a corporation of Delaware

Filed July 22, 1966, Ser. No. 567,114

6 Claims. (Cl. 236—99)



This invention relates to a gas control for gas heating oven and in particular to a manually operated valve mechanism having a single control knob which may be rotated between an "off," "pilot" and "on" position so as to enable resetting the safety valve.

As the knob is manually rotated between "off," "pilot," and "on" it is operatively connected to the valve to rotate the valve. The knob may be depressed in "pilot" position to reset the safety. In the range of knob movement past "on" the knob is disconnected from the valve and the cam on the knob can adjust the thermostat which controls a second valve receiving flow from the first and delivering it to the burner.

3,411,714

**METHOD AND APPARATUS FOR ATOMIZING LIQUIDS USING THE PROPULSION JET OF A ROCKET ENGINE**

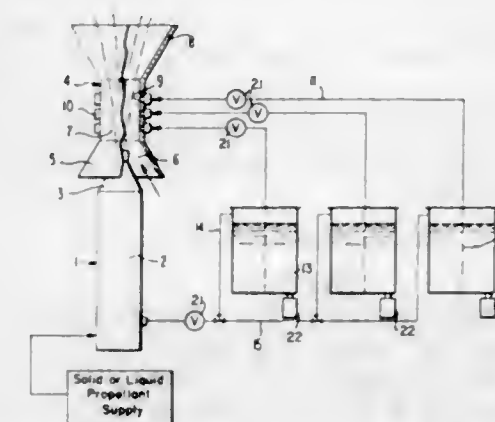
Willi J. Petters and Otto Schreiner, Liebenau, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany

Filed Oct. 19, 1965, Ser. No. 498,059

Claims priority, application Germany, Oct. 19, 1964, St. 22,829

53 Claims. (Cl. 239—8)

The present disclosure is directed to a process and apparatus for atomizing liquids, solutions, emulsions, suspensions, or solid materials in finally divided form. More particularly, the present disclosure is directed to a process



to the propulsion jet of a rocket engine where it is atomized by said propulsion jet.

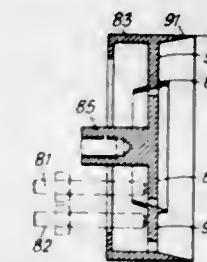
3,411,715

**CENTRIFUGAL ELECTROSTATIC SPRAYING HEAD**

Neil Rudolph Wallis, Cariad, Goring-on-Thames, Oxfordshire, England

Filed Apr. 2, 1965, Ser. No. 445,157

13 Claims. (Cl. 118—626)



Apparatus for coating articles with two-component coating materials including a rotating atomizing head preferably consisting of inner and outer coaxial cups each having circular discharge edges, with the edge of the inner cup positioned rearward of the edge of the outer cup, the hardener being supplied to the inner cup and the resin being supplied to the outer cup. A film of the hardener is formed on the inner surface of the inner cup and material is ejected from this film to be deposited on the inner surface of the outer cup where it mixes with the resin to form a composite film. Composite material is ejected from the forward edge of the outer cup and electrostatically deposited on the article to be coated.

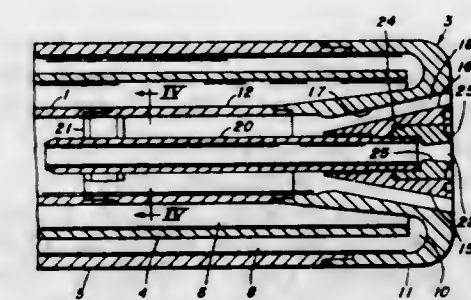
3,411,716

**OXYGEN LANCE FOR STEELMAKING FURNACES**

Raymond C. Stephan, Calumet Township, Lake County, Ind., and Calvin M. Willey, Penn Hills Township, Allegheny County, Pa., assignors to United States Steel Corporation, a corporation of Delaware

Filed May 11, 1966, Ser. No. 549,349

5 Claims. (Cl. 239—132.3)

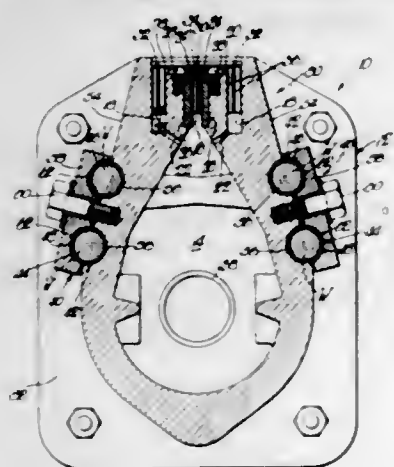


An oxygen lance having a flow control pipe extending axially inwardly a short distance from the nozzle end of a water-cooled oxygen supply pipe and arranged concen-



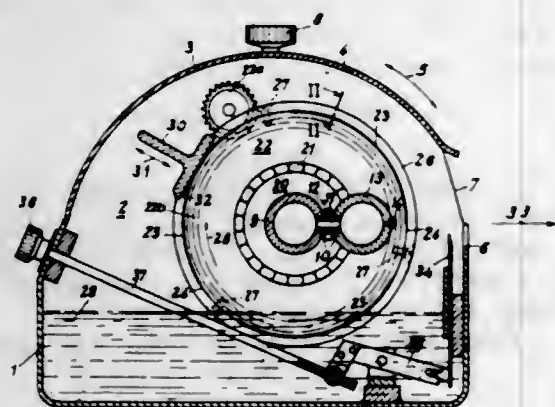
trically with respect thereto, the inner end of the control pipe being in communication with the oxygen supply pipe for the flow of oxygen therethrough. A control plug on the outer end of the control pipe and the nozzle end of said supply pipe have conical facing surfaces which define an outwardly flaring annular orifice through which a ring-like jet of oxygen is discharged, the oxygen flowing through said control pipe being discharged along an axial path extending centrally with respect to the annular orifice about said control plug.

**3,411,717**  
**LIQUID-COOLED GAS BURNER**  
John H. Flynn, 234 Elk Ave.,  
New Rochelle, N.Y. 10804  
Filed July 1, 1966, Ser. No. 562,271  
3 Claims. (Cl. 239-132.3)



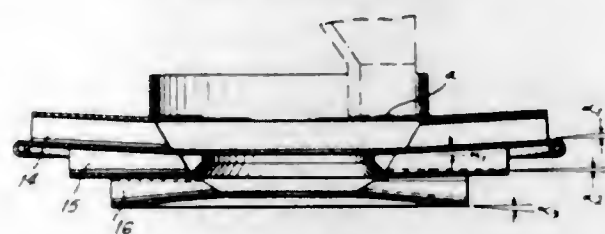
A burner casing with grooving in its outer wall for removable reception of tubing for coolant passage therethrough, with the tubing being releasably locked in the grooving.

**3,411,718**  
**ATOMIZER FOR LIQUID**  
Ernst Wagner, 105 Stampfenbachstrasse,  
8006 Zurich, Switzerland  
Filed Apr. 18, 1967, Ser. No. 631,796  
Claims priority, application Switzerland, Apr. 20, 1966,  
5,712/66  
18 Claims. (Cl. 239-214.25)



An atomizer for moistening printing plates in offset printing having several screen strips freely tensioned between axially spaced coaxial discs in a common cylindrical surface and circumferentially spaced from each other in that surface. When the discs rotate about the axis, the screens pass through water in a tank, and the water film picked up by each screen is atomized by a sheet of air discharged from a manifold pipe near the axis of rotation. Various wiper arrangements are shown for reducing the thickness of the water film and for enhancing its uniformity so as to produce droplets of minimum size.

**3,411,719**  
**CENTRIFUGAL DISTRIBUTOR FOR FERTILIZER AND OTHER MATERIALS IN POWDER OR GRANULES**  
Pavel Babiciu, Gheorghe Fleger, Rudolf Attahal, Nicolae Gheorghe, and Radu Nicolae, Bucharest, Rumania, assignors to Ministerul Industrial Constructiilor de Masini, Bucharest, Rumania  
Filed Dec. 30, 1964, Ser. No. 422,154  
9 Claims. (Cl. 239-667)

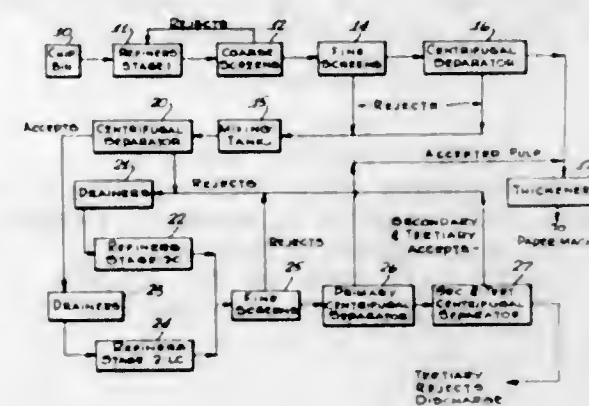


1. A centrifugal distributor for continuously dispersing granular, particulate or similar material, comprising in combination, a frame; hopper means mounted in said frame; rotatable horizontal dispersing means mounted underneath said hopper means; a funnel adjustably mounted at the outlet of said hopper means and adapted to distribute eccentrically with respect to the axis of said horizontal dispersing means material from said hopper means onto said horizontal dispersing means; vibrating means operatively connected to said hopper means for vibrating the latter; said horizontal dispersing means comprising a rotatably mounted shaft and a plurality of groups of blades of different lengths, inclinations with respect to the horizontal and curvatures connected thereto, the group of longest blades of said plurality of groups of blades being the most inclined with respect to the horizontal and having such a curvature that the angle formed by a tangent along the outermost point of a blade of said group of longest blades and a radius passing through said point from the axis of said horizontal dispersing means forms the smallest angle when compared with angles correspondingly formed by groups of shorter blades of said plurality of blades, the peripheral extremities of said group of longest blades defining a circle of maximum diameter which is located at the highest level in said horizontal dispersing means, said group of longest blades being adapted to accept the largest quantity of material from said funnel when compared with groups of shorter blades of said plurality of blades, the groups of shorter blades being less inclined with respect to the horizontal and having such a curvature that the angle formed by a tangent along the outermost point of a blade of said group of shorter lengths and a radius passing through said outermost point from the axis of said horizontal dispersing means forms an angle larger than said corresponding aforementioned smallest angle, and the peripheral extremities of said groups of shorter blades defining circles of smaller diameters at lower levels when compared with said circle of said group of longest blades; and motor means operatively connected to said rotatably mounted shaft for rotating the latter and to said vibrating means.

**3,411,720**  
**PRODUCTION OF MECHANICAL PULP FROM WOOD CHIPS**  
Howard W. H. Jones and Donald E. Helleur, Grand'Mere, Quebec, Canada, assignors to Consolidated Paper (Bahamas) Limited, Nassau, Bahamas  
Continuation-in-part of application Ser. No. 170,110, Jan. 31, 1962. This application Aug. 18, 1966, Ser. No. 573,271  
6 Claims. (Cl. 241-28)

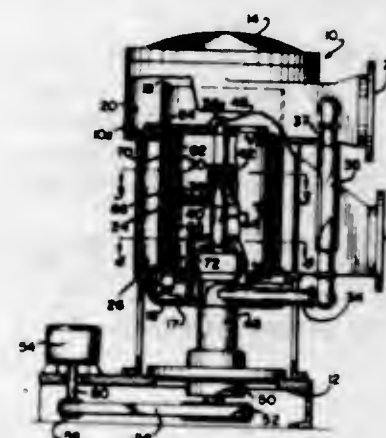
A mechanical process for treating raw, uncooked wood chips in which increased amounts of energy are expended on the wood material to increase the strength of the re-

sulting pulp. Raw wood chips are fed centrally into a treatment area between a stationary disc and a rotating disc and are caused to move radially outwards over a



sinuous path. The discharge at the periphery is restricted to increase the energy expended on the wood material, and the treatment area is enclosed to permit the steam generated to increase the pressure in the area.

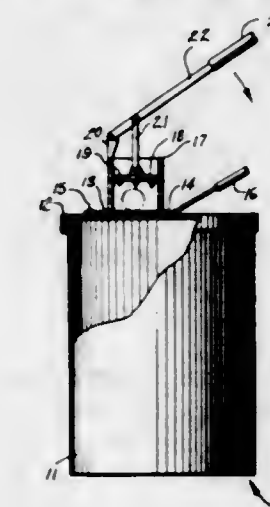
**3,411,721**  
**REFINING AND SCREENING APPARATUS**  
Henri A. Delcellier, Beaurepaire, Quebec, Canada, assignor to Canadian Ingersoll-Rand Company Limited, Montreal, Quebec, Canada, a corporation of Canada  
Filed Sept. 2, 1966, Ser. No. 576,988  
18 Claims. (Cl. 241-97)



1. An apparatus for refining and screening paper pulp fluid, comprising:  
a first working member;  
a second working member opposing said first working member and spaced from said first working member to provide a passage between said working members;  
said first and second working members being relatively rotatable;  
means for effecting relative rotation of said first and second working members;  
pulse generating means carried by one of said working members within said passage between said working members;  
pulse generating means carried by the other of said working members within said passage between said working members and cooperating with said pulse generating means carried by said one of said working members during relative rotation of said working members to create pulses for refining paper pulp fluid passing through said passage;  
screening means communicating with said passage between said working members for screening paper pulp fluid passing therethrough;

inlet means communicating with said passage between said working members for supplying paper pulp fluid to said passage;  
accepts outlet means communicating with said screening means for discharging paper pulp fluid accepted by said screening means from said screening means; and  
rejects outlet means communicating with said passage between said working members for discharging paper pulp fluid rejected by said screening means from said passage.

**3,411,722**  
**REFUSE CAN COVER AND CRUSHER**  
Craig Webber, Tylersport, Penn. 18971  
Filed Aug. 23, 1966, Ser. No. 575,221  
5 Claims. (Cl. 241-99)



1. A refuse can cover and crusher comprising, in combination, a refuse can, a circular cover adapted to snugly enclose the top portion of said can, said circular cover being provided with a rectangular opening, a rectangular plate arranged to enclose said opening of said cover, an elongated handle being integrally secured to one side of said plate for opening said rectangular opening within said cover, a rectangular chamber secured on said cover, said chamber being concentric with said plate and said opening of said cover, crushing means moveably positioned within said chamber, a handle communicating with said chamber and said crushing means for lowering said crushing means on the contents within said chamber and means for opening said rectangular opening of said cover for depositing the crushed contents from said chamber into said refuse can.

**3,411,723**  
**DISPOSABLE SPATULA**  
Joseph D. Kohn, 126 Amory St.,  
Brookline, Mass. 02146  
Filed Jan. 27, 1966, Ser. No. 523,308  
10 Claims. (Cl. 241-168)

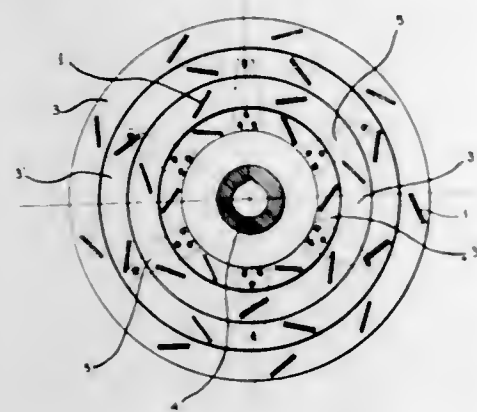


The disposable spatula, preferably molded of an inexpensive plastic material, is shaped to substantially duplicate the major characteristics of ordinary metal spatulas. One notable feature of all embodiments is the use of a thick blade molded with square side edges and with the mold parting line between the edges.



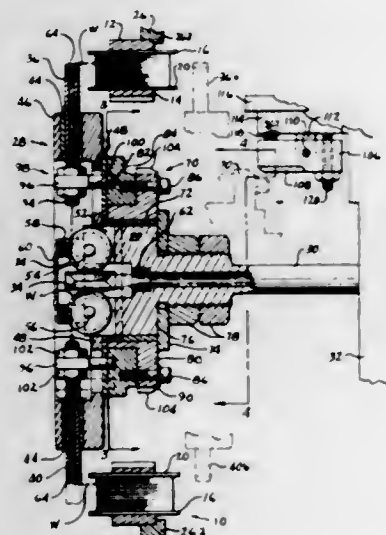
**3,411,724**  
**CAGE TYPE DISINTEGRATOR WITH BLADE SHAPED IMPACTING MEMBERS, PARTICULARLY SUITED FOR PROCESSING HARD MATERIALS**

Luigi Noé, Milan, Italy, assignor to Sviluppo Silicalcite S.p.A., Milan, Italy  
 Filed May 16, 1966, Ser. No. 550,360  
 Claims priority, application Italy, May 29, 1965, 11,999/65; July 8, 1965, 15,271/65; Feb. 28, 1966, 4,437/66  
 10 Claims. (Cl. 241-188)



In a cage type disintegrator having concentric rows of supported impacting members, the improvement comprising impacting members in the shape of blades, which blades are individually affixed at least at one of their ends to a corresponding support member, and which blades are individually angled toward their direction of rotation at an angle of from 5° to 55° between each active blade surface and the plane perpendicular to the radial plane containing the corner of said active surface in closest relationship to the axis of rotation. The active surfaces of the said blades are preferably substantially concave.

**3,411,725**  
**COIL WINDING MACHINE**  
 John M. Biddison, Dayton, Ohio, assignor to The Globe Tool and Engineering Company, Dayton, Ohio, a corporation of Ohio  
 Filed July 12, 1965, Ser. No. 471,239  
 13 Claims. (Cl. 242-1.1)



Four wire guide needles mounted on and for movement with a spindle reciprocated along and oscillated about an axis of a stator to form coils on pole pieces thereof are progressively moved by a cam radially toward and away from the aforementioned axis to lay wire evenly upon the pole pieces. The eccentricity of a cam engaging cam followers connected to the needles and snugly mounted upon

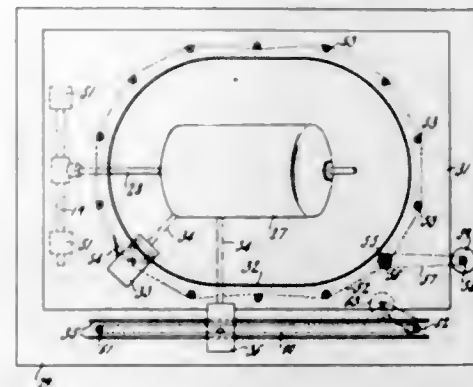
the spindle is changed by holding the cam fixed as the spindle rotates during alternate oscillatory movements of the spindle. In one embodiment, the aforementioned cam is a compound cam which can be adjusted to vary the extent of radial movement of the needles.

**3,411,726**  
**YARN STRING-UP ROLL**  
 Frederick H. Engleman, Cary, N.C., and Don E. Fisher, Pensacola, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
 Filed Dec. 12, 1966, Ser. No. 600,970  
 2 Claims. (Cl. 242-18)



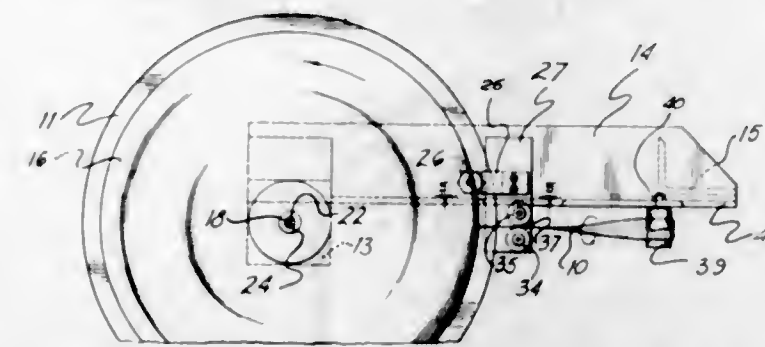
A yarn string-up roll having a peripherally open, internal slot extending backwardly from the direction of rotation of said roll between spaced, opposed walls one depending over the other, and a ball displaceable by centrifugal force into said slot for holding a yarn between the ball and slot wall surfaces.

**3,411,727**  
**METHOD OF WINDING FILAMENTS TO FORM A PRESSURE VESSEL**  
 Edwin C. Uhlig, South Bend, Ind., Henry C. Buffington, Cranston, R.I., Irving A. King, Bellingham, Mass., and Arnold C. Brooks, Tiverton, R.I., assignors to Uniroyal, Inc., a corporation of New Jersey  
 Original application June 15, 1960, Ser. No. 36,396, now Patent No. 3,144,952, dated Aug. 18, 1964. Divided and this application June 17, 1964, Ser. No. 375,898  
 10 Claims. (Cl. 242-2)



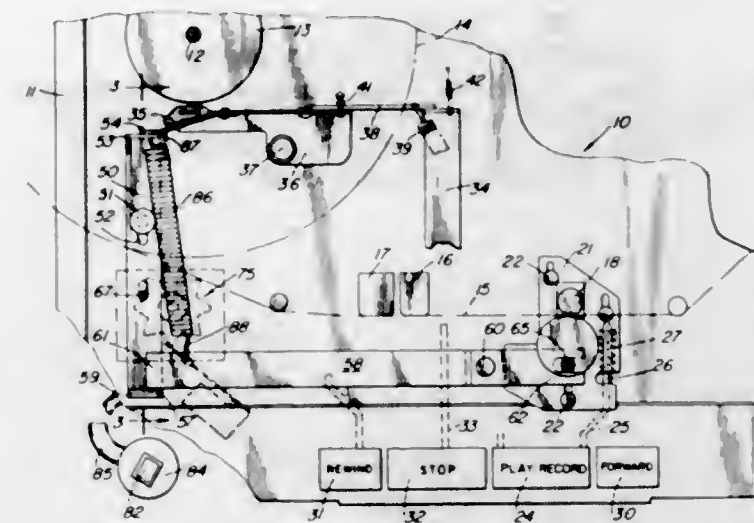
A method of winding filaments to form filament wound structure such as a pressure vessel having an elongated body portion and a bulging end which comprises winding girth windings on the body portion and then winding end windings over the body portion and over the ends of the structure with each circuit of the end windings lying along a path that passes over both ends and the elongated body portion of the structure. Each winding is wound to meet itself only once in each complete circuit of the structure and to form an angle at each point on the elongated body portion with a line formed on the surface of the structure by an axial plane through the point of measurement which angle is less than the angle whose tangent is one-half the quotient of the circumference of the body portion divided by the length of the body portion.

**3,411,728**  
**TAPE FEEDING APPARATUS**  
 Joseph J. Hall, Somerville, and Jack A. Kummerow, Englishtown, N.J., assignors to Johnson & Johnson, a corporation of New Jersey  
 Filed Jan. 24, 1967, Ser. No. 611,455  
 10 Claims. (Cl. 242-55)



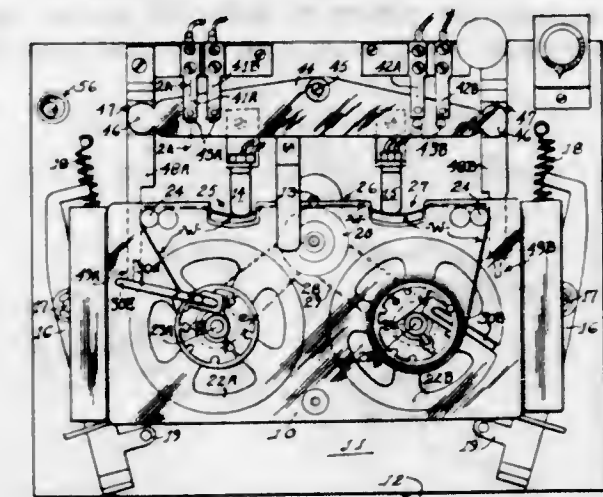
This application discloses apparatus for feeding pressure-sensitive adhesive tape at substantially constant tension from a large roll of said tape wound upon itself with the adhesive side facing the center of the roll. The tape roll is laid on its side on a horizontal table mounted on substantially frictionless bearing means in such a way that the table will rotate freely in a horizontal plane when the tape is unwound by drawing it away from the roll. Spaced guide rollers define a vertical guide slot for leading the tape horizontally away from the roll and a turning roller is provided for leading the tape vertically away from the guide slot. Brake means is provided which normally prevents the table from rotating but releases it, preferably automatically, when feeding tension is applied to the tape extending through the guide slot.

**3,411,729**  
**TAPE RECORDER**  
 Marion R. Karecki, Bloomington, Minn., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan  
 Filed Oct. 13, 1966, Ser. No. 586,493  
 7 Claims. (Cl. 242-55.12)



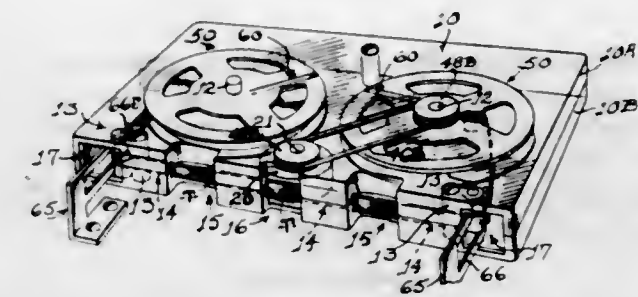
Pause mechanism, in a tape recorder, permits tape travel to be instantaneously halted and restarted independently of the stop button. A motor-operated cam is in continuous engagement with a slide member acting on tape braking mechanism in the tape recorder and is intermittently operated by a motor which may be energized by depressing a control button connected thereto by a cable of suitable length. The motor is energized through two sets of switches, one being operated by the control button and the other being operated by an actuating lever with which the cam also is in continuous engagement, in an arrangement whereby successive operations of the control button operates the motor first to halt and then to restart the motor.

**3,411,730**  
**REVERSING SOUND TAPE REEL**  
 Jerry O. Kelley, Chicago, Ill., assignor to Cart-Trac, Inc., Chicago, Ill., a corporation of Illinois  
 Filed Aug. 16, 1966, Ser. No. 572,741  
 9 Claims. (Cl. 242-55.13)



In sound tape reels and the like, a control finger slides linearly in a flange portion of the reel in a direction which may be approximately radial or chordal with respect to the reel hub, the finger having an inner end which fits into a recess in the hub in a manner such that the terminal portions of the tape can be wound onto and from the hub, a terminal portion of the tape fitting into a slot in such inner end so disposed that the unwinding or rewinding pull on the tape will positively drive and shift the finger linearly in and out, depending upon which way the tape is being wound, the outer end of the finger projecting on outward displacement thereof to engage and actuate a switch-control member, or the like.

**3,411,731**  
**FLIP-FLOP SOUND TAPE CARTRIDGE**  
 Jerry O. Kelley, Chicago, Ill., assignor to Cart-Trac, Inc., Chicago, Ill., a corporation of Illinois  
 Filed Aug. 19, 1966, Ser. No. 573,598  
 13 Claims. (Cl. 242-55.13)



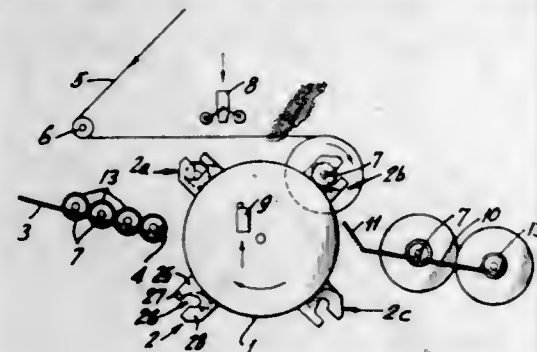
A positionally sensitive clutch is provided for reel-to-reel tape cartridges adapted to be turned over on one side or the other to reverse the travel of the tape, the clutch being an integrated part of a capstan roller having a pulley at each end either of which will be coupled with the roller for positive driving therewith by a gravitationally-responsive element intercoupling the roller with only one pulley in each of the two turned-over positions of the cartridge or reel and capstan assembly.

**3,411,732**  
**FULLY AUTOMATIC REEL CHANGER**  
 Markus Ebnetter, Saint Gall, Switzerland, assignor to Fred Ruesch, Saint Gall, Switzerland  
 Filed Sept. 20, 1966, Ser. No. 580,718  
 9 Claims. (Cl. 242-56)

Apparatus for continuously winding strip material on reels includes a drum rotatable on a horizontal axis for stepwise angular displacement and carrying a plurality



of circumferentially spaced spindle supports arranged to pick up an empty reel from a first magazine and to discharge fully wound reels onto a second magazine. The spindle of each reel has a pinion rotatable thereon and coupled thereto through a slip-type friction clutch. A drive gear rotatable about the horizontal axis of the drum engages the pinion of each reel picked up by a spindle support to rotate the reel. Each reel is moved first



to a ready position, at which it is rotated, and then to a winding position in which it wound with tape or the like, after which the wound reel is discharged. Shear means are positioned between the ready position and the winding position to sever the strip or tape from the wound reel and apply the cut end to the reel in the ready position, and end treatment means operate in coordination with the shear means to treat the severed strip material ends.

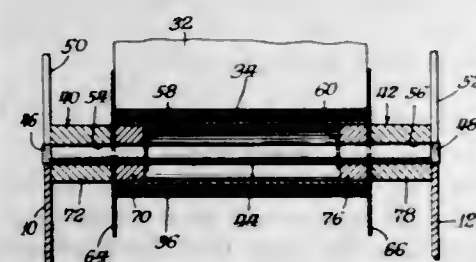
### 3,411,733 CORE

William L. Lawson, Forest Hills, and Venerio J. Rigolini, Brooklyn, N.Y., assignors to Whitehouse Products, Inc., Brooklyn, N.Y., a corporation of New York  
Filed Mar. 14, 1967, Ser. No. 623,042  
6 Claims. (Cl. 242-68.5)



A collapsible core for use for coiling continuous strands comprising a strip of stiff, flexible, sheet material having, at one of its ends, a slit and, at its opposite end, a tab, said tab being insertable in said slit and, when so inserted, locking said strip into a frusto-conical core for receiving, and coiling, a continuous strand.

**3,411,734  
ADJUSTABLE WIDTH PAPER ROLL SUPPORT**  
Burton Greenberg, Chicago, and Karl M. Murgas, Lincolnwood, Ill., assignors to Celeron Manufacturing Company, Skokie, Ill., a corporation of Illinois  
Filed Apr. 12, 1967, Ser. No. 630,436  
4 Claims. (Cl. 242-71.9)



An apparatus for suspending and aligning paper rolls of diverse widths in a photocopy machine having two hollow flanged shafts mounted spaced apart on a rod.

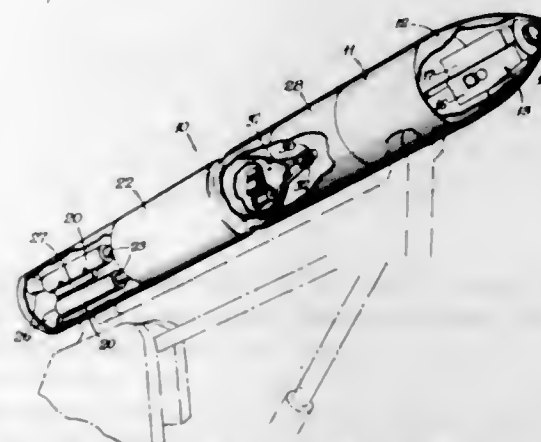
Each flange is positioned at an unequal distance from the respective ends of the shaft.

**3,411,735  
SWIVEL RACK FOR WIRE REELS**  
Harold R. Hurd, Main St., Miston, Tenn. 38056  
Filed May 2, 1967, Ser. No. 635,526  
8 Claims. (Cl. 242-129.62)



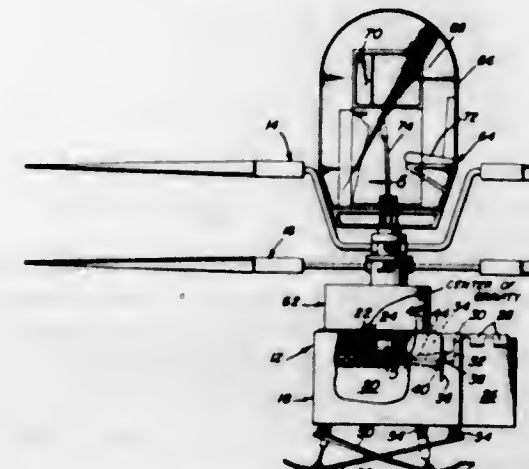
An upstanding frame including generally parallel upstanding side members interconnected at corresponding ends by means of transversely extending first and second end members, one of the end members including support means adapted for securement to a suitable support surface and from which the first end of the frame is journaled for rotation about an axis generally paralleling and disposed centrally intermediate the side members and the side members including means removably journaling wire reels therefrom for rotation about axes disposed generally normal to the axis of rotation of the frame relative to the support means and spaced along the side members.

**3,411,736  
MISSILE GUIDANCE SYSTEM**  
Joseph A. Kelly, Riverside, Calif., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois  
Filed Dec. 13, 1965, Ser. No. 513,392  
6 Claims. (Cl. 244-3.15)



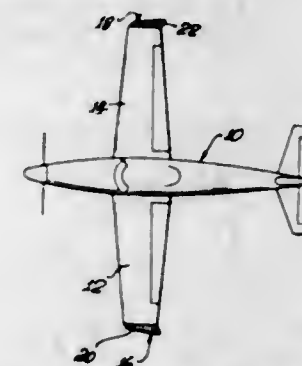
A rotating pilot rocket is propelled into a chamber within a missile to be guided. The chamber has detection means sensing the location of the pilot rocket within the chamber. Control signals are generated in response to sensed pilot rocket location and are used to guide the missile. The pilot rocket is impelled into the chamber immediately prior to missile launch. Wedge shaped photo sensors are used in the chamber to sense rocket locations.

**3,411,737  
HELICOPTER**  
Joseph B. Godwin, Hanford, Calif., assignor of fifty percent to Aubrey W. Price, Hanford, Calif.  
Filed Aug. 24, 1966, Ser. No. 574,726  
3 Claims. (Cl. 244-17.19)



A helicopter including a stationary upstanding tubular support extending between a pilot compartment supported at its upper end and an engine compartment supported at its lower end, the tubular support having external concentric sleeve members journaled thereon from which rotary wing means are supported and which are driven from motor means contained within the engine compartment. The lower engine compartment defines the body of the helicopter and includes movable stabilizer and rudder control surface defining members while the pilot's compartment supported at the top of the tubular support includes control means for moving the stabilizer and rudder controls and motion transmitting means extending through the tubular stationary support are provided to operatively connect the control means to the stabilizer and rudder means.

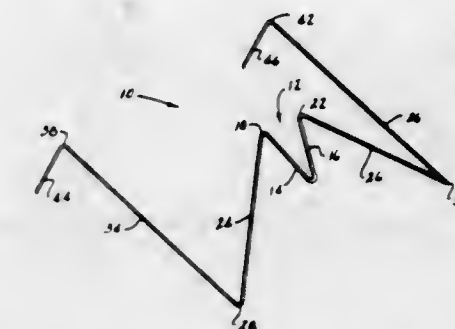
**3,411,738  
AIRFOIL TIP**  
William E. Sargent, P.O. Box 711, Blythe, Calif. 92225  
Continuation of application Ser. No. 404,777, Oct. 19, 1964. This application Oct. 27, 1966, Ser. No. 590,091  
2 Claims. (Cl. 244-40)



An airplane wing tip which acts as an end plate on the tip of the wing. The tip has an outboard end which diverges rearwardly, relative to its inboard end, from the leading edge of the tip to its trailing edge, and which is inclined downwardly, relative to its inboard end, from the leading edge of the tip to its trailing edge. The outboard end of the tip, at the leading edge thereof, is located at substantially the same level as the lower surface of the inboard end of the tip, and the outboard end of the tip, at the trailing edge thereof, is located below the inboard end thereof a distance substantially equal to the maximum thickness of the inboard end of

the tip. The tip curves and converges generally outwardly and downwardly from its inboard end to its outboard end, and the degree of such outward and downward convergence increases progressively from the leading edge of the tip to its trailing edge.

**3,411,739  
FISHPOLE TIP-UP**  
Carlos Barfield, 19961 Winthrop, Detroit, Mich. 48219  
Filed Feb. 16, 1966, Ser. No. 527,882  
6 Claims. (Cl. 248-38)



A fishpole tip-up for supporting a pole in an inclined position is formed as a unitary member having a symmetrical configuration. The central portion of the member has a V-shaped notch for supporting the pole and a pair of legs extending downwardly from the notch to contact a supporting surface. Two other legs are formed as extensions of the first pair of legs extending rearwardly and angularly upwardly and then downwardly to also contact the supporting surface and provide a four-point surface contact with the first pair of legs.

**3,411,740  
CHRISTMAS TREE STAND**  
Donald A. Schulz, Wauwatosa, Wis., assignor to S-B Manufacturing Company, Milwaukee, Wis., a Wisconsin partnership  
Filed Nov. 23, 1966, Ser. No. 596,710  
5 Claims. (Cl. 248-48)



The stand disclosed herein has deep channel-shaped legs, a watering bowl for a tree having an edge which is curved at the top so that the free edge extends downwardly, a canopy which encircles the tree above the watering bowl and which is provided with inner and outer walls spaced to fit closely around the upper end of each leg of the stand, and which is provided with aligned inner and outer holes for the reception of tree securing screw members which are threaded into holes in the respective legs. The legs are slotted near the center, extending in a semi-circle generally upwardly, laterally, and downwardly toward the foot from the free edge, where the leg channel is deepest, to receive the semi-circular rim of the bowl. The tongue which is left in the side of the leg by the slot is truncated and rests on a downwardly directed shoulder which is pressed from the



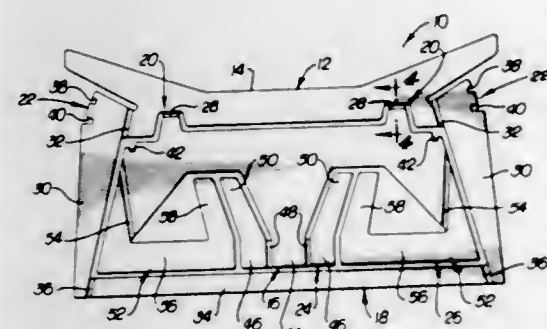
material of the rim of the bowl to provide a firm and exactly positioned engagement between the leg and the bowl.

3,411,741

BOOK REST

Joseph L. Nadler, Goleta, Calif., assignor to The Polyplan Corporation, Goleta, Calif., a corporation of California

Filed Sept. 13, 1966, Ser. No. 579,067  
5 Claims. (Cl. 248-456)

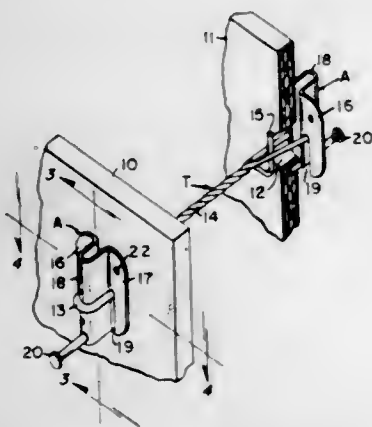


A one-piece collapsible book rest of flexible plastic material comprising members foldable between erected, operative positions and collapsed, inoperative positions wherein all of the members are coplanar. Reduced-thickness portions of the plastic material act as hinges between the various foldable members, and integral latch elements secure various of the members in their erected positions.

3,411,742

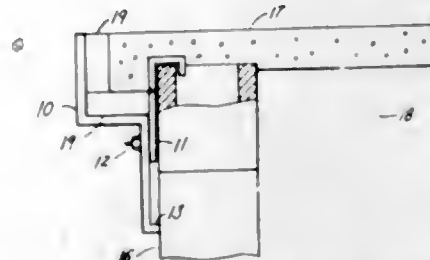
FORM TIE ANCHOR

John C. McArdle, 3300 S. Holly St.,  
Denver, Colo. 80222  
Filed Jan. 20, 1966, Ser. No. 521,946  
8 Claims. (Cl. 249-205)



An anchor for the loop terminal of a form tie protruding from a concrete form wall, including a medial rib formed with spaced sides and a top joining the sides, to substantially fill the exposed opening of a loop terminal and maintain the sides of the loop spread apart, the top preferably being transversely curved and convex, to conform to the end of the loop terminal, with a flat base integral with each opposite side of the rib and extending laterally and bearing against the form wall. Each flat base may be restricted in length when the rib tapers inwardly, to form a wedging surface, while a flat button extends both laterally and longitudinally from the end of the wedging surface. The flat base at each side may be longitudinally coextensive with the rib and have a slot adjacent the rib, to receive the sides of the tie loop. Such an anchor may be formed, as by stamping, from a single piece of metal.

3,411,743  
CONSTRUCTION FORM HOLDER  
Robert T. Hawkins, Danville, Ill.  
(R.R. 1, Georgetown, Ill. 61846)  
Filed Apr. 18, 1966, Ser. No. 543,175  
2 Claims. (Cl. 249-219)

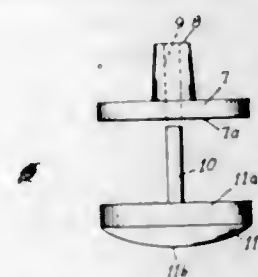


Apparatus for assembling forms used in the construction of poured concrete structures. Two pieces of flat metal bent to hold wood forms are held together by a single fastener and can be disassembled after the concrete has hardened to allow removal of the concrete forms. A portion of the apparatus is designed to snap off and remain in the concrete structure.

3,411,744

WASHER ASSEMBLY FOR WATER VALVE

Maurice R. Prather, 8085 Hopper Road,  
Cincinnati, Ohio 45230  
Filed Feb. 23, 1966, Ser. No. 529,548  
6 Claims. (Cl. 251-88)

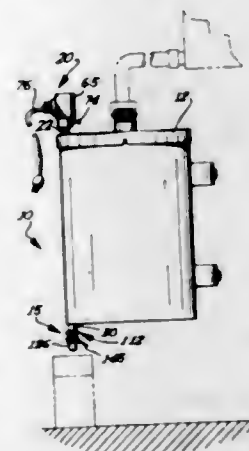


A washer assembly comprising an upper and lower part whose surface portions lie contiguous with one another and are rotatable relative thereto.

3,411,745

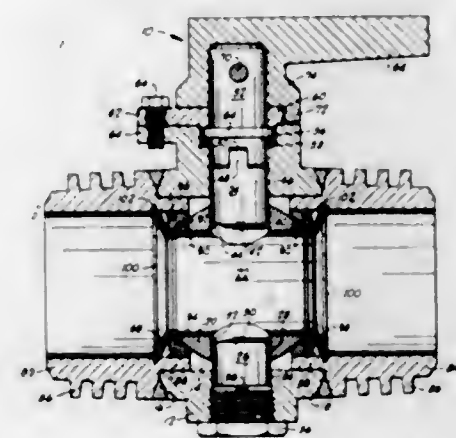
FILL VALVE ASSEMBLY

Clarence G. Austin, Jr., and Howard R. Garrett, Woodstock, Ill., assignors, by mesne assignments, to Haskon, Inc., Wilmington, Del., a corporation of Delaware  
Filed Apr. 11, 1966, Ser. No. 541,642  
7 Claims. (Cl. 251-129)



A fill valve assembly for use in the dispensing of fluids used for human consumption. The assembly includes an electromagnetic actuator and dispensing valve which are physically separated and connected by an actuating stem with the actuator, dispensing valve and stem being readily removable for cleaning purposes.

3,411,746  
WELDED BALL VALVE CONSTRUCTION  
Domen Scaramucci, Oklahoma City, Okla., assignor to Balon Corporation, Oklahoma City, Okla., a corporation of Oklahoma  
Filed June 30, 1966, Ser. No. 561,917  
20 Claims. (Cl. 251-315)

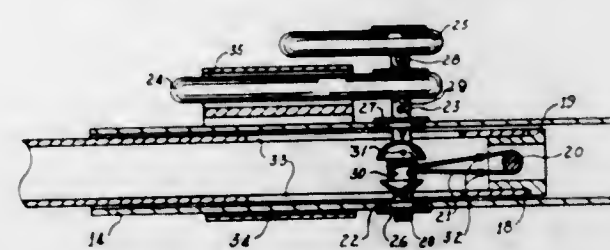


1. In a ball valve for a piping system, the combination of:  
a body having a valve chamber therein;  
a valve ball in the valve chamber having a flow port therethrough, said valve ball also having a bore through the top thereof communicating with the flow port and a bore through the bottom thereof in alignment with the upper bore and communicating with the flow port;  
an upper trunnion journaled in the body and extending into the upper bore in the valve ball;  
a lower trunnion journaled in the body and extending into the lower bore in the valve ball; and  
welding material in each of said bores exposed to the flow port rigidly securing the respective trunnion to the walls of the respective bore.

3,411,747

PUSH-PULL BAR

Charles H. Lister, Jr., 307 Park Blvd., Oldsmar, Fla. 33557, and James Eldred Jones, Sr., 3502 River Grove Drive, Tampa, Fla. 33610  
Filed July 17, 1967, Ser. No. 653,707  
3 Claims. (Cl. 254-1)



A bar whose length may be extended or shortened for the imposition of compression or tensile force on other objects, said changes in length being produced by the winding of a flexible cable upon a drum located within said bar. The drum is rotated by means of a ratchet wrench outside the bar.

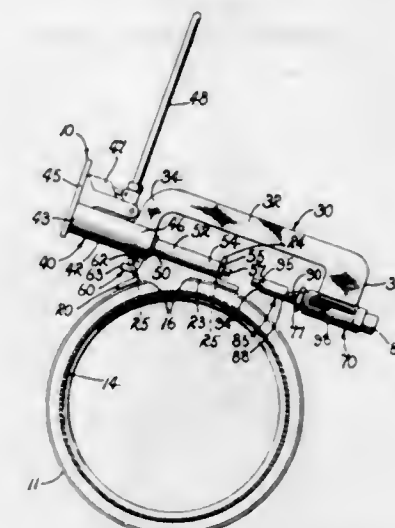
3,411,748

BAND EXPANDER AND CONTRACTOR FOR DRAIN PIPES

Earl W. Fortune, 8503 Longview Ave.,  
Atwater, Calif. 95301  
Filed Apr. 25, 1967, Ser. No. 633,579  
6 Claims. (Cl. 254-51)

A tool for expanding and compressing the ends of substantially circular drain pipe clamping bands having a

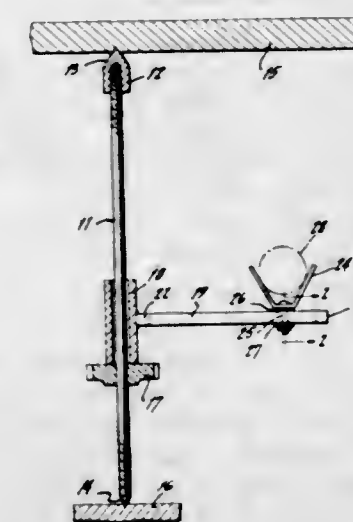
frame providing opposite ends individually mounting an extendible-retractable member and a reaction member for selective engagement with the ends of the bands. A second reaction member mounted on the frame at a position spaced from the extendible-retractable member in



the opposite direction from the first reaction member for alternate selective engagement with a correspondingly opposite end of the band from the end engaged by said extendible-retractable member alternately to draw the ends toward each other and to spread them apart incident to extension of the extendible-retractable member.

3,411,749

LIFTING DEVICE SUPPORTED AT BOTH ENDS  
AND SCREW ACTIVATED  
Aaron Glassman, Scranton, Pa., assignor to Pennsylvania Sewing Research Corp., a corporation of Pennsylvania  
Filed Oct. 13, 1965, Ser. No. 495,419  
4 Claims. (Cl. 254-100)



A lifting device comprised of an externally-threaded standard, adjustable in length, for spanning the underside of a table top and the floor below, and including anchor means at both ends to engage said underside and said floor and to maintain the standard in a substantially upright position. The device includes a sleeve slidably mounted and rotatable on the standard, a workholder mounted on the sleeve and shiftable radially from the standard, and internally-threaded means threaded on the standard for raising and lowering the sleeve.



3,411,750

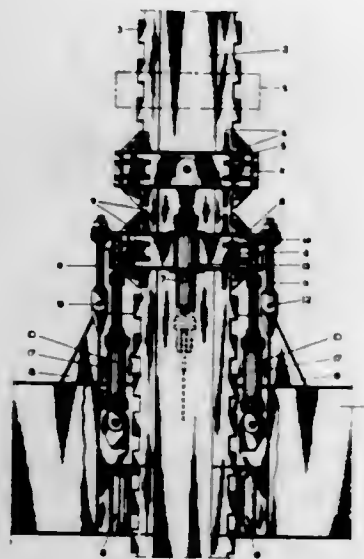
**APPARATUS FOR PRODUCING A RELATIVE LINEAR DISPLACEMENT BETWEEN A COLUMN AND A BODY**

August Hendrik Maria Smulders, Wassenaar, Netherlands, assignor to N.V. Werf Gusto v/h Firma, A.F. Smulders

Filed Jan. 6, 1967, Ser. No. 607,704

Claims priority, application Netherlands, Jan. 10, 1966, 6600285

8 Claims. (Cl. 254-110)



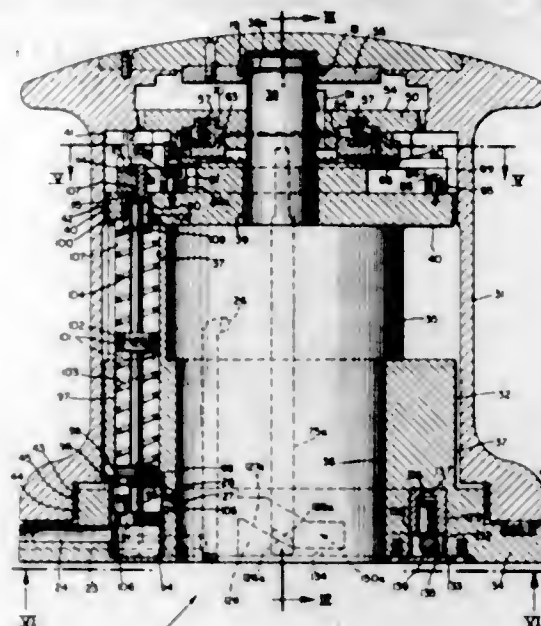
Means are provided for moving a column and a body relative to each other. The column has outwardly extending teeth on it, and driving pawls are vertically reciprocable and engage with the teeth. Blocking pawls hold the column between movements of the driving pawls. The driving pawls are carried by a first frame that encompasses the column above a second frame that carries the blocking pawls. Oppositely arranged upright hydraulic motors operate the frames, the axes of each pair of motors lying in a vertical midplane of its frame, these midplanes for the two pairs of motors being perpendicular to each other.

3,411,751

**HYDRAULIC POWER WINCH**  
Frank D. Pooley, Jr., 1936 Paper Mill Road, Huntingdon Valley, Pa. 19006  
Filed Apr. 20, 1967, Ser. No. 632,370  
8 Claims. (Cl. 254-150)

A reversible hydraulic motor is fixedly mounted in a housing and has a shaft extending from one end thereof. A capstan is mounted for rotation about said motor and housing. A gear is keyed to the shaft of the motor for rotation therewith and for axially sliding thereon. The inner radial side of the gear is attached to one half of a ratchet mechanism for engaging the other half of the ratchet mechanism attached to the housing. The gear teeth engage mating teeth on the inner cylindrical surface of the capstan for rotating the capstan and are disposed for axial sliding engagement therewith. A hydraulic cylinder is positioned in one of the hydraulic fluid lines to the reversible hydraulic motor, said cylinder containing a piston and rod which are attached to a mechanism for engagement with said gear and ratchet mechanism whereby when the reversible hydraulic motor is turning the capstan in one direction the ratchet will prevent rotation in the opposite direction, and when the motor is reversed, the hydraulic cylinder and piston arrangement will release the ratchet mechanism and the motor will rotate the capstan in the other direction, and further, the hydraulic cylinder and piston arrangement may disengage completely the gear from the capstan so that there is no con-

nection between the motor and the capstan. Hand actuated mechanical means may be provided to disengage the cap-



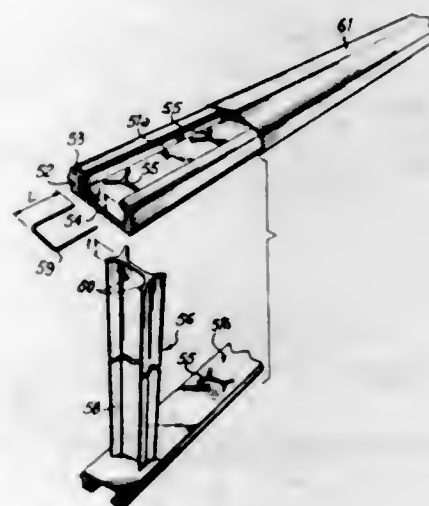
stan and gear in the event of a failure in the hydraulic system.

3,411,752

**GUARDRAILS SUCH AS BALCONY BALUSTRADES**André Gérard Bos, 64 Ave. de Lardenne, Toulouse, Haute-Garonne, France  
Filed Jan. 23, 1967, Ser. No. 611,015

Claims priority, application France, Jan. 28, 1966, 47,645

7 Claims. (Cl. 256-22)



The present invention is directed to a guardrail construction which may be delivered to the site of erection in a knock-down condition and quickly erected with a minimum of effort and time. The top and bottom rails are of channel cross section with inwardly directed stops. The web of each rail is provided with spaced slots there-through which are complementary to the cross section of the spacer bars carried therebetween. Each spacer bar has a pair of spaced openings proximate their free ends, which openings cooperate with the stops on the top and bottom rails and the inner side of the webs of the rails to lock the spacer bars and rails into a unitary rigid construction when U-shaped pins are passed through the openings, the locking pins may be welded in place when assembled and a smooth cover plate slid over the entire construction.

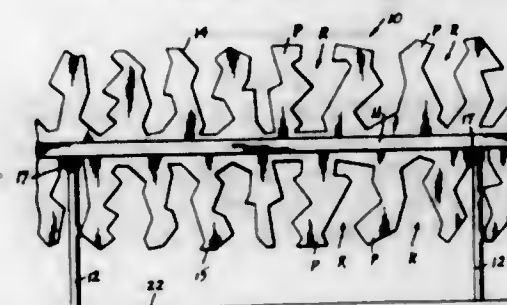
3,411,753

**DECORATIVE FENCE**

Everette Clifton Wood, Ardmore, Okla., assignor of eighty percent to Betty Wood and twenty percent to John C. Caldwell, both of Ardmore, Okla.

Filed Oct. 5, 1966, Ser. No. 584,494

9 Claims. (Cl. 256-24)

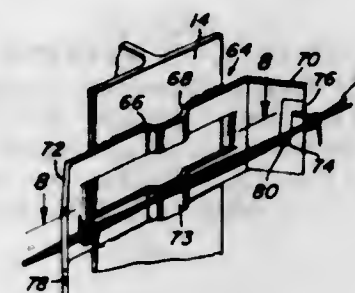


In a decorative fence, the combination of horizontally extending fence rail means, vertically disposed decorative panel means formed from sheet material having edge portions thereof supportably retained by said rail means, and fence posts connected to said rail means for supporting said panel means with the lowermost edge thereof spaced above the ground, said panel means being formed from a single sheet of material cut along an irregular line to provide each panel with a series of prominences and recesses therebetween, the size and shape of the prominences of each panel being complementally identical to the size and shape of the recesses in the other panel.

3,411,754

**FENCE POST WIRE FASTENER**Martin H. Fahrenholz, Bassett, Nebr. 68714  
Continuation-in-part of application Ser. No. 440,673, Mar. 10, 1965. This application Dec. 8, 1966, Ser. No. 600,130

4 Claims. (Cl. 256-48)



Means for attaching an elongated flexible member, such as a strand of wire, to a fence post or the like, including horizontally spaced apart clips defining generally vertically disposed oppositely opening slots, the slots in the clips having closed ends in substantial horizontal alignment and vertically spaced entrance passages, the entrance passages being disposed in vertically spaced relation so that one of said clips holds the wire up in a locking position and the other of the clips holds the wire down in a locking position against accidental dislodgment.

3,411,755

**MIXING APPARATUS FOR USE IN THE PREPARATION OF DENTAL CEMENT AND METHOD OF PREPARING THE SAME**

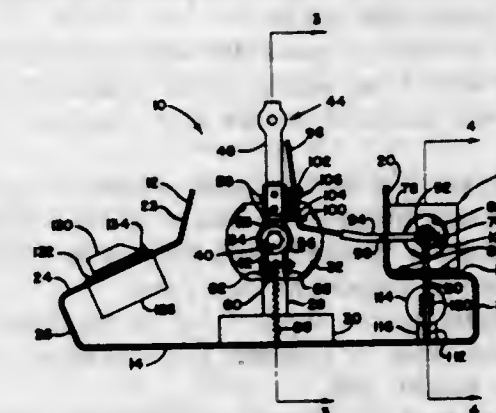
Walter S. Strauss and George A. Shedlarski, Buffalo, N.Y., assignors to Dentek, Inc., Buffalo, N.Y., a corporation of New York

Filed Apr. 25, 1967, Ser. No. 633,598

15 Claims. (Cl. 259-72)

A method of and an apparatus for preparing certain dental materials such as zinc phosphate and silicate cements wherein the liquid constituent is added to a capsule containing the powder constituent, the capsule is oscillated

to promote the mixing of the constituents and cooled to free the heat generated by the physical and/or chemical



reaction of the constituents and thereby prevent premature hardening of the cement.

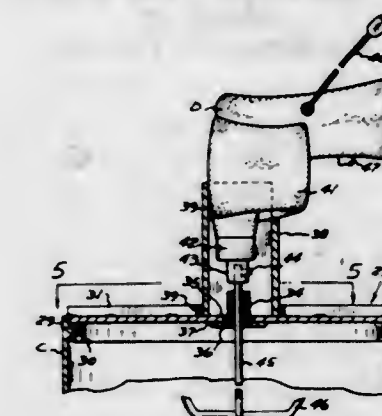
3,411,756

**MIXING DEVICE FOR FLUIDS**

Moses Ziegler, 12638 Roselawn, Detroit, Mich. 48238

Filed Sept. 11, 1967, Ser. No. 666,752

2 Claims. (Cl. 259-122)



A mixer for fluids stored in a cylindrical open container, which includes an adapter plate selectively mountable upon such container and interlocked therewith, and an electric motor mounted on said plate with interconnected drive shaft and paddle mixer thereon.

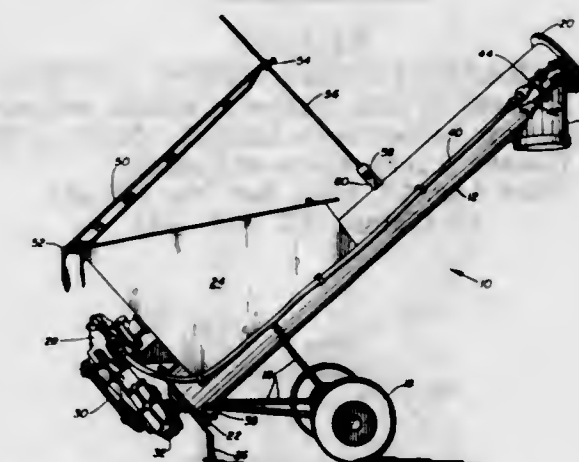
3,411,757

**LOADER**

Loren Hale, 3703 E. 36th St. N., Tulsa, Okla. 74115

Filed Mar. 28, 1966, Ser. No. 537,895

3 Claims. (Cl. 259-161)



1. A loader comprising:  
a substantially closed feed tube including:  
(a) a closure at each end thereof  
(b) a downwardly directed discharge tube at the upper end



- (c) a material receiving opening at the top half of said feed tube adjacent the lower end
- (d) a rotatable auger supported by said closures, means to rotate said auger;
- a hopper extending upwardly adjacent the lower end of said tube from said material receiving opening to cause said material to converge thereinto said feed tube;
- a mesh cover for said hopper pivotal along the rear edge of said hopper and means to raise the free end to an angular position with respect to horizontal;
- a dual wheeled support for said tube;
- an adjustable tripod support leg at the lower end of said feed tube to position said discharge tube at a desired height; and
- an angular bracket supported atop and across said material receiving opening acting as a bridge to prevent jamming of the auger at the opening.

3,411,758

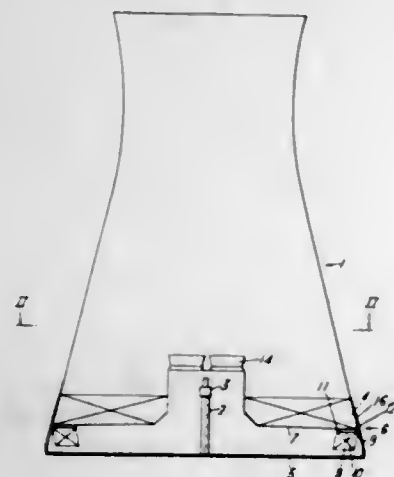
## COOLING TOWERS

Philip David Edmondson, 50 Rochester Row, Westminster, London SW. 1, England

Continuation of application Ser. No. 584,526, Oct. 5, 1966. This application Feb. 12, 1968, Ser. No. 704,942

Claims priority, application Great Britain, Oct. 7, 1965, 42,658/65

4 Claims. (Cl. 261-24)



A natural draught cooling tower in which an upper irrigation stack is mounted above a decking which divides the inlet to the tower into two parts, the decking having a central impermeable part in the centre of which a fan unit is mounted, the periphery of the decking being permeable, and there being a cross-flow packing mounted below the peripheral region of the decking.

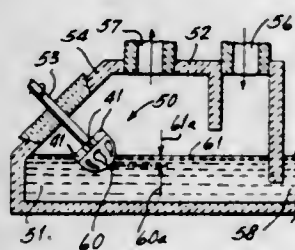
3,411,759

## APPARATUS FOR SPLASHING LIQUIDS

Bryan Rapson, Arvida, Quebec, Canada, assignor to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada

Filed Aug. 14, 1964, Ser. No. 389,653

16 Claims. (Cl. 261-91)



In a treatment chamber for bringing a flow of gas into contact with a spray of liquid, a rotated impeller partially

dipping into a body of the liquid for splashing such liquid into the gas-passage space above the body comprises a cluster of arcuate vanes on one side of a base plate that extends across the axis of rotation of the impeller, the vanes providing curved, radially-extending pockets inwardly closed by a hub portion and opening both peripherally and opposite the base plate.

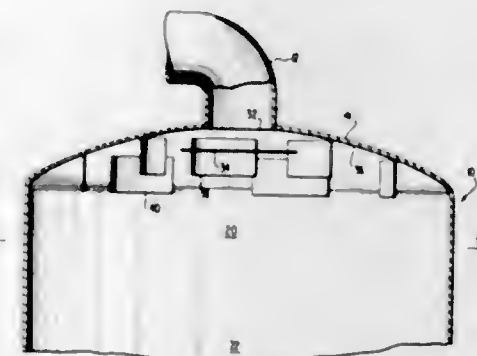
3,411,760

## TOP-INSIDE PRESSURE TANK DISTRIBUTOR

William J. Katz, Fox Point, Wis., assignor to Rex Chain-belt Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed Feb. 10, 1966, Ser. No. 526,486

4 Claims. (Cl. 261-98)



A distribution system for gas and liquid in a gas absorption tank having a central liquid inlet opening directed downwardly through the top of the tank includes a fixed baffle spaced downwardly from the opening to direct liquid horizontally along an inverted concave surface and a series of discontinuous arcuate baffles are fixed to the concave surface to intercept portions of the liquid and to form separate falling streams in the tank.

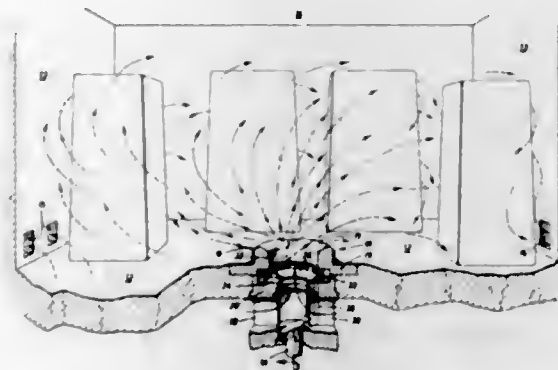
3,411,761

## BURNER AND SOAKING PIT

Karl Alexander Gmell, Hamilton, Ontario, Canada, assignor to The Steel Company of Canada, Limited, Hamilton, Ontario, Canada, a company of Canada

Filed Dec. 19, 1966, Ser. No. 602,954

14 Claims. (Cl. 263-40)



An improved burner for use in soaking pits and furnaces comprising the combination of a port block and burner body having an axial port extending therethrough and an annular baffle formed in the burner body extending in the port whereby combustion air entering through the port is entrained by fuel jetted tangentially into the port downstream of the baffle and obliquely into the soaking pit or furnace. The combustion products enter the soaking pit or furnace with a swirling motion to effectively heat the contents therein while permitting the formation of a protective layer of air at the top of the pit or furnace.

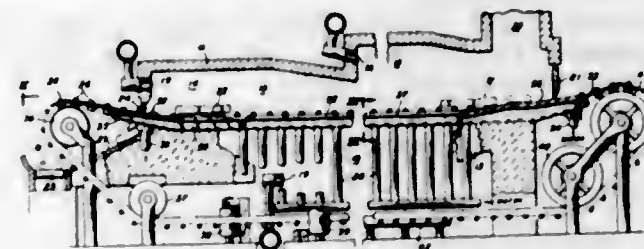
3,411,762

## APPARATUS FOR MOVING WORK THROUGH A CONTINUOUS REHEATING FURNACE

Julius B. Evans, Chicago, Ill., assignor to United States Steel Corporation, a corporation of Delaware

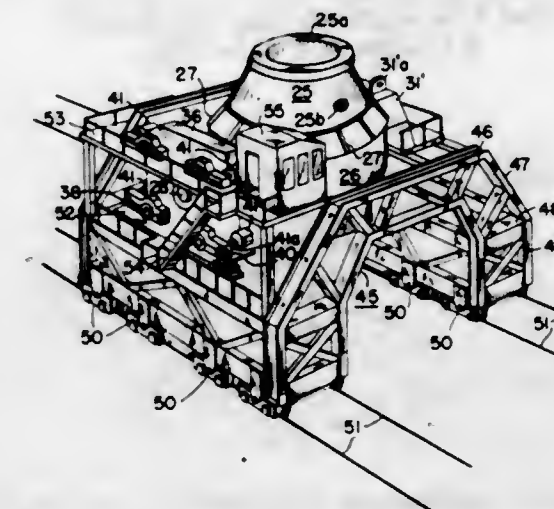
Filed Dec. 20, 1966, Ser. No. 603,376

8 Claims. (Cl. 263-8)



A conveyor arrangement for carrying semifinished steel shapes through a reheating furnace. Conveyors formed of ceramic blocks mounted in metal casings coupled to form two endless strands, which travel through the furnace in water-cooled troughs. Strands parallel through most of the furnace length, but diverge near discharge end to deposit work on a hearth, from which it slides down an incline and leaves the furnace. Main purpose is to eliminate "skid-marks" from the work. These marks are cool spots which result when the work travels through furnace on conventional water-cooled skids.

ing type of an oxygen blow furnace converter vessel. The side legs are connected by overhead, upwardly-offset, bridging paneled truss framing to define a central open area within which the converter vessel is suspended. Transversely spaced-apart and longitudinally-extending floor-mounted track or rail member pairs define a wide, centrally-open work area therebetween which represents working area spacing between the side legs of the machine. Each side panel leg has wheeled truck adjacent its front and back ends for cooperating with and riding back and forth on and along the track member pairs. Each



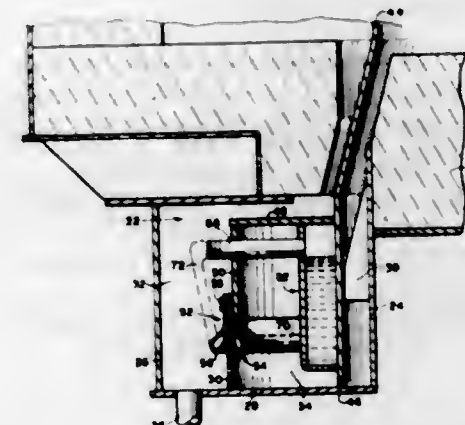
3,411,763

## BELL TYPE FURNACE HAVING ELASTOMER FLAP TYPE SEAL

Calvin C. Blackman and Robert A. Letherer, Bay Village, Ohio, assignors to Rad-Con Inc., Cleveland, Ohio, a Corporation of Ohio

Filed Aug. 29, 1966, Ser. No. 575,577

10 Claims. (Cl. 266-5)



1. In a bell-type furnace including a base member for supporting a charge and a cover member for covering the charge, an improved gas seal comprising a pair of annular resilient, elastomer flaps projecting from one of said members, the other of said members having an annular ring projecting between said flaps and sealing thereagainst when said cover member is positioned over said charge and supported by said base.

truck has a reversible electric motor drive that is unitized in its operation with respect to motor drives of the other trucks to provide a coordinated back and forth movement of the machine on the track members.

A furnace operating plant layout has vessel operating stations along the track members in the transverse working area or spacing therebetween to provide for full and complete operational utilization of the converter vessel, including its cleaning and repair. A pair of such stations are additionally provided with transversely-extending side bays for handling the charging materials and for handling the melted and refined metal processed by the vessel.

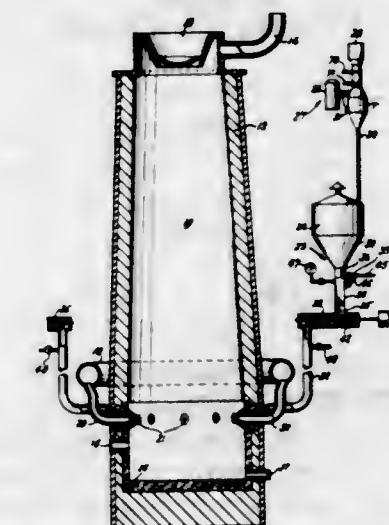
3,411,765

## APPARATUS FOR CHARGING COARSELY COM-MINUTED COAL INTO TUYERES OF A BLAST FURNACE

Lawrence D. Schmidt, New York, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Original application Dec. 21, 1962, Ser. No. 246,397, now Patent No. 3,240,587, dated Mar. 15, 1966. Divided and this application Oct. 20, 1965, Ser. No. 516,182

7 Claims. (Cl. 266-29)



Apparatus for charging dry, preheated, coarsely comminuted coal as an auxiliary fuel to a blast furnace, in combination, a hot bin to receive and store the coal, a

3,411,764

## STEELMAKING PLANT HAVING A MO-BILE, STRADDLE CARRIAGE CONVERT-ER SUPPORT

Martin C. Falk, Pittsburgh, and Joseph Cugini, Jr., and Robert M. Van Tassel, New Castle, Pa., assignors to Pennsylvania Engineering Corporation, New Castle, Pa., a corporation of Pennsylvania

Filed Feb. 17, 1966, Ser. No. 528,138

6 Claims. (Cl. 266-13)

A heavy-duty self-propelled, positioning and operating carriage or machine of a straddle frame construction has paneled side legs provided with bearing stands to rotatably-receive opposed trunnion shafts of an upright operat-



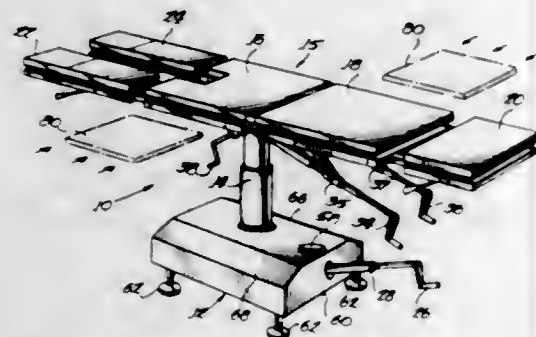
gas tight valved pressure bin into which the coal is introduced and provided with means for introducing pressure fluid, jet means for scouring the valve seat of pressure bin, means for removing coal from pressure bin while still under pressure and screw conveyor for injecting the coal from pressure bin into tuyere of blast furnace.

3,411,766

## OPERATING TABLE

Richard W. Lanigan, Arlington Heights, Ill., assignor to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois

Filed Feb. 23, 1966, Ser. No. 529,379  
5 Claims. (Cl. 269—325)



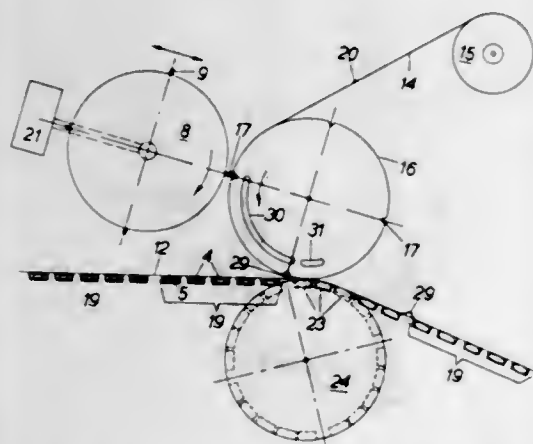
A relatively light-weight and portable operating table readily transportable by air. The table includes a generally rectangular hollow base and a telescoping column extending upwardly therefrom. A rectangular seat section is mounted upon the column and rectangular head and leg sections are pivotally connected along opposite ends of the seat section, the head, leg and seat sections being no wider than the hollow base. When the table is collapsed for transportation and storage, the pivotal leg and head sections are swung into depending vertical positions within the horizontal limits defined by the base. The base constitutes a ballast tank which may be filled with water for added stability. At least one of the legs which supports the base above a floor surface is adjustable so that the base may be tipped for draining. Beneath the patient-supporting panels of the table are interconnecting compartments for receiving X-ray film cassettes, the panels being formed of X-ray permeable material.

3,411,767

## APPARATUS FOR POSITIONING A WEB

Theo Moser, Walblingen, and Helmut Epple, Hohenacker, Germany, assignors to Höfliger & Karg, Stuttgart, Germany

Filed July 11, 1966, Ser. No. 564,286  
Claims priority, application Germany, July 9, 1965, H 56,539  
15 Claims. (Cl. 270—53)



Marks on a transported web are sensed, and signals produced controlling the forming of larger or smaller folds

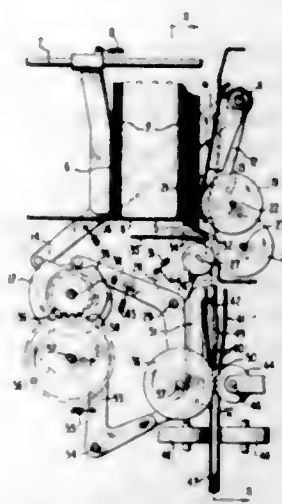
in the web so that web sections can be accurately placed on another transported web.

3,411,768

## HIGH SPEED DEVICE FOR FEEDING DATA CARRYING DOCUMENTS SUCH AS CARDS AND CHECKS

Giancarlo Gatti, Varese, Italy, assignor to Olivetti-General Electric S.p.A., Caluso, Turin, Italy, a corporation of Italy

Filed Oct. 8, 1965, Ser. No. 493,991  
3 Claims. (Cl. 271—10)



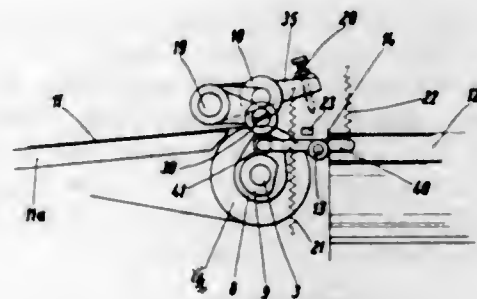
An improved high speed device for feeding documents comprising separating means for removing documents from a stack, one by one, feeding the documents alternately through one of two paths to an aligning means and stopping member, thence changing the direction of the movement of the card.

3,411,769

## SHEET FEEDER FOR A SHEET PROCESSING MACHINE

Adolf Schwebel, Offenbach am Main, Germany, assignor to Mabeg Maschinenbau G.m.b.H. Nachf. Hense & Pleines G.m.b.H. & Co., Offenbach am Main, Germany, a firm of Germany

Filed Feb. 2, 1967, Ser. No. 613,634  
6 Claims. (Cl. 271—10)



The invention relates to a sheet feeder for feeding successive sheets from a stack of sheets to a sheet processing machine.

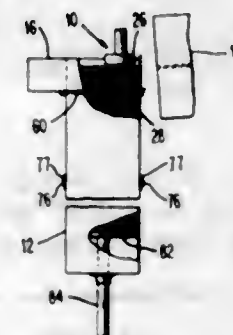
The sheet feeder comprises a band conveyor which conveys successive sheets over a sheet table to the sheet processing machine. The sheet feeder further comprises drive means for driving the conveyor and control means for supplying successive sheets to the conveyor to transport the sheets and for aligning the same if necessary. The invention resides in providing a common drive shaft for the conveyor and for sequentially and intermittently activating the control means.

3,411,770

## SHEET SEPARATOR

Charles Barton Albright, Norristown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 4, 1966, Ser. No. 570,299  
5 Claims. (Cl. 271—26)



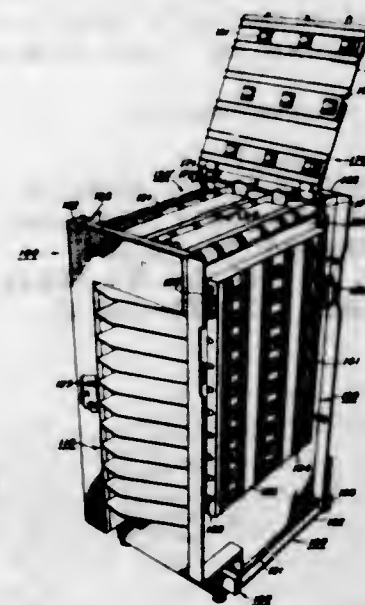
The present device provides a jet of air which is directed vertically downward against a stack of unit records or sheets. The unit records are moved upwardly through a magazine at a controlled rate of speed toward the vertical jet of air. The magazine includes a preseparator device which emits jets of air transversely through the upper layers of the unit records as the unit records approach the vertical jet. The transverse jets serve to separate the upper layers thereby making them ready to be separated by the vertical jet. When the top unit record reaches a predetermined position, the velocity of the vertical stream in its radial excursion creates a differential of pressure and the top unit record is snapped upward from the stack. The magazine has an open end through which the separated top unit record is moved.

3,411,771

## SHEET TRANSPORT

Karl E. Bahr, Pittsford, and Augustus W. Griswold and Charles R. Young, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Aug. 26, 1966, Ser. No. 575,477  
3 Claims. (Cl. 271—51)



A sheet transport mechanism adapted to facilitate the removal of sheet material jams occurring therein. The mechanism includes a plurality of rotatable drive rollers positioned on a support member on one side of the sheet feed path. Positioned on the other side of the sheet feed path is a plurality of idler rollers mounted on a frame member through spring urged bifurcated brackets. The

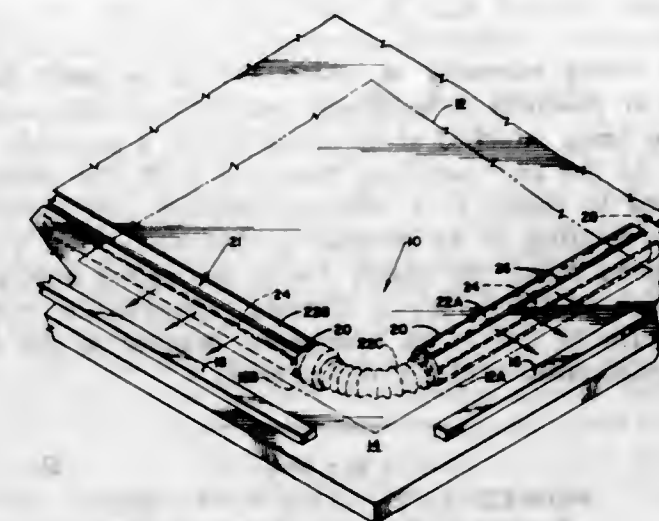
springs are arranged to permit the easy removal and replacement of the idler rollers while the frame and support members are pivotally connected to each other for their separation in the event of a paper jam.

3,411,772

## APPARATUS FOR REGISTERING A FABRIC WORKPIECE

Herman Rovin, East Norwalk, Conn., assignor, by mesne assignments, to Ivanhoe Research Corporation, % Robert A. Hack, New York, N.Y., a corporation of Delaware

Filed Feb. 3, 1966, Ser. No. 524,897  
9 Claims. (Cl. 271—52)



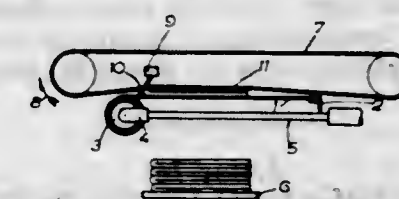
This invention relates in general to apparatus for handling fabric workpieces and more particularly it relates to an apparatus comprising a hollow cylindrical rotatable member with a row of suction openings therein for applying a sequence of lateral impulses to register a fabric workpiece at a particular desired location so that its position is accurately determined in readiness for further work to be performed upon it.

3,411,773

## STACKING DEVICES

James Edward Cornwall, Lascelles Hall, near Huddersfield, Yorkshire, England, assignor to Thomas Broadbent & Sons Limited, Huddersfield, Yorkshire, England

Filed May 25, 1966, Ser. No. 552,805  
Claims priority, application Great Britain, May 26, 1965, 22,276/65  
9 Claims. (Cl. 271—73)

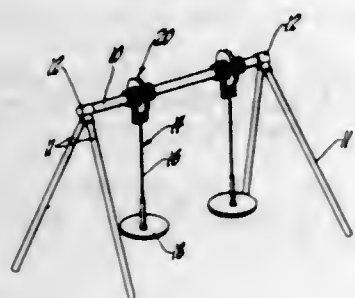


Articles are advanced serially to a staking station along a lengthening and shortening run of article supporting flexible material which is self coilable on a roller, the forward end of the run being arcuate and being advanced at a lower speed and withdrawn at a higher speed to and from a terminal position above a stacking station. On retraction the article supporting run rolls away from the article to render the article unsupported without sliding between the article and the run.



3,411,774

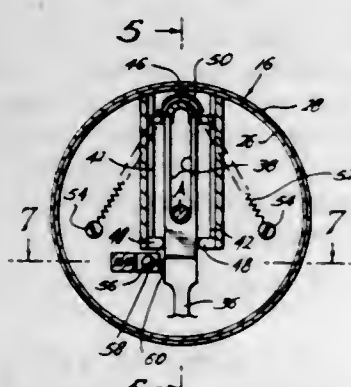
**OSCILLATION OPERATED ELEVATABLE SWING**  
George D. Thornton, 29179 Longview, Apt. 19,  
Warren, Mich. 48093  
Filed Dec. 7, 1964, Ser. No. 416,492  
16 Claims. (Cl. 272-6)



A swing assembly in which a rope or cable has a seat or platform at the lower end thereof, such rope or cable being attached at its upper end to a rotatable pulley. As the seat oscillates back and forth, the pulley is caused to rotate in a winding direction and prevented from rotating in an unwinding direction. At a predetermined point, the clutch means preventing unwinding rotation of the pulley is released, allowing the seat or platform to fall in an unimpeded manner to the fully extended position of the rope or cable.

3,411,775

**POWER ACTUATED JUMP ROPE**  
Eugene P. Delk, Jr., Houston, Tex.  
(4603 Oleander St., Bellaire, Tex. 77401)  
Filed Oct. 20, 1965, Ser. No. 498,739  
3 Claims. (Cl. 272-75)



Mechanism for operating a jump rope for use as play or exercise equipment. An electric motor is used to drive a circular plate to which one end of a jump rope is releasably attached. Also attached to the plate by resilient biasing springs is a counterweight. When the end of the rope is attached to the plate the counterweight is offset from the center of rotation of the plate to counterbalance the weight of the rope, when the rope is disengaged from the plate, the counterweight returns to the center of rotation of the plate so that the device is always balanced.

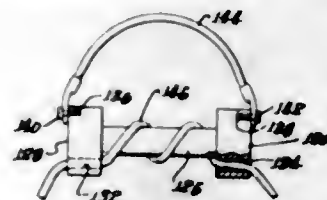
3,411,776

**RECIPROCATING FRICTION-TYPE EXERCISING DEVICE**

Edgar E. Holkesvick Fullerton, and John Hudnall and Robert W. Adams, Los Angeles, Calif., assignors, by direct and mesne assignments, to Edgar E. Holkesvick, Fullerton, Calif.  
Original application June 12, 1961, Ser. No. 116,393, now Patent No. 3,197,204, dated July 27, 1965. Divided and this application June 9, 1965, Ser. No. 482,646  
The portion of the term of the patent subsequent to July 27, 1982, has been disclaimed  
13 Claims. (Cl. 272-79)

An exercising device adapted to be suspended from a support and which includes an elongated shaft of a length to receive several turns of rope therearound. Spaced-apart

apertures guide a length of rope onto and off of the shaft. A length of rope extends through one aperture, at least partially around the shaft and then out through the other



aperture, the length of rope having a handle at each end whereby the rope can be moved back and forth through the device in sliding frictional engagement with the shaft.

3,411,777

**TOY FOR TESTING BALANCING SKILL**  
Tulvio S. Durand, Inglewood, Calif., assignor to Systems Technology, Inc.  
Filed Oct. 11, 1965, Ser. No. 494,418  
3 Claims. (Cl. 273-1)



A device for testing balancing skill. An outer lightweight tube has a viscous damping fluid filling its interior. Suspended and movable within the damping fluid is a dense bobweight element configured to fit the interior of the tube. The bobweight has an orifice along its periphery to allow for passage of the viscous fluid as the bobweight drops from the top of the tube to the bottom as the bottom end of the tube is balanced by a user. Both ends of the tube are sealed.

3,411,778

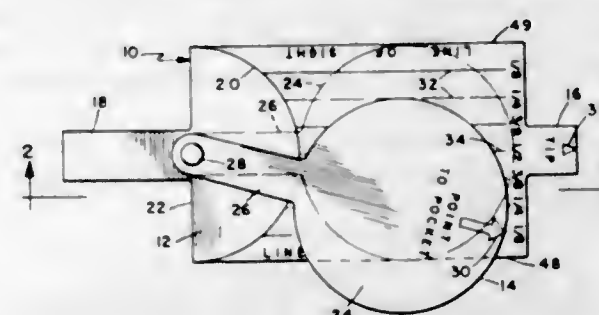
**BALLOON TARGET MISSILE**  
Robert M. Barry, 7921 Noel Court,  
Richmond, Va. 23234  
Filed Nov. 16, 1965, Ser. No. 508,115  
5 Claims. (Cl. 273-105.4)



A freely flying target having a body portion of appreciable weight for projection into a trajectory. The body has affixed thereto an inflatable balloon which serves as a target member and which is deflated when struck by projectiles. A brightly colored indicator ribbon is attached to the body portion to facilitate retrieving of the target body.

3,411,779

**AIMING POINT INDICATOR FOR BILLIARDS**  
Donald K. McGowan, La Mesa, Calif.  
(9303 Linden Ave. N., Seattle, Wash. 98103)  
Filed Oct. 28, 1966, Ser. No. 590,364  
7 Claims. (Cl. 273-2)



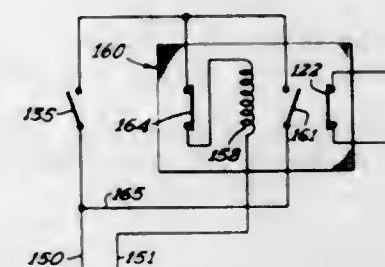
1. An aiming point indicator for billiards, for indicating the point on an object ball at which a cue ball must be aimed in order to direct the object ball to a selected pocket, the indicator comprising:

- a base plate having a ball locating arcuate element corresponding to a portion of a billiard ball, and a calibrated scale, said scale having parallel demarcations extending adjacent to said arcuate element for indicating a progression of fractional portions of the diameter of the ball;
- a pointer element including a disc portion representing a billiard ball, with an arm extending radially from said disc portion and being pivotally attached to said base plate at the center of radius of said arcuate element, and said disc portion being tangential to said arcuate element;

the adjusted position of said pointer, in use, giving a reading as one of said fractional portions, thus indicating the proper aiming point on an object ball.

3,411,780

**AUTOMATIC PINSETTER CIRCUIT**  
James B. Mellon, Box 589, Pierre, S. Dak. 57501  
Filed May 21, 1965, Ser. No. 457,633  
4 Claims. (Cl. 273-43)



This invention and disclosure relates to automatic pinsetting apparatus for bowling alleys and is directed to an improved circuit which will eliminate unwanted cycling of the pinsetting apparatus and more particularly in the tenth frame of bowling when a manually operating control switch under the direction of the bowler is operated to reset the alley. If such a switch is operated with the present equipment at a particular period of time in the movement of the pinsetting apparatus, the structure will recycle the complete cycle introducing an undesired time delay in preparing the alley for the next bowler. This particular invention is directed to an improved control circuit incorporated into such automatic pinsetting apparatus as is shown in the patent to W. F. Huck et al., No. 2,949,300 on "Automatic Pinsetters" dated Aug. 16, 1960, which will temporarily disable the manual control to prevent such

undesired operation. The improved circuit adds a separate relay of the time delay type with contacts in the pinsetter control circuit wherein the manual control initiates a recycling operation. This circuit is initiated by an additional cam operated switch which is operative only during a predetermined portion of the pinsetter cycle wherein initiation of manual control would permit the undesired recycling. The switch circuit controls the time delay relay to disable the operation of the manual control switch for a predetermined period thus preventing the unwanted sequence of operation.

3,411,781

**POLYESTER BOWLING BALL AND METHOD OF MAKING SAME**

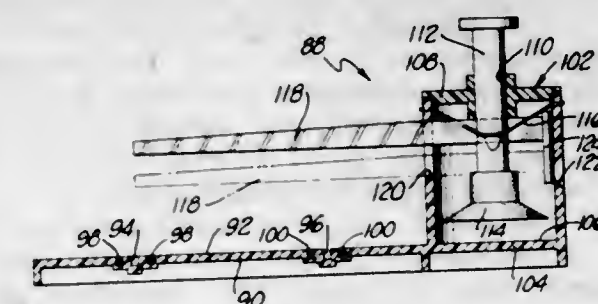
Anton W. Rytina, Grand Haven, and Carl O. Degner, Muskegon, Mich., assignors to Brunswick Corporation, a corporation of Delaware  
Filed Apr. 27, 1965, Ser. No. 451,250  
2 Claims. (Cl. 273-63)

A bowling ball having improved hardness, rebound ability, impact resistance, abrasion and scratch resistance, among other desired properties. The ball includes a core and has a polyester cover in which the polyester is cross-linked by polymerization of a monomeric ester of a polyol and unsaturated acid. The polyester is usually a blend of rigid and flexible polyester resins in which the polyesters are dissolved in a suitable monomeric solvent such as styrene. The ball is prepared by mixing the cross-linking monomer into a blend of the liquid rigid and flexible polyester resins, molding the resulting liquid mixture about the ball core and curing the mixture.

3,411,782

**STARTING DEVICE FOR TOY ROAD RACE CARS EMPLOYING SUCTION CUP TIMER**

Olen P. Wood, Rosemead, Calif., assignor to Eldon Industries, Inc., Hawthorne, Calif., a corporation of California  
Filed Feb. 28, 1966, Ser. No. 530,545  
5 Claims. (Cl. 273-86)



A starting device for toy road race cars employing a suction cup serving as a timer. This suction cup controls the position of a barricade or bar extending across a track for such cars so that in one position of the suction cup timer the track is blocked and in another position it is not. The suction cup timer also controls the operation of a switch used to supply power to the track.

3,411,783

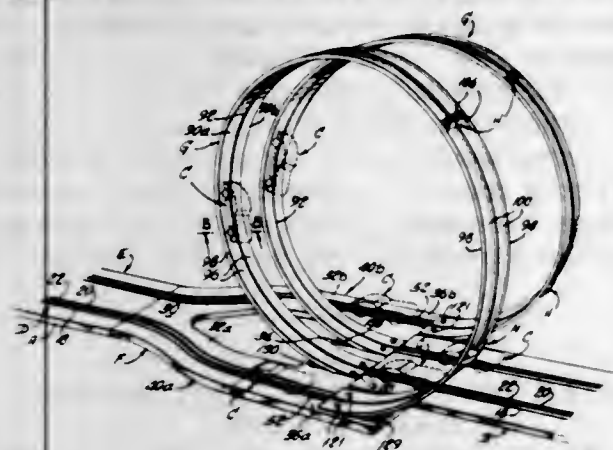
**HELICAL LOOP RACING TRACK ASSEMBLY**  
Charles T. Montagna, Clark, N.J., assignor to The Lionel Corporation, New York, N.Y., a corporation of New York

Continuation of application Ser. No. 406,060, Oct. 23, 1964. This application Mar. 8, 1967, Ser. No. 621,708  
10 Claims. (Cl. 273-86)

A miniature racing track assembly for electrically operated toy vehicles including a pair of side by side tracks each of which has first and second portions in longi-

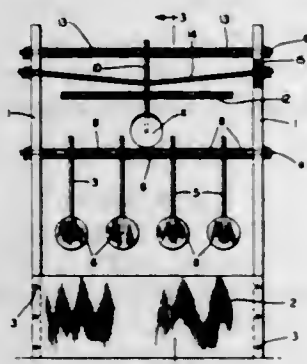


tudinal alignment and in the same horizontal plane. A Y-shaped member connects the respective first and second



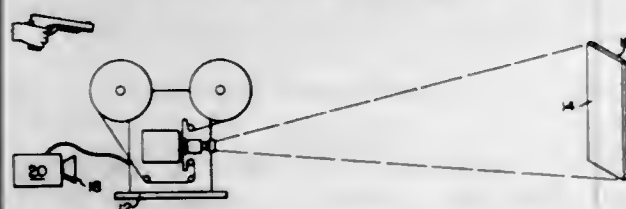
portions with the end portions of helically shaped track loops.

**3,411,784**  
**SELF RESETTING TARGET**  
James Robert Lawrence, R.D. 2, Box 30,  
near Loudonville, Ohio 44842  
Filed June 22, 1966, Ser. No. 559,555  
10 Claims. (Cl. 273-102)



1. A target device comprising a plurality of spaced individual targets pivoted upon a common horizontal axis and normally suspended therefrom, said targets being adapted to be operated by the impact of projectiles so as to be thereby moved upward out of their normal positions, means for supporting said targets in said upward position, and a master target movably mounted relative to the individual targets and means responsive to movement of said master target for striking the individual targets in said upward position and moving them from said support means to thereby fall to the normal position.

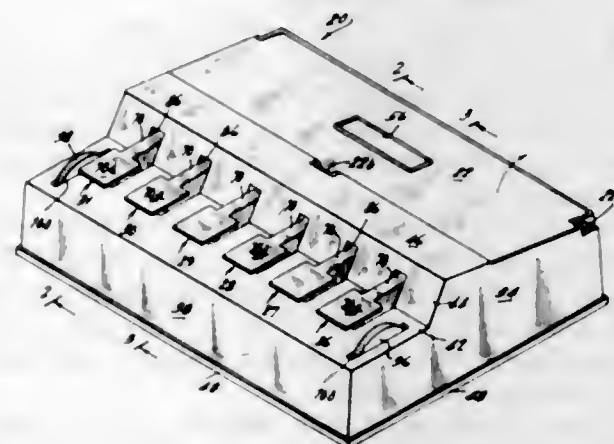
**3,411,785**  
**STOP CONTROL FOR MOVING PICTURE TARGET PROJECTOR**  
Roger Molina, Fairport, and Elmer J. Koepplin, Rochester, N.Y., assignors to Crosman Arms Company, Inc., Fairport, N.Y., a corporation of New York  
Filed Jan. 18, 1965, Ser. No. 426,270  
2 Claims. (Cl. 273-105.1)



1. Apparatus for practice shooting comprising  
(a) a motion picture projector having an electrically actuatable clutch in its film drive train,  
(b) a microphone for producing an electrical signal in response to a gunshot report,

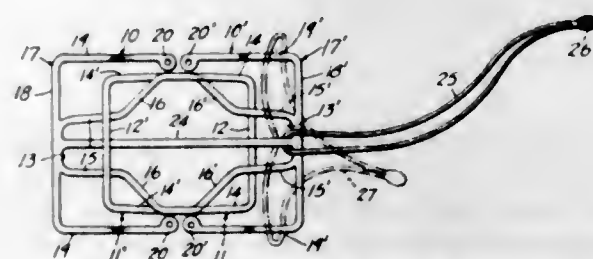
(c) an amplifier for amplifying electrical signals produced by said microphone,  
(d) means including a relay in the output circuit of said amplifier for controlling said clutch, and electrical triggering means connected to said relay and responsive to signals amplified by said amplifier to actuate said relay and disengage said clutch,  
(e) further means in said output circuit for biasing said relay with holding current so that once said relay is actuated it remains actuated until said biasing means is disabled, and  
(f) manually controllable means for simultaneously opening said output circuit and disabling said biasing means.

**3,411,786**  
**TOY CONTAINER WITH RANDOMLY UNLATCHABLE LID**  
Julius Cooper, New Hyde Park, N.Y., assignor to Ideal Toy Corporation, Hollis, N.Y., a corporation of New York  
Filed Mar. 7, 1966, Ser. No. 532,241  
4 Claims. (Cl. 273-138)



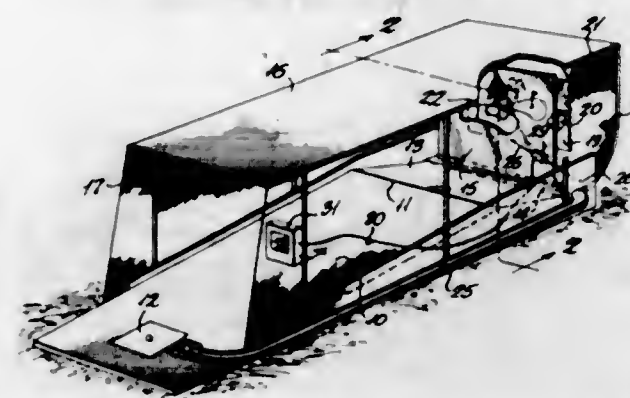
A child's toy consisting of a container having a spring biased lid which is latched in a closed position, an unlatching mechanism selectively operated by only one of six levers, and means which randomly selects which lever is effective to operate the unlatching mechanism.

**3,411,787**  
**PUZZLES**  
Ronald Ace, 1704 M St., West Belmar, N.J. 07719, and John N. Ricci, 22 De Forest Ave., Red Bank, N.J. 07701  
Filed Apr. 14, 1966, Ser. No. 542,628  
4 Claims. (Cl. 273-159)



A puzzle comprising two similar frame parts integrally joined and spaced by a rod and an operating loop-type member normally anchored to said rod, each part consisting of a closed frame having wide and narrow ends, a U-shaped frame, the crosshead of which joins said narrow end and said rod being arranged centrally of the puzzle between angularly offset portions of said wide ends. Further, the side arms of the U-shaped frame are angularly offset and parallel to the offset portions of said wide ends.

**3,411,788**  
**GOLF GAME APPARATUS WITH ELECTRICAL SCORING MEANS**  
Don M. Blanding, P.O. Drawer 1527,  
Sumter, S.C. 29150  
Continuation-in-part of application Ser. No. 437,505,  
Mar. 5, 1965. This application Sept. 29, 1966, Ser.  
No. 582,840  
6 Claims. (Cl. 273-176)



A transparent sheet material barrier including a golf ball target opening is positioned forwardly of a decorated impact curtain. Movement of the impact curtain causes a tension element to close an electrical switch which actuates a scoring device. A ball return trough extends between target and tee-off areas.

**3,411,789**  
**GOLF SWING TRAINING DEVICE**  
Henry L. Warner, 318 Highland Ave.,  
Fayetteville, N.C. 28305  
Filed Sept. 19, 1966, Ser. No. 580,348  
1 Claim. (Cl. 273-186)



1. A golf practice device comprising the combination of an attachment adapted to be secured to the head of a golf club, and a mat over which the golf club can be swung, said attachment including a springy member having a portion adapted to extend below the sole of the club head when secured thereto and of a character to engage and move along the mat when the club is swung, said mat having a flexible top sheet secured at spaced locations to a base member, a recording surface on said base member extending between said locations and above which said sheet extends, the characteristics of said recording surface being such that it will reveal a line when the top sheet is engaged by said springy member and pressed into engagement with the recording surface, and by a separation of the top sheet from the said recording surface the line will be erased, said base member including a raised elongated portion extending between said spaced locations, and the portion of said top sheet

between one of said locations and said raised elongated portion being spaced above said base member whereby a golfer by stepping on said portion of said top sheet may separate said top sheet from said recording surface.

**3,411,790**  
**TOY PHONOGRAPH FOR USE WITH CHANGEABLE RECORDS**  
Bernard Suchowski, Howard Beach, N.Y., assignor, by mesne assignments, to Ideal Toy Corporation, Hollis, N.Y., a corporation of New York  
Filed July 21, 1965, Ser. No. 473,656  
17 Claims. (Cl. 274-1)



A turntable carries a record and is spring biased upward toward a tone arm and a speaker cone. A button can be pushed to depress the turntable against the spring bias a small amount to release the tone arm after it has played the record for spring actuated movement to the edge of the turntable. If the turntable is depressed a large amount it registers with a slot in the casing through which the record may be changed. Either the record has a cut-out portion at its center or the tone arm has a depression thereon so that the turntable will be released for upward movement when a record has been played, the upward movement of the turntable opening a switch to turn off the phonograph. The turntable also opens the switch in the absence of a record.

**3,411,791**  
**AUTOMATIC RECORD CHANGER**  
James T. Dennis, 812 American National Bldg.,  
Oklahoma City, Okla. 73102  
Application Jan. 16, 1962, Ser. No. 168,305, which is a continuation of abandoned application Ser. No. 752,969, Aug. 4, 1958. Divided and this application Mar. 31, 1966, Ser. No. 539,049  
17 Claims. (Cl. 274-10)



An automatic record changer in which the turntable is stopped during the record changing cycle and as the record is deposited thereon. A slip clutch arrangement is provided to bring the turntable smoothly up to speed again. Automatic control of the turntable speed is provided in response to (1) the size of the record released, (2) the movement of the tone arm and stylus selected for play, and (3) use of a 45 r.p.m. adaptor for large center hole records. An anti-skate arrangement is provided to

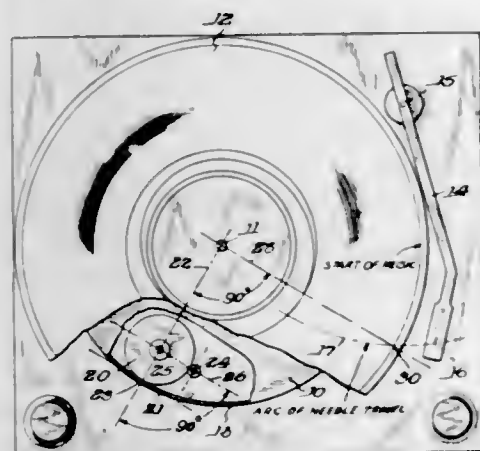


prevent the tone arm from skipping inwardly over the initial grooves of the record. Manual speed selection may be made by a common control knob at any time. A velocity tripping mechanism is provided which initiates a record changing cycle with low needle pressure and places substantially no load on the tone arm during the playing cycle. The position of the balance arm can disable the automatic tripping mechanism.

### 3,411,792 RECORD PLAYER

Robert J. Hammond, Stevensville, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan

Filed Oct. 18, 1965, Ser. No. 497,220  
1 Claim. (Cl. 274—39)

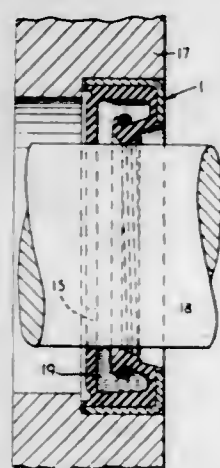


Record player having its turntable rotated by a motor driven pulley through an idler having tangential contact with a peripheral flange of the turntable, the pulley engaging the periphery of the collar along an axis including the centers of the pulley and idler; the record player having its tone arm mounted so that its needle moves in an arcuate path during record play which is generally radially of the turntable and parallel to said pulley-idler centers axis, said arcuate path being also normally disposed to a radial axis which includes the center of the turntable, the center of the idler and the point of contact the idler with the turntable flange.

### 3,411,793 SHAFT SEALS

Ernest T. Jagger and Geoffrey W. Halliday, Newcastle-upon-Tyne, England, assignors to George Angus & Company Limited, Newcastle-upon-Tyne, England

Filed June 11, 1965, Ser. No. 463,114  
Claims priority, application Great Britain, June 22, 1964, 25,660/64  
6 Claims. (Cl. 277—32)



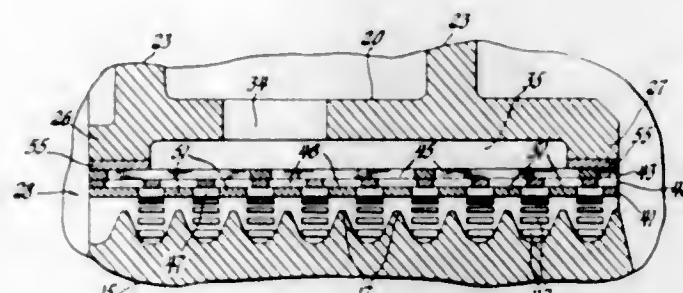
A shaft seal having an oil feed-back thread at its sealing periphery is provided, at the oil side, with a supplementary sealing lip, preferably with oil-admission holes,

to retain oil close to at least part of the sealing periphery to prevent the seal running dry in consequence of the feed-back action.

### 3,411,794 COOLED SEAL RING

Robert L. Allen, Greenwood, Ind., assignor to General Motors Company, Detroit, Mich., a corporation of Delaware

Filed Dec. 12, 1966, Ser. No. 601,196  
13 Claims. (Cl. 277—53)

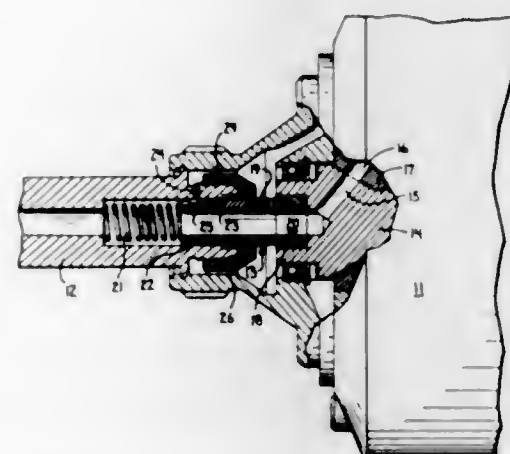


A ring to cooperate with a labyrinth seal in a turbine or the like is made of a laminated porous material so that the ring is more readily abrasible in the event of contact with the seal ridges and so that cooling air can be fed through the porous material to the gap between the two seal members.

### 3,411,795 SEALING DEVICE FOR HIGH TEMPERATURE INPUT NOZZLE

Halley H. Hamlin, Lyndhurst, Ohio, assignor to the United States of America as represented by the Secretary of the Navy

Filed Mar. 22, 1966, Ser. No. 538,162  
1 Claim. (Cl. 277—74)



A sealing device having a spring biased cylindrical sealing element with a passageway therethrough for connecting a stationarily mounted nozzle to a rotating element of an engine and having a pliable washer engaging said nozzle and said cylindrical sealing element for preventing escapement of high temperature gases flowing through said passageway.

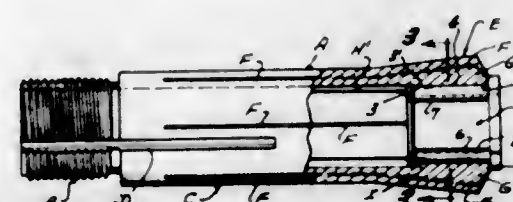
### 3,411,796 WORKPIECE GRIPPING BUSHING

John A. Decker, 10559 Pinyon Ave.,  
Tujunga, Calif. 91042

Filed June 17, 1966, Ser. No. 558,355  
8 Claims. (Cl. 279—46)

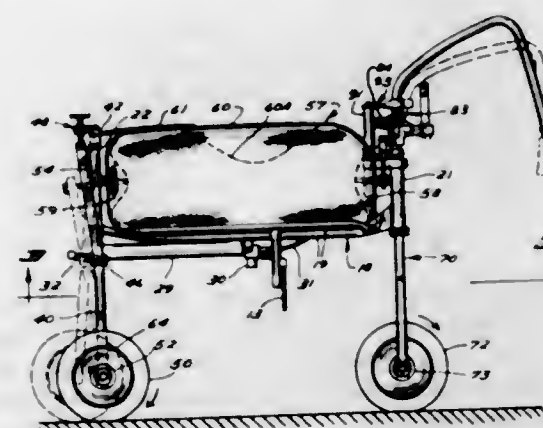
1. As an article of manufacture, a bushing removably insertable in a spring collet for holding a workpiece in the collet, said bushing being formed from a material having a workpiece engaging surface which is softer than

the surface of the workpiece to be held by said bushing and said bushing including a body portion having an outer circumferential surface conforming to the work engaging surface of the collet and an inner circumferential surface conforming to the configuration of the portion of the workpiece to be engaged thereby, a collet nose engaging flange at one end of said body portion, and a peripheral rib extending radially outwardly from the outer surface of the opposite end of said body portion adapted to engage the shoulder within the collet formed



by the juncture of the work engaging surface of the collet with the larger axial bore which extends to the adjacent end of the collet and cooperating with said flange to hold said bushing in the collet against unintended removal, said bushing further having a plurality of longitudinal slits formed therein and extending in alternation from opposite ends of said bushing whereby said bushing is rendered compressible in response to constriction thereof by the collet to be caused to grip a workpiece inserted in said bushing.

3,411,797  
TOY VEHICLE  
John Julian Wild, 1100 E. 36th St.,  
Minneapolis, Minn. 55407  
Filed July 28, 1966, Ser. No. 568,574  
5 Claims. (Cl. 280—1.175)

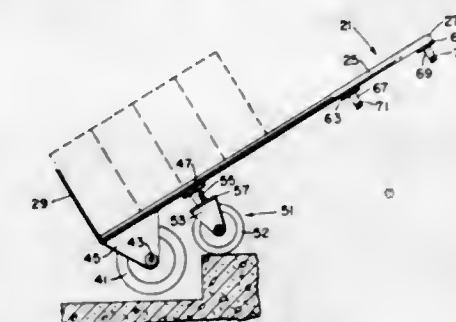


An operator propelled toy vehicle in which the appearance, action and sensation of a real life animal is simulated. A unidirectional propelling mechanism for a vehicle is actuated and driven by a fluid filled operator support device which is responsive to the repeated application of an operator to cause movement of the vehicle. The operator support device may also be utilized to control the operation of suitable vehicle braking means conjointly and cooperatively with the vehicle propelling effect.

3,411,798  
MATERIAL HANDLING MEANS  
Custer E. Capadalis, Memphis, Tenn.  
(6038 Orchid Lane, Dallas, Tex. 75230)  
Filed June 8, 1966, Ser. No. 556,177  
2 Claims. (Cl. 280—5.32)

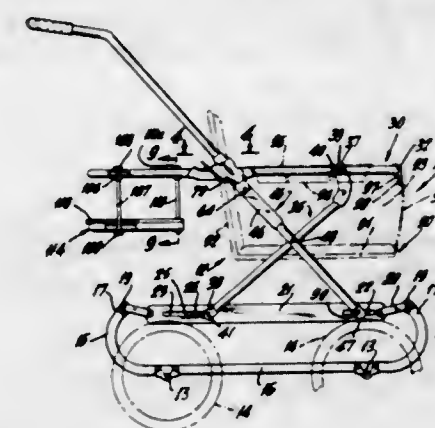
Material handling means comprising a hand truck having normal wheel means for rollably supporting material to be handled, and shiftable supplemental wheel

means for acting as a fulcrum to assist in elevating the truck over obstacles such as curbs or the like or for attachment to a remote portion of the hand truck to enable it to be used in a horizontal position.



tachment to a remote portion of the hand truck to enable it to be used in a horizontal position.

3,411,799  
PUSH VEHICLES FOR INFANTS AND CHILDREN  
Herman Felsher, 6514 18th Ave.,  
Brooklyn, N.Y. 11204  
May 18, 1966, Ser. No. 551,045  
6 Claims. (Cl. 280—36)



The invention comprises a push vehicle for infants and children comprising a chassis including a pair of side frames supported on wheels and including a pair of parallel longitudinal members at opposite sides of the device, and formed with slots at the ends thereof. A main seating structure is supported in a body frame to which is pivoted a pair of interpivot members. These interpivot members have pins at their lower ends received in the slots. The rear slots have notches with which an opposed pair of said interpivot members have pin and slot connections. Thus the interpivot members and the seating structure are adjustable as a whole forwardly and rearwardly in increments, and the interpivot members are collapsible in any adjusted position.

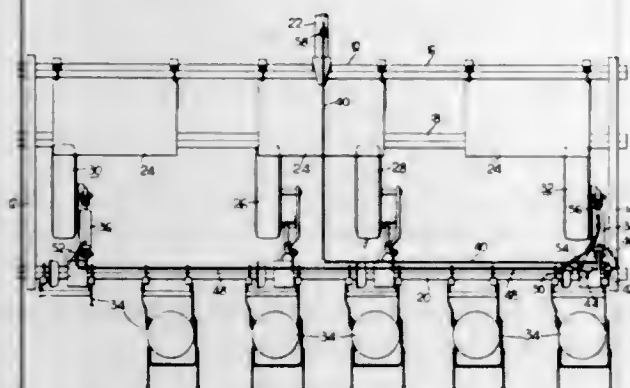
Mounted on the body frame which supports the main seating structure is an auxiliary seating structure located in back of the main seating structure. When the auxiliary seating structure is in back of the main seating structure, two infants or children may ride on the device in sitting positions. However the main seating structure has a backrest which is movable rearwardly toward and against the auxiliary seating structure. If the child in the main seating structure wants to sleep, the backrest of the main seating structure would go back and strike the legs of the child seating in the auxiliary seating structure. The auxiliary seating structure however is swingable upwardly and forwardly through an angle of 180° to overlie the front end of the main seating structure, so that one child can sleep in the main seating structure with the backrest swung rearwardly, and a second child can sit in the auxiliary seating structure with the legs of the second child hanging down in front of the main seating structure.



3,411,800

**PLANTER POWER LIFT**

Frank C. Krumholz, Hales Corners, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.  
Filed Sept. 23, 1966, Ser. No. 581,471  
2 Claims. (Cl. 280—43.23)

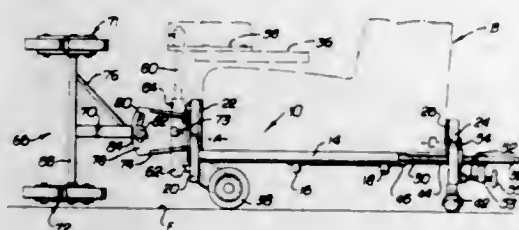


This disclosure is of a wide implement with adjustable height wheels supporting same and hydraulic means for raising and lowering all wheels at the same time and rate.

3,411,801

**HAND TRUCK FOR UPHOLSTERED COUCHES**

John Ansdell, % A&D Upholstering, 16701 Bellflower Blvd., Bellflower, Calif. 90706  
Filed Nov. 28, 1966, Ser. No. 597,328  
20 Claims. (Cl. 280—47.24)



1. In a hand truck for use in moving upholstered couches or the like: a frame forming a bed plane; a foot plate at one end of the frame defining a solid angle with said bed said angle having an apex; releasable clamp means for securing an object, such as a couch, to said angle; and a wheel assembly connected to said frame and located outside the said angle; said wheel assembly having a rolling axis confined to extend in a plane that is substantially perpendicular to the said apex.

3,411,802  
**DOLLY**

Milton Diller, Chicago, Ill., assignor to Montgomery Ward & Co., Incorporated, Chicago, Ill., a corporation of Illinois

Filed Jan. 3, 1967, Ser. No. 606,863  
10 Claims. (Cl. 280—79.1)



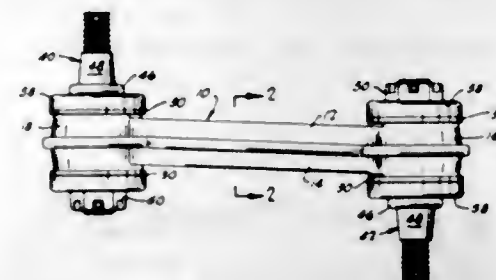
The dolly includes a platform and a pair of side walls thereon with spaced-apart axles on the side walls and wheels mounted on the axles, alignment structure including an abutment member and a mounting member thereon and directed normal thereto, and a guide carried by the side walls slidably receiving the mounting member, whereby the abutment member is slidable while the platform of the dolly is disposed beneath an article.

3,411,803

**VEHICLE IDLER ARM**

James O. Melton, Norman, and Thomas B. Wilkinson and James H. Jackson, Oklahoma City, Okla., assignors to Jamco, Inc., Oklahoma City, Okla., a corporation of Oklahoma

Filed June 20, 1966, Ser. No. 558,827  
10 Claims. (Cl. 280—95)

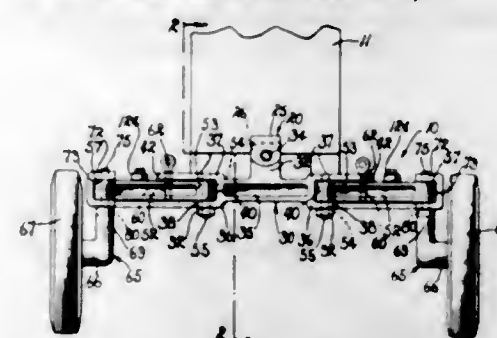


An idler arm constructed of two stamped halves joined along a central parting plane containing the longitudinal axis of the idler arm, the idler arm having apertured, spindle-receiving hub portions at each end thereof. The idler arm further includes a synthetic resin cylindrical sleeve disposed inside a pair of aligned annular, synthetic resin bushing members which are pressed into at least one of the apertured hub portions from the opposite sides thereof and keyed to the stamped halves of the idler arm. A spindle extends through the sleeve and is secured to the idler arm.

3,411,804

**MOUNTING SYSTEM FOR VEHICLE STEERING WHEELS**

Wayland W. Hill, P.O. Box 168, and Aubrey O. Kidwell, Rte. 1, Box 172, both of Earlimart, Calif. 93219  
Filed Apr. 10, 1967, Ser. No. 629,531  
7 Claims. (Cl. 280—95)



A mounting system for the steerable wheels of a vehicle in which the wheels are individually supported on sets of parallelogram linkages that permit the wheels to be selectively independently or simultaneously disposed in adjusted positions laterally outwardly spaced from the vehicle and from each other in parallel relation and which includes means interconnecting the sets of parallelogram linkages with each other and with a steering mechanism of the vehicle permitting steering of the wheels in all such laterally adjusted positions without manual adjustment of the steering mechanism or the connecting means.

3,411,805

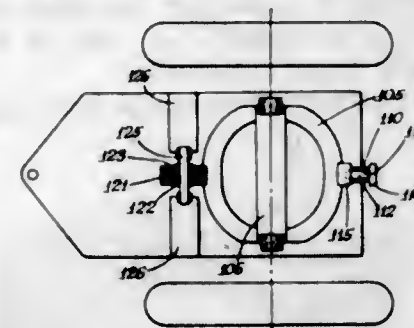
**ARTICULATED FRAME STEER TRACTOR**

Karl Salna, Mundelein, Ill., assignor to International Harvester Company, a corporation of Delaware  
Original application Dec. 23, 1964, Ser. No. 420,683.  
Divided and this application Mar. 16, 1966, Ser. No. 553,594

1 Claim. (Cl. 280—111)

A wheel truck mounting for the rear axle of an articulated frame, earth moving vehicle having an axle supporting ring which is mounted on the rearward portion of the rear frame section by a longitudinal pin and on the forward portion of the rear frame section by a spherical apertured block on the ring, a complementary ball por-

tion engageable within the block and a pin secured to the rear frame section and extending through the ball portion

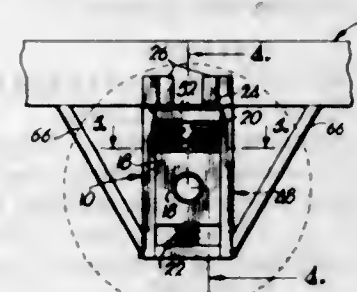


transverse to the longitudinal axis of the rear frame section.

**SUSPENSION SYSTEM FOR TRAILERS**

George M. Bellairs, 719 S. Oakland St., Webb City, Mo. 64870  
Continuation-in-part of application Ser. No. 394,918, Sept. 8, 1964. This application Sept. 26, 1966, Ser. No. 581,801

2 Claims. (Cl. 280—124)

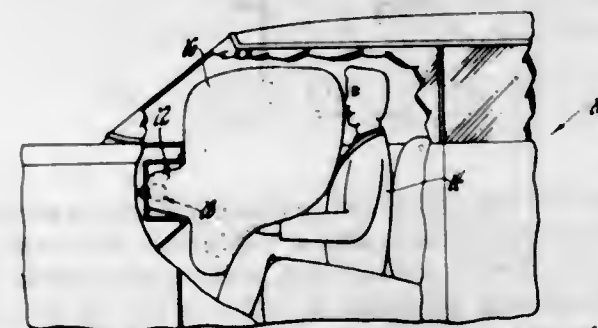


A suspension unit for vehicles including a frame for attachment to the vehicle, a hollow mount slidably carried within the frame and a stub axle traversing the mount, secured thereto and having at least one wheel carried by an end thereof extending outwardly from the mount. Load cushioning spring means are interposed between the mount and the top of the frame and stabilizing spring means are interposed between the mount and the bottom of the frame, vertical reciprocation of the mount, against said spring means, being permitted by a plurality of up-rights which are embraced by corresponding sleeves carried by the mount.

3,411,807

**VEHICLE SAFETY ASSEMBLY**

Sidney Oldberg, Birmingham, and William R. Carey, Farmington, Mich., assignors to Eaton Yale & Towne, Inc., Cleveland, Ohio, a corporation of Ohio  
Filed Mar. 9, 1967, Ser. No. 621,845  
5 Claims. (Cl. 280—150)

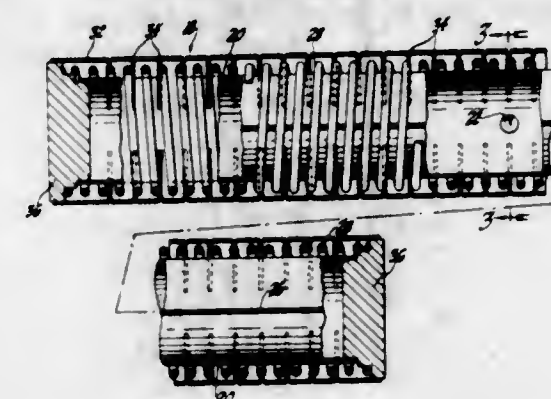


An assembly for protecting an occupant of a vehicle comprising an inflatable bag, a fluid source in communication with the bag for storing fluid to inflate the bag, and an outer member disposed about the fluid source for controlling the flow of fluid from the fluid source to the bag and wherein the outer member has a plurality of spaced elongated narrow slots through which the fluid from the fluid source flows to prevent the inadvertent rupture of the bag.

3,411,808

**VEHICLE SAFETY ASSEMBLY**

Richard Chute, Huntington Woods, Mich., assignor to Eaton Yale & Towne, Inc., Cleveland, Ohio, a corporation of Ohio  
Filed Mar. 9, 1967, Ser. No. 621,974  
11 Claims. (Cl. 280—150)

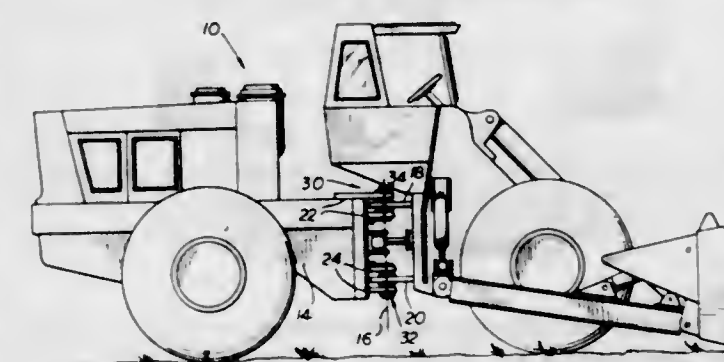


A safety assembly adapted to be attached to a vehicle for protecting an occupant thereof and including an inflatable bag, a container to store fluid for inflating the bag, an explosive means disposed within the container for opening the container upon activation thereof, a helically coiled spring-like member disposed about the container for controlling the opening of the container when the explosive means is activated, and an outer cylindrical member disposed thereabout and having elongated narrow slots therein for controlling the flow of fluid into the bag to prevent the inadvertent rupture of the bag.

3,411,809

**ARTICULATED VEHICLE BUSHING**

Keith W. Kampert, Libertyville, and Kenneth E. Hontz, Streamwood, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware  
Filed Oct. 27, 1966, Ser. No. 590,039  
7 Claims. (Cl. 280—400)



An articulated connection between front and rear frame sections of an articulated vehicle to provide relative rotation therebetween about an axis of rotation, the connection including a pair of vertically spaced hinges each having unsymmetrically truncated spherical bushing surfaces to provide a selective direction axial load transfer and misalignment compensation and cylindrical bushing surfaces to provide radial load transfer.

3,411,810

**APPARATUS FOR PREVENTING ACCIDENTAL DISCONNECTION OF PRESSURE SOURCES FROM WELL TOOLS**

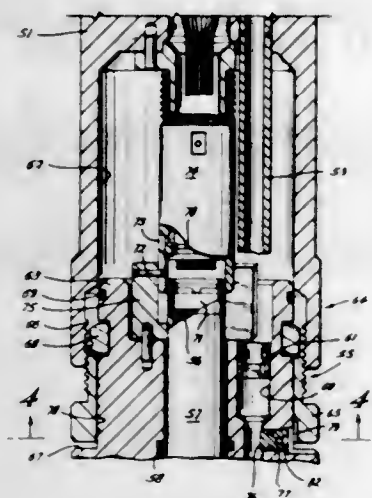
Harold J. Urbanosky, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Oct. 14, 1966, Ser. No. 586,806  
8 Claims. (Cl. 285—83)

A pressure-responsive latching means for preventing premature disconnection of multi-sectional well tools con-



taining high-pressure fluids. A piston or other member is urged by fluid pressure within the well tool into latching engagement with stop means on the coupling means to



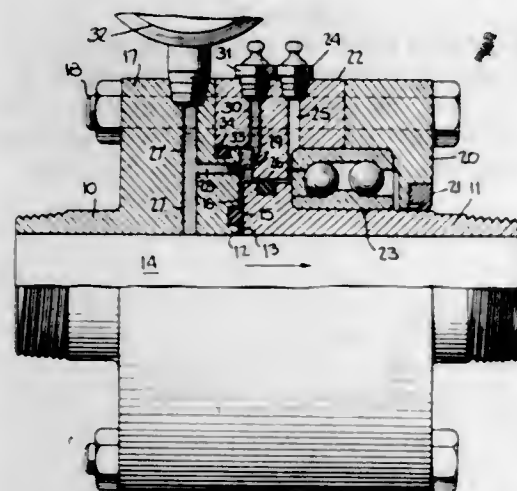
prevent their premature disconnection before the entrapped high-pressure fluid has been safely removed or vented.

3,411,811

### SWIVEL JOINT ADAPTER FOR CONDUITS CONTAINING MORTAR OR THE LIKE

Henry A. Nelson Holland, Ridgewood, N.J., assignor to Raymond International Inc., New York, N.Y., a corporation of New Jersey

Filed May 12, 1966, Ser. No. 549,684  
3 Claims. (Cl. 285-94)



A swivel joint adapter which prevents mortar or the like from contaminating relatively moveable parts of the adapter by the provision of a duct which at one end is exposed to the pressure of the mortar passing there-through, which contains a pressure transmittable generally viscous medium, and which has its opposite end connected to direct the medium into the space between the relatively moveable parts.

3,411,812

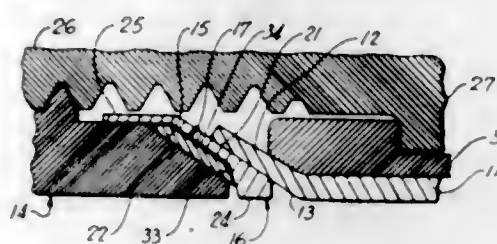
### FLARED FITTING SEAL

William A. Prince, North Haven, Conn., and William E. O'Brien, La Mesa, Calif., assignors to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware

Filed Dec. 29, 1964, Ser. No. 421,943  
5 Claims. (Cl. 285-187)

1. In a flared tube coupling having a frusto-conical seat cooperating with a flared tube end, a seal between said seat and said flared tube end comprising, an inner circumferentially continuous ring having a high thermal coefficient of expansion in engagement with said seat,

an outer circumferentially continuous ring in engagement with said flared tube end having a lower thermal coefficient of expansion than that of said inner ring which is comparable to that of the coupling adjacent said flared tube end, an inclined interface between said inner ring and said outer ring,



said rings being in engagement along said inclined interface, and means for maintaining said coupling, said tube end and said seal in assembled sealing relationship, and abutment means on said outer ring engaging said inner ring and maintaining said inner ring in hoop tension.

3,411,813

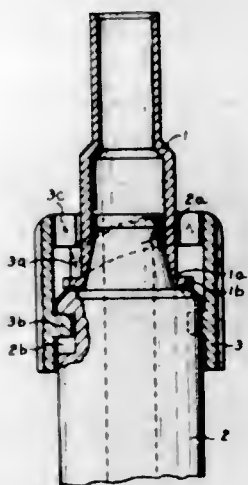
### SELF-CENTERING COAXIAL SHAFT COUPLING

Alois Kreuz, Dornigheim, Germany, assignor to VDO Tachometer Werke Adolf Schlöding G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

Filed June 7, 1966, Ser. No. 555,847  
Claims priority, application Germany, July 3, 1965, V 28,793

3 Claims. (Cl. 285-332)

A socket connection between the connecting branch of a speedometer and the cylindrical end sleeve of a protection sheath of the flexible drive shaft, which comprises a cylindrical end sleeve having a radially outwardly extending collar at its free end, and a connecting branch adapted to form the end portion of a speedometer. A retaining cap is resiliently secured to the connecting branch by means of bayonet lock means, and the retaining cap has integral



elastic tongues. The latter secure the end sleeve resiliently to the connecting branch, and are disposed inside of the retaining cap along a helical line, surrounding annularly the end sleeve and engaging an outer collar of the end sleeve.

3,411,814

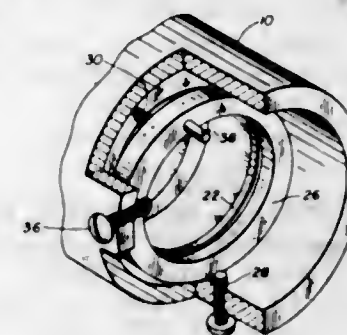
### PIPE COUPLING

Stephen V. Dillon, 2256 S. Troost Ave., Tulsa, Okla. 74114

Filed Feb. 11, 1966, Ser. No. 526,803  
5 Claims. (Cl. 285-340)

This invention relates to a pipe coupling and has for its object the provision of a quick-action coupling for re-

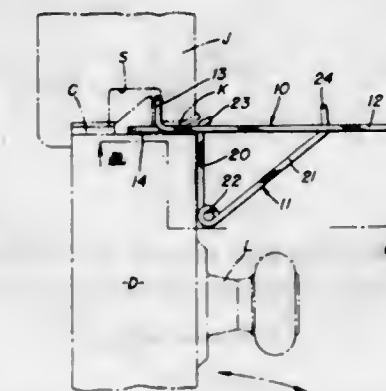
taining adjacent abutting ends of a plain pipe, tubing, hose resilient flanges one adapted to seat against each of the connections or rod members and further providing a walls.



### 3,411,817 DETACHABLE SECURITY LOCK FOR HINGED DOORS

Donald C. Carver, Columbus, Ohio; Geraldine B. Carver, executrix of the estate of said Donald C. Carver, deceased

Filed Mar. 1, 1967, Ser. No. 619,827  
2 Claims. (Cl. 292-298)



means for releasing the pipe from the coupling without special tools or instruments.

3,411,815

### BALL JOINT ASSEMBLY

Leo S. Sullivan, Jr., Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 21, 1967, Ser. No. 655,236  
4 Claims. (Cl. 287-87)



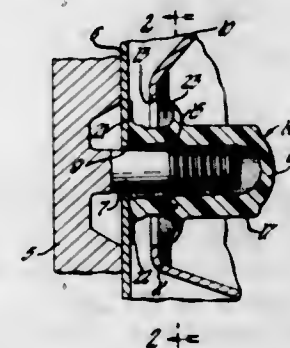
A ball and socket joint is provided with a plastic bearing member disposed between the ball and socket which includes an integral Belleville spring portion acting, when subjected to axial pressure as an incidence of assembly, to exert a preload force tending to compensate for manufacturing tolerances and wear in service.

3,411,816

### DOUBLE SEALING NUT

Howard K. Andrews, Grosse Pointe Woods, and Frank I. Dabkowski, Livonia, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Nov. 22, 1966, Ser. No. 596,179  
5 Claims. (Cl. 287-189.36)



An arrangement to fasten a body against a double-walled structure including a nut having two diverging

My invention relates to a simple lightweight security lock structure which can be readily carried by a person from one room to another and which can be easily and quickly mounted on the jamb of a door of that room which is hinged for swinging inwardly. The lock is very sturdy and rugged and when mounted on the door jamb in association with the usual keeper plate of the ordinary spring type door latch or lock can permit the door to swing into closed position and can then be readily adjusted into locking engagement with the door to maintain it closed even though a person opens an ordinary lock on the door with a key. To permit opening of the door, my lock can be adjusted readily into a non-engaging position from inside the room and when leaving the room, the lock can be detached from the door jamb and carried in the pocket or purse of the person.

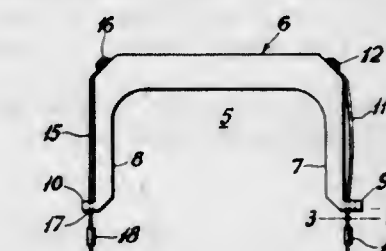
3,411,818

### STRIP PICKUP TOOL

Donald B. Nordstrom, Leonardo, N.J., assignor to The Bendix Corporation, a corporation of Delaware

Filed Oct. 12, 1966, Ser. No. 586,085

4 Claims. (Cl. 294-33)



A device having spring-loaded pins for extending into holes in a strip, which are normally required for registration, which puts tension on the strips to hold them on the pins.

3,411,819

### EXPANSIBLE CAMPER

Donald Tyree and Edward Seubert, both of Highway 40 W., Boonville, Mo. 65233

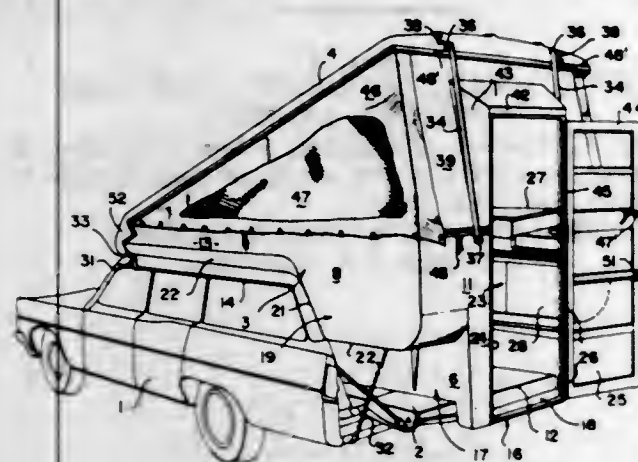
Filed Oct. 25, 1966, Ser. No. 589,331

12 Claims. (Cl. 296-23)

An automotive vehicle carried camper comprising a rigid base member shaped to conform to the surface of



the roof of the vehicle, a roof member pivoted to the base member having a door opening and a panel also

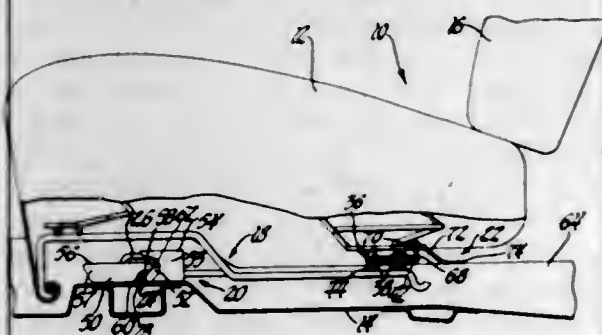


having a door opening and hinged to the rear wall, both openings defining a complete opening for a door.

3,411,820

**REAR SEAT CUSHION RETAINING MEANS**  
Tom H. Brett, Mount Clemens, William K. Norwick, Dearborn, and Harold E. Rose, Royal Oak, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed May 18, 1967, Ser. No. 639,463  
6 Claims. (Cl. 296-63)

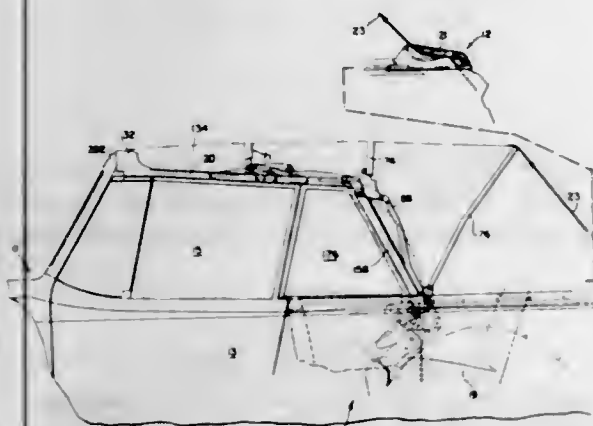


A latching arrangement for a rear seating cushion wherein spring bars fixed to the seat spring structure are retained in the front by keepers fixed to the floor panel and at the rear by a retaining bracket located on the drive shaft tunnel.

3,411,821

**CONVERTIBLE TOP MECHANISM**  
Joseph Adamski, Brooklyn, Mich., assignor to Dura Corporation, Oak Park, Mich., a corporation of New York

Filed July 7, 1967, Ser. No. 651,811  
4 Claims. (Cl. 296-117)

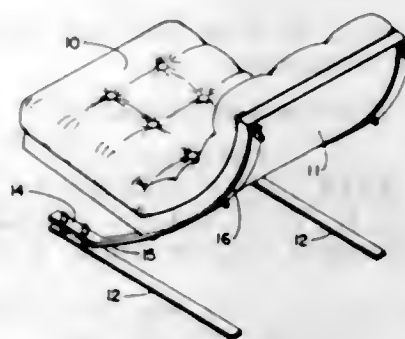


Adjustable means are provided at the pivotal intersection between the front and center rails of the linkage

means of a convertible top mechanism to reduce to a minimum play, when the top is extended, between these members and a plate member to which the front and center rails are pivotally attached. The adjustable means provides a force which urges the plate member in a generally normal direction away from the front and center rails.

3,411,822

**DOUBLE SPRING MOUNTED CHAIR**  
Martin Borenstein, 177 Florence Ave., Oakland, Calif. 94618  
Filed Nov. 10, 1966, Ser. No. 593,446  
3 Claims. (Cl. 297-294)

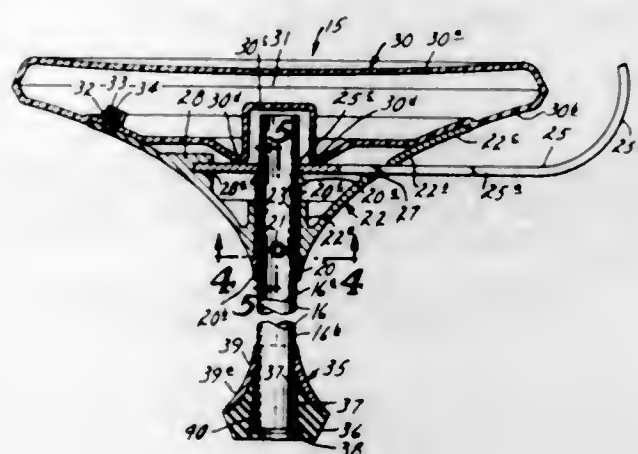


The present invention relates to furniture and particularly spring suspended furniture where the back is mounted on curving parallel spring members extending without interruption to under the forward portion of the seat where they are mounted in spaced relation upon flat spring members which contact the floor and where the mounting means is adjustable separately both as to attitude of the seat and as to resilience of the spring mounting. The seat is mounted in cantilever suspension, without any support at the forward portion.

3,411,823

**SEAT MOUNTING STRUCTURE**  
Richard C. Buc, Minneapolis, Minn., assignor to Sico Incorporated, Minneapolis, Minn., a corporation of Minnesota

Filed June 14, 1967, Ser. No. 646,095  
6 Claims. (Cl. 297-349)



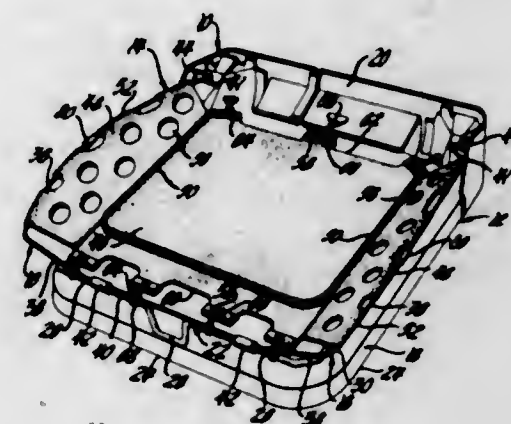
An improved seating structure especially adapted for use in combination table and seat structures wherein a plurality of seats are each supported by a single leg member that is also attached to the table to provide support therefor. Disclosed herein is an upwardly and outwardly flaring seat supporting member rotatably mounted on an upper portion of the leg member to provide support for the entire periphery of a seat mounted thereon. Also sup-

ported by the seat supporting member and the leg member is an L-shaped backrest support member.

3,411,824

**RUBBER DIAPHRAGM SUPPORT FOR BUCKET SEATS**

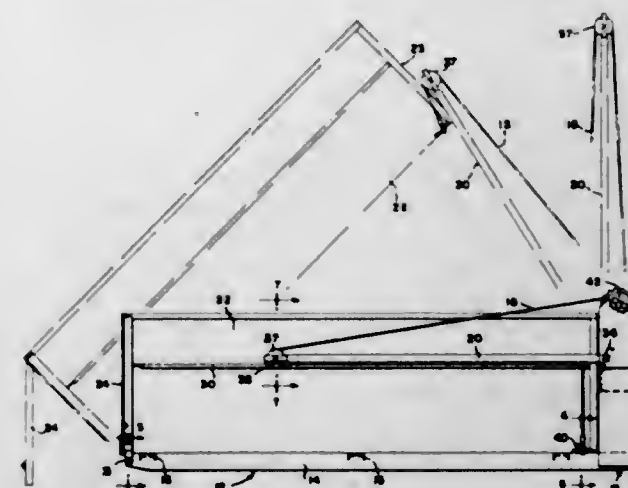
Clayton H. White, Mount Clemens, and Robert R. Mercer, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Mar. 17, 1967, Ser. No. 623,946  
8 Claims. (Cl. 297-452)



A seat construction having a frame member supporting a diaphragm type load supporting section including integrally formed side members. The diaphragm is supported fore and aft by attaching tabs formed integrally with the diaphragm to the front and rear of the frame member. The edges of the side membranes are supported by a border wire, the ends of which are attached to the front and rear sections of the frame member.

3,411,825

**DUMP-BODY ACCESSORY FOR PICK-UP TRUCK**  
Lloyd R. Fulton, 9258 Greenwood Ave., Seattle, Wash. 98103  
Filed Jan. 20, 1967, Ser. No. 610,650  
11 Claims. (Cl. 298-19)



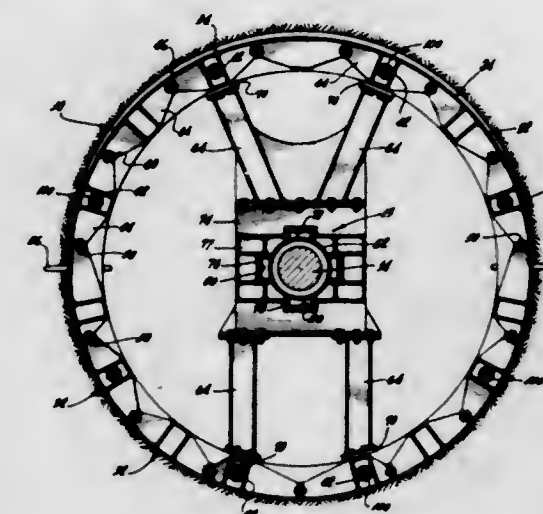
An accessory dump body structure which is adapted to be used in pick-up type utility trucks to convert the truck to a dump truck. The dump body is pivotally mounted on a skid type bed arranged to be slidably inserted through the open back of the truck. A hand operated winch is attached to a front head-board above the level of the body. The ends of a cable from the winch pass around the ends of booms pivotally mounted to the head-board and resting along each side of the body.

3,411,826

**TUNNEL BORING MACHINE**

Richard A. Wallers, Balboa Island, and John C. Haspert, Arcadia, Calif., assignors to Smith Industries International, Inc., Gardena Heights, Calif., a corporation of California

Filed May 26, 1966, Ser. No. 553,176  
12 Claims. (Cl. 299-31)



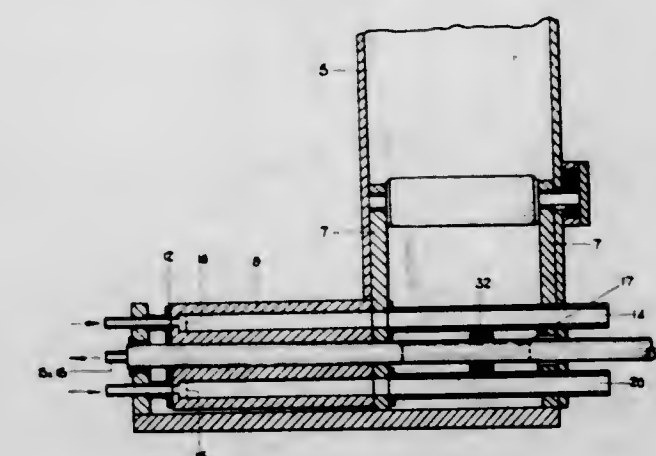
A tunnel boring machine which includes an exterior shell having a surface exposed to the earth bore made by a cutter, the shell having an articulated or segmented portion formed of a plurality of circumferential sections or segments each removably but rigidly secured to a circumferentially adjacent section so that the exposed surface diameter of the shell may be altered for operation in different size bores by adding or removing sections, together with a rotatably driven cutter, and other operative apertures.

3,411,827

**MECHANISM FOR FEEDING ARTICLES INTO PNEUMATIC PIPELINES**

John P. Rupert, Stellenbosch, Cape, Republic of South Africa, assignor to Tobacco Research and Development Institute Limited, Zug, Switzerland

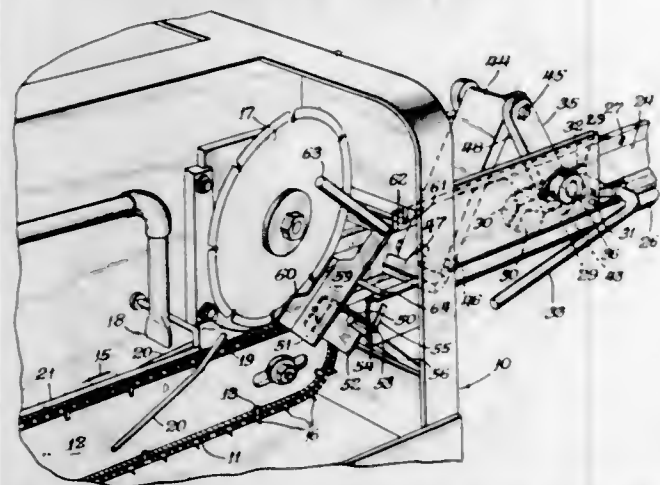
Filed Mar. 16, 1967, Ser. No. 623,690  
Claims priority, application Republic of South Africa, Mar. 18, 1966, 1,528/66; June 28, 1966, 3,809/66; Jan. 19, 1967, 316/67  
11 Claims. (Cl. 302-2)



A valve for feeding articles in and out of pipelines comprising a drum movable between two positions of dwell and a bore in the drum which in one position of dwell registers with a pipeline and in the other position with a receiving or dispatching station, articles being blown out of or being sucked into the bore at the station, so that an article is axially translated at the station and laterally moved by the movement of the drum.

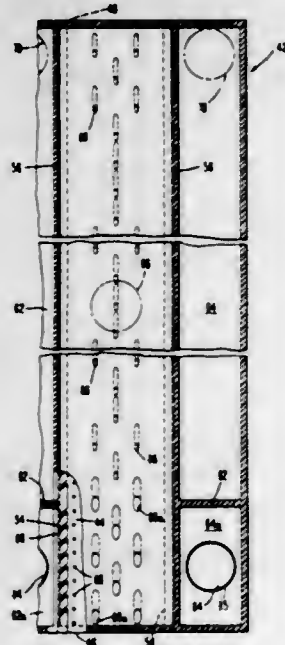


**3,411,828**  
**FEED APPARATUS FOR A POULTRY GIZZARD PROCESSING MACHINE**  
 Carl J. Hill, Box 409, Canton, Ga. 30114  
 Filed Oct. 20, 1966, Ser. No. 588,176  
 18 Claims. (Cl. 302-14)



1. In a gizzard processing machine of the type having a transporting means driven by power means and including a vertical cutting means for splitting the gizzards loaded onto the transporting means at a pickup point and including a trough along which the gizzards are moved to the pickup point, the improvement comprising: a gate in said trough upstream of said pickup point to stop the gizzards moving along said trough; and feeding means associated with said gate to engage the forwardmost gizzard stopped by said gate, to open said gate and to feed said forwardmost gizzard to said pickup point; said gate closing after said forwardmost gizzard has passed to stop the remaining gizzards in said trough.

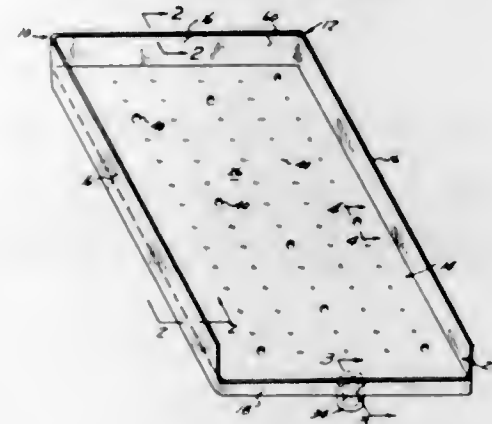
**3,411,829**  
**SHEET HANDLING SYSTEM EMPLOYING AN ALL-FLUID TRANSPORT TECHNIQUE**  
 Charles Barton Albright, Norristown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware  
 Filed Aug. 4, 1966, Ser. No. 570,304  
 10 Claims. (Cl. 302-29)



The present device includes a separator means which directs a vertical jet of air onto the top item of a stack of items and when the stack is moved sufficiently close to the air jet source, the static pressure is instantaneously converted into radial velocity pressure and the top item is shopped upward from the remaining items in the stack. In addition the present system includes a collar-like pre-separator which provides transverse air jets to rattle the

top number of items in the stack. Further the present system includes a magazine arrangement which is tilted toward the main passageway of the transport system in order that the force of gravity will help cause the item, which is separated, to move forward into the entrance of the main passageway. The system effects incremental air movement by providing regularly located propulsion jet apertures which are connected to a source of air pressure while at the same time providing regularly located exhaust apertures which are connected to a negative pressure source. Accordingly, as the air enters the passageway under pressure it moves only a predetermined distance before it is taken off by a properly located exhaust aperture and thus any sheet item which is passing along the main passageway is incrementally carried by this air flow. The present system also provides a means to align the sheet items passing therethrough in order that information which is recorded thereon may be read from a reading head and a read station. Finally, the present system provides a means for disposing an item as it passes through the read station in contact proximity with the read head in order to read the information therefrom. Yet another feature that is included in the present system is the selectably operable turnaround station wherein the items are fluid-dynamically intercepted and removed from their excursion through the main passageway, thereafter, literally turned around and finally decelerated to be passed into a stacker device.

**3,411,830**  
**AIR-CUSHIONING PNEUMATIC CONVEYOR**  
 Leon W. Smith, 75 Henderson St., Pontiac, Mich. 48053  
 Filed Nov. 14, 1966, Ser. No. 593,840  
 2 Claims. (Cl. 302-31)

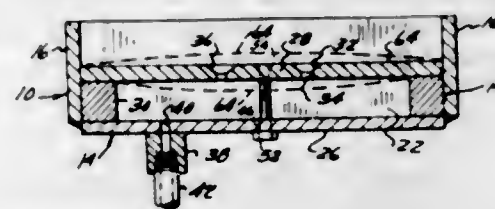


Disclosed herein is a conveyor wherein the article or material to be conveyed is simultaneously raised above the bed of the conveyor chute and propelled forwardly along the chute by jets of compressed air discharged in an upward and forward direction through multiple air jet nozzle passageways opening into air expansion recesses disposed below the level of the top surface holes of the bed of the chute. This creates a forwardly-moving cushion of air on which the conveyed article rests while it is being conveyed, thereby reducing friction to a minimum while propelling the conveyed article forward, as from a machine tool or stamping press to a point of disposal or article receiver like a tote bin.

**3,411,831**  
**DEFORMABLE AIR-CUSHIONING PNEUMATIC CONVEYOR**  
 Leon W. Smith, 75 Henderson St., Pontiac, Mich. 48053  
 Filed Jan. 19, 1967, Ser. No. 610,350  
 4 Claims. (Cl. 302-31)

A deformable air-cushioning pneumatic conveyor wherein the article to be conveyed is raised above the bed

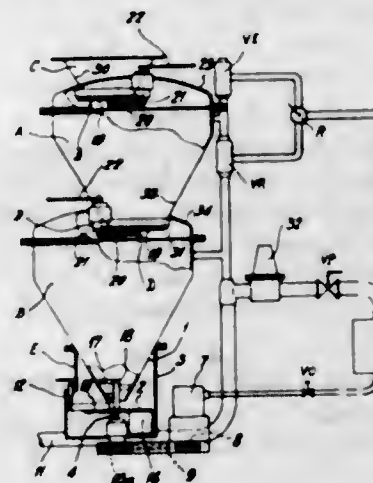
of the conveyor chute by jets of compressed air discharged in an upward direction through multiple air jet openings or nozzle holes in the bed of the chute, thereby eliminating the friction between the conveyed articles and the bed of the chute so that the articles can be moved along the chute either by gravity or manually or mechanically or



by forwardly-directed air jet openings with a minimum of force required. In order to minimize leakage of air between the cushion and the conveyed articles where the conveyed articles have convex or concave bottom surfaces, means is provided for deforming the conveyor bed to more nearly conform to the configuration of such bottom surfaces.

**3,411,832**  
**PNEUMATIC SPRAYING MACHINES**  
 Jean Etienne Garreau, Ave. Marechal Joffre, Bougival, France, and Georges Henri Garreau, 10 Rue Sergent Bobillot, Nanterre, France  
 Filed Dec. 27, 1966, Ser. No. 604,805  
 Claims priority, application France, Jan. 8, 1966, 45,265

12 Claims. (Cl. 302-53)

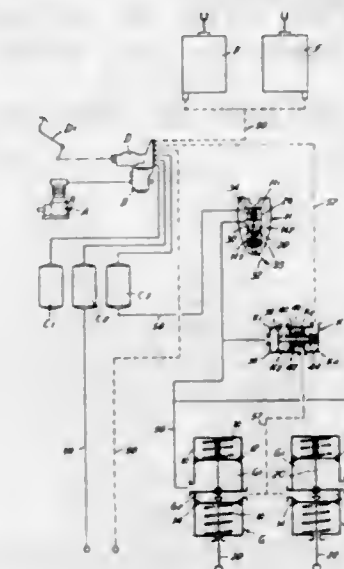


A pneumatic spraying machine comprising a pressure-resistant tank, an inlet for receiving material to be sprayed, an outlet conduit, and a rotary shut-off member disposed below the inlet which is rotatable between positions in which it respectively uncovers and blocks the inlet, biasing means urging the shut-off member towards the inlet, a rotary distributor plate located above the outlet conduit, and a rotatable scraper arranged to sweep material from the plate into the outlet conduit.

**3,411,833**  
**SYSTEM FOR THE AUTOMATIC BRAKING OF VEHICLES, PARTICULARLY TO PERFORM NORMAL, EMERGENCY STATIONARY BRAKING**  
 Giuseppe Alfieri, Viale Malino 21, Milan, Italy  
 Filed Apr. 7, 1966, Ser. No. 567,324  
 Claims priority, application Italy, Apr. 7, 1965, 7,658/65; Nov. 26, 1965, 26,355/65  
 14 Claims. (Cl. 303-7)

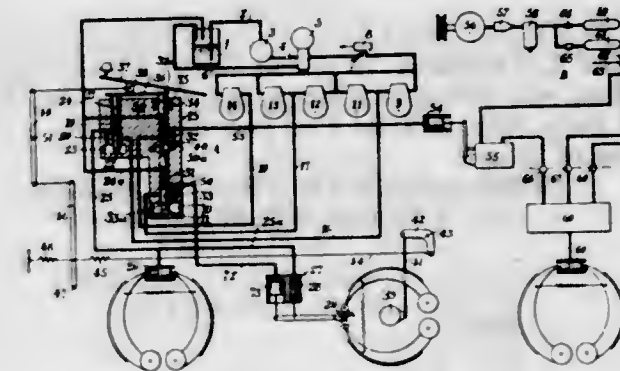
A system for the pneumatic braking of vehicles such as tractor-trailer combinations in which a pneumatic servomotor and a mechanical servomotor are provided to actuate the braking members. The pneumatic servomotor is connected to a pressure source to perform normal

braking while the mechanical servomotor is normally pressurized but is vented to the atmosphere to provide



emergency braking. The system includes a pneumatic distributor and valve means to control the flow of pressurized air to the servomotors.

**3,411,834**  
**BRAKING SYSTEMS OF ARTICULATED VEHICLES**  
 Edmond Henry-Blaud, Paris, France, assignor to Société Anonyme André Citroën, Paris, France, a French body corporate  
 Filed May 3, 1967, Ser. No. 635,799  
 Claims priority, application France, May 9, 1966, 60,792  
 6 Claims. (Cl. 303-7)



Braking system for articulated vehicles of the type comprising a tractor to which a trailer or semitrailer can be coupled, which incorporates a brake distributor comprising three distributor slide valves movable in three separate bores, characterised in that the compensator bar of the brake distributor engages the outer ends of the first and second slide valves controlling the front brake cylinders of the tractor and the trailer braking circuit respectively, the roller of said brake distributor located between said first and second slide valves is nearer to the first slide valve, when the rear axle of the tractor is unloaded, than when said axle is loaded, said roller being moved to said second slide valve when the load on said rear axle increases, the second bore wherein the second slide valve is located, communicating with a pipe line connected to the actuator of a normally closed valve inserted in the trailer braking circuit and controlling the supply of braking fluid to the trailer brakes, the working chamber of the third bore wherein the third slide valve is located, communicating with said last-mentioned pipe line.



3,411,835

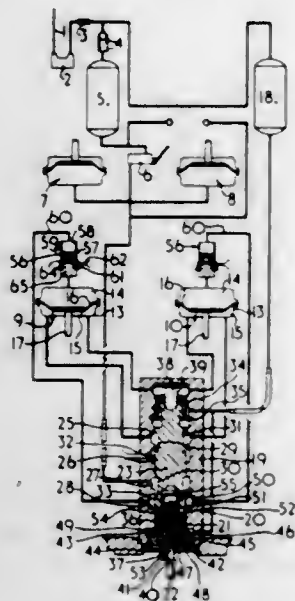
**VEHICLE ANTI-SKID BRAKING SYSTEMS**

John Walter Davis, Coventry, England, assignor to The Dunlop Company Limited, London, England, a corporation of Great Britain

Filed July 7, 1966, Ser. No. 563,600

Claims priority, application Great Britain, July 15, 1965, 29,998/65

35 Claims. (Cl. 303—21)



A fluid pressure braking system for vehicles which incorporates a skid-sensing device which controls the supply of fluid pressure to a brake-releasing chamber forming a part of the brake operating mechanism to effect release of the brakes. The system also includes means associated with the brake-applying chamber of the brake-operating mechanism to release excess pressure from the working chamber.

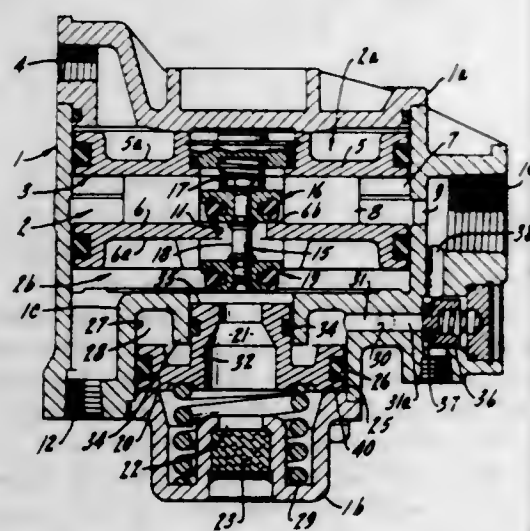
3,411,836

**RELAY EMERGENCY MODULATING VALVE**

Harold L. Dobrikin, Highland Park, Charles Horowitz, Niles, and Boleslaw Klimek, Des Plaines, Ill., assignors to Berg Mfg. & Sales Co., Des Plaines, Ill., a corporation of Illinois

Filed Aug. 23, 1967, Ser. No. 662,729

5 Claims. (Cl. 303—40)



A fluid pressure brake system relay valve assembly including a floating double piston dividing a chamber into a service subchamber and a transfer subchamber, a passage through said piston to communicate an air reservoir with the transfer subchamber, a double-headed valve carried by the piston with one of its heads controlling said passage and the other of its heads controlling an exhaust

outlet for said transfer subchamber, an emergency piston yieldingly urged to close the exhaust passage and urged in the opposite direction by pressure from an emergency pressure system, whereby loss of emergency pressure produces application of braking pressure in a predetermined ratio, the emergency pressure being deliverable through the assembly of the invention to the emergency piston and to the reservoir and a check valve permitting flow of said emergency pressure to said reservoir and precluding said flow in the opposite direction.

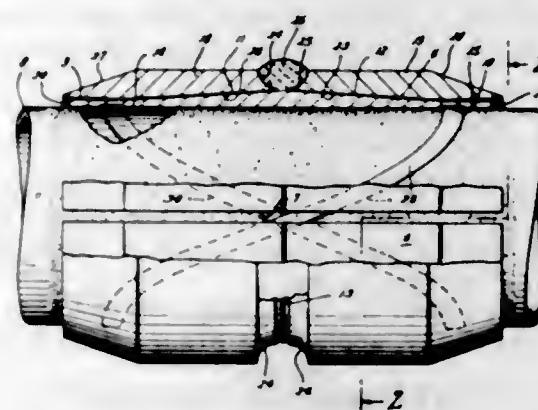
3,411,837

**DRILL PIPE PROTECTOR**

Herman J. Schellstede, Houma, La., assignor to Sparta Industries, Incorporated, Houma, La., a corporation of Louisiana

Filed Nov. 28, 1966, Ser. No. 597,411

2 Claims. (Cl. 308—4)



This drill pipe protector consists of a one-piece split sleeve received about an adhesive-coated portion of the drill pipe and having oppositely-inclined tapers on its outer surface wedgingly engaged by a pair of collars which are drawn together by the thermal contraction of a bead of weld metal laid between the ends of the collar. The pipe may be provided with a rib which interlocks with the split sleeve to prevent longitudinal displacement of the protector.

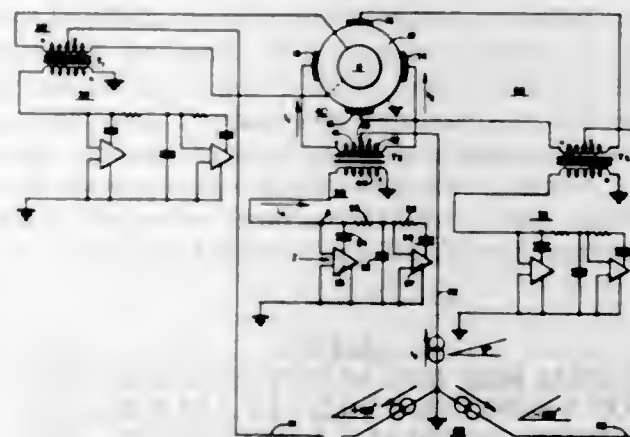
3,411,838

**ELECTROSTATIC SUPPORT**

James L. Atkinson, La Mirada, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed Mar. 7, 1966, Ser. No. 532,371

7 Claims. (Cl. 308—10)



1. An electrostatic support system for supporting a member between a pair of electrodes comprising in combination: electrostatic support circuit establishing an alternating potential between said member and said electrodes for electrostatically supporting said member; sensing means providing an alternating signal indicative of the displacement of said member from a centered position between said pair of electrodes; and

impedance means responsive to said alternating signal and providing a signal to said electrostatic support circuit varying said alternating potential between said member and said electrodes so as to effect substantial centering of said member between said pair of electrodes.

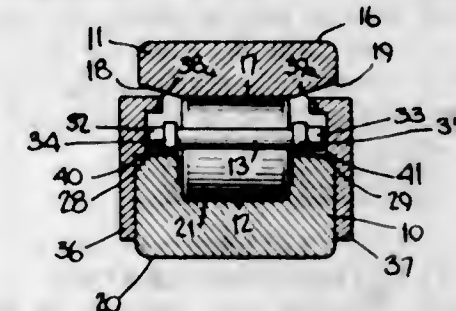
3,411,839

**QUILL TYPE ROLLER BEARING**

Donald P. Johnston, Jamestown, N.Y., assignor to TRW Inc., Euclid, Ohio, a corporation of Ohio

Filed May 10, 1966, Ser. No. 549,003

4 Claims. (Cl. 308—206)



A roller bearing comprises inner and outer rings with rollers therebetween spaced by cylindrical rolling quills riding on races in side plates mounted on the inner rings. The circumferential axially extending surfaces are on opposite sides of the inner race having a diameter greater than the inner race and supporting the side plates to attain the desired dimensional relationship for the pure rolling relationship of engaging surfaces.

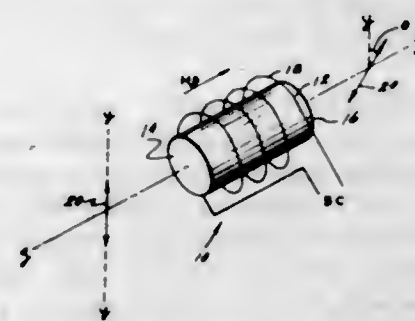
3,411,840

**RADIATION MODULATOR**

Charles C. Robinson, Southbridge, Mass., assignor, by mesne assignments, to American Optical Company, Southbridge, Mass., a corporation of Delaware

Filed May 25, 1964, Ser. No. 369,791

8 Claims. (Cl. 350—151)



The new use for glass consisting essentially of arsenic and an element of the sulphur group as a Faraday rotator having application to optical devices such as radiation phase shifters, isolators and shutters operating in the visible and infrared regions of the electromagnetic spectrum. The glass is placed in a magnetic field and polarized electromagnetic radiation is directed into the glass for effecting Faraday rotation thereof.

3,411,841

**REAR VIEW MIRROR-SUN VISOR ASSEMBLY**

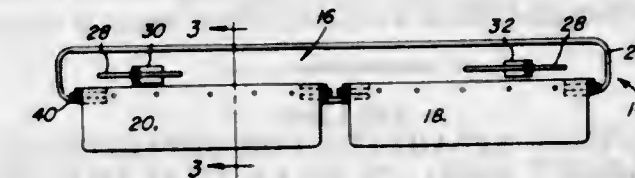
Clifford W. Loftin, 1466 Wells Ave.,

Claremont, Calif. 91711

Filed Mar. 2, 1965, Ser. No. 436,541

1 Claim. (Cl. 350—277)

An elongated rectangular rear view mirror assembly extending across the entire interior width of a vehicle and including a rigid backing member having a mirror secured thereto by a peripheral frame. The backing member is provided with pillow block means for securing the



pivotal movement with respect thereto, by outwardly projecting stub shafts carried by the sun visor members which shafts are rotatably journaled in pillow blocks carried by the backing member.

3,411,842

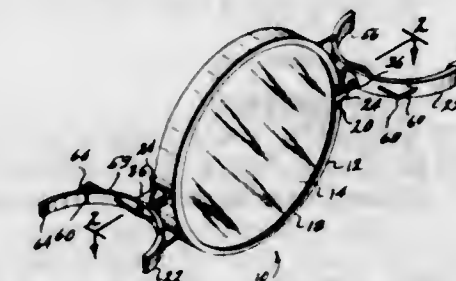
**MIRROR ASSEMBLY TO BE HELD BETWEEN THE KNEES OF A USER**

Eugene A. Levy, 2429 Lanterman Terrace,

Los Angeles, Calif. 90039

Filed July 6, 1964, Ser. No. 380,205

2 Claims. (Cl. 350—298)



The invention provides a mirror assembly adapted to be held between the knees of the user, and positioned with respect to the user's face by pressure exerted by the knees, whereby the mirror is rotated about a horizontal axis to whatever extent is desired. Both hands of the user are thus left free even during adjustment of the mirror as well as in use.

3,411,843

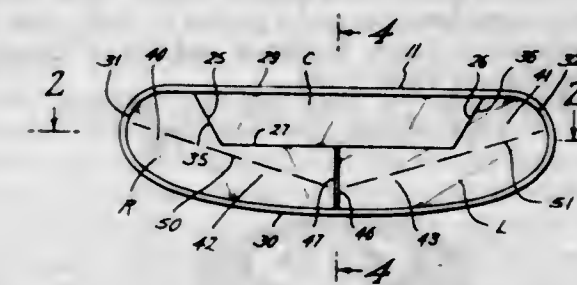
**COMPOSITE REARVIEW MIRROR**

Bynum W. Moller, P.O. Box 3631,

Victoria, Tex. 77901

Filed Feb. 17, 1966, Ser. No. 528,269

10 Claims. (Cl. 350—303)



1. A composite rearview mirror for viewing to the rear of a vehicle comprising:

- a housing adapted to be mounted on said vehicle,
- a central mirror segment carried on said housing for viewing the sector directly to the rear of the vehicle,
- a right side sector viewing segment carried in said housing at an angle relative to said central segment for viewing the outside sector of the vehicle at the right rear corner thereof,
- said right side sector viewing segment being set at an angle to the central portion and having a recess portion into which a central mirror segment extends,

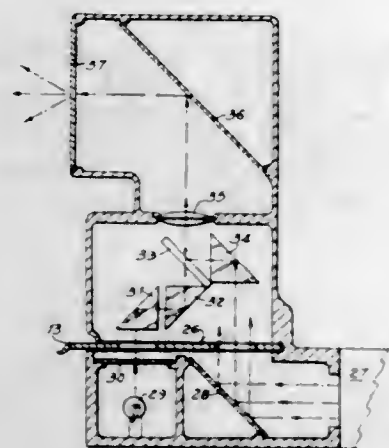


- (c) a left side sector viewing segment carried in said housing at an angle relative to said central segment for viewing the outside sector of the vehicle at the left rear corner thereof, and
- (f) said left side sector viewing segment being set at an angle to the central portion and having a recess portion into which a central mirror segment extends.

3,411,844

**PROJECTION APPARATUS FOR SUPERPOSING A READOUT GRID ON DATA FILM IMAGES**  
 Frederick Jonker, Washington, D.C., assignor to Jonker Business Machines, Inc., a corporation of Delaware  
 Original application Nov. 1, 1961, Ser. No. 150,114, now Patent No. 3,209,643. Divided and this application Oct. 5, 1965, Ser. No. 568,366

3 Claims. (Cl. 353-27)



Apparatus for the projection and viewing of the locations of light-transmitting data spots on a micro-image film, or on a superposed set of such films, with precise positional reference to a read-out grid. The film or films are positioned in one section of a unitary holder, and an accurate read-out grid is positioned in an adjacent section of the holder. The holder is insertable as a unit in the object plane of a projection viewer which provides for illumination of the films and grid, and which includes an optical system for deflecting their respective rays over a common optical path and focusing said rays, in accurate positional registration, on a common viewing screen.

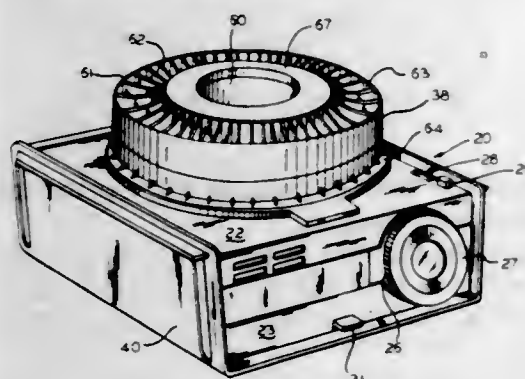
3,411,845

**AUTOMATIC SLIDE PROJECTOR**

William Bruce Pester, Ann Arbor, Mich., and Albert J. Schwarz, Lincolnwood, and Charles F. Seitz, Oak Park, Ill., assignors to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York

Filed Nov. 28, 1966, Ser. No. 603,078

14 Claims. (Cl. 353-88)



A jam-proof slide projector of the type arranged to support a slide tray having a portion adapted to be fixed on the projector and a relatively movable portion, the fixed portion having a slot through which the slides are adapted

to pass vertically, one at a time, and to be received in slide guides arranged in vertical registration with the slot, one of which guides is movable, and having indexing means in the projector moving the movable tray portion to successively align the slides in the tray in vertical registration with the slot, and also having slide carrying means operating in timed relation with the indexing means to feed each slide between the guides into projection position and to return each slide through the slot into the tray, a shutter being operatively coordinated with the movable slide guide so that the shutter is prevented from opening during movement of a slide into and out of projection position and also in the event that a slide is absent from between the guides. The drive means for the projector is operable for a full or partial cycle and the tray may be mounted on and latched to the projector in any position. When the drive means has been operated to complete a partial cycle the tray is released for movement relative to the projector or for removal therefrom.

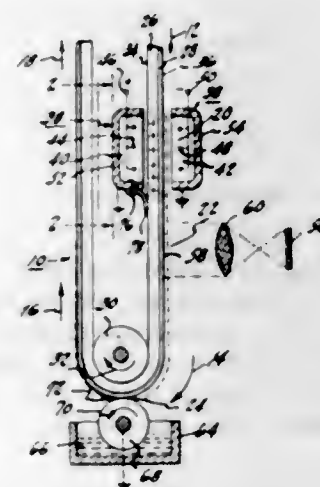
3,411,846

**ELECTROPHOTOGRAPHY**

Seymour Naroff, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Feb. 18, 1966, Ser. No. 528,474

10 Claims. (Cl. 355-3)



In compact electrophotographic apparatus, using double corona charging devices and a grounded electroscopic toner applicator, unwanted spurious currents that tend to flow along the conductive backing of a recording element are prevented by providing a current path for the spurious currents adjacent one of the corona discharge devices. The conductive path comprises a grounding finger connected to a grounded shield of a corona discharge device and disposed to contact the backing of the recording element.

3,411,847

**LIGHT PROJECTING DEVICE FOR PHOTOGRAPHIC PRINTER**

Siegfried Barbieri, Brixen, near Bozen, Italy, assignor to Durst A.G., Bozen, Italy

Filed June 17, 1966, Ser. No. 558,457

Claims priority, application Italy, Apr. 8, 1966,

8,035/66

15 Claims. (Cl. 355-30)

1. A colored light projecting device for a photographic printer comprising a housing, a source of substantially white light in said housing having a first optical axis, a variable color filter assembly in said housing having a second optical axis intersecting said first optical axis, a cold light reflector in said housing at the intersection between said first and second optical axes for directing cold light from said source along said second optical axis and

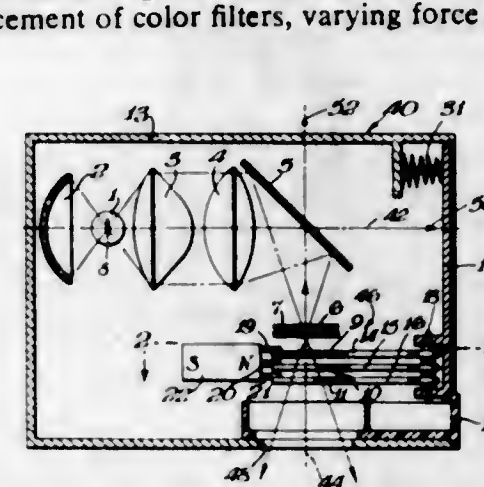
3,411,849

**FREQUENCY STABILIZED LASER**

Frederick Aronowitz, St. Louis Park, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed May 13, 1965, Ser. No. 455,422

6 Claims. (Cl. 356-28)



for passing heat rays through it along said first optical axis, a heat reflecting filter between said cold light reflector and said variable color filter assembly for reflecting heat rays back through said cold light reflector and passing substantially cold light along said second optical axis through said variable color filter assembly, said variable color filter assembly including arms and detachable color filter mounting means upon said arms for facilitating replacement of color filters, varying force drive means

connected to said arms for actuating the insertion and removal of said color filters into said second optical axis whereby a minimal force is applied to said arms when said color filters are disposed in the vicinity of said second optical axis, and magnetic aligning means reacting between said housing and said arms for firmly aligning said color filters in line with said second optical axis when said drive means moves them into said vicinity whereby vibration is minimized when said color filters are introduced into said second optical axis.

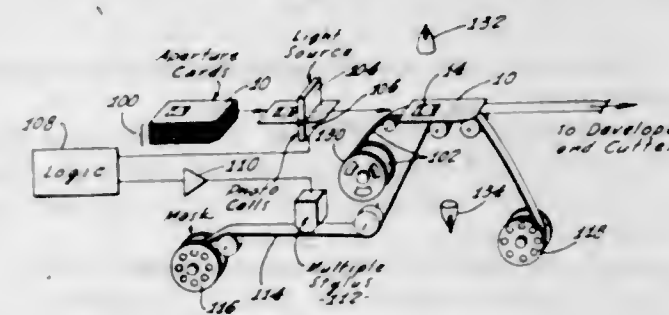
3,411,848

**CODER-EXPOSER**

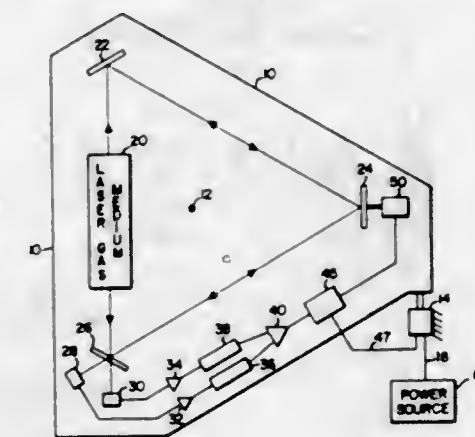
Joseph E. Stalder and Alfred M. Nelson, Redondo Beach, and Robert L. Laurent, Palos Verdes Estates, Calif., George M. Stamps, Champaign, Ill., and Clark R. Miller, Granada Hills, Calif., assignors to the Magnavox Company, Torrance, Calif., a corporation of Delaware

Filed June 16, 1966, Ser. No. 557,965

12 Claims. (Cl. 355-89)



1. A system for transferring information recorded on a first storage medium to a photographic film, including first means operatively coupled to the first storage medium for producing an output signal in accordance with the information recorded on the first storage medium, an intermediate transfer medium having a variable optical density, second means operatively coupled to the first means and the intermediate transfer medium and responsive to the output signal from the first means for producing changes in the optical density of the intermediate transfer medium in accordance with the output signal, and third means operatively coupled to the intermediate transfer medium and the photographic film for exposing the photographic film in accordance with the optical density of the intermediate transfer medium.



Apparatus to frequency stabilize a ring laser by adjusting the cavity length so as to keep the intensities of the two counter-rotating light beams equal.

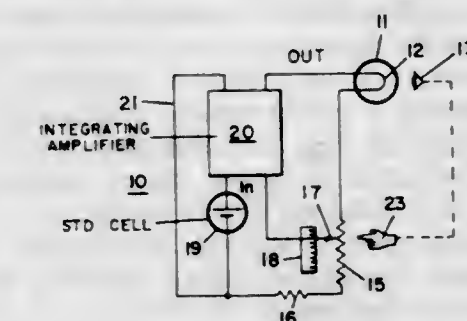
3,411,850

**ELECTRONIC RADIANT ENERGY PYROMETERS**

Albert J. Williams, Jr., Philadelphia, and William T. Gray, Jenkintown, Pa., assignors to Leeds & Northrup Company, a corporation of Pennsylvania

Filed Mar. 5, 1962, Ser. No. 177,380

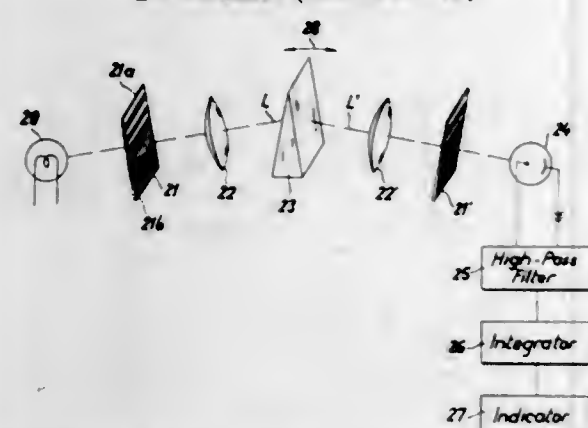
5 Claims. (Cl. 356-50)



4. An optical pyrometer system for measuring the temperature of a body comprising a variable brightness standard for producing a brightness related to the electric current flow therethrough, adjustable calibrated potentiometric means including means adjustable relative to a scale, said potentiometric means being connected in a circuit with said standard in such a way as to produce an electrical output signal related to the electric current flow therethrough and to the setting of said potentiometric means relative to said scale, a source producing a standard electrical signal, and means responsive to the difference between said standard electrical signal and the signal output from said potentiometric means, the outputs of said potentiometric means and that of said standard source being connected to the input of said means responsive to the difference between said standard electrical signal and the signal output from said potentiometric means for controlling the current through said variable brightness standard and the potentiometric means to maintain the difference between said standard electrical signal and the signal output from said potentiometric means substantially at zero, whereby the temperature of said body is indicated by said scale when the brightness of said standard and the brightness of said body are equal.



**3,411,851**  
**APPARATUS FOR SPECTROMETRICALLY ANALYZING AND SCANNING A RADIANT FLUX**  
 André Jean Girard, Chatillon-sous-Bagneux, France, assignor to Office National d'Etudes et de Recherches Aérospatiales, Chatillon-sous-Bagneux, Hauts-de-Seine, France, a corporation of France  
 Filed Nov. 30, 1964, Ser. No. 414,627  
 Claims priority, application France, Nov. 29, 1963, 955,571  
 14 Claims. (Cl. 356—83)

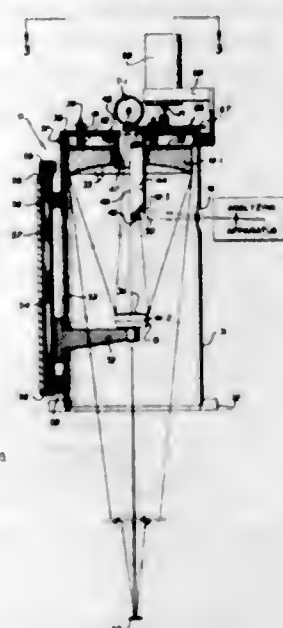


1. An apparatus for the spectrometric analysis of a flux of radiation, comprising radiation-gate means with an input side and an output side each exhibiting a substantially planar pattern of adjoining zones alternately forming part of a first and a second multiplicity of zones, said radiation-gate means including a support for at least one of said patterns, the zones of said first multiplicity having a transmissivity for incident radiation different from that of the zones of said second multiplicity, said pattern being non-repetitive in at least one reference direction; a projection system for directing incident radiation, transmitted by the zones of one multiplicity of the input-side pattern, onto the output-side pattern of said gate means, said system including dispersion means with a spectrum-spread plane parallel to said direction for casting upon said output-side pattern an exactly registering image of said input-side pattern as projected with an operative wavelength of incident radiation bearing a predetermined relationship with the relative position of said radiation-gate means and said system; photoelectric transducer means positioned to receive radiation transmitted by one multiplicity of zones of said output-side pattern, the rate of reception of radiant energy by said transducer means attaining an extreme value for said predetermined wavelength and having finite other values for all other wavelengths projected with partial coincidence of said patterns; drive means for periodically sweeping the projected image of said input-side pattern past said output-side pattern in said spectrum-spread plane over substantially the full range of operating wavelengths by relatively moving said support and at least part of said projection system whereby said rate of reception periodically reaches said extreme value in the presence of radiation of a predetermined wavelength within said range; and filter means connected to said transducer means for isolating a pulse corresponding to said extreme value in the output of said transducer means by suppressing at least the fundamental sweep frequency of said drive means in said output.

**3,411,852**  
**OPTICAL MONITORING APPARATUS WHICH INCLUDES A REFLECTOR SYSTEM FOR FOCUSING LIGHT ON A SAMPLE AND FOR RECEIVING LIGHT REFLECTED FROM THE SAMPLE**  
 Domenick Marinozzi, Jr., Westtown, Pa., assignor to Optical Coating Laboratory, Inc., Santa Rosa, Calif., a corporation of California  
 Filed Nov. 6, 1963, Ser. No. 321,888  
 5 Claims. (Cl. 356—24)

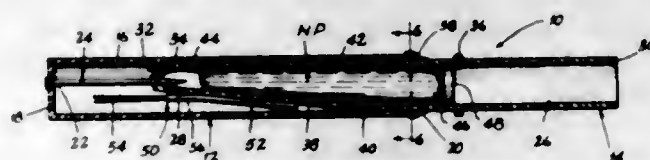
Optical monitoring apparatus for monitoring the reflectivity of an element and having first and second reflect-

ing mirrors and means for supplying energy to the second mirror, the first and second mirrors being arranged so that the second mirror reflects a portion of the energy to the first mirror and in which the first mirror reflects a portion of said energy to the element, said element being



adapted to reflect a portion of the energy reflected thereon to the first mirror and the first mirror reflecting a portion of the energy to the second mirror, means for receiving energy and a third mirror receiving energy from the second mirror and reflecting it to the means for receiving energy.

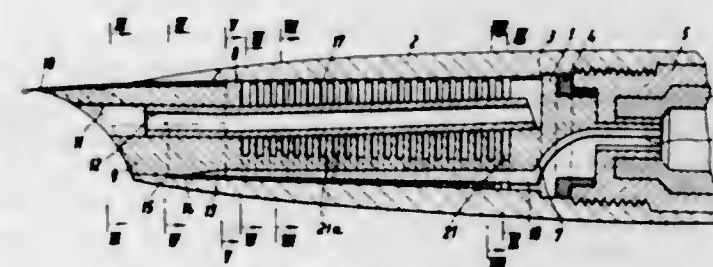
**3,411,853**  
**DISPOSABLE NAIL POLISH APPLICATOR**  
 Harry H. Hoff, Afton, Mo.  
 (6334 De Mara Drive, St. Louis, Mo. 63123)  
 Filed June 27, 1967, Ser. No. 649,195  
 4 Claims. (Cl. 401—134)



1. A disposable nail polish applicator device including in combination:  
 a first elongated tubular member formed of clear plastic material and having a cylindrical side wall closed at one end by an integral end wall, the opposite end being open;  
 a second elongated tubular member formed of clear pliable plastic material and having a cylindrical side wall that merges into a partly cylindrical and partly flat wall extension, said extension being closed by an end wall opposite the open end of the side wall; said second member being telescopically slidable within portions of said first member;  
 a circular opening formed in said end wall of the partly cylindrical and partly flat wall extension of the second tubular member;  
 a capsule formed of clear pliable plastic material having a determined volume of nail polish hermetically sealed therein, said capsule being enclosed within said second tubular member;  
 a disc element press-fitted into said second tubular member so as to engage against one end of the capsule; capsule piercing means in the form of a horizontally disposed pointed pin element having its head and thereto adjacent portion anchored in said end wall of the first tubular member and its pointed end portion extending through said circular opening in the end

wall of the partly cylindrical and partly flat wall extension of the second tubular member;  
 a brush assembly integrated with said second tubular member, the polish applying bristles of said assembly being disposed below said opening in the extension end wall when the applicator is in use; and  
 an annular projecting flange formed on the second tubular member intermediate the ends thereof, said flange serving to limit telescopic movements of the first relatively to the second tubular member.

**3,411,854**  
**INK CONDUCTOR FOR FOUNTAIN PENS**  
 Ernst Rödel, Hamburg, and Konrad Kressel, Hamburg-Poppenbittel, Germany, assignors to Montblanc-Simplo G.m.b.H., Hamburg, Germany  
 Filed Apr. 29, 1966, Ser. No. 546,453  
 Claims priority, application Germany, Apr. 30, 1965, M 65,069  
 6 Claims. (Cl. 401—227)



An ink conductor for fountain pens with a control passage leading to an ink container for passing ink and air in opposite direction, which is equipped with a longitudinal capillary connecting the control passage with the pen and also equipped with a plurality of pockets formed by capillary grooves and ribs communicating with the longitudinal capillary while a venting passage extends in the longitudinal direction through the pockets and has only its inner end in communication with the surrounding pockets, the longitudinal capillary being located at the bottom side of the ink conductor and having its front end ending diametrically opposite the pen and communicating with the inside surface of the latter through a capillary annular passage means.

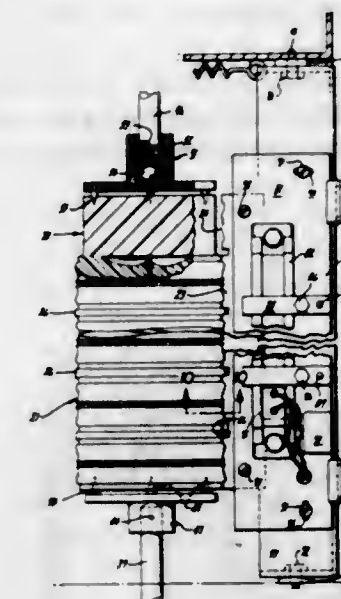
**3,411,855**  
**CANDLES**  
 Sven Olund, San Rafael, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware  
 No Drawing. Filed Dec. 7, 1966, Ser. No. 599,719  
 6 Claims. (Cl. 431—4)

Encased candles in which the fuel is a mixture of paraffin wax which melts at about 105–175° F. and polybutene of about 500 to 20,000 SUS at 200° F. viscosity made using Friedel-Crafts catalyst.

**3,411,856**  
**PROCESS AND MACHINE FOR FORMING A DECORATIVE PATTERN ON CANDLES**  
 Lucius M. Crumrine, Jr., Burlingame, Calif., assignor to Bluegate Candle Company, Montara, Calif., a corporation of California  
 Filed Feb. 28, 1966, Ser. No. 530,534  
 12 Claims. (Cl. 431—126)

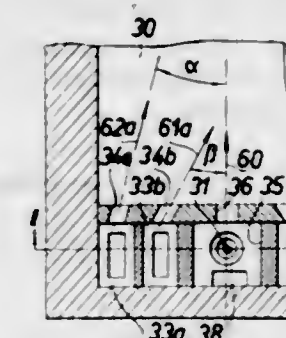
A candle decorating machine and process including means for horizontally supporting and rotating a candle and a heated cutting and forming member such that the

latter is selectively brought into lateral engagement with the side of the candle. Circumferential grooves and longitudinal ridges are formed in the candle by selective opera-



tion of the member to form a decorative pattern in which the longitudinal ridges conform to the surface outline along the candle.

**3,411,857**  
**FIRE EQUIPMENTS FOR LIQUID AND GASEOUS FUELS**  
 Károly Perédi, 10 Kekgolyo utca, Budapest XII, Hungary  
 Continuation-in-part of application Ser. No. 418,714, Dec. 16, 1964. This application Jan. 30, 1967, Ser. No. 612,498  
 2 Claims. (Cl. 431—178)



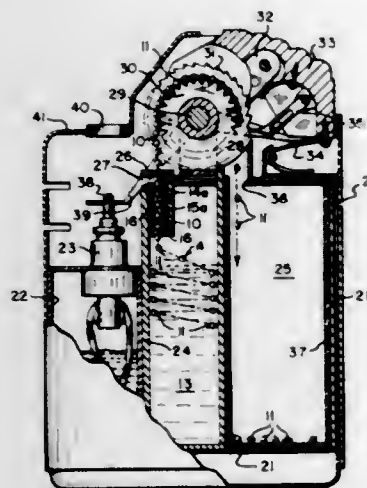
Combination apparatus for fluid fuels, in which an elongated distribution chamber with fuel injection and an igniter at one end feeds through one or more openings to a combustion chamber which has a roof and side walls and is thus adapted to heat workpieces. Secondary air is fed directly to the combustion chamber, and the secondary air inlets may be specially arranged to spread the combustion over the combustion chamber.

**3,411,858**  
**COMBUSTION DEVICES**  
 Douglas Somerville Fuller, Burrows, Long Reach, Ockham, Surrey, England  
 Filed Sept. 12, 1966, Ser. No. 578,837  
 Claims priority, application Great Britain, Sept. 14, 1965, 39,269/65  
 10 Claims. (Cl. 431—267)

1. In a combustion device wherein ignition of fuel delivered to a burner is effected by spontaneous com-



bustion of a pyrophoric substance brought into contact with the ambient atmosphere adjacent the burner, the device being provided with a fuel reservoir, a fuel burner, a storage reservoir for the pyrophoric substance, and metering means for delivering a measured quantity of the pyrophoric substance to the atmosphere adjacent the burner, the improvement which comprises an elongated storage seal communicating with the pyrophoric substance reservoir, metering means in the form of an elongated



gated member stored within the pyrophoric substance reservoir and extending out of said reservoir through a longitudinal opening in the seal, withdrawing means for withdrawing stepwise through the seal and into close proximity to the burner a discrete length of the elongated member, each discrete length of the elongated member entrapping within the seal a measured amount of the pyrophoric substance available for spontaneous ignition when exposed to the ambient atmosphere adjacent the burner by withdrawal of said discrete length of the elongated member out of the seal.

## CHEMICAL

3,411,860

## METHOD OF DYEING CELLULOSE FIBERS

Willy Braun, Heidelberg, and Julius Eisele, Guenter Krehbiel, Guenter Lange, Roland Mueller, Wilhelm Ruehmens, Josef Stadler, and Hermann Weissauer, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany  
No Drawing. Filed Oct. 28, 1958, Ser. No. 770,018  
Claims priority, application Germany, Oct. 29, 1957, B 46,595

1 Claim. (Cl. 8—18)

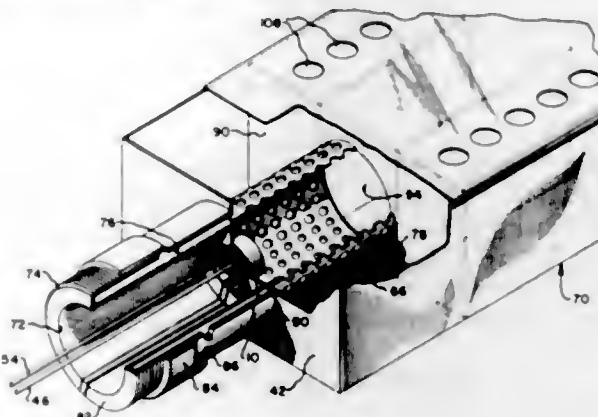
1. In the process for simultaneously coloring and finishing a textile fabric formed at least in part of cellulose fibers by immersing said fabric in an aqueous solution containing a resin-forming composition, an acid catalyst and a water-soluble reactive dyestuff having a group which is reactive under acid conditions with said resin-forming composition to bond said dyestuff to said resin, drying the so-treated textile fabric and thereafter baking the textile fabric to effect the formation of said resin and said bond between said dyestuff and said resin, the improvement which consists in adding to said solution an alkali metal salt of an alkylnaphthalene sulfonic acid.

3,411,859

## OIL BURNER WITH ELONGATED FLAME CHAMBER

Orvis A. Davis, Sr., Gibsonsia, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa.  
Continuation-in-part of application Ser. No. 70,226, Nov. 18, 1960. This application Apr. 24, 1964, Ser. No. 362,302

1 Claim. (Cl. 431—287)



1. An apparatus comprising in combination an elongated flame chamber and an aspirating nozzle having a discharge orifice, a transverse barrier disposed within said elongated flame chamber near its rearward end defining a smaller rearward section and a larger forward section in said flame chamber, an opening centrally located on said transverse barrier, a perforated duct coaxial with said central opening extending between said transverse barrier and the opposing wall of said rearward section, passage means at a point in said rearward section outside of said perforated duct for the admission of air to said rearward section, said nozzle disposed so that its discharge orifice is directed coaxially into said perforated duct, a pair of elongated parallel baffles within said larger section of said flame chamber defining within said larger section a central elongated zone to which access is provided by said central opening and side elongated zones extending along each side of said central zone, access means between said central zone and each of said side zones at the forward end of said forward section of said flame chamber, and elongated opening means extending along the top of said side zones.

3,411,861

## PROCESS FOR DYEING SYNTHETIC POLYAMIDE FIBERS WITH 1,4-DISUBSTITUTED ANTHRAQUINONE DYES

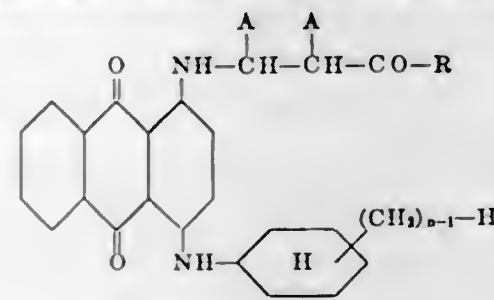
Jacques Guenthard, Blinningen, Basel-Land, and Fred Mueller, Munchenstein, Basel-Land, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Feb. 15, 1966, Ser. No. 527,507

Claims priority, application Switzerland, Mar. 5, 1965, 3,066/65; Mar. 18, 1965, 3,800/65

3 Claims. (Cl. 8—39)

1. Process for the dyeing and printing of synthetic polyamide fibres with disperse dyestuffs of the formula



(I)

where one A stands for a hydrogen atom and the other A stands for a hydrogen atom or a methyl radical, R represents a member having at the most 8 carbon atoms which is selected from the group consisting of hydroxy, substituted and unsubstituted alkoxy, cycloalkoxy and aralkoxy and n stands for 1 or 2.

3,411,862

## PROCESS FOR THE CONTINUOUS REFINING OF LENGTHS OF TEXTILE MATERIALS AND THE LIKE

Christian A. Meier-Windhorst, Hamburg, Germany, assignor to Artos Dr. Ing. Meier-Windhorst K.G., Hamburg, Germany

No Drawing. Filed Dec. 9, 1965, Ser. No. 512,771

4 Claims. (Cl. 8—101)

A length of textile material which is being refined by continuous impregnation with a suitable refining medium, is maintained in an atmosphere consisting of a mixture of steam and an inert gas in order to provide the real treating temperature of the refining process, said temperature being below 100° C.

3,411,863

## PROCESS FOR CHEMICALLY ATTACHING COMPOUNDS TO AMINIZED CELLULOSE BY MEANS OF FORMALDEHYDE

John D. Guthrie, New Orleans, La., Marcia S. Pottle, Ithaca, N.Y., and Matthew F. Margavio, Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed July 16, 1965, Ser. No. 472,741

47 Claims. (Cl. 8—129)

A process for the chemical modification of aminized cellulose. The process provides versatile method of attaching a great variety of compounds to aminized cellulose. The aminized cellulose will react with formaldehyde in conjunction with, for example, the following compounds: phenols, ketones, acids, esters amides, nitriles, dyes and ethers.

3,411,864

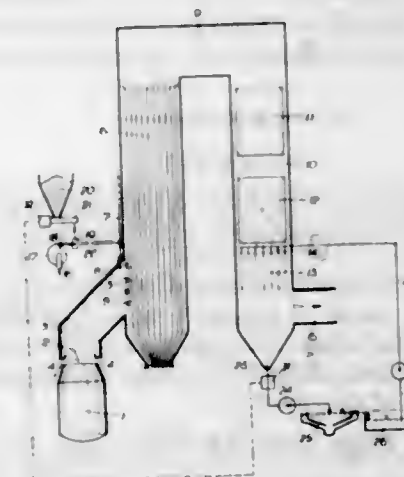
## METHOD OF REMOVING SUSPENDED ACIDIC OR ALKALINE PULVERULENT PARTICLES FROM GASES

Josef Pallinger, Vienna, Austria, assignor to Waagner-Biro Aktiengesellschaft, Vienna, Austria

Filed July 9, 1964, Ser. No. 381,320

Claims priority, application Austria, July 10, 1963, A 5,538/63

11 Claims. (Cl. 23—2)



Acidic or alkaline pulverulent particles suspended in a gas are washed out of the latter with a washing liquid so that the spent washing liquid, notwithstanding the

acidic or alkaline nature of the pulverulent impurities will be substantially neutral, by introducing into the gaseous suspension of non-fluid and generally solid acidic or alkaline impurities a pulverulent alkaline or acidic material capable of neutralizing the acidic or alkaline impurities when the pulverulent acidic or alkaline impurities and the pulverulent alkaline or acidic materials are dispersed in the washing liquid, so that by washing the gas containing the pulverulent acidic or alkaline impurities and neutralizing agent, the gas is purified and freed from pulverulent constituents and the washing liquid which now will contain at least partially dissolved the pulverulent constituents of the washed gas will be of substantially neutral reaction.

3,411,865

## METHOD OF REMOVING SULFUR DIOXIDE FROM GASES

Franciscus W. Pijpers and Maria M. J. J. Starmans, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 19, 1964, Ser. No. 390,754

Claims priority, application Netherlands, Oct. 3, 1963, 298,751

8 Claims. (Cl. 23—2)

Method of removing sulfur dioxide from hot gaseous mixtures comprising contacting said hot gaseous mixtures with a solid acceptor for sulfur dioxide comprising a mixture of an alkali metal oxide and a minor amount of iron oxide and, optionally antimony oxide, on a carrier selected from the group consisting of alumina, magnesia and chromia.

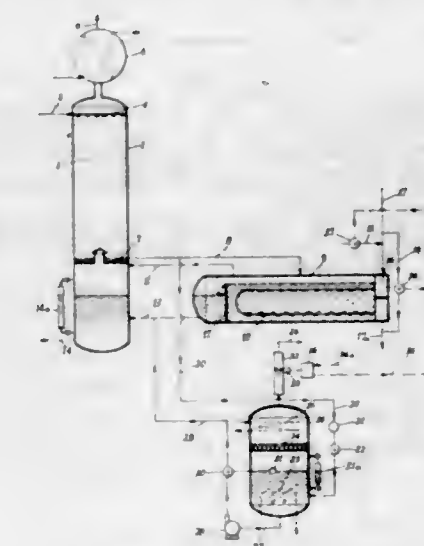
3,411,866

## METHOD AND APPARATUS FOR MAINTAINING PROPER REACTIVATION OF ABSORBENT SOLUTION

Harry Allen Jewell, Louisville, Ky., assignor to Girdler Corporation, Louisville, Ky., a corporation of Ohio

Filed Jan. 8, 1965, Ser. No. 424,250

7 Claims. (Cl. 23—2)



Process and apparatus for automatically maintaining proper reactivation of an acidic gas absorbent solution in a reactivator which is heated by steam generated from the absorbent in an associated indirectly steam heated reboiler wherein a portion of the absorbent solution passing from the reactivator to the reboiler is diverted to a test vessel wherein it is heated, the degree of gas evolution therefrom determined and, in response to such determination, automatically activating means either (1) to admit steam to the reboiler heating means or (2) to cause the steam to by-pass the reboiler heating means.



### 3,411,867 METHOD OF REMOVING PHOSGENE FROM GASES

Ronald W. Beech and James T. Polley, Glen Dale, W. Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York  
No Drawing. Filed May 6, 1965, Ser. No. 453,821  
7 Claims. (Cl. 23—2)

A novel process for removing phosgene from gas streams especially those containing relatively small quantities of phosgene, comprises contacting the gas streams with crystalline alumina in the presence of sufficient water to dissolve the HCl formed by the resulting conversion of phosgene.

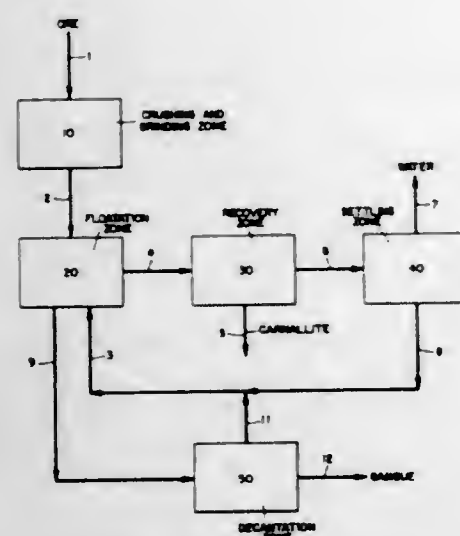
### 3,411,868 PRODUCTION OF BERYLLIUM FLUORIDE Simon J. Morana, Hazleton, Pa., assignor to The Beryllium Corporation, Reading, Pa., a corporation of Pennsylvania No Drawing. Filed Sept. 22, 1965, Ser. No. 489,405 4 Claims. (Cl. 23—15)

A method of producing substantially pure beryllium fluoride from sinter leach liquor containing sodium fluoberyllate complex by passing the leach liquor through a cation exchange resin and collecting the effluent which contains essentially beryllium fluoride and hydrogen fluoride in concentrations identical with that of the sinter leach liquid feed material.

### 3,411,869 METHOD OF PREPARING ANHYDROUS FERROUS HALIDES Kenneth B. Bradley, Midland, Mich., and Alton W. Long, Lucas, Ohio, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware No Drawing. Filed Jan. 28, 1966, Ser. No. 536,230 10 Claims. (Cl. 23—87)

Substantially anhydrous ferrous chloride, bromide or iodide can be prepared from either crystalline hydrates or aqueous solutions of these ferrous salts by heating in an inert organic which has a boiling point at least as high as the temperature at which the hydrates normally lose the final mole of water of hydration.

### 3,411,870 PURIFICATION OF CARNALLITE Eugene Richard Nightingale, Jr., Murray Hill, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware Filed Jan. 28, 1966, Ser. No. 523,735 3 Claims. (Cl. 23—91)



Process for separating carnallite from gangue and simultaneously removing water of hydration therefrom

which comprises utilizing a halogenated hydrocarbon preferably in conjunction with a hydrocarbon in a flotation zone and thereafter removing the liquid including water of hydration in a recovery zone.

### 3,411,871 PROCESS FOR FORMING ACTIVE CUPROUS HALIDE SORBENTS

Werner Albert Bauch and Jack Whitfield Burt, Baton Rouge, La., and Warren Alfred Knarr, Ponca City, Okla., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed June 8, 1965, Ser. No. 462,431  
15 Claims. (Cl. 23—97)

This invention relates to improvements in the preparation of highly porous activated cuprous halide sorbent particles for use in the separation of ligands, e.g., butadiene, via complexation techniques. Highly porous sorbent particles are prepared from the corresponding cuprous halide salts by dissolving the latter in olefinic solvents, filtering to remove fines, especially those particles of size smaller than about 0.15 micron, and then contacting the sorbent with a suitable ligand to form an insoluble complex. The ligand addition rate is controlled at from about 0.0001 to 0.1 gram of the ligand/minute/gram of dissolved cuprous halide salt to suppress reformation of fines. The insoluble complex is thermally decomplexed to provide recovery of active sorbent particles which can then be used for the separation and recovery of ligands from admixture with hydrocarbon streams.

### 3,411,872 METHOD OF PRODUCING NONHYGROSCOPIC SODIUM ALUMINUM PHOSPHATE

Leo B. Post, New City, N.Y., and Julian E. Blanch, Stamford, Conn., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 24, 1967, Ser. No. 655,351  
5 Claims. (Cl. 23—105)

The process for manufacturing sodium aluminum phosphate (SALP) includes adding reactive sodium and aluminum compounds to a solution of phosphoric acid, concentrating the solution to cause crystallization of the SALP and wherein an ionizable compound is added before crystallization for surface modification. Controlled sizing of the SALP is accomplished in the presence of an alkali metal ion, which modifies the surface of the final particle. The sizing is preferably controlled by wet milling with immediate surface modification being obtained by the alkali metal ion incorporated in the solvent solution.

### 3,411,873 PROCESS FOR THE STABILIZATION OF DICALCIUMPHOSPHATE DIHYDRATE

Heinz Harnisch, Lovenich, near Cologne, Joseph Cremer, Hermulheim, near Cologne, and Friedrich Schulte, Hurth, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

No Drawing. Filed Nov. 30, 1966, Ser. No. 597,875  
Claims priority, application Germany, Dec. 22, 1965, K 57,982

11 Claims. (Cl. 23—109)

The present invention relates to a process for stabilizing dicalcium phosphate dihydrate by means of a magnesium phosphate.

### 3,411,874 ZSM-2 ZEOLITE AND PREPARATION THEREOF Julius Clirc, Glassboro, N.J., assignor to Mobil Oil Corporation, a corporation of New York No Drawing. Filed Nov. 9, 1964, Ser. No. 409,640 7 Claims. (Cl. 23—113)

A novel crystalline aluminosilicate composition having a silica to alumina mol ratio of 3.3 to 4 and a specified X-ray diffraction pattern prepared by contacting a finely divided amorphous glass having a chemical composition, defined by the following molar ratios, of



with excess water at a temperature between 20 and 100° C. until crystals of said aluminosilicate are formed.

### 3,411,875 PROCESS FOR THE PRODUCTION OF ANHYDROUS HYDROSULFITES Yoshio Yoshikawa, Heizo Okazaki, and Takaaki Yamaguchi, Tokyo, Japan, assignors to Mitsubishi Edogawa Kagaku Kabushiki Kaisha, Chiyoda-ku, Tokyo, Japan, a corporation of Japan No Drawing. Filed Apr. 1, 1965, Ser. No. 444,833 Claims priority, application Japan, Apr. 8, 1964, 39/19,694

2 Claims. (Cl. 23—116)

1. Process for the production of anhydrous alkali metal hydrosulfite which comprises adding dropwise sulfur dioxide containing methanol and an alkaline agent to an aqueous solution of alkali metal formate, at a temperature, between the anhydrous-hydrate transition point of alkali metal hydrosulfite and the reflux temperature of the reaction mixture and at a pH between 4 and 6.5.

### 3,411,876 PREPARATION OF HYDRARGILLITE Max Michel, Sarcelles-les-Rosiers, and Denis Papée, Paris, France, assignors to Produits Chimiques Pechiney-Saint-Gobain, Neuilly-sur-Seine, France No Drawing. Filed May 25, 1964, Ser. No. 370,035 Claims priority, application France, May 27, 1963, 936,111

6 Claims. (Cl. 23—143)

The preparation of hydrargillite in fine crystalline form by aging a suspension of aluminum hydroxide having up to 35% by weight alumina calculated as  $\text{Al}_2\text{O}_3$  and at least 10% monovalent acid ions based upon the molecules of  $\text{Al}_2\text{O}_3$  in which the aging step to develop the suspension is carried out under nondrying conditions and thereafter bringing the suspension into a medium in the form of an ammoniacal or amino medium to transform the alumina into a hydrargillite base crystalline substance.

### 3,411,877 PROCESS FOR PRODUCING WATER DISPERSIBLE HYDRARGILLITE Max Michel, Sarcelles-les-Rosiers, and Denis Papée, Paris, France, assignors to Pechiney-Saint-Gobain, Neuilly-sur-Seine, France No Drawing. Filed May 8, 1964, Ser. No. 366,153 Claims priority, application France, May 14, 1963, 934,790

3 Claims. (Cl. 23—143)

A water dispersible hydrargillite produced by precipitation of aluminum hydroxide in solution with a monovalent acid in an amount to maintain the pH within the range of 8 to 9 to form an alumina gel, copiously filtering and washing the gel to produce an alumina gel in which the ratio of monovalent acid ions to alumina is at least 0.1, maintaining the alumina gel at a temperature below 60° C. without desiccation until the mass is converted to the hydrargillite structure.

### 3,411,878 ALUMINA AGGLOMERATES AND METHOD FOR PRODUCING SAME Maxime Graulier, Paris, and Max Michel, Sarcelles-les-Rosiers, France, assignors to Produits Chimiques Pechiney-Saint-Gobain, Neuilly-sur-Seine, France No Drawing. Filed Mar. 25, 1966, Ser. No. 537,277 Claims priority, application France, Mar. 31, 1965, 11,394

9 Claims. (Cl. 23—143)

1. The method for the manufacture of porous alumina agglomerates of high mechanical strength from alumina gel comprising forming an aqueous slurry of amorphous hydrated alumina gel, rapidly drying the amorphous hydrated alumina gel to a fine powder in which the alumina gel maintains the amorphous state, moistening the powdered amorphous alumina gel with aqueous medium, agglomerating the moistened powder, curing the agglomerate in a protective atmosphere at a temperature within the range of 60 to 100° C. to convert the amorphous alumina gel to pseudoboehmite, drying, and then calcining the agglomerate at elevated calcining temperatures.

### 3,411,879 PURIFICATION OF AQUEOUS HYDROCHLORIC ACID

Robert E. Whitfield, Pleasant Hill, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Filed Sept. 17, 1965, Ser. No. 488,238  
3 Claims. (Cl. 23—154)

This invention relates to a method for the removal of fluoride ions from aqueous solutions of hydrochloric acid containing the same by contacting such hydrochloric acid solutions with silica gel or alumina and subsequently regenerating said silica gel or alumina with an aqueous base.

### 3,411,880 RECOVERY OF HIGH PURITY MAGNESIUM OXIDE AND CALCIUM OXIDE FROM MAG- NESITE AND CALCITE ORES George Adrian Kent, Ottawa, Ontario, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada No Drawing. Filed Aug. 23, 1965, Ser. No. 481,922 8 Claims. (Cl. 23—186)

The invention contemplates the recovery of magnesium oxide and calcium oxide from magnesite and calcite ores of a purity not heretofore readily available. A body of one of these ores is initially heated to a temperature of 400–900° C. and then digested with acetic acid in water at a temperature of 65–80° C. to form a solution containing magnesium or calcium acetate and coagulated insoluble particles. These particles are removed from the resulting filtrate and the residue heated to about 550–1000° C. to form the desired oxide.

### 3,411,881 PREPARATION OF SOLUTIONS OF HYDROXYL- AMINE AND APPLICATION THEREOF Willem Jacob van der Burg, Oss, Netherlands, assignor to Organon Inc., West Orange, N.J., a corporation of New Jersey No Drawing. Filed Feb. 11, 1965, Ser. No. 431,993 Claims priority, application Netherlands, Mar. 6, 1964, 6402255

2 Claims. (Cl. 23—190)

An anhydrous alcoholic solution of hydroxylamine is prepared by reacting a solution of a hydroxylamine salt in an anhydrous alcohol with lithium alcoholate, at a temperature below 20° C., preferably between 0° and 5° C. The hydroxylamine solution is useful for the preparation of an hydroxamic acid from an amino acid ester.



3,411,882

**PRODUCTION OF BORON NITRIDE**

Helmut Knorre, Hainstadt (Main), and Gerhard Kuhner, Gross-Auhelm, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Feb. 17, 1967, Ser. No. 616,763  
Claims priority, application Germany, Feb. 19, 1966, D 49,401

4 Claims. (Cl. 23—191)

Process for the production of boron nitride comprising reacting alkali metal borates or mixtures of an alkali metal oxide and alkali metal borates or boron trioxide with silicon and/or aluminum or their alloys in contact with nitrogen, or nitrogen yielding gases, such as ammonia, at a temperature between 200 and 1200° C. and leaching the reaction mixture with water to dissolve out the water soluble alkali metal salts.

3,411,883

**RECOVERY OF CESIUM AND NITROUS OXIDE FROM FISSION PRODUCT SOLUTIONS CONTAINING AMMONIUM NITRATE**

Jakob Van Rouendal Smit, Pretoria, Transvaal, Republic of South Africa, assignor to South African Inventions Development Corporation, Council for Scientific and Industrial Research, Scientia, Pretoria, Transvaal, Republic of South Africa, a corporation of the Republic of South Africa

Continuation-in-part of application Ser. No. 310,974, Sept. 19, 1963. This application July 30, 1964, Ser. No. 386,360

9 Claims. (Cl. 23—25)

Ammonium nitrate is decomposed, e.g., to remove it from a fission product concentrate, such as cesium 137. The reaction proceeds under aqueous strongly acid conditions "fission product waste," presents considerable disposal in the system by refluxing. The main reaction product is nitrous oxide and the reaction can be controlled to yield almost pure nitrous oxide (laughing gas), wherefore the process can also be used for the manufacture of nitrous oxide.

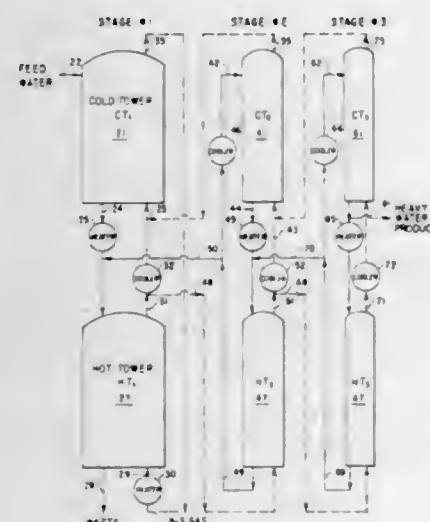
3,411,884

**PROCESS FOR CONCENTRATING HEAVY WATER**

Victor R. Thayer, Newark, Del., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Apr. 11, 1967, Ser. No. 630,486

2 Claims. (Cl. 23—204)



A process for concentrating deuterium oxide by isotope exchange between water and hydrogen sulfide in staged

pairs of hot and cold isotope exchange towers. The water stream of the first stage is passed from feed through first stage cold and hot towers and disposed of. Water is recycled within the stages after the first. Recycle, counter-current H<sub>2</sub>S gas flow is established throughout all of the stages, a portion of the hydrogen sulfide flow of each stage except the last being cascaded to its subsequent stage. Water enriched in deuterium oxide is advanced from the first to higher stages by transport as humidity in the cascaded gas.

3,411,885

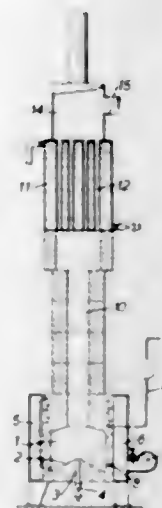
**APPARATUS AND PROCESS FOR PRODUCING CARBON BLACK**

Lennart Hugo Malmstrom and Carl Olof Malmstrom, Norrköping, Sweden, assignors to Svenska Carbon Black Aktiebolag, Sjötväggsgatan, Norrköping, Sweden, a Swedish company

Filed Mar. 2, 1966, Ser. No. 531,188

Claims priority, application Sweden, Mar. 15, 1965, 3,320/65; June 16, 1965, 7,920/65

8 Claims. (Cl. 23—209.6)



A furnace for producing carbon black is provided with a heated refractory lined reaction chamber into which liquid hydrocarbons to be combusted are fed and form a pool of liquid at the base. An oxygen-containing combustion gas is fed to the chamber through a number of tangential inlets directed obliquely downwardly so that the entering gas gives turbulent combustion of the oil vapours generated by the heat radiated from the furnace lining. Combustion products exit from the chamber through an outlet at the top of the furnace.

3,411,886

**PRODUCTION OF THIONYL HALIDE AND AROMATIC ACYL HALIDES**

Emmett H. Burk, Jr., Glenwood, and Byron W. Turnquest, Chicago, Ill., assignors to Sinclair Research Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 16, 1965, Ser. No. 480,175

11 Claims. (Cl. 23—203)

A method for the production of thionyl halide and aromatic acyl halides, the halogen atoms of the halides having an atomic number from 17 to 35. The method involves reacting, in the liquid phase, sulfur dioxide with an aromatic compound having at least one trihalomethyl radical attached to the aromatic nucleus. The halogen of the trihalomethyl radical has an atomic number from 17 to 35. The reaction is conducted in the presence of a catalytic amount of ferric halide and the halogen atoms of the ferric halide have an atomic number from 17 to 35.

3,411,887

**DIAGNOSTIC COMPOSITION**

Edmond Chiu-Choon Ku, Detroit, Mich., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed June 15, 1964, Ser. No. 375,298

16 Claims. (Cl. 23—230)

A test composition for detecting specific constituents in body fluids such as urine which contain interfering reducing substances such as ascorbic acid, comprising an enzymatic detecting system which releases peroxide and a trapping system for oxidizing the interfering reducing substance, said trapping system comprising an ionizable heavy metal compound which in the ionized state has an oxidation-reduction potential ( $E^{\circ}_{red}$ ) above that of the interfering substance but below that of the chromogenic substance.

3,411,888

**AGGLOMERATION OF NATURALLY OCCURRING ZEOLITES**

Emery H. Westerland, Tonawanda, and Wilfred Drost, Williamsville, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 191,229, Apr. 30, 1962. This application Nov. 30, 1965, Ser. No. 510,675

3 Claims. (Cl. 23—313)

The invention relates to a process for forming agglomerate particles of naturally-occurring zeolite ores. It has been found that these ores contain relatively small quantities of gangue materials of indefinite composition which if properly treated act as very good binder material for the zeolite crystals. Essential factors in the process are (a) particle size of the ore mass, less than 100 mesh, (b) the quantity of water added to the ore, between 35 to 45 weight percent of the total composition, (c) the firing temperature, from 375° C. to 700° C., and (d) the use of an inert purge gas during the firing.

3,411,889

**SULFAMIDE**

Ludwik I. Kopeck, Wilmington, Del., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 7, 1966, Ser. No. 532,057

6 Claims. (Cl. 23—357)

In the preparation of sulfamide and ammonium fluoride from sulfuric fluoride and ammonia according to the equation:  $\text{SO}_2\text{F}_2 + 4\text{NH}_3 \rightarrow \text{SO}_2(\text{NH}_2)_2 + 2\text{NH}_4\text{F}$ , it has been discovered that if the reaction is carried out at low temperature in the presence of excess anhydrous ammonia a separation of the products by filtration may be achieved in that  $\text{SO}_2(\text{NH}_2)_2$  is soluble in the liquid ammonia, whereas the  $\text{NH}_4\text{F}$  is insoluble and is, therefore, susceptible to separation by filtration.

3,411,890

**CHEMICAL PRODUCTS AND PROCESSES**

Joseph H. Balthis, Jr., Mendenhall, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed July 11, 1962, Ser. No. 209,487

9 Claims. (Cl. 23—358)

Double salts of cobalt(III) and chromium(III) amines and decahydrodecaborate or dodecahydrododecaborate anions with a second anion which is oxidizing are useful as initiating explosives.

3,411,891

**SALTS OF NONAHYDRONONABORATES AND THEIR PREPARATION**

Frank K. Klanberg, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 23, 1966, Ser. No. 529,242

10 Claims. (Cl. 23—358)

The invention is directed to preparation of salts of the general formula  $\text{M}_n(\text{B}_9\text{H}_9)_m \cdot m\text{H}_2\text{O}$ .

3,411,892

**FERROMAGNETIC THIN FILM****MEMORY ELEMENT**

Yozo Sasaki, Takashi Furuya, and Zun Kinoshita, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan

Filed Nov. 23, 1964, Ser. No. 413,276

Claims priority, application Japan, Nov. 28, 1963, 38/63,941

7 Claims. (Cl. 29—183.5)

The invention broadly discloses a memory element comprising a non-magnetic conductor wire having a ferromagnetic thin film coating and further having an intermediate coating between the ferromagnetic coating and the conductive wire of a non-magnetic metallic material which greatly enhances the magnetic properties of the ferromagnetic thin film which is quite frequently subjected to defects in the absence of the intermediate coating. The intermediate coating may be copper, zinc or cadmium.

3,411,893

**PRODUCTION OF NITROGEN-PHOSPHORUS-SULFUR COMPOUNDS**

John C. Driskell, Sheffield, and Harry T. Lewis, Jr., Florence, Ala., assignors to Tennessee Valley Authority, a corporation of the United States

Filed Aug. 30, 1965, Ser. No. 483,887

7 Claims. (Cl. 71—32)

A process for preparing a new highly concentrated, water insoluble, nonhygroscopic solid fertilizer intermediate in a reactor by the vapor phase reaction of ammonia, phosphorus and sulfur at 660° to 1100° F. Intermediate fertilizer products contain from about 4 to 9 percent sulfur and a total plant food content of 150 to 160 percent distributed as 39 to 42 percent N and from 110 to 117 percent  $\text{P}_2\text{O}_5$  equivalent. The products have the empirical formula  $\text{PN}_x\text{H}_y\text{S}_z$  where x is greater than 1.6 but less than 3, y is greater than 0 but not greater than 6, and z is greater than 0 but less than 1. Fertilizer intermediate is hydrolyzed to water-soluble finished fertilizer material by treatment with steam at 435° to 525° F. and 380 to 900 p.s.i.g. for 0.5 to about 2 hours. Fertilizer product hydrolyzate contains about 12 to 16 percent nitrogen, 49 to 55 percent phosphorus pentoxide, and 1 to 3 percent sulfur.

3,411,894

**RETARDATION OF RIPENING OF VEGETABLE MATERIALS**

Morris Lieberman, Silver Spring, Md., and Leslie William Mapson, The White House, Hauxton, Cambridge, England; said Lieberman assignor to the United States of America as represented by the Secretary of Agriculture

Filed July 22, 1963, Ser. No. 296,876

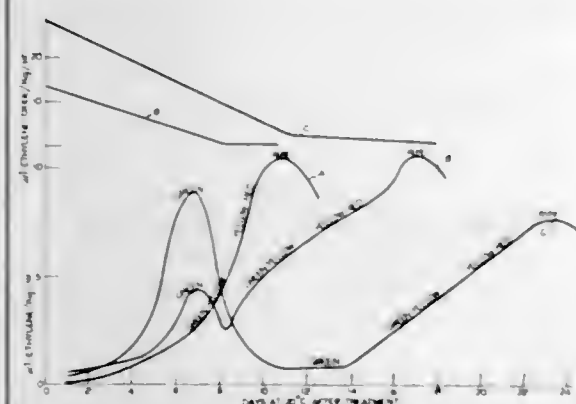
Claims priority, application Great Britain, July 31, 1962, 29,401/62

12 Claims. (Cl. 71—68)

1. A process for retarding the ripening of harvested mature, but unripe, plant material selected from the group consisting of fruits, vegetables, and cut flowers wherein ripening continues after harvesting by the biosynthesis of ethylene in the plant tissue, said process comprising exposing said plant material subsequent to harvesting to a



member of the group consisting of a gaseous atmosphere and an aqueous solution, each member containing a maximum of 1% by weight ethylene oxide, for a period of no longer than 2 to 3 days at said concentration to tem-



porarily incorporate into the tissues of said plant material an amount of ethylene oxide sufficient to retard ripening, but insufficient to damage the material and permanently prevent ripening upon termination of the exposure.

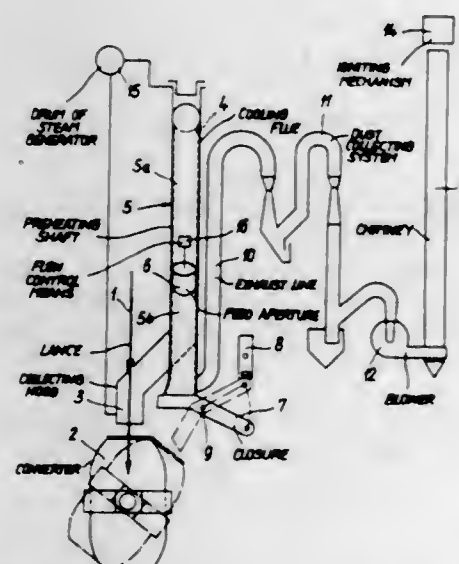
### 3,411,895 METHOD OF CONTROLLING PLANT GROWTH WITH PENTAERYTHRITOL ARSENITE CHLORO- BENZOATES

Marcel A. Gradsten, Demarest, N.J., assignor to Tenneco Chemicals, Inc., a corporation of Delaware  
Continuation-in-part of application Ser. No. 447,898, Apr. 13, 1965. This application Aug. 9, 1967, Ser. No. 659,327

6 Claims. (Cl. 71-97)

Pentaerythritol arsenite chlorobenzoates have an unusual spectrum of herbicidal activity. They can be used as preemergence or postemergence selective herbicides to control the growth of a wide variety of weed species in an area containing a crop.

3,411,896  
METHOD AND APPARATUS FOR  
REFINING OPERATIONS  
Günter Urban, Essen, Margarethenhohe, and Friedrich Filles, Niederwienigern, Germany, assignors to Beteiligungs- und Patentverwaltungsgesellschaft mit beschränkter Haftung, Essen, Germany  
Filed Mar. 2, 1966, Ser. No. 531,190  
Claims priority, application Germany, Mar. 4, 1965, P 14 58 814.8  
9 Claims. (Cl. 75-60)



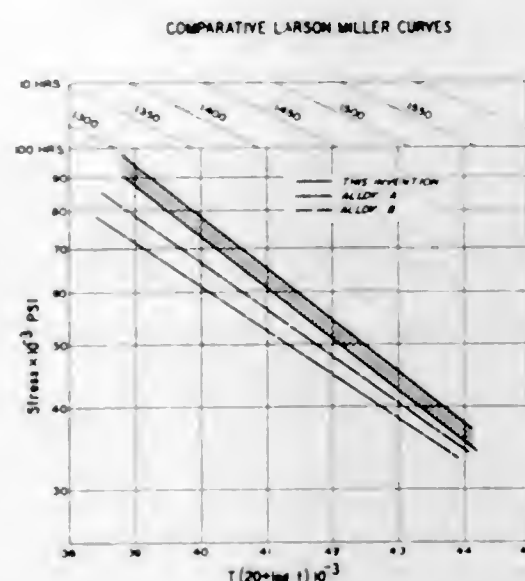
Method and apparatus for cooling and purifying exhaust gases emanating from metallurgical refining operations. The exhaust gases serve to preheat additional mate-

rial to be refined. The material, which is in the form of individual pieces with interstices between them, is arranged in a preheating shaft and is discharged, after preheating, in a given direction. The exhaust gases are first cooled and then passed through the interstices of the additional material in substantially the same direction in which the material is ultimately discharged. The material is thus preheated and the exhaust gases simultaneously purified.

3,411,897  
METHOD FOR CONTINUOUS CASTING OF  
RIMMING STEEL  
Paul E. Lindberg, Jr., Grosse Ile, Mich., assignor, by mesne assignments, to Concast Incorporated, New York, N.Y., a corporation of Delaware  
No Drawing. Filed Sept. 8, 1965, Ser. No. 485,915  
7 Claims. (Cl. 75-129)

This is a method of partially deoxidizing molten steel to prepare rimming steel to be continuously cast. Vanadium is added to molten steel in an amount not more than about 82.50 pounds per 47 tons of molten steel. Thereafter not more than a total of about 50 pounds of aluminum are added per 47 tons of the molten steel, the aluminum being added a portion at a time to a point at which the customary agitation of the molten steel is without boiling and frothing when the steel is poured. The molten steel is then continuously cast by pouring it in one end of an open-ended mold and withdrawing a partially solidified casting from the other end.

3,411,898  
NICKEL BASE ALLOY  
David W. Schulz, Peter L. Lansing, and Glenn A. Fritzlen, Kokomo, Ind., assignors to Union Carbide Corporation, a corporation of New York  
Filed Mar. 25, 1966, Ser. No. 537,351  
2 Claims. (Cl. 75-171)



1. A nickel base alloy consisting essentially of by weight about

	Percent
Chromium	14 to 17
Tungsten	1 to 3
Iron	up to 4.5
Carbon	0.03 to 0.13
Vanadium	0.65 to 1.35
Boron	0.003 to 0.012
Molybdenum	6 to 9
Aluminum	1.5 to 2.5
Titanium	2.5 to 3.5
Silicon	up to 0.12
Cobalt	up to 2
Nickel	balance

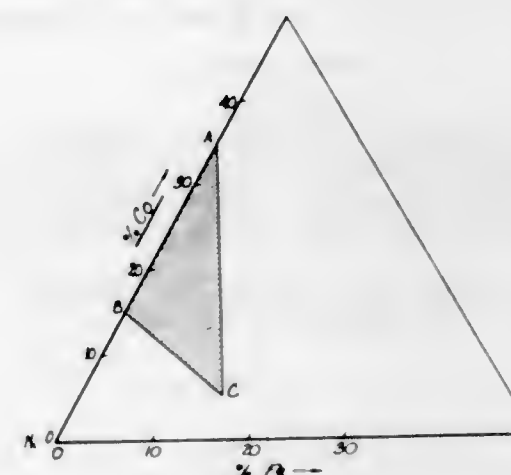
### 3,411,899 NICKEL-CHROMIUM ALLOYS WITH DELAYED AGING CHARACTERISTICS

Edward Gordon Richards, West Hagley, and David Marshall Ward, Birmingham, England, assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

Filed July 15, 1966, Ser. No. 565,476

Claims priority, application Great Britain, July 22, 1965, 31,326/65

7 Claims. (Cl. 75-171)



1. A precipitation-hardenable nickel-chromium-cobalt alloy adapted for elevated temperature use and characterized by the unique capability of delaying the onset of precipitation hardening whereby ease in processing the alloys is facilitated, said alloy consisting essentially of from about 16% to 24% chromium, about 5% to 35% cobalt, up to 15% iron with the cobalt and iron being correlated such that the following relationships are satisfied:

$2 \times (\text{percent Fe}) + (\text{percent Co})$  does not exceed 35% and  
 $2 \times (\text{percent Fe}) + 3 \times (\text{percent Co})$  is not less than 45%

from 1% to about 2.8% titanium, up to 4% columbian, up to 8% tantalum, the sum of the columbian plus one-half the tantalum being from 2% to 4%, up to 4% molybdenum, up to 8% tungsten, the sum of twice the molybdenum plus the tungsten not exceeding about 8.5%, carbon in an amount not exceeding about 0.15%, up to about 0.004% boron, up to 0.05% zirconium up to 0.5% silicon, up to 0.5% manganese and the balance essentially nickel.

3,411,900  
BRAZING ALLOY COMPOSITION  
Edward R. Roeder and Ernst G. Huschke, Jr., Canoga Park, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware  
No Drawing. Filed Apr. 13, 1966, Ser. No. 542,192

2 Claims. (Cl. 75-173)

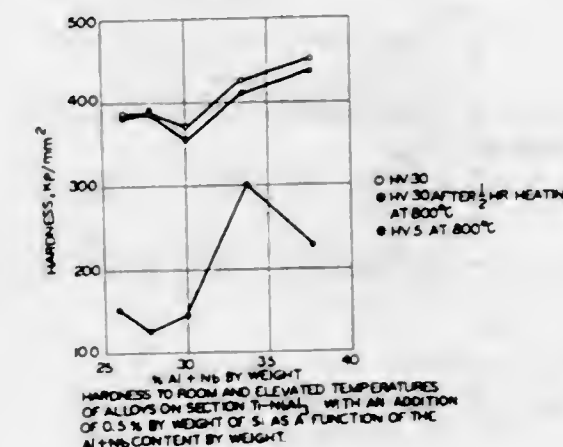
1. A brazing alloy consisting essentially of: from 1 to 10 weight percent palladium, from 1 to 7.5 weight percent copper, from .5 to 3.5 weight percent nickel, 0 to .15 weight percent impurities, and the balance silver, said silver being present in an amount of 80 to 95 weight percent.

3,411,901  
ALLOY  
Heinrich Winter, Eschborn, Taunus, Germany, assignor to the Federal Republic of Germany as represented by the Secretary of Defense

Filed Feb. 8, 1965, Ser. No. 430,794

Claims priority, application Germany, Feb. 15, 1964, B 75,453

2 Claims. (Cl. 75-175.5)



Ternary titanium base alloys of improved high temperature strength contain about 15.5 percent of aluminum, about 18 percent of niobium and about 0.5 percent of Si.

3,411,902  
METHOD OF PRODUCING INFILTRATED  
CONTACT MATERIAL  
Richard H. Krock, Peabody, and Edward J. Zdanek, Lexington, Mass., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware  
Filed Jan. 22, 1968, Ser. No. 699,571  
9 Claims. (Cl. 75-208)

A material for use as a current carrying material consisting essentially of a porous powder body of refractory metal, the voids of which are filled by a substantially continuous matrix of a second metal which is substantially mutually insoluble and substantially non-reactive with the refractory metal. The composite material is prepared by subjecting the porous body of refractory metal to the steps of treating the refractory metal body in a reducing atmosphere, outgassing the refractory metal body and, thereafter, vacuum infiltrating the porous body of refractory metal with a second metal which is substantially mutually insoluble and substantially non-reactive with the refractory metal. The composite contact material has a gaseous component content or component content which may release gas of about 7 p.p.m. and generally less than 2 p.p.m.

3,411,903  
XEROGRAPHIC METHOD AND PLATE COM-  
PRISING PHOTOCONDUCTIVE INSULAT-  
ING FIBERS  
John W. Weigl, West Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York  
No Drawing. Filed Nov. 23, 1964, Ser. No. 413,307

20 Claims. (Cl. 96-1.8)

A xerographic device made up of photoconductive fibers which have been woven or felted together in the form of a sheet or web. The internal structure of the fibers consists essentially of a photoconductive insulating material free of any conductive member.

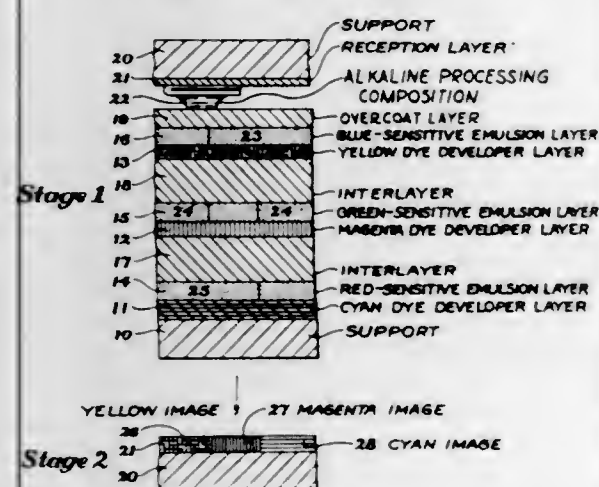


### 3,411,904 PHOTOGRAPHIC MULTICOLOR DIFFUSION TRANSFER PROCESS USING DYE DEVELOPERS AND ELEMENT

Richard W. Becker, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Continuation-in-part of application Ser. No. 71,314, Nov. 23, 1960. This application May 19, 1964, Ser. No. 368,490

11 Claims. (Cl. 96—3)

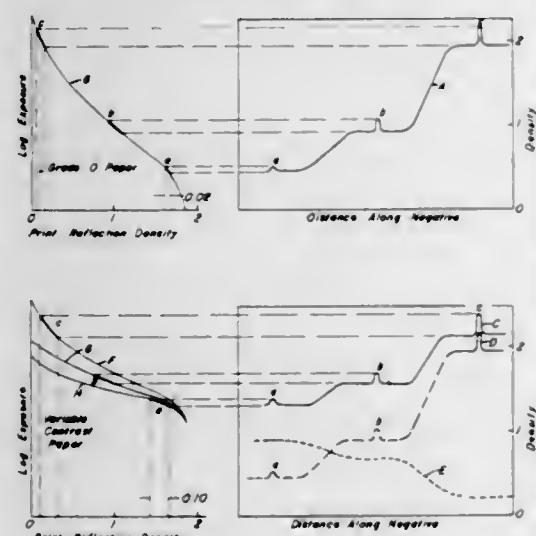


Photographic elements are provided comprising a support having coated thereon, in the order given, red, green and blue image-forming units comprising, respectively, a red sensitive emulsion layer having an underlying, contiguous cyan dye developer layer; a green sensitive emulsion layer having an underlying contiguous magenta dye developer layer; and, a blue sensitive silver halide emulsion layer having an underlying contiguous yellow dye developer layer. In accordance with the invention, the yellow dye developer layer is from .01 to .1 mil in thickness and contains from 25 to 250 mg. gelatin per square foot; each of the image-forming units is separated by gelatin interlayers which are 3/4 to 3 times as thick, and contain from 2 to 6 times as much gelatin as the yellow dye developer layer; and, the element contains a substantially colorless, water-insoluble hydroquinone which is soluble and diffusible in alkaline solution through the layers of the element.

### 3,411,905 PHOTOGRAPHIC MASKING PROCESS

Robert A. Mooney, Clarence N. Nelson, and Warren A. Shelton, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed June 14, 1965, Ser. No. 463,786  
8 Claims. (Cl. 96—5)



1. A photographic printing process for automatically extending the fine detail print reproduction from a negative simultaneously into both the under- and over-exposed

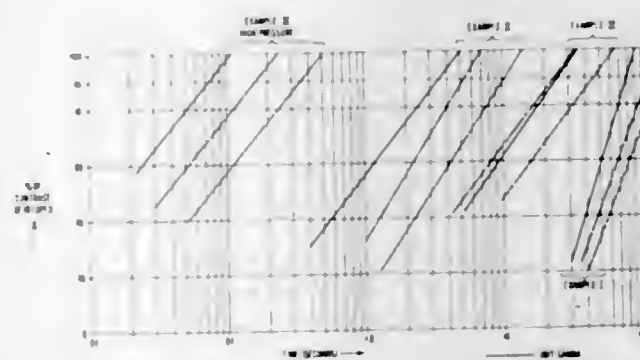
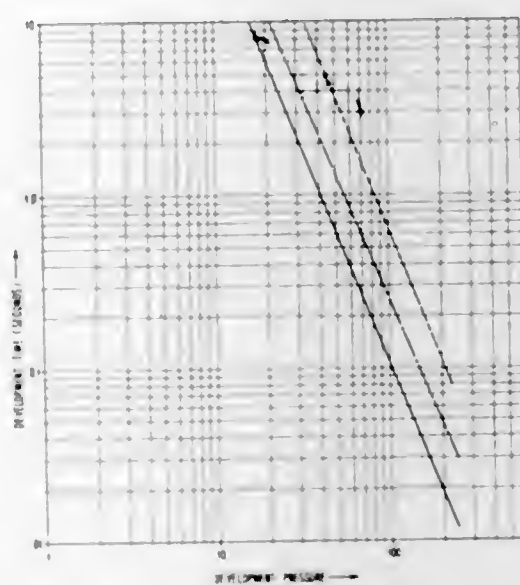
areas of the said negative in addition to lowering the macro contrast of the negative without lowering the micro contrast of the negative, said process comprising the steps of:

- (1) producing a two-colored unsharp mask of said negative, said mask automatically forming in an imagewise manner a continuously variable pair of printing filters one of said filters being positive and the other negative, and
- (2) exposing a variable-contrast reflection type photographic element to light through the said negative and the said mask in unsharp printing relationship, said element having a high contrast emulsion that responds to light transmitted by only one of the said variable pair of printing filters and a low contrast emulsion that responds only to light transmitted by the other of the said variable pair of printing filters.

### 3,411,906 DIAZO DEVELOPMENT PROCESS

John W. Boone, Saratoga, and Henry S. Todd, Los Gatos, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed May 25, 1964, Ser. No. 369,861  
11 Claims. (Cl. 96—49)



A method of developing photosensitive materials, such as diazotype films and papers, with ammonia at high pressures thereby reducing significantly the development time. For example, a commercial diazotype film was developed to 90% contrast in less than 0.1 second by contacting the film with anhydrous ammonia at about 90 p.s.i.a.

### 3,411,907 PHOTOGRAPHIC COMPOSITIONS CONTAINING COMBINATION OF SOFT AND HARD MAT- TING AGENTS

Kay R. Whitmore and George M. Coryell, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
No Drawing. Filed Mar. 4, 1965, Ser. No. 437,272  
17 Claims. (Cl. 96—67)

A photographic composition, especially a layer of a photographic element, comprising a colloid binder containing silver halide and a combination of solid, water insoluble, discrete particles of at least two different matting agents, one of which is a soft matting agent and the other hard, provides improved resistance to abrasion and other advantages. A mixture of polymethylmethacrylate particles as a soft matting agent and silica as a hard matting agent is especially suitable in a layer of a photographic element.

### 3,411,908 PHOTOGRAPHIC PAPER BASE

Irvin H. Crawford, Rochester, N.Y., and William L. Johnson and Joseph E. Ratcliff, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Continuation-in-part of application Ser. No. 350,640, Mar. 10, 1964. This application Apr. 12, 1967, Ser. No. 630,261

12 Claims. (Cl. 96—74)

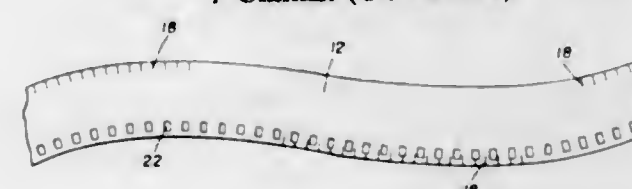


Photographic paper base is treated with corona discharge, and a polyolefin is extruded onto the paper. A photographic emulsion is then coated onto the polyolefin surface. The bond between the polyolefin and the paper is sufficient to resist the action of aqueous acid and alkaline photographic processing solutions.

### 3,411,909 PHOTOGRAPHIC FILM LEADER TREATMENT

Frederick W. Kern and Hubert Nerwin, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed June 24, 1964, Ser. No. 377,588  
7 Claims. (Cl. 96—78)



A film leader having a longitudinal portion of one edge deformed and elongated and a subsequent longitudinally displaced portion of the opposite edge deformed and elongated to provide the leader with a serpentine configuration to prevent edge fog of the underlying film.

### 3,411,910 PHOTOGRAPHIC ELEMENTS CONTAINING A HARDENED GELATIN LAYER

Irvin H. Crawford and William J. Venor, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Nov. 13, 1964, Ser. No. 411,059  
4 Claims. (Cl. 96—85)

In conventional processes for manufacturing photographic elements comprising a support overcoated by a

layer of gelatin which in turn is overcoated with a layer of photosensitive emulsion, the gelatin ordinarily "hardens" after the photosensitive emulsion layer has been coated thereon. If the gelatin layer is allowed to harden before the photosensitive emulsion is applied to its surface, the adhesion of the photosensitive emulsion layer is very poor. It was found that treatment of the surface of hardened gelatin coatings by electron bombardment to reduce their contact angle measured with water to below 75° substantially improves the adhesion properties of the gelatin layer with subsequently-coated photosensitive emulsion layers.

### 3,411,911 NOVEL PHOTOGRAPHIC MATERIALS CONTAINING WATER INSOLUBLE INTERPOLYMERS

Thomas K. Dykstra, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 10, 1965, Ser. No. 454,683  
20 Claims. (Cl. 96—87)

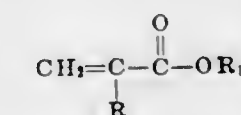
Photographic emulsions comprising water insoluble interpolymers of acrylic esters and sulfoesters and photographic elements comprising a support and at least one layer containing said water insoluble polymer.

### 3,411,912 NOVEL POLYMERS AND THEIR USE IN PHOTOGRAPHIC APPLICATIONS

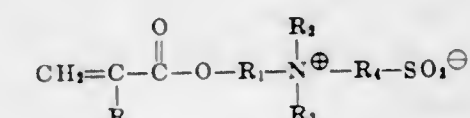
Thomas K. Dykstra and Thomas E. Whiteley, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 21, 1965, Ser. No. 449,879  
13 Claims. (Cl. 96—87)

A photographic composition comprising interpolymers having (1) units of acrylic acid, (2) units of monomer represented by the formula:



where R is a hydrogen atom or methyl group and R<sub>1</sub> is an alkyl radical with (3) units of monomer having the formula:



where R is a hydrogen atom or alkyl group, R<sub>1</sub> and R<sub>4</sub> are each divalent saturated aliphatic hydrocarbon radicals and R<sub>2</sub> and R<sub>3</sub> each represent hydrogen atoms or alkyl groups; wherein said interpolymer comprises up to 15%, by weight, of said (1), at least about 75%, by weight, of said (2) and up to about 10%, by weight, of said (3).

### 3,411,913 PLASTICIZED GELATIN COATINGS CONTAINING NORBORNANE DIOLS

Jan W. H. Faber and William F. Fowler, Jr., Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 27, 1965, Ser. No. 451,319  
6 Claims. (Cl. 96—94)

Gelatin coatings and coating compositions which contain, in an effective amount to plasticize the gelatin, a norbornane compound which contains at least two hydroxy groups.



**3,411,914**  
**METHOD FOR STABILIZING X-RAY EMULSIONS TO RED SAFELIGHTS**  
 Claude Dostes, Joinville-le-Pont, France, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
 No Drawing. Filed July 13, 1964, Ser. No. 382,407  
 Claims priority, application France, Dec. 5, 1963, 956,168

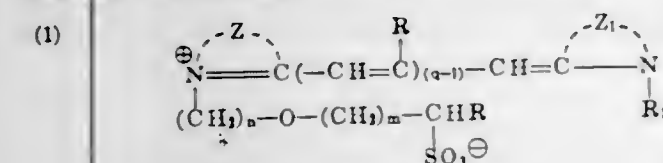
6 Claims. (Cl. 96—101)  
 Photographic silver halide emulsions are prepared by adding, after the end of the after-ripening step, first a tetrazaindene salt and then a noble metal salt. These emulsions have good sensitivity to image-forming radiation such as X-ray intensifier screen emissions and are substantially insensitive to red safelights.

**3,411,915**  
**SILVER HALIDE EMULSIONS CONTAINING A SUPERSENSITIZING DYE COMBINATION**  
 Jean E. Jones and Norman W. Kalenda, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
 Filed July 1, 1965, Ser. No. 468,748  
 22 Claims. (Cl. 96—104)

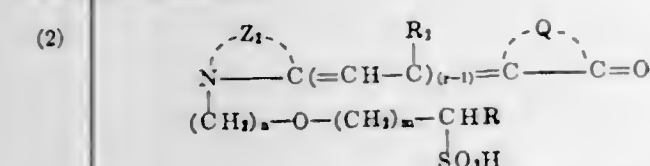
Photographic silver halide emulsions containing cyanine dyes together with supersensitizing combinations of certain holopolar carbocyanine dyes containing either a 2,4-chromandione nucleus, a 4,6(1H,5H)pyrimidinedione nucleus, a 1,3-dioxane-4,6-dione nucleus or a 3,5-pyrazolidinedione nucleus.

**3,411,916**  
**SOLUBILIZED SENSITIZING DYES**  
 Leslie G. S. Brooker and Grafton H. Keyes, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
 No Drawing. Original application Mar. 19, 1962, Ser. No. 180,854, now Patent No. 3,352,857, dated Nov. 14, 1967. Divided and this application Apr. 3, 1967, Ser. No. 643,765  
 7 Claims. (Cl. 96—106)

1. A light-sensitive photographic element comprising a support and at least one silver halide emulsion layer containing a sensitizing amount of a dye selected from those having the formula:

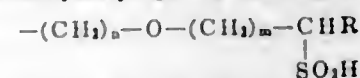


and the formula:



wherein Z, Z<sub>1</sub> and Z<sub>2</sub> each represents the nonmetallic atoms necessary to complete a heterocyclic nucleus selected from the class consisting of those of the thiazole series, those of the benzothiazole series, those of the naphthothiazole series, those of the oxazole series, those of the benzoxazole series, those of the naphthoxazole series, those of the selenazole series, those of the benzoselenazole series, those of the naphthoselenazole series, those of the pyridine series, those of the quinoline series, those of the isoquinoline series, those of the imidazole series, those of the benzimidazole series, those of the naphthimidazole series, those of the lepidine series; R represents a member selected from the class consisting of a hydrogen atom and a lower alkyl group having from 1 to 4 carbon atoms; q represents an integer of from 1 to 3; n represents an integer of from 2 to 4; m represents an in-

teger of from 2 to 4; r represents an integer of from 2 to 3; R<sub>1</sub> represents a member selected from the class consisting of a lower alkyl group having from 1 to 4 carbon atoms, a carboxyalkyl group having from 1 to 5 carbon atoms, a carbalkoxyalkyl group having from 3 to 5 carbon atoms, a sulfoalkyl group having from 1 to 4 carbon atoms, a hydroxyalkyl group having from 1 to 4 carbon atoms, an alkoxyalkyl group having from 2 to 5 carbon atoms, a sulfoalkoxyalkyl group having the formula



in which n, m, and R are as defined, and an aryl group; Q represents a heterocyclic nucleus selected from the class consisting of those of the pyrazolone series, those of the 2,4,6-triketohexahydropyrimidine series, those of the 2,4,6-triketo-2-thiohexahydropyrimidine series and those of the indandione series, those of the rhodanine series, those of the hydantoin series, those of the thiohydantoin series, and those of the 2-thio-2,4-oxazolidinedione series; R<sub>2</sub> represents a member selected from the class consisting of a hydrogen atom, a lower alkyl group, an alkoxy group, an aryl group, a substituted mercapto group, a thienyl group, an indolyl group, a furyl group, a pyrrolyl group, and a pyrrocolyl group, such that when q is the integer 3, R<sub>2</sub> is a hydrogen atom; R<sub>3</sub> represents a member selected from the class consisting of a hydrogen atom, an alkyl group, an aryl group, a thionyl group, an indolyl group, a furyl group, a pyrrolyl group and a pyrrocolyl group, such that when r is the integer 3, R<sub>3</sub> is a hydrogen atom.

**3,411,917**  
**SENSITIZATION OF SILVER HALIDE EMULSIONS WITH DIRECT ELECTRICAL CURRENT**  
 John Figueras, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
 No Drawing. Filed Apr. 29, 1965, Ser. No. 451,992  
 9 Claims. (Cl. 96—107)

Photographic silver halide emulsions are sensitized by passing a direct electrical current having a voltage of 3-12 volts therethrough. The sensitization treatment increases the speed of the photographic emulsion. It can be used in conjunction with other chemical sensitizing treatments such as, for example, sulfur-type and noble metal sensitization. The electrolysis treatment can be performed either before or after the other sensitizing treatments. Especially useful results have been obtained where the treatment was carried out following the other sensitizing operations.

**3,411,918**  
**COLOR RESTORATION OF DISTILLED LIQUORS**  
 Gordon B. Nickol, Cincinnati, Ohio, assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia  
 No Drawing. Filed Apr. 7, 1964, Ser. No. 358,075  
 14 Claims. (Cl. 99—34)

Preventing the discoloration of and restoring the color to liquors by adding thereto minor amounts of an alkali metal ethylenediamine tetraacetate.

**3,411,919**  
**CONTINUOUS-MIX BREAD CONTAINING NON-FAT MILK TOGETHER WITH BOTH CARRAGEENAN AND HYDROXYLATED PHOSPHATIDE IN SYNERGISTIC PROPORTIONS**  
 Elmer F. Glabe, Chicago, Ill., and Earl C. Jertson, Trenton, N.J., assignors to Marine Colloids, Inc., Springfield, N.J., a corporation of Delaware  
 No Drawing. Filed Mar. 29, 1965, Ser. No. 443,653  
 10 Claims. (Cl. 99—91)

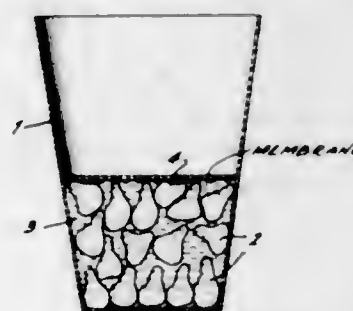
Continuous-mix bread containing nonfat milk in amounts from 2-6% by weight of the flour is prepared

by incorporating with the bread mix prior to baking 0.10% to 1.0% by weight of hydroxylated phosphatide based on the weight of the flour, and 0.01% to 0.15% by weight of carrageenan extract based on the weight of the flour. The combined use of the two last mentioned ingredients makes it possible to use smaller amounts of each ingredient and at the same time obtain excellent loaf and loaf shape at both high and low levels of oxidizer.

**3,411,920**  
**PROCESS FOR THE MANUFACTURE OF COTTAGE CHEESE**  
 Jimmie L. Holder, Hanford, and Dee R. Morgan, Moraga, Calif., assignors to Safeway Stores, Incorporated, Oakland, Calif., a corporation of Maryland  
 Filed Jan. 6, 1965, Ser. No. 469,527  
 7 Claims. (Cl. 99—116)

Process for the manufacture of soft unripened cheese (e.g., cottage cheese). Liquid milk is coagulated in the presence of acid forming bacteria to form a curd and whey. After the curd is cut, an edible acid is added to increase the acidity of the whey (e.g., to pH 4.4 or lower), after which the mass is heated to firm the curd.

**3,411,921**  
**METHOD OF MAKING A FOOD PACKAGE**  
 Gerald A. Shifrin, 1875 Corporal Kennedy St., Bayside, N.Y. 11360  
 Filed Jan. 3, 1968, Ser. No. 700,320  
 5 Claims. (Cl. 99—171)



A method of making a food package containing both dairy products and fruits and vegetables wherein the dairy product is separated from the fruit or vegetable by either a thin, edible, rupturable gelatin membrane or a viscous layer of sugar solution.

**3,411,922**  
**METHOD OF PRODUCING BONELESS COOKED CHICKEN BREASTS IN CANS**  
 Michael Eder, Bel Air, Md., assignor to Schludenberg-Kurdle Co., Inc., Baltimore, Md., a corporation of Maryland  
 No Drawing. Continuation-in-part of application Ser. No. 217,536, Aug. 17, 1962. This application May 31, 1966, Ser. No. 553,614  
 1 Claim. (Cl. 99—187)

A boneless chicken breast product consisting essentially of ground chicken breasts and chicken breast skins and seasonings and preservatives characterized and distinguished by the absence of added binder materials which inherently retains its shape when heated and a process for producing the produce are disclosed.

**3,411,923**  
**METAL-CONTAINING ORGANIC PHOSPHATE COMPOSITIONS**  
 John Bretz, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio  
 No Drawing. Filed Feb. 14, 1966, Ser. No. 527,041  
 13 Claims. (Cl. 106—14)

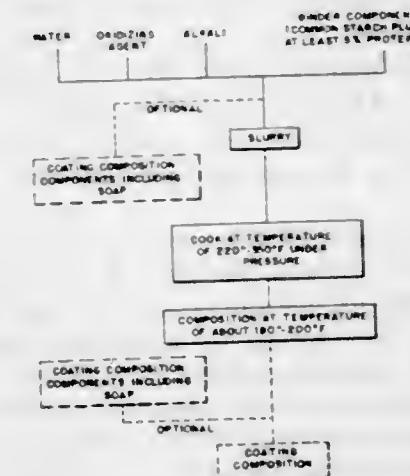
Corrosion of metal surfaces is inhibited by application to such surfaces of a composition comprising in combina-

tion (A) the reaction product of a polyvalent metal salt of an acid phosphate ester and an organic epoxide, and (B) a basic metal salt of an oil soluble sulfonic or carboxylic acid.

**3,411,924**  
**METHOD OF MANUFACTURING A THREE-COMPONENT WATER-RESISTING BINDING AGENT**  
 Pavel Vladimirovich Lapshin, Moscow, U.S.S.R., assignor to Nauchno-Issledovatel'skiy Institut Zhelezobetonnykh Izdely, Strolelnykh i Nerudnykh Materialov, Moscow, U.S.S.R.  
 No Drawing. Filed June 2, 1964, Ser. No. 372,091  
 10 Claims. (Cl. 106—89)

This invention relates to the manufacture of three-component water-resisting binding agents on a base of gypsum, portland cement and diatomaceous earth (diatomite) as well as articles made therefrom. Cement containing portland cement or puzzolanic portland cement is introduced in a process of dehydration of diaqueous gypsum, the cement being fed into the gypsum-boiling kettle after the gypsum has reached a temperature above 100° C. If, for economic reasons, a cement not containing diatomaceous earth (diatomite) is used, such diatomaceous earth is introduced into the kettle either at the time of charging the diaqueous gypsum into the kettle, or during the process of its dehydration before cement charging. It is even possible to charge the diatomaceous earth (diatomite) after the cement has been charged but not before the transformation of the gypsum into hemihydrate.

**3,411,925**  
**OXIDIZED STARCH-PROTEIN COMPOSITION AND METHODS FOR PRODUCING AND USING THE SAME**  
 George E. Lauterbach, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware  
 Continuation-in-part of application Ser. No. 291,825, July 1, 1963. This application Mar. 24, 1966, Ser. No. 543,446  
 11 Claims. (Cl. 106—157)



6. A fluid composition comprising an aqueous alkaline dispersion having a pH in the range of about 8 to 10 containing the alkaline catalyzed reaction product at a temperature in excess of the gelatinization range of common starch of:

- (a) common starch,
- (b) protein to the extent of between about 5% and 85% by weight based on the total weight of starch and protein,
- (c) a water-soluble oxidizing agent capable of oxidizing starch alcohol groups to carbonyl groups, and



said composition including a complex formed between amylose of the starch and a starch gelation inhibiting agent whereby gelation of the composition is inhibited.

3,411,926

## JOINT CEMENT

Jack L. Gogek and Donald L. Wilhelm, Decatur, Ill., assignors to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware

No Drawing. Filed Aug. 1, 1966, Ser. No. 569,091  
10 Claims. (Cl. 106—210)

A wallboard joint cement comprising a major portion of a wallboard joint cement filler and a minor portion of a cement binder comprising between about 51 and 75% by weight of gelatinized oxidized starch material and between about 25 and 49% by weight of non-gelatinized starch material.

3,411,927

## PROCESSING OF ASPHALT AND LIGHTWEIGHT AGGREGATE COMPOSITION

Joseph John Brouk, Ladue, Mo. (% J. J. Brouk & Company), 1367 S. Kingshighway Blvd., St. Louis, Mo. 63110

No Drawing. Filed Apr. 6, 1964, Ser. No. 357,740  
12 Claims. (Cl. 106—281)

1. The method of making a composition which comprises the steps of:
  - (a) mixing hot asphalt with hot aggregate, and
  - (b) adding a controlled amount of water to the hot mixture to cool the mixture to a temperature of a hot mix that can be transported and used as a hot mix,
  - (c) the water being substantially evaporated by the heat of the mixture.

3,411,928

## FLUIDIZED BED DRYING AND OXIDIZING OF CARBON BLACK

Robert E. Dollinger and David S. Joy, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 22, 1963, Ser. No. 303,799  
4 Claims. (Cl. 106—307)

1. A process for producing a simulated channel black from wet-pelleted furnace black pellets which comprises the steps of:
  - (1) maintaining a fluidized bed of said wet pellets with a stream of hot non-oxidizing drying gas at an inlet temperature in the range of 1000 to 1400° F. so as to dry said pellets to a moisture content below about 0.5 weight percent, said pellets being introduced to a low section of said bed and dry pellets being withdrawn from the top of said bed;
  - (2) maintaining a fluidized bed of effluent pellets from step (1) with a stream of an oxidizing gas containing O<sub>2</sub> in the range of 14 to 16 volume percent at a temperature in the range of 720 to 750° F. and a contact time in the range of 55 to 65 minutes so as to substantially oxidize said furnace black, lower the pH, and increase the surface area thereof;
  - (3) maintaining a fluidized bed of effluent pellets from step (2) with a stream of non-oxidizing cooling gas comprising essentially the effluent drying gas of step (1) so as to cool said pellets to a temperature sufficiently low to permit exposure to air without oxidation of said black but not substantially below 300° F. to avoid condensation of moisture on the oxidized pellets; and
  - (4) recovering the cooled pellets.

3,411,929

## METHOD AND APPARATUS FOR COLLECTING AND TREATING CARBON BLACK

Clarence E. Garrett, Aransas Pass, Tex., assignor to Ashland Oil & Refining Company, Houston, Tex., a corporation of Kentucky

Filed Jan. 19, 1966, Ser. No. 521,604  
20 Claims. (Cl. 106—307)

A method and apparatus for collecting carbon black from hot flue gases of a carbon black furnace and treating the carbon black; which includes, passing the combustion products containing the carbon black through a gas permeable filter medium, capable of withstanding substantial differential pressures and of collecting the carbon black particles thereon, to deposit the carbon black on the filter, such as a bag-type carbon black filter; passing a different gas, preferably hot air containing a chemical treating agent, through the filter in the same direction as the combustion products, to thereby dry treat the carbon black; and removing the treated carbon black particles from the filter medium by reversing the flow of gas through the filter medium and/or shaking the filter medium. A plurality of collector-treater units may also be connected serially and operated on a time cycle, including a collection cycle, a drying and treating cycle, a removal cycle and a down cycle, so that at least one of the units is collecting carbon black at all times.

3,411,930

## POLISHABLE METAL POWDER UNDERCOATING

Paul J. Reising, 32867 Robinhood Drive, Birmingham, Mich. 48010

No Drawing. Filed Aug. 8, 1963, Ser. No. 300,908  
14 Claims. (Cl. 117—8)

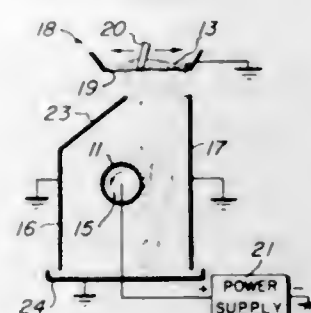
Automobile body parts such as metal panels are coated with a corrosion resistant metal powder-containing material. A top layer of paint, lacquer or suitable top coating is applied over the metal powder. Certain areas are then machined (mechanical abrading) to exposed desired portions of the undercoating. The abrading causes the metal powder layer to be polished and effects a lustrous finish to the exposed areas.

3,411,931

## ELECTROSTATIC METHOD OF APPLYING FLOCK TO A PAINT ROLLER SLEEVE

Fredrick B. Burns, South Milwaukee, and Erik Henningson, Milwaukee, Wis., assignors to EZ Paint Corporation, a corporation of Delaware

Filed Dec. 3, 1964, Ser. No. 415,624  
3 Claims. (Cl. 117—17)



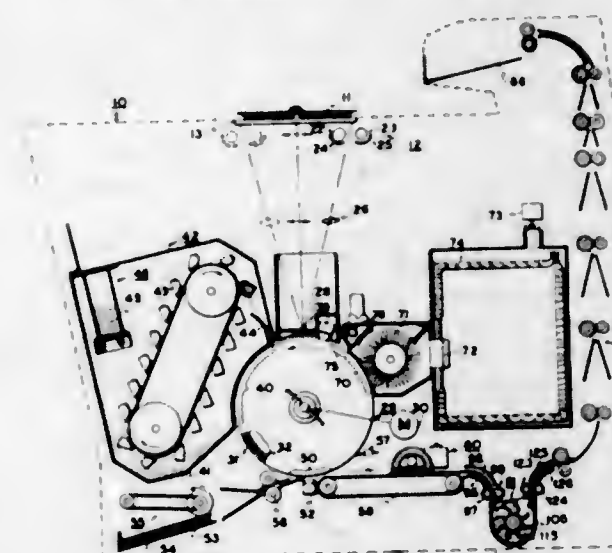
A flocked paint roller sleeve having the flock fibers generally at a uniform acute angle with respect to the sleeve surface, in one form inclined peripherally and in another inclined axially of the roller. A method and apparatus for manufacturing such sleeves provides a radial electrostatic field and effects relative movement between the roller sleeve and fibers which has a unidirectional component peripheral of the sleeves.

3,411,932

## QUALITY XEROGRAPHIC REPRODUCTIONS

David L. Malone, East Rochester, and Edward F. Mayer, Pittsford, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Sept. 23, 1964, Ser. No. 398,690  
14 Claims. (Cl. 117—17.5)



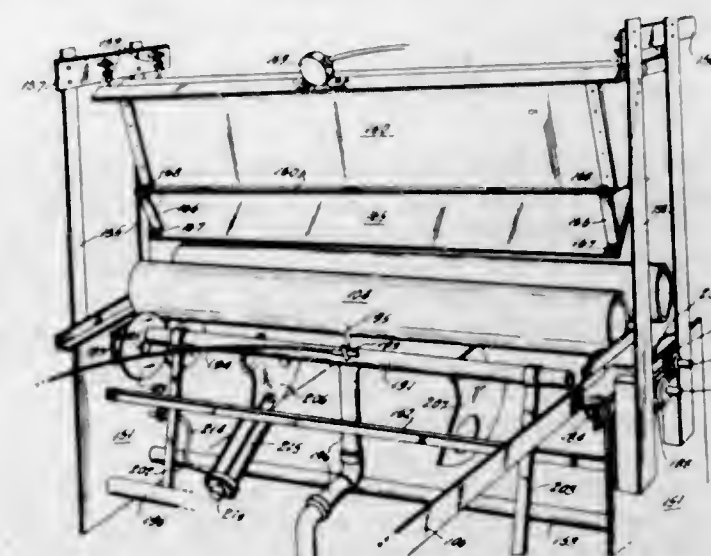
Method and apparatus for producing xerographic reproductions of graphic information on a support, substantially free of undesirable background, from xerographically developed images of high density deposits of powder particles in the image areas and low density unavoidably deposited randomly positioned powder particles in the non-image areas in which the support and powder deposits are exposed to a source of radiation for a predetermined time period at an intensity sufficient to fuse the high density powder deposits to the support but insufficient to fuse the low density background deposits of powder particles to the support and the unfused low density background deposits of powder particles are subsequently removed from the support.

3,411,933

## METHOD FOR COATING PIPE

Louis Moore, Birmingham, Ala., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

Continuation of application Ser. No. 279,533, May 10, 1963. This application Mar. 30, 1967, Ser. No. 627,268  
5 Claims. (Cl. 117—18)



A method for coating pipe in which the pipe is rotated about its longitudinal axis while experiencing no linear motion; is heated over its entire length while rotating so as to be raised to a predetermined temperature level; is then coated by a particular material dropped by gravity from a position above the rotating heated pipe; and then

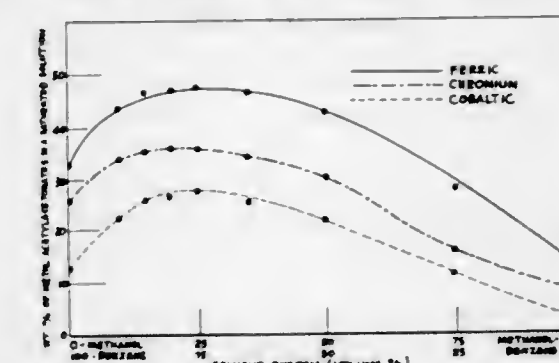
is cooled by introducing a coolant into one end of the pipe which is slightly tilted causing the coolant to be removed at the opposite lower end of the pipe to cool first the pipe and then the coating.

3,411,934

## METHOD OF PRODUCING TIN OXIDE-COBALT OXIDE PLURAL LAYERS ON GLASS ARTICLES

Oscar D. Englehart, Brackenridge, and Joseph E. Michelotti, Pittsburgh, Pa., assignors to PPG Industries, Inc., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 332,934, Dec. 23, 1963. This application Apr. 15, 1964, Ser. No. 360,031  
10 Claims. (Cl. 117—33.3)



1. A method of preparing glass products of reduced radiant solar energy transmittance which comprises heating the glass to a temperature of at least 400° F. but below the glass softening temperature, forming a transparent tin oxide coating on said heated glass, and contacting the tin oxide surface of said heated tin oxide coated glass with a solution of cobalt acetylacetonate to form a transparent cobalt oxide coating thereon.

3,411,935

## PRESSURE-SENSITIVE TRANSFER ELEMENTS AND METHOD OF PRODUCING SAME

Hermann Winzer, Duren, Rhineland, Germany, assignor to Renker-Belipa G.m.b.H., Lendersdorf-Krauthausen, Germany

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,575  
19 Claims. (Cl. 117—36.4)

1. Pressure-sensitive transfer elements for producing copies, comprising supports 20–80 mu in thickness having on the surface thereof depressions 10–60% of the thickness of said support, and said depressions being spaced about 1–50 mu by protrusions of said support, pigments enveloped in 15–25% of the pigment weight resilient polyvinyl polymers deposited in said depressions of said support, the size of said pigments being smaller than the said depressions, said dried pigment coating being covered with a transfer layer in amount ranging from 1 to 5 gr./m.<sup>2</sup> built up by a gel formed by a network of solid aggregates of aliphatic carboxyl-containing hydrocarbon compounds containing 25–40 carbon atoms, and having an acid number of 10–160, a saponification number of 100–108, an unsaponifiable part of 5–25%, and a solvated fluid phase included in the network-like solid phase in an amount not exceeding 10% by weight of said hydrocarbon compounds.

3,411,936

## DEVELOPING ELECTROSTATIC IMAGES WITH A LIQUID DEVELOPER CONTAINING TETRA-PHENYL TIN OR ZIRCONYL 2-ETHYLHEXOATE

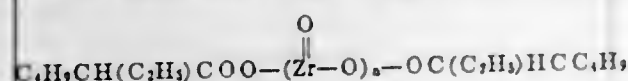
Jerome Roteman, Freehold, N.J., and Beatrice Arnovich, New York, N.Y., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Mar. 1, 1965, Ser. No. 436,328  
4 Claims. (Cl. 117—37)

A method of liquid developing of negatively charged electrostatic images which involves imparting a positive



charge to pigment particles in the liquid developer by means of a charge control agent selected from the group consisting of tetraphenyl tin or zirconium complex salt



where  $n$  is between 1 and 2.

### 3,411,937 METHOD OF LIQUID ELECTROSTATIC DEVELOPING

Jerome Roteman, Freehold, N.J., and Beatrice Arnovich, New York, N.Y., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio  
No Drawing. Filed Mar. 1, 1965, Ser. No. 436,329  
5 Claims. (Cl. 117-37)

A method of liquid developing of negatively charged images employing a positively charged developer composition comprising a dispersion of a pigment in an electrically insulating liquid containing a resinous mixture consisting of linseed oil, rosin, and the reaction product of polyterpene and phenolformaldehyde, and having dissolved therein a metallic soap and a zirconium complex salt.

### 3,411,938 COPPER SUBSTRATE CLEANING AND VAPOR COATING METHOD

Richard H. Storck, Telford, and Alfred A. Adomines, Wayne, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware  
No Drawing. Filed Aug. 7, 1964, Ser. No. 388,302  
2 Claims. (Cl. 117-50)

The adhesion of vapor deposited chromium or aluminum overlaid with a layer of silicon monoxide to a copper substrate is improved by, after precleaning the copper substrate, subjecting the copper substrate to a glow discharge in the presence of an inert or reducing atmosphere, such as may be obtained by means of an argon and nitrogen or hydrogen atmosphere, respectively. After the glow discharge treatment of the copper substrate the metal to be vapor deposited thereon, chromium or aluminum, is vapor deposited thereon followed by the vapor deposition of silicon monoxide.

### 3,411,939 METHOD FOR RENDERING EARTHY MATERIAL IMPERVIOUS TO WATER AND THE PRODUCTS THEREOF

Byron A. Hunter, Woodbridge, and Bogislav Von Schmeling, Hamden, Conn., assignors to Uniroyal, Inc., a corporation of New Jersey  
No Drawing. Filed Nov. 9, 1964, Ser. No. 409,978  
12 Claims. (Cl. 117-62.1)

Earthy material is rendered substantially impervious to water by treating the surface of such material with at least one pound per acre of a phenoxy alkanoic acid, which, when the phenyl ring contains a chlorine substituent, also contains a hydrocarbon substituent with at least 4 carbon atoms on the phenyl ring.

### 3,411,940 PROCESS FOR COATING SURFACES WITH POLYEPOXIDE COMPOSITIONS

John A. Lopez, Springfield, and Dennis Neal, Somerville, N.J., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware  
No Drawing. Continuation of application Ser. No. 289,428, June 20, 1963. This application Feb. 13, 1967, Ser. No. 615,842  
10 Claims. (Cl. 117-62.2)

A process for coating surfaces is disclosed. This process comprises spreading a liquid coating containing a polyepoxide and a polymercaptan on the surface and then

applying an accelerator for the epoxy/mercaptan reaction. This process also comprises applying an accelerator for an epoxy/mercaptan reaction to a surface, and then spraying on top thereof a mixture of a polyepoxide and a polymercaptan.

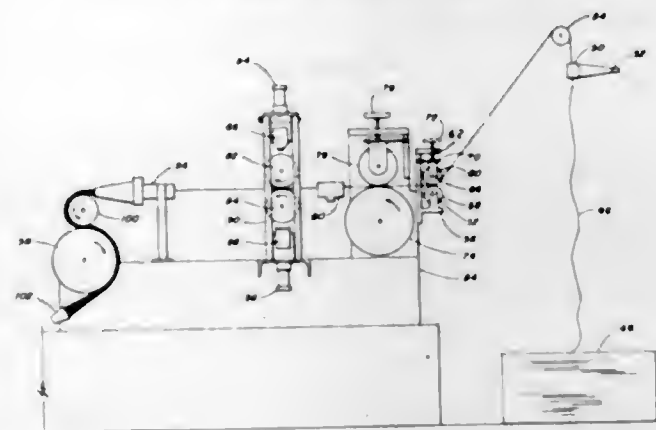
### 3,411,941 PROCESS FOR COATING A METALLIC ARTICLE WITH THERMALLY REFLOWABLE CELLULOSE ACETATE BUTYRATE/MELAMINE-FORMALDEHYDE RESIN/ALKYD OR ACRYLIC RESIN COATING COMPOSITIONS

Jack W. Lowe, Jr., and James D. Crowley, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
No Drawing. Filed Mar. 1, 1965, Ser. No. 436,363  
19 Claims. (Cl. 117-64)

Method of coating metallic articles with a thermally reflowable thermosetting coating composition, comprising the steps of first applying to the metallic article a solvated coating composition comprising cellulose acetate butyrate, melamine-formaldehyde resin, and either an alkyd resin or an acrylic resin; drying the coated article at temperatures ranging from about 120° F. to about 225° F.; sanding the surface of the dried coating composition; and then consecutively thermally reflowing and thermosetting the coating composition at temperatures ranging from about 250° F. to about 450° F. The method finds utility in the application of paints to automobiles.

### 3,411,942 METHOD OF APPLYING LIQUID ADDENDUM TO OPPOSITE SURFACES OF A CONTINUOUS MULTIFILAMENT TOW

Theodore C. Fritz and Richard F. Dyer, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
Filed Dec. 21, 1964, Ser. No. 419,748  
1 Claim. (Cl. 117-68)



A method and apparatus features an opposed dual roll arrangement for applying liquid addendum in uniform quantities to both sides of a continuous multifilament tow. Wick applicators are positioned against the rolls of the arrangement and meter predetermined quantities of addendum onto each roll surface, after which the addendum is deposited onto the tow passing between the rolls.

### 3,411,943 PROCESS FOR THE IMPROVEMENT OF BOND STRENGTHS BETWEEN BRICK OR METALLIC SURFACES AND CEMENTITIOUS MATERIALS

Wallace J. Bragg, Houghton Lake, and Dallas G. Grenley, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Filed Dec. 2, 1965, Ser. No. 511,256  
4 Claims. (Cl. 117-70)

1. A process for promoting the adhesion of cementitious material to brick or metallic surfaces which com-

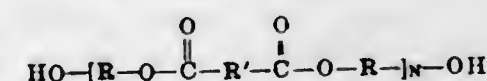
prises the sequential steps of (1) applying to said surfaces an essentially continuous coating of a thermoplastic vinylidene chloride interpolymeric latex consisting essentially of from about 35 to about 90 percent by weight of vinylidene chloride and from about 65 to about 10 percent by weight of a dissimilar interpolymerizable comonomer, as based on a total interpolymer latex solids content of 100 percent by weight, (2) allowing said coating to dry to a film, (3) applying an aqueous hydraulic cementitious material to the coated surfaces, and (4) allowing said cementitious material to harden.

### 3,411,944 HEAT STABLE MAGNETIC COATING COMPOSITION

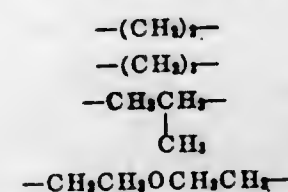
Louis M. Higashi, San Jose, Calif., assignor to Memorex Corporation, Santa Clara, Calif., a corporation of California  
No Drawing. Filed June 14, 1965, Ser. No. 463,885  
5 Claims. (Cl. 117-121)

1. A magnetic recording media which comprises a support means and a magnetic pigment dispersed in a polymeric binder coated on said support means where said binder comprises:

(A) a low molecular weight diol selected from the class consisting of primary and secondary aliphatic glycols containing 2 to 22 carbon atoms, polyether glycols containing 4 to 22 carbon atoms and polyester glycols having a hydroxyl number of 10 to 100 and having the following general formula



where R is the carbon chain of a glycol represented by



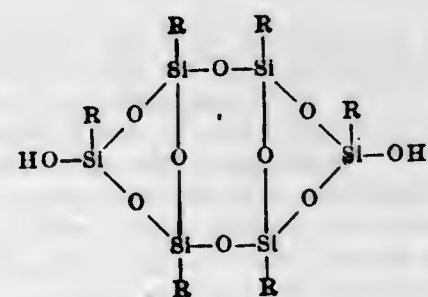
and R' is an aliphatic hydrocarbon radical containing about 6 to 16 carbon atoms, and N is an integer having a value such that the molecular weight of the low molecular weight polyester diol is 216 to 3240,

(B) a high molecular weight diol having a hydroxyl number of 1 to 40 and having the following general formula

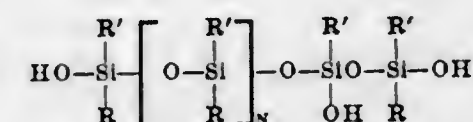


where R is a benzene ring, in the ortho, meta, or para configuration, R' is an aliphatic hydrocarbon radical containing about 6-16 carbon atoms, X is an integer from 7 to 30, and N is an integer having a value such that the molecular weight of the high molecular weight polyester is approximately 10,000 to 30,000,

(C) a silane polyol selected from the class consisting of a silane polyol having the general formula

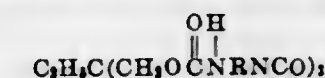


where each R indicates a hydrocarbon group containing 1 to 20 carbon atoms, and a silane polyol having the general formula



where R is an aliphatic hydrocarbon group containing 1 to 10 carbon atoms, and R' is a phenyl group, and

(D) a triisocyanate selected from the class consisting of triphenyl methane triisocyanate and a prepolymer having the general formula



where R is a divalent benzene radical containing an aliphatic hydrocarbon side chain of 0 to 18 carbon atoms,

(E) the low molecular weight diol forming from about 2 to about 90 weight percent of the combined weights of said two diols,  
(F) the weight of said silane polyol forming from about 2 to about 30 percent of the weight of said other components of said binder,  
(G) said triisocyanate being present in an amount sufficient to contribute to said binder from 0.5 to 1.5 mols of reactive isocyanate groups per mol of reactive hydroxyl groups contributed to said binder by said two diols and said polyol, and  
(H) said triisocyanate being chemically reacted with both of said diols and with said polyol.

### 3,411,945 PROCESS FOR PROVIDING A DURABLE ANTI-STATIC FINISH FOR SYNTHETIC TEXTILE MATERIALS

Tsai Hsiang Chao, Somerville, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine  
No Drawing. Filed Mar. 15, 1965, Ser. No. 439,996  
7 Claims. (Cl. 117-139.5)

A method of rendering synthetic hydrophobic textile materials antistatic by applying an aqueous solution of a resin obtained by reacting a polyalkylene glycol-alkyl-ene-polyamine with a cyanuric halide, and curing said resin on the textile by heating.

### 3,411,946 PROCESS AND APPARATUS FOR PRODUCING AN INTERMETALLIC COMPOUND

Ralph F. Tramposch, Sudbury, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware  
Filed Sept. 5, 1963, Ser. No. 306,950  
30 Claims. (Cl. 117-201)

1. A nonvacuumized process for producing an intermetallic compound comprising passing a current flow through at least one source material capable of being dissolved and thereafter recrystallized, a solvent forming a solid to liquid interface with said material, and a substrate forming a liquid to solid interface with said solvent, said current producing a thermoelectric heating effect to dissolve said source material into said solvent at said solid to liquid interface and a thermoelectric cooling effect at a solvent substrate interface spaced from said solid to liquid interface to form an intermetallic compound coating on said substrate.



3,411,947

**INDIUM OXIDE RESISTOR COMPOSITION, METHOD, AND ARTICLE**

Murry L. Block and Arthur H. Mones, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York  
Filed June 29, 1964, Ser. No. 378,921  
10 Claims. (Cl. 117—215)

A resistor comprises: 100 to 30% by weight of finely divided indium oxide having a crystallite size of between 200 and 2,000 angstrom units; 0 to 60% by weight of borosilicate glass; and, 0 to 70% by weight of dopant capable of altering resistance. Resistivity decreasing dopants are antimony, arsenic, phosphorous, tungsten, silicon, tantalum, zirconium, titanium, tin, cerium, niobium and molybdenum. Resistivity increasing dopants are copper, gold, lead, silver, platinum, palladium and lithium. The borosilicate glass increases resistivity of the indium oxide whether or not doped, and increases adhesion to the surface of a supporting dielectric substrate.

3,411,948

**ELECTROSENSITIVE RECORDING MEDIUM**

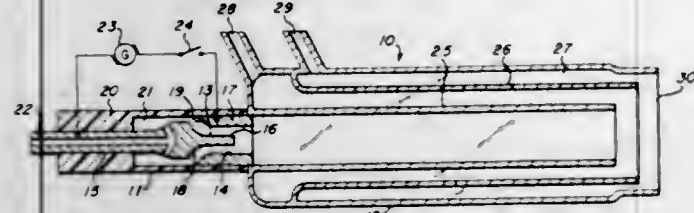
Charles S. Reis, Mountain View, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California  
Filed Apr. 8, 1964, Ser. No. 358,191  
1 Claim. (Cl. 117—217)

An improved electrosensitive recording medium includes conductive particles of a conductive metal compound in a surface coating disposed on a sublayer of vapor-deposited metal film which is removed in the region adjacent a conductive particle in response to conduction of electrical signal therethrough.

3,411,949

**METHOD AND APPARATUS FOR THE MANUFACTURE OF PYROLYTIC FIBERS**

Ralph L. Hough, Springfield, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force  
Filed Aug. 13, 1965, Ser. No. 479,675  
28 Claims. (Cl. 117—228)



A method for the manufacture of pyrolytic fibers comprising the steps of conducting a carbon containing, pyrolytic deposition gas from one of the methane, ethylene and acetylene series through a high voltage electric arc to nucleate a portion of the carbon therein, thereafter heating the gas with the nucleated carbon therein to a temperature within the range of from 500 to 1200 degrees centigrade, and thereafter passing the nucleated pyrolytic material through a second carbon deposition gas while heating the nucleated material to a temperature at which the carbon from said second deposition gas pyrolytically deposits upon the nucleated carbon.

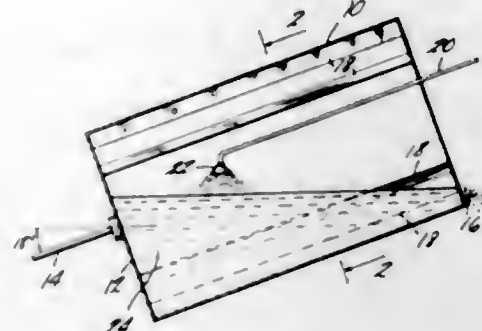
3,411,950

**COLD WATER SWELLING CARBOHYDRATES**

Kurt L. Aspmann and Clifford H. Hullinger, Chicago, and Forrest J. Mork, Calumet City, Ill., assignors to American Maize-Products Company, a corporation of Maine  
Continuation-in-part of application Ser. No. 94,933, Mar. 10, 1961. This application Dec. 2, 1966, Ser. No. 621,078  
6 Claims. (Cl. 127—71)

1. The method of forming porous, water-dispersible

beads of a cold water swelling carbohydrate material which comprises the steps of forming a bed of finely-divided particles of said carbohydrate material, causing the carbohydrate particles in the surface layer of the bed to roll and tumble continuously across the surface of the bed and causing fresh carbohydrate particles from sub-surface layers of the bed to surface and roll and tumble continuously over the first said rolling and tumbling particles to cover the same, simultaneously causing a plurality of discrete water droplets to strike the surface of the bed in the absence of any extraneous

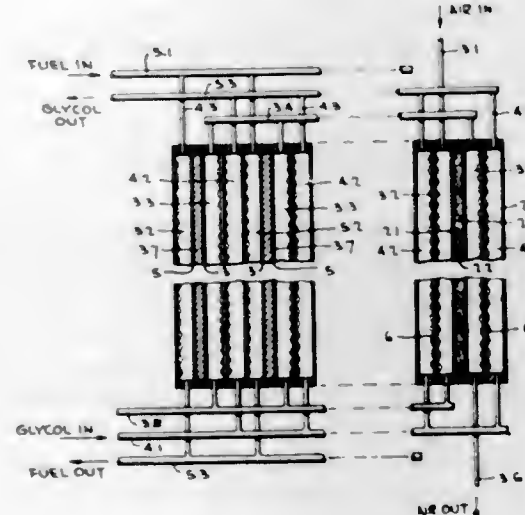


adhesive for the particles thereof whereby said rolling and tumbling particles aggregate around each droplet of water in the form of discrete porous beads, continuously moving said porous beads out of the zone where the droplets strike the surface of the bed, limiting the amount of water added as aforesaid to a quantity up to about 14% based on the weight of said carbohydrate particles, and continuing the aggregation of said carbohydrate particles until at least about 70% by weight of the resulting porous beads are of a size that is retained upon a 100 mesh Tyler screen.

3,411,951

**POWER SUPPLY COMPRISING IN COMBINATION A FUEL CELL STACK AND A HUMIDITY EXCHANGE SCRUBBER UNIT**

Raymond L. Gelting, Manchester, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware  
Filed Oct. 15, 1965, Ser. No. 496,566  
5 Claims. (Cl. 136—86)

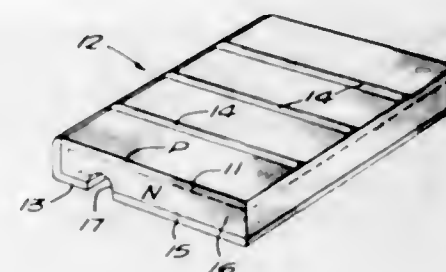


A power supply comprising in combination a plurality of fuel cells each comprising a fuel electrode, an oxidizing electrode, and an electrolyte positioned between said electrodes and in contact therewith, and a humidity exchange/scrubber unit comprising a humidity exchange/scrubber chamber containing a humidity exchange/scrubber material is described. In operation, ambient air is preconditioned in the humidity exchange/scrubber unit before being fed to the fuel cell for consumption.

3,411,952

**PHOTOVOLTAIC CELL AND SOLAR CELL PANEL**

Bernd Ross and Austin H. Herbst, Arcadia, Calif., assignors, by mesne assignments, to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware  
Filed Apr. 2, 1962, Ser. No. 184,347  
10 Claims. (Cl. 136—89)



1. A photovoltaic cell having a top, an edge surface and a bottom, comprising:

(a) a first-type conductivity region separated from a second-type conductivity region by a P-N junction, said first-type region extending across the top, continuing across a minor portion of the total edge surface, and continuing across a minor portion of the bottom of said cell,

(b) a first electrode in ohmic contact with said first-type region on the top, edge surface, and bottom of said cell, and

(c) a second electrode in ohmic contact with said second-type region on the bottom of said cell, said electrodes being sufficiently apart to prevent electrical shorting.

6. A solar-cell panel comprising:

a substrate including a plurality of conducting strips; a plurality of groups of photovoltaic cells, each of said cells comprising a generally rectangular body of semiconductor material, said body having a bulk region of a first conductivity type and a surface region of a second conductivity type covering the top surface of said body, said surface region terminating at the sides and at one end of said body and continuing around the other end thereof and extending over a minor portion of the bottom surface of said body; a first ohmic contact formed on said minor portion of said bottom surface; a second ohmic contact formed on a major portion of said bottom surface of said body and extending substantially to said sides and one end thereof, and insulating means separating said first and second ohmic contacts;

a first group of said cells having their first ohmic contacts electrically connected to a first of said conducting strips and their second ohmic contacts electrically connected to a second of said conducting strips;

a second group of said cells having their first ohmic contacts electrically connected to said second conducting strip and their second ohmic contacts electrically connected to a third of said conducting strips.

3,411,953

**METHOD OF PRODUCING A FUEL CELL ELECTRODE CONTAINING A NICKEL-PHOSPHORUS ALLOY AS THE CATALYST**

Theodore L. Larson, Milwaukee, and James P. Murdock, West Allis, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.  
No Drawing. Filed Feb. 5, 1965, Ser. No. 430,726  
6 Claims. (Cl. 136—120)

A method of producing a catalytic fuel cell electrode whereby a flocculent nickel phosphorus alloy is precipitated with an alkali hypophosphite from an ammonium hydroxide solution containing a dissolved nickelous

salt and a dissolved alkali pyrophosphate, and forming the flocculent nickel phosphorus alloy into an electrode.

3,411,954

**METHOD OF MAKING ELECTRODES**

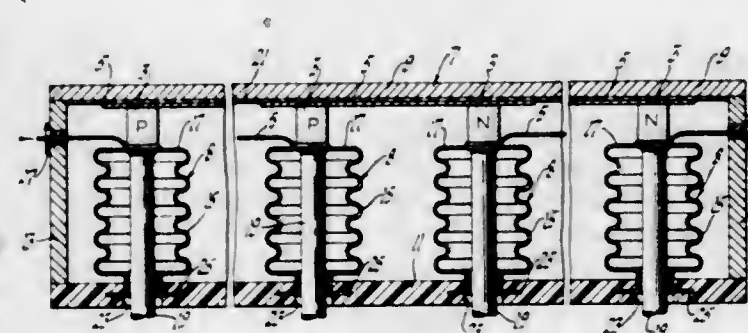
Peter D. Richman, Park Ridge, N.J., assignor, by mesne assignments, to Leeson Corporation, Warwick, R.I., a corporation of Massachusetts  
No Drawing. Filed Sept. 30, 1965, Ser. No. 491,825  
8 Claims. (Cl. 136—120)

1. The method of constructing a lightweight electrode comprising the steps of applying a liquid suspension of a catalytic material including a catalytic metal and a hydrophobic polymer particle to a porous substrate, drawing the liquid medium through the substrate for removing the liquid suspending medium from said catalytic metal and hydrophobic polymer, disposing of a porous metal support on said treated substrate, pressing said metal support on said treated substrate to effect penetration of the catalytic material about said support, heating said composite of metal support, catalytic material, and substrate at a temperature sufficient to bond the hydrophobic polymer particles to each other and to said metal support, and thereafter removing said substrate.

3,411,955

**THERMOELECTRIC DEVICE**

Adolph L. Weiss, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Nov. 13, 1962, Ser. No. 237,215  
12 Claims. (Cl. 136—205)



1. A thermoelectric device comprising a gas-tight casing having one end formed of a good heat conducting material and another end generally oppositely disposed thereto and having a plurality of openings formed therein in spaced relationship, an array of thermoelectric elements formed of dissimilar materials positioned within said casing and having a plurality of junctions of the hot type and a plurality of junctions of the cold type, said elements being positioned with all the junctions of one type in good heat conducting relationship with said end formed of good heat conducting material, a plurality of bellows-like members positioned within said casing and secured thereto in gas-tight electrically insulated relationship about said openings, a heat conducting member secured to the inner surface of the end of said bellows-like members remote from said apertures and extending therethrough, said elements being positioned on the outer surface of said end of said bellows-like members and in good heat conducting relationship with said heat conducting members, and the electrical connections to said array extending through said casing, said bellows-like members serving to complete the gas-tight seal of said casing and elastically urge said thermoelectric elements and said junctions of the one type into good heat conducting relationship with said first-mentioned end.



3,411,956

**THERMOCOUPLE WITH NICKEL-CONTAINING ELEMENTS**

Forbes S. Sibley, Birmingham, Mich., assignor to Hoskins Manufacturing Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Oct. 15, 1963, Ser. No. 316,445  
7 Claims. (Cl. 136—236)

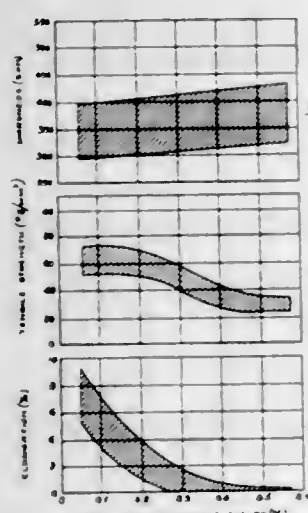
1. A thermocouple comprising an electropositive element composed of an alloy consisting essentially of from 9 to 12.5% chromium, up to 2.5% iron, up to 3.0% molybdenum, residual amounts of silicon and aluminum resulting from deoxidation of the melt and the balance substantially all nickel joined to an electronegative element composed of an alloy consisting essentially of 13.5 to 15.5% copper and the balance substantially all nickel, said electronegative element developing in combination with said electropositive element an electromotive force which closely conforms to the standard E.M.F. vs. temperature curve of an iron-constantan thermocouple.

3,411,957

**METHOD OF MANUFACTURING A CAST IRON ROLL**

Kiyoshi Takai and Fumio Hashimoto, Tokyo, and Yuichiro Sato and Kiyoshi Matsukura, Toyama-shi, Japan, assignors to Nisso Seiko Kabushiki Kaisha, Tokyo, Japan

Filed Oct. 24, 1965, Ser. No. 504,431  
Claims priority, application Japan, June 1, 1965, 40/31,919; June 23, 1965, 40/36,967, 40/36,968  
11 Claims. (Cl. 148—2)



A process for the preparation of durable cast iron rolls which comprises preparing a casting containing 1.7–3.8% carbon, less than 2.5% silicon, at least one manganese, chromium, molybdenum, vanadium or tungsten alloying element in specified amounts, a cobalt or nickel mechanical-property improving material in specified amounts and less than a 0.20% total of phosphorous, sulfur, copper, tin, arsenic, lead, antimony, bismuth and zinc detrimental elements; hot working the casting at a temperature of 1125–900° C. after heating the casting to a temperature 50° lower than the solidus line; and heat-treating the hot-worked casting to obtain the required mechanical properties.

3,411,958

**TREATMENT OF STEEL PARTS**

Glenn T. Sink, San Pedro, and William H. Hyter, Los Angeles, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland

No Drawing. Filed May 3, 1965, Ser. No. 452,913  
17 Claims. (Cl. 148—6.2)

Method and composition for treating steel parts, and cadmium plated and zinc plated steel parts to prevent

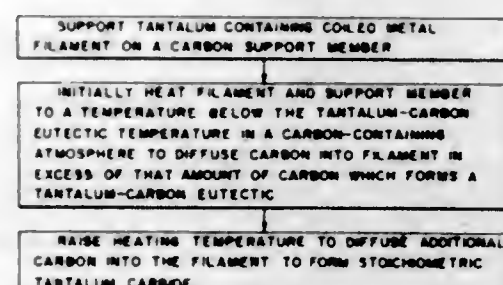
corrosion and especially hydrogen embrittlement thereof. The metal part to be treated is contacted with an aqueous acid solution consisting essentially of ammonium ion, nitrate ion, and hexavalent chromium ion and sufficient nitric or chromic acid to give a pH in the range from 0 to about 2.5. The inclusion of an acid stable wetting agent in the above solution is advantageous but optional.

3,411,959

**METHOD FOR PRODUCING TANTALUM CARBIDE AND TANTALUM-ALLOY CARBIDE FILAMENTS**

Richard Corth, East Orange, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 21, 1966, Ser. No. 535,815  
10 Claims. (Cl. 148—13.1)



- The method of forming a filamentary material which at least principally comprises tantalum carbide, which method comprises:
  - supporting on a carbon member a filament of tantalum metal or a refractory alloy principally comprising tantalum metal;
  - initially heating said support member and supported filament in an atmosphere consisting essentially of carbon as the only reactive constituent at a predetermined temperature below the eutectic melting temperature of said filament as partially carbided, but sufficient to cause carbon to readily diffuse into said filament;
  - maintaining the initial heating for a predetermined period of time to cause carbon to diffuse into said filament in amount less than that required to form stoichiometric tantalum carbide, but in amount sufficient to raise the melting temperature of said partially carbided filament to substantially more than said eutectic melting temperature;
  - heating said support member and supported filament in said atmosphere consisting essentially of carbon to a final heating temperature greater than said eutectic melting temperature, but less than the melting temperature of said initially heated filament;
  - maintaining the final heating temperature for a predetermined period of time to cause additional carbon to diffuse into said filament to form stoichiometric tantalum carbide; and
  - cooling said filament under non-reactive conditions to a temperature below which said filament will not oxidize.

3,411,960

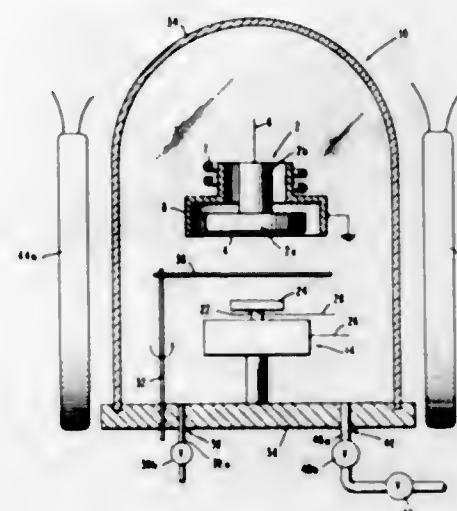
**FERROMAGNETIC THIN FILM ALLOY**

Barry L. Flur, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Original application Dec. 23, 1964, Ser. No. 420,754, now Patent No. 3,303,117, dated Feb. 7, 1967. Divided and this application Oct. 20, 1966, Ser. No. 600,309  
1 Claim. (Cl. 148—31.55)

A ferromagnetic thin film alloy of the type finding adaptation as a storage and switching device consisting

of 2 to 6% by weight molybdenum, from about 14 to 19% by weight iron, with the balance nickel, character-



ized by an anisotropy field of up to about 0.5 oersted and a coercive force of about 0.5 oersted.

3,411,961

**HEAT TREATMENT PROCESS FOR CREEP RESISTANT SOLDER ALLOYS**

Douglas J. Harvey, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

No Drawing. Original application Oct. 21, 1965, Ser. No. 500,333. Divided and this application Nov. 29, 1967, Ser. No. 686,705

4 Claims. (Cl. 148—127)

A lead-based alloy containing about 1–5% tin, 0.1–2% silver and 0.1–0.8% indium and the balance lead may advantageously be employed as a creep resistant solder. The creep resistance of the alloy may be further increased by heating the composition to 250° F.–450° F. for about one hour and subsequently cooling to normal room temperature.

3,411,962

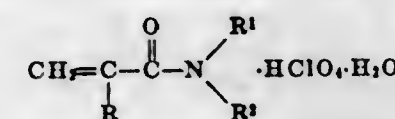
**POLYMERIZABLE COMBUSTIBLE PERCHLORATE SALTS FOR PROPELLANTS AND PROPELLANT COMPOSITIONS CONTAINING SAME**

James L. Chaille, Huntsville, Ala., Warren D. Niederhauser, Meadowbrook, Pa., and Al Kennedy, Fayetteville, Tenn., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 798,291, Mar. 9, 1959. This application Jan. 20, 1960, Ser. No. 3,200

9 Claims. (Cl. 149—19)

1. Polymerizable combustible compositions suitable for the manufacture of propellants consisting essentially of a monomer of the formula:



in which R, R<sup>1</sup> and R<sup>2</sup> are selected from the group consisting of hydrogen and an alkyl group containing 1 to 8 carbon atoms in intimate admixture with an oxidizer selected from the group consisting of ammonium, lithium, sodium, and potassium perchlorates and nitrates and mixtures thereof, said oxidizer being present in an amount sufficient to oxidize completely said polymerizable combustible compositions.

3,411,963

**ILLUMINATING FLARE COMPOSITION COMPOSED OF MAGNESIUM, SODIUM NITRATE, AND AN EPOXY RESIN-POLYGLYCOL RESIN BINDER**

Bernard E. Douda, Bloomfield, Ind., assignor to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed July 31, 1967, Ser. No. 657,726  
1 Claim. (Cl. 149—19)

An illuminating flare composition comprised of a fuel, such as magnesium, an oxidizing agent, such as sodium nitrate, and a binder comprised of an epoxy resin and a polyglycol resin.

3,411,964

**ILLUMINATING FLARE COMPOSITION COMPOSED OF MAGNESIUM, SODIUM NITRATE, AND A VINYL TERMINATED POLYSILOXANE BINDER**

Bernard E. Douda, Bloomfield, Ind., assignor to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed July 31, 1967, Ser. No. 657,727  
1 Claim. (Cl. 149—19)

An illuminating flare composition comprised of a fuel, such as magnesium, an oxidizing agent, such as sodium nitrate, and a silicone resin binder which is a complex mixture of organo-polysiloxanes having the organic groups of methyl, phenyl, and vinyl radicals attached to the silicon atoms.

3,411,965

**METHOD OF BONDING POLYHALOCARBON FABRICS TO METAL**

Edward C. Hobaica, Mystic, Conn., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 11, 1964, Ser. No. 395,648  
6 Claims. (Cl. 156—3)

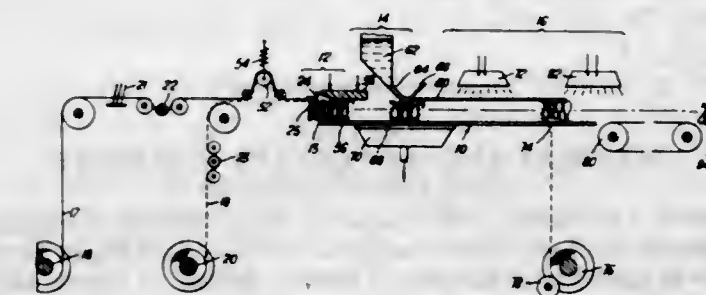
In the particular embodiment of the invention described herein, a fabric layer made of Teflon fibers is bonded to a metal surface by first etching only one side of the fabric layer and then bonding the etched side of the layer to the metal surface with adhesive. In order to etch only one side of the fabric, the other side is coated with a layer of rubber latex which is then dried to form a mask which is impervious to the etching agent.

3,411,966

**METHOD OF MAKING A PILE FABRIC**

Pierre Couquet, Domaine-de-Mazerettes-pres-Mirepoix, France, assignor to Debron Carpets Limited, Kidderminster, England

Filed June 21, 1965, Ser. No. 465,569  
Claims priority, application Great Britain, June 23, 1964, 25,908/64  
18 Claims. (Cl. 156—72)



This invention relates to the manufacture of a pile fabric in which a series of parallel threads and a continuous flexible interliner are superimposed and pleated together so as to produce a pleated pile in which the interliner is interleaved. Then a backing is applied to the pile

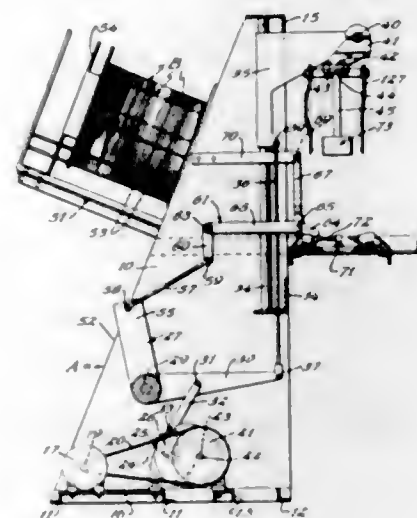


on the side remote from the interliner; and the pleated threads are fixed in place by this backing after which the interliner is removed.

### 3,411,967 PROCESS OF SIMULTANEOUSLY FOAMING AND LAMINATING POLYOLEFIN FILM TO A SOLID BACKING

Stanley P. Rowland, New Orleans, La., and Dorothee M. McClain and Melvin F. Maringer, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia  
No Drawing. Filed July 14, 1964, Ser. No. 382,649  
9 Claims. (Cl. 156-79)

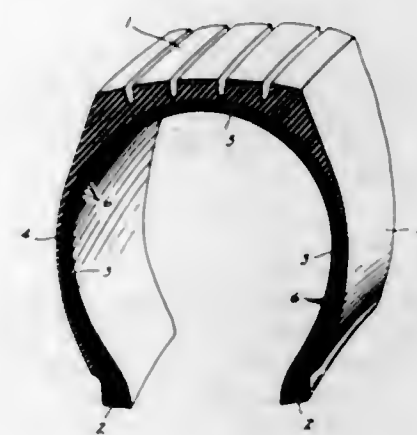
1. A process for the production of a laminate containing foamed plastic films having substantially uniform thicknesses and smooth surfaces, which consists of the sequential steps of intimately mixing a finely-divided solid, polyolefin with about 0.1 to about 10 percent by weight of a finely-divided solid blowing agent, forming an unfoamed film having a substantially uniform thickness and smooth surface from said mixture, placing the film on a substantially solid substrate, and heating the film and substrate at a temperature sufficient to decompose said blowing agent and to melt said polyolefin and produce a foamed polyolefin film bonded to said substrate.



gressively engage areas of the edges, melting the edges sufficiently to bond them together.

### 3,411,970 FORMATION OF LAMINATES OF RUBBER AND CORD

Jack T. Perrin, Cuyahoga Falls, Ohio, assignor to The General Tire & Rubber Company, a corporation of Ohio  
Continuation-in-part of application Ser. No. 348,704, Mar. 2, 1964. This application Nov. 1, 1967, Ser. No. 681,602  
6 Claims. (Cl. 156-297)



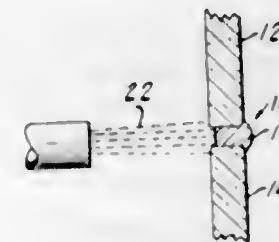
The adhesion between cords such as rayon, nylon or polyester cord to rubber formulations containing carbon black as a reinforcing filler is improved by using a small amount of finely divided silica in the formulation. The silica, preferably precipitated hydrated silica, is preferably used in an amount of between about 4 and about 12 parts per 100 parts of the synthetic or natural rubber with the total amount of the reinforcing filler (carbon black and silica) not exceeding about 55 parts. This process does not appear to adversely affect the other properties of the rubber-cord laminate.

### 3,411,971 METHOD OF SEPARATING FRIT-SEALED GLASS BODIES

Doyle Alfred Wood, Ottawa, Ohio, assignor to Sylvania Electric Products Inc., a corporation of Delaware  
Filed Sept. 2, 1966, Ser. No. 576,890  
5 Claims. (Cl. 156-344)

2. In a method of separating glass bodies frit sealed together at a junction area with the exterior of said frit

seal overlapping said bodies the steps comprising: abrasively removing said overlapping exterior of said frit seal; thermally shocking the remainder of said seal to in-



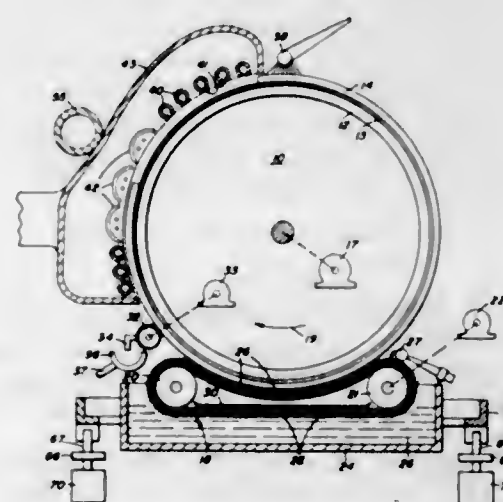
corporate stresses therein; and mechanically shocking said seal to cause separation of said bodies.

3,411,972  
METHOD FOR MOLDING GELATIN PRODUCTS  
Ival O. Salyer and James L. Schwendeman, Dayton, Ohio, assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 296,450, July 22, 1963. This application June 30, 1966, Ser. No. 561,754  
3 Claims. (Cl. 156-336)

Chemically unreacted gelatin having a water content of from 12 to 14 weight percent is molded at 100°-160° C./50-3,000 p.s.i. to obtain a very tough solid. Laminates are prepared by first impregnating a permeable support with an aqueous solution of gelatin and drying to give a coating of gelatin having the above water content, stacking, and molding the stack under the above conditions of temperature and pressure.

### 3,411,973 APPARATUS FOR ETCHING A CELLULOSIC PRINTING PLATE

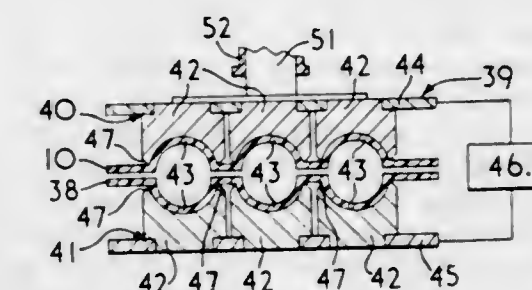
Howard K. Siler, Dayton, Ohio, assignor, by mesne assignments, to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
Filed Apr. 26, 1965, Ser. No. 450,971  
5 Claims. (Cl. 156-345)



A perforated plush belt for scrubbing the surface of a printing plate to etch the surface thereof wherein the perforations permit the removal of etchant and entrained cellulosic materials from the surface of the belt to prevent accumulation thereof in the pile.

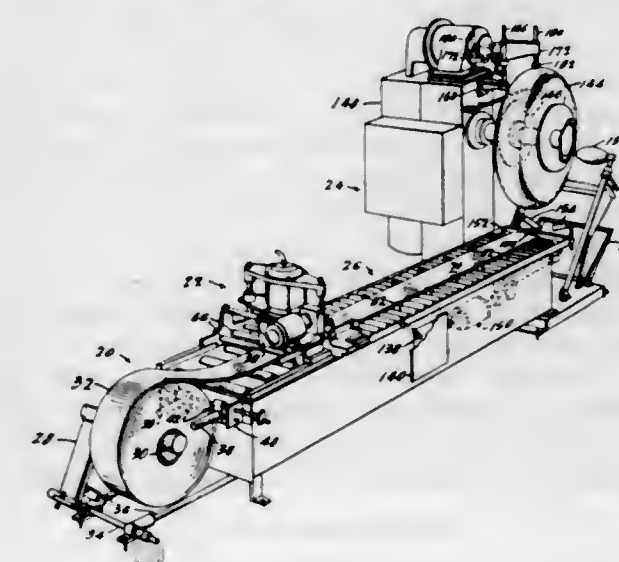
### 3,411,974 APPARATUS FOR FORMING HOLLOW PLASTIC ARTICLES

James Jones-Hinton, Tanworth-in-Arden, and Thomas E. H. Gray, Sutton Coldfield, England, assignors to The Dunlop Company Limited, London, England, a British company  
Filed Oct. 4, 1965, Ser. No. 492,487  
Claims priority, application Great Britain, Oct. 14, 1964, 41,827/64  
16 Claims. (Cl. 156-380)



1. An apparatus for forming a table-tennis ball which comprises a pair of electrodes, each electrode comprising an open-ended cylinder having an internal diameter at the open end substantially equal to the external diameter of a table-tennis ball and the cylinders being arranged so that the open ends thereof are directly opposed, means to connect the electrodes to a source of a high frequency alternating electric current, and means to reduce the separation of the electrodes during passage of the high frequency alternating electric current between the electrodes.

3,411,975  
APPARATUS FOR RETREADING TIRES  
Ronald C. Rowe, Muncie, Ind., assignor to Bacon American Corporation, Muncie, Ind., a corporation of Indiana  
Filed Sept. 11, 1964, Ser. No. 395,834  
12 Claims. (Cl. 156-405)



1. In combination with apparatus for retreading tires including means for rotatably supporting a supply of tread stock, a conveyor having a plurality of rotatable conveyor rollers, means for moving a strip of the tread stock along said conveyor, means for cutting the strip, a pair of tire bead engaging plates, and a stand for supporting said bead plates, the improvement comprising means for centering the supply roll of tread stock with respect to said conveyor, said centering means comprising a pair of parallel, horizontally-disposed rollers, a bearing block rotatably supporting each of said horizontal rollers and having a smooth passage and a parallel, threaded passage therethrough, a guide rod extending through the smooth passages of said bearing blocks, a threaded rod threadedly

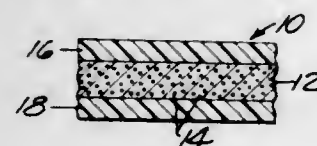


engaged with the threaded passages of said bearing blocks, said rod having symmetrical right and left hand threads, bracket means at each end of said guide and threaded rods for supporting said rods from said conveyor and including means for rotatably supporting said threaded rod, a handle beyond one of said bracket means for rotating said screw and for moving said bearing blocks and said rollers toward and away from one another symmetrically about the center line of the conveyor, said strip cutting means including a cutting blade, means for moving said blade in a vertical path, a rigid plastic roller located in the path of said blade and transversely to said conveyor, supporting rollers located on each side of said plastic roller and below the plane of said plastic roller whereby the tread stock strip bends when moved over said plastic roller, means for rotatably supporting said plastic roller in the path of the blade, a plurality of pairs of guide rollers uniformly spaced along said conveyor between said cutting means and said bead plate stand, each of said guide rollers having a vertical axle, brackets extending upwardly between some of said conveyor rollers and supporting said vertical axles, two mounting bars extending parallel to said conveyor and located below said conveyor rollers, said brackets being affixed to said bars, means for movably supporting said bars, two connecting links pivotally attached to each of said bars at corresponding positions symmetrically of said conveyor, two main links between said bars and each having end portions pivotally connected to the ends of said connecting links opposite the ends connected to said bars, vertical drive shafts affixed to said main links, means for rotatably supporting said vertical drive shafts, a worm wheel affixed to each of said drive shafts, a horizontal drive shaft extending parallel to said conveyor, means for supporting said horizontal drive shaft, two worms on said horizontal drive shaft engaging said worm wheels, a ratchet handle on said horizontal drive shaft for rotating said horizontal drive shaft in either direction, a vertical post affixed to said stand and having a scale representing a function of the distance between the axis of said bead plates and the scale, a gauge bracket rotatably mounted on said post, a collar vertically movable on said post to adjust said gauge bracket vertically thereon and yet enable said bracket to rotate, means for attaching said collar to said post, said gauge bracket having a vertically extending passage there-through located in a plane symmetrical and parallel to said bead plates and having a slot extending parallel to said passage, a feeler movably mounted in said vertical passage, a roller rotatably mounted on the lower end of said feeler, a projection affixed to said feeler and extending through said slot, a pointer having an end pivotally connected to said projection, and pivot means on said gauge bracket pivotally supporting said pointer, said gauge bracket having markings cooperating with said pointer to indicate when a dimension of a tire casing sensed by said feeler equals the designated dimension set on said scale.

3,411,976

## SELF-MARKING RECORD MATERIAL

Robert F. Heliker, North St. Paul, and Ray A. Hunder, White Bear Lake, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware  
Filed Mar. 21, 1966, Ser. No. 535,802  
6 Claims. (Cl. 161—5)



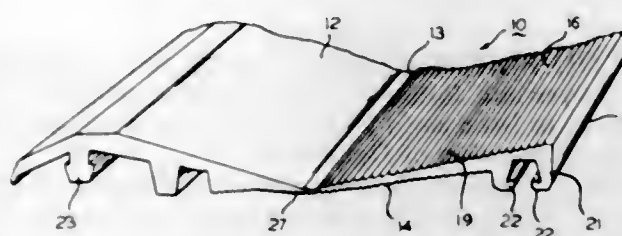
1. A protective-plastic surfaced self-marking record material, comprising a pressure-responsive self-imaging

substrate carrying normally separated image-forming reactants which combine and react upon the application of marking pressure to said substrate, at least one of said reactants comprising microscopically sized pressure-rupturable capsules containing a liquid color-forming reactant, and a protective-plastic coating over said substrate comprising a locally extensible layer of transparent, flexible, plastic capable of transmitting marking pressures thereon to said substrate to cause rupture of said capsules beneath local areas to which pressure is applied.

3,411,977

## RESILIENT PROTECTIVE EDGING FOR FLOOR COVERINGS SUCH AS RUGS, CARPETS OR THE LIKE

William Slater, Jr., Glen Ellyn, Ill.  
(300 W. Hubbard St., Chicago, Ill. 60610)  
Filed Oct. 18, 1965, Ser. No. 497,156  
2 Claims. (Cl. 161—117)



1. An edging for protecting the edges of a floor covering comprising an integral resilient sheet formed of first and second protecting elements joined longitudinally by a thin connecting web; said first protecting element having a lock-slot extending along and adjacent to the edge thereof, said first element being tapered from a greater thickness adjacent said edge to a lesser thickness adjacent said web thereby providing a thin flange; said second protecting element having a locking member, adapted to provide engagement with said lock-slot, extending from a surface thereof and said second protecting element being generally sloped upward from said web to a portion of said second protecting element which is at the surface oppositely disposed from said locking member, said second protecting element being generally sloped downward from said portion to the edge thereof; whereby when said web is severed forming discrete first and second protecting elements, said flange of said first protecting element is adapted to underlie said floor covering along a marginal portion thereof with said lock-slot extending outward from said marginal portion, and said second protecting element is adapted to provide a sloped configuration extending from the surface on which said floor covering is laid to the surface of said floor covering and overlying said marginal portion thereof with said locking member being in engagement with said lock-slot.

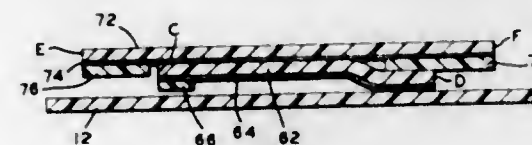
3,411,978

## PRESSURE SENSITIVE ADHESIVE MARKER

Louis A. Frohbach and Edwin C. Addis, Florence, Mass., assignors, by mesne assignments, to Avery Products Corporation, San Marino, Calif., a corporation of California  
Continuation-in-part of application Ser. No. 381,988, July 13, 1964. This application Dec. 31, 1964, Ser. No. 425,106  
5 Claims. (Cl. 161—145)

A pressure sensitive adhesive marker assembly comprises a flexible strip of material having a pressure sensitive adhesive coating at its underside and is manipulated by means of an overlying mask to which the marker is adhesively fastened. One edge of the marker is releasably adhered to the underside of the mask while the opposite edge of the marker is free of such adherence

with the mask, thus providing for adherence or stripping of the marker with regard to an underlying surface, depending upon which end of the mask is manipulated. In



one of the embodiments two markers are assembled on each other in the described manner, the upper marker serving also as a mask for the lower mask.

3,411,979

## FOAMED ARTIFICIAL FILAMENT

John C. Lewis, Jr., Middlebury, Vt., assignor to Polymers, Inc., Middlebury, Vt., a corporation of Vermont  
Filed Aug. 24, 1965, Ser. No. 482,100  
4 Claims. (Cl. 161—178)



1. A foamed synthetic brush filament having a homogeneous cell structure formed from a long chain linear stable thermoplastic polymer selected from the group consisting of propylene polymers and co-polymers comprising: a cross-section of at least two lobular projections extending from each other at about equal angles from a common center portion, said filament having repeated unoriented and oriented portions adjacent to one another through its entire length, said unoriented portions having a larger cross-sectional area than the oriented portions, the aggregate lengths of the oriented portions being at least 40% but not more than 80% of the total length of the filament, said filament having a specific gravity not exceeding 0.080, whereby varying amounts of stiffness and recovery are imparted to the filament along its length.

3,411,980

## IN-SITU RESIN ADHESION OF REINFORCING ELEMENT-TO-RUBBER

Richard Leshin, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio  
No Drawing. Filed Mar. 26, 1965, Ser. No. 443,168  
9 Claims. (Cl. 161—183)

Discloses rubber and reinforced rubber structures wherein the rubber is modified with a resin formed in-situ resulting from the reaction of a methylene acceptor such as resorcinol and a methylene donor reactable therewith.

856 O.G.—80

The donors include alpha (hydroxymethyl) substituted aldehydes, and an N-[alpha (hydroxymethyl) substituted alkylidene]-N-(hydrocarbon substituted) amine.

3,411,981

METHOD AND ARTICLE FROM LAMINATING NON-FOAMED POLYURETHANE ELASTOMER TO VINYL POLYMER WITH A FUSION BOND  
Cyrus H. Thomas, Miami, Fla., assignor to Industrial Vinyls, Incorporated, a corporation of Florida  
Continuation-in-part of application Ser. No. 211,365, July 20, 1962. This application Feb. 24, 1966, Ser. No. 544,064  
8 Claims. (Cl. 161—190)

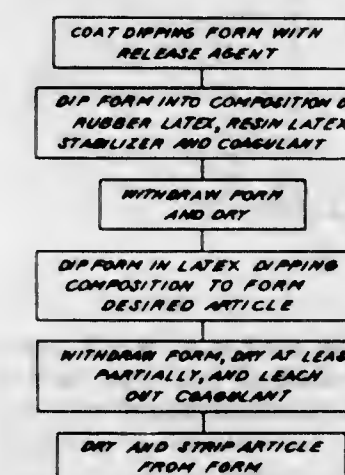


A resinous structure having a high bursting strength and abrasion resistance constructed from a laminate of a layer of a thermoplastic vinyl polymer and a thin layer of a thermoplastic polyurethane or a molded mixture of a thermoplastic vinyl polymer and a thermoplastic polyurethane.

3,411,982

## ELASTOMERIC ARTICLE HAVING A SLIP COATING

John J. Kavalir, St. Eustache sur le Lac, Quebec Canada, and Everett V. Anderson, Bethany, Conn., assignors to Uniroyal, Inc., a corporation of New Jersey  
Original application Mar. 18, 1964, Ser. No. 352,988, now Patent No. 3,286,011, dated Nov. 15, 1966. Divided and this application June 7, 1966, Ser. No. 555,850  
1 Claim. (Cl. 161—242)



A latex dipped article such as a glove or girdle, having an adherent slip finish layer which is a blend of an elastomer and an alkyl acrylate resin.

3,411,983

PROCESS FOR THE CONTROL OF SLIME-FORMING AND OTHER MICROORGANISMS WITH 2,3,6-TRICHLORO-5-NITROPHENYL COMPOUNDS  
Theodore A. Girard, Wayne, N.J., assignor to Tenneco Chemicals, Inc., a corporation of Delaware  
No Drawing. Filed Aug. 6, 1964, Ser. No. 387,980  
12 Claims. (Cl. 162—161)

1. The process of inhibiting microbiological deterioration

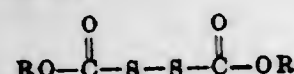


tion of organic substances that are normally susceptible to deterioration by the action of microorganisms and inhibiting the formation of slime in industrial water systems that are in contact with such substances which comprises adding to the water system a microbiocidally effective amount of 2,3,6-trichloro-5-nitrophenylacetic acid.

**3,411,984**  
**STARCH MONOTHIOCARBONATE DISULFIDE**  
**AND PROCESS FOR USING SAME IN PAPER**  
Mamerto M. Cruz, Pennington, N.J., assignor to  
FMC Corporation, New York, N.Y., a corpora-  
tion of Delaware

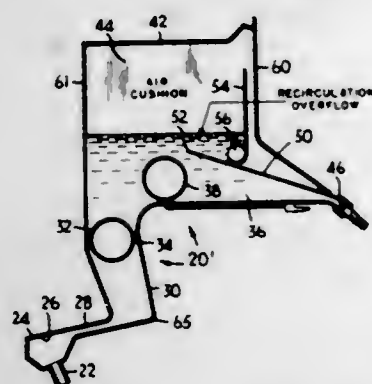
Filed Sept. 27, 1965, Ser. No. 490,287  
6 Claims. (Cl. 162-175)

A novel compound, a starch monothiocarbonate disulfide having the formula:



wherein RO represents the  $\alpha$ -anhydroglucose units of a starch molecule, has been found useful as an additive to paper in amounts of at least about 1% by weight of the dry pulp (and preferably 2 to 5%) to increase both the wet and dry strength of the paper and otherwise improve its physical properties. This novel product can be produced by oxidizing starch dithiocarbonate disulfide (starch xanthide) with about stoichiometric amounts of chlorine dioxide.

**3,411,985**  
**PAPER-MAKING MACHINERY**  
John A. Means, South Norwalk, Conn., assignor to  
Time Incorporated, New York, N.Y., a corporation  
of New York  
Filed Mar. 9, 1965, Ser. No. 438,194  
6 Claims. (Cl. 162-212)



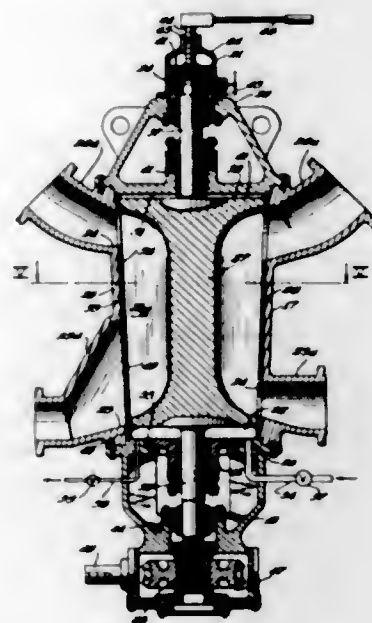
A paper-stock-flow system in which paper stock flows first through a flat channel and then through a plurality of parallel pipes in communication with the flat channel at the downstream end thereof is provided with spool-shaped deflocculation means in the flat channel and with rounded entrances to the pipes. The rounded entrances are shaped as portions of spools. A recirculation overflow is provided in the flow system for withdrawing the fastest-moving portion of the stock from the flow system so that the standard deviation of the speed of the portion of the stock remaining in the flow system for delivery to the wet end of a paper machine is reduced.

**3,411,986**  
**AXIAL FLOW ROTARY FEEDER FOR**  
**CELLULOSE DIGESTER**  
Ronald L. Buchberger and Arnold J. Roerig, Beloit, Wis.,  
assignors to Beloit Corporation, Beloit, Wis., a corpora-  
tion of Wisconsin

Filed Aug. 4, 1965, Ser. No. 477,242  
4 Claims. (Cl. 162-246)

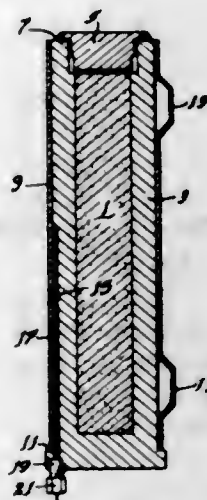
Apparatus for feeding cellulosic material to a continu-  
ous pulping digester. The apparatus is a rotary feeder

valve having a frusto-conically shaped bore with at least two pairs of inlets and outlets therein and a complemen-  
tarily shaped rotor in the bore with passages in the rotor.  
The passages are arranged to interconnect first one of the



said pairs of inlets and outlets and then the other pair  
upon rotation of the rotor and screens are placed in either  
the rotor or the outlets in the bore for collecting chips  
in the passages.

**3,411,987**  
**DEVICE FOR MEASURING THE DEPOSITION OF**  
**SOLIDS IN NUCLEAR REACTORS**  
Vincent F. FitzPatrick, Richland, Wash., assignor to the  
United States of America as represented by the United  
States Atomic Energy Commission  
Filed Dec. 6, 1967, Ser. No. 688,481  
4 Claims. (Cl. 176-68)

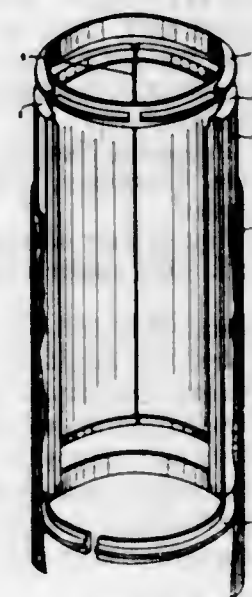


A special nuclear fuel element is employed for measur-  
ing the deposition of solids on fuel element surfaces in  
nuclear reactors. A core which is highly enriched in  
uranium-235, uranium-233 or plutonium-239 is sur-  
rounded by a heavy cladding of nonfissionable material  
having a fairly high capture cross section for neutrons.  
This gives substantially constant heat generation over a  
long period of time. A thin jacket surrounds the cladding.  
A thermocouple between the jacket and the cladding  
measures the temperature at that point. Increases in the  
difference between this temperature and the temperature  
of the coolant surrounding the device indicate the amount  
of deposition on the fuel element surface.

**3,411,988**  
**NUCLEAR REACTOR COOLING CHANNEL**  
**WITH INTERNAL SOLID INSULATION**  
Jacques Dufresne, Varese, Flaviano Farfaletti-Casali,  
Milan, and Giuseppe Volta, Ispra, Italy, assignors to  
European Atomic Energy Community (Euratom), Brus-  
sels, Belgium.

Filed June 1, 1967, Ser. No. 642,771  
Claims priority, application Italy, June 14, 1966,  
19,040/66

7 Claims. (Cl. 176-87)



A pressure tube for a nuclear reactor having internal  
heat insulation formed by a series of hollow cylinders  
along the tube. Each cylinder is composed of sectors mat-  
ing along adjacent longitudinal edges. A pressure ring is  
mounted between the ends of each adjacent pair of cylin-  
ders and supports them against the inside surface of the  
pressure tube.

**3,411,989**  
**PROCESS FOR PREPARING YEAST CELLS CON-**  
**TAINING AN ENHANCED AMOUNT OF RIBO-**  
**NUCLEIC ACID**

Yoshio Nakao, Ibaraki, and Isao Banno and Mitsuo  
Kuno, Suita, Japan, assignors to Takeda Chemical In-  
dustries, Ltd., Osaka, Japan

No Drawing. Filed Sept. 1, 1966, Ser. No. 576,544  
Claims priority, application Japan, Sept. 2, 1965,  
40/53,951

13 Claims. (Cl. 195-28)

1. A process for preparing yeast cells containing an  
enhanced amount of ribonucleic acid, which comprises  
inoculating a mutant of the genus *Candida* which is re-  
sistant to a dyestuff selected from the group consisting of  
thiazine dye, oxazine dye and acridine dye, onto a nutrient  
culture medium comprising carbon source consisting  
mainly of hydrocarbons containing not less than 10%  
(volume/volume) of normal paraffins having a carbon

atom number within the range from 14 to 21, and in-  
cubating the culture medium at a temperature of about  
20° C. to about 40° C. and at a pH value of about 4.0  
to about 8.0 under aerobic conditions.

**3,411,990**  
**PROCESS FOR PRODUCING L-GLUTAMIC ACID**  
Kiyoshi Udagawa, Yoyohama, and Mamoru Kohata,  
Kawasaki-shi, Japan, assignors to Kyowa Hakko  
Kogyo Co., Ltd., Tokyo, Japan, a corporation of  
Japan

No Drawing. Filed Dec. 16, 1965, Ser. No. 514,399  
Claims priority, application Japan, Dec. 18, 1964,  
39/71,029

13 Claims. (Cl. 195-47)

A process for producing L-glutamic acid by fermenta-  
tion which comprises culturing a hydrocarbon non-assim-  
ilatory L-glutamic acid-producing microorganism under  
aerobic conditions in an aqueous nutrient medium con-  
taining carbohydrates or organic acids as the main carbon  
source and also containing at least one hydrocarbon, the  
latter serving to eliminate the hindrance of the fermenta-  
tion which is caused by biotin and biotin-active substances.

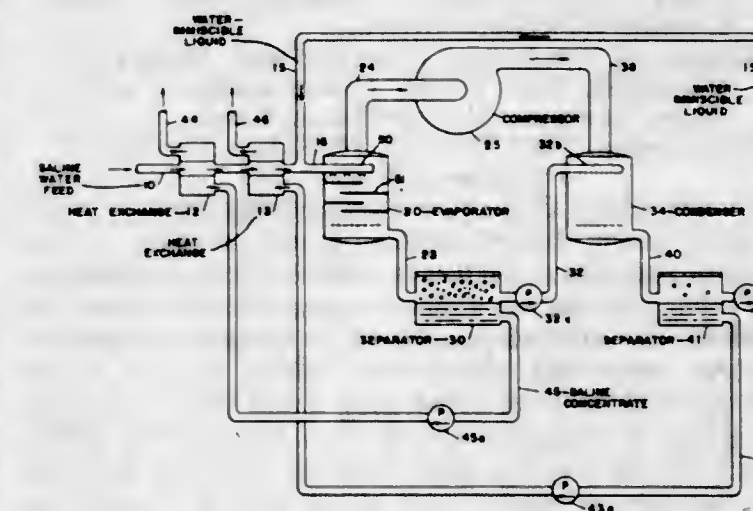
**3,411,991**  
**VITAMIN B<sub>12</sub> FERMENTATION**  
Peter G. Lim, Elsmere, Del., assignor to Hercules Incor-  
porated, Wilmington, Del., a corporation of Delaware  
No Drawing. Filed July 8, 1966, Ser. No. 563,722  
3 Claims. (Cl. 195-96)

1. In a process for the production of vitamin B<sub>12</sub> by the  
fermentation of an aqueous culture medium with *Pro-*  
*pionibacterium freudenreichii*, the improvement which  
comprises carrying out the fermentation in the presence  
of glycine in an amount of about 0.05% to about 2% by  
weight of said culture medium.

**3,411,992**  
**DISTILLATION UTILIZING A VAPOR COM-**  
**PRESSOR AND AN IMMISCIBLE LIQUID-**  
**SOLID MEDIUM**

Ewart E. L. Mitchell, Princeton, N.J., assignor to Elec-  
tronic Associates, Inc., Long Branch, N.J., a corpora-  
tion of New Jersey

Continuation of application Ser. No. 289,852, June 24,  
1963. This application Dec. 11, 1967, Ser. No. 689,728  
7 Claims. (Cl. 203-11)



A molten liquid heat exchange medium immiscible  
in saline water mixed therewith and sprayed or distributed  
on a tray in an evaporator wherein the aqueous portion of  
the feed vaporizes and the immiscible medium is partially  
solidified. The vapor withdrawn by a compressor is then  
brought into direct contact with the solidified medium to  
condense the vapor and remelt the medium for recycle  
to the evaporator.

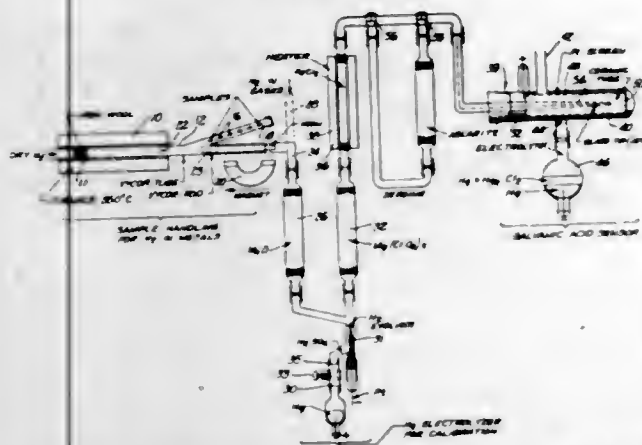


3,411,993

## HYDROGEN DETECTION

Carlos J. Sambucetti, La Habra, and Paul A. Hersch, Fullerton, Calif., assignors to Beckman Instruments, Inc., a corporation of California

Filed Feb. 8, 1965, Ser. No. 431,009  
17 Claims. (Cl. 204-1)



A method and apparatus for quantitatively detecting hydrogen gas in a gas stream in which the hydrogen is quantitatively converted into an acid vapor by reaction with a metal halide. The acid vapor is conveyed to an analytical device which quantitatively and directly detects the acid vapor in the gas stream, thus provides a measure of the hydrogen in the initial gas stream. The invention may be employed for measuring hydrogen in a metallic specimen by heating the specimen and thus evolving the hydrogen gas which is conveyed by a carrier gas to the metal halide for reaction therewith.

3,411,994

## ALUMINUM ANODIZING PROCESS AND PRODUCT THEREOF

Eugene Wainer, Shaker Heights, Ohio, assignor to Horizons Incorporated, a corporation of New Jersey

No Drawing. Filed Sept. 7, 1965, Ser. No. 485,629  
3 Claims. (Cl. 204-35)

Aluminum is anodized in a 1% sulfuric acid electrolyte, then dipped in deionized water and then in oxalic acid to produce a semi-white porcelain-like appearance in the product.

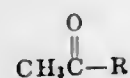
3,411,995

## PROCESS AND PRODUCT FOR PLATING ON CAST, MALLEABLE, CARBURIZED AND CARBONITRIDED IRONS

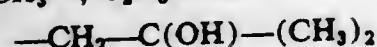
Edward B. Saubestre, Hamden, and Theophil J. Wleczorek, West Haven, Conn., assignors to Enthone, Incorporated, New Haven, Conn.

No Drawing. Filed Mar. 15, 1965, Ser. No. 439,987  
6 Claims. (Cl. 204-38)

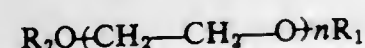
Process for cyanide zinc electroplating ferrous metal surfaces having discrete carboniferous particles in their surfaces and which enables a sufficiently high hydrogen overvoltage to be maintained during the electroplating to allow the zinc electroplating to occur. The process involves immersing the ferrous metal surface in an aqueous acid solution comprising about 2 to 36 ounces per gallon of phosphate ion, 0.15 to 3 ounces per gallon of at least one wetting agent from the group of nonionic and cationic surfactants, and about 4 to 20 ounces per gallon of a miscible solvent from the group of compounds of the formulae:



wherein R is  $\text{CH}_3$ —,  $\text{C}_2\text{H}_5$ — or



and



wherein  $\text{R}_1$  is  $\text{H}$ ,  $-\text{CO}-\text{CH}_3$ ,  $-\text{PO}(\text{OH})_2$  or  $-\text{SO}_2(\text{OH})$ ,  $\text{R}_2$  is  $\text{H}$  or  $\text{H}(\text{CH}_2)_m$ ,  $n$  is 1-2 and  $m$  is 1-4, and optionally an organic thio compound as corrosion inhibitor, the aqueous acid solution having a pH of up to 3.0 inclusive and being at room temperature or an elevated temperature up to  $180^\circ\text{F}$ ., for a time sufficient to form the ferrous surface a thin continuous phosphate-containing film. The thus-coated ferrous metal surface is then zinc electroplated in a cyanide zinc electroplating bath.

3,411,996

## PROCESS FOR BRIGHTENING ZINC AND CADMIUM ELECTROPLATE USING AN INNER SALT OF A QUATERNIZED PYRIDINE CARBOXYLIC ACID AND COMPOSITIONS CONTAINING THE SAME

John D. Rushmere, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 511,245, Dec. 2, 1965. This application Sept. 20, 1967, Ser. No. 669,309

16 Claims. (Cl. 204-50)

It has been found that the addition of an inner salt of a quaternized pyridine carboxylic acid to aqueous alkaline electroplating baths containing zinc and cadmium ions provides smooth, bright deposits of these metals. High plating efficiency with low consumption of the inner salt of the quaternized pyridine compound is obtained using it alone or in combination with other bath additives.

3,411,997

## ELECTROLYTIC PROCESS FOR PREPARING N-LOWER ACYLOXYMETHYL-N-HYDROCARBYL LOWER ACYLAMIDES AND CERTAIN DERIVATIVES THEREOF

Sidney D. Ross, Williamstown, Manuel Finkelstein, North Adams, and Raymond C. Petersen, Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

No Drawing. Filed July 1, 1965, Ser. No. 468,981  
9 Claims. (Cl. 204-59)

Electrolyzing an electrolyte composition so as to form an N-lower acyloxymethyl-N-hydrocarbyl lower acylamide. Preparation of this class of compounds permits the formation of certain derivatives by reacting this lower acylamide with compounds such as a carboxylic acid, a primary or secondary alcohol or mercaptan, a compound having an aromatic ring containing an unsubstituted nucleophilic position or an acid salt of a urea or thiourea.

3,411,998

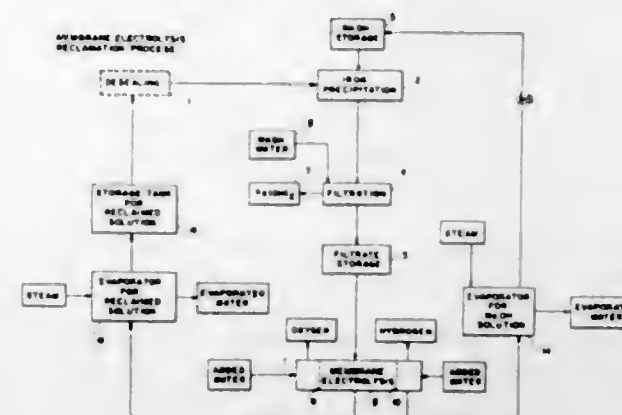
## PROCESS FOR RECLAIMING SPENT ALKALI METAL CARBOXYLATE SOLUTIONS

Harold Wallman, New London, Thomas V. Bolles, Mystic, and Oliver L. I. Brown, Quaker Hill, Conn., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 6, 1966, Ser. No. 540,660  
18 Claims. (Cl. 204-98)

1. A cyclic process for reclaiming spent aqueous alkali metal salt solution of a carboxylic acid, which comprises the following steps: (1) withdrawing the spent solution from the operation in which it became spent and mixing with it aqueous alkali metal hydroxide solution until the pH of the mixture becomes high enough to precipitate from the mixture substantially all of the metal that was complexed by the spent solution; (2) separating the precipitated solids, washing them with water, separating them from the wash water and recovering the separated solids thereby obtaining a byproduct consisting mostly of hydroxides of the metals that were complexed in the spent solution; (3) collecting and mingling the liquid and wash water from which the solids were separated thereby ob-

taining a somewhat diluted aqueous solution of a basic pH consisting of alkali metal carboxylate with excess alkali metal hydroxide; (4) subjecting the solution obtained in step (3) to electrolytic treatment in an electrolytic cell of the kind which has an anode and a cathode located in chambers separated by at least one cation exchange membrane to permit passage of positive ions and inhibit passage of negative ions, using an aqueous alkali metal hydroxide solution as the catholyte in said cathode chamber and alkali metal carboxylate solution in the chamber on the opposite side from the catholyte of the same cation exchange membrane; (5) passing a DC electric current through said cell and thereby (a) causing oxygen gas to be formed and released at the anode and hydrogen gas to be formed and released at the cathode, (b) causing positively charged alkali metal ions from said alkali metal carboxylate solution to migrate to the catholyte and unite with hydroxyl ions formed therein to gen-



erate additional alkali metal hydroxide in the catholyte, and (c) electrolyzing water to provide the positively charged hydrogen ions and negatively charged hydroxyl ions involved in said reactions as well as said oxygen and hydrogen gas; (6) replacing the water lost by electrolysis as needed to assist in maintaining the volume and concentration of the solutions in the cell; (7) continually withdrawing some of the catholyte solution and replacing it with water as needed to assist in maintaining the volume and concentration of the catholyte solution; (8) evaporating water from the withdrawn catholyte solution to obtain an alkali metal hydroxide solution of the desired concentration for reuse in step (1) of the process; and (9) withdrawing alkali metal carboxylate solution of the pH desired for the reclaimed solution and evaporating water from it to produce a reclaimed solution having both the pH and percentage concentration of alkali metal carboxylate desired for reuse in the operation from which the spent solution came.

3,411,999

## METHOD OF ETCHING REFRACTORY METAL BASED MATERIALS UNIFORMLY ALONG A SURFACE

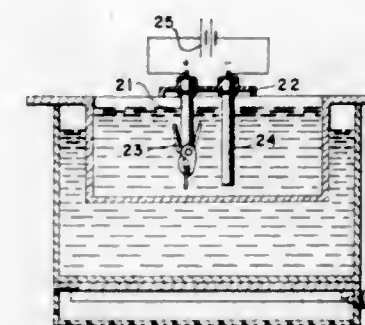
Harold P. Weinberg, Alexandria, Va., assignor to Value Engineering Company, Alexandria, Va., a corporation of Delaware

Filed Dec. 10, 1965, Ser. No. 512,935  
10 Claims. (Cl. 204-141)

1. A method of chemically etching an article of refractory metals, refractory metal based alloys and carbides to remove metal at substantially a uniform rate along a surface thereof, and comprising the steps of immersing the article into a volume of an etchant, providing a body of liquid to surround a substantial portion of said etchant and interposing a rigid diaphragm between said liquid and said etchant to prevent contact between said liquid and said etchant, producing ultrasonic vibrations in the body of liquid with said vibrations being transmitted through the liquid and diaphragm to the etchant and uni-

formly distributed within the etchant around the immersed portion of the article.

6. A method of electrochemically etching an article of refractory metals, refractory metal based alloys and carbides to remove metal at substantially a uniform rate along a surface thereof, and comprising the steps of providing a body of liquid to surround a substantial portion of said etchant and interposing a rigid diaphragm between



said liquid and said etchant to prevent contact between said liquid and said etchant, bringing a portion of an article into contact with the etchant, producing ultrasonic vibrations within the body of liquid with said vibrations being transmitted through the body of liquid and diaphragm to the etchant and uniformly distributed within the etchant around the immersed portion of the article and polarizing the article anodically to pass an electric current from said article through the electrolytic chemical etchant.

3,412,000

## CATHODIC PROTECTION OF TITANIUM SURFACES

Ram Dev Bedi, Warrensville Heights, Ohio, assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 14, 1965, Ser. No. 447,973  
12 Claims. (Cl. 204-147)

In accordance with certain of its aspects, the process of this invention for protecting titanium from etching while immersed in an aqueous acid solution characterized by ability to etch a bare titanium-containing metal surface comprises placing said titanium in intimate electrical contact with a low hydrogen overvoltage metal, and maintaining on said titanium a low cathodic current density with respect to an anode in said solution for a time period greater than that required to etch said bare titanium-containing surface without application of said cathodic current.

3,412,001

## PHOTOCHEMICAL PREPARATION OF MERCAPTANS

Joseph R. Edwards, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Oct. 16, 1964, Ser. No. 404,510  
3 Claims. (Cl. 204-162)

In the preparation of mercaptans by reacting olefins with hydrogen sulfide, in the presence of actinic light, the selectivity of the reaction is improved by carrying out the reaction such that the conversion level of the olefin into mercaptan is in the range of about 7 to 22 percent.

3,412,002

## APPARATUS AND METHOD FOR ELECTROPHORETIC BREAKING OF EMULSIONS

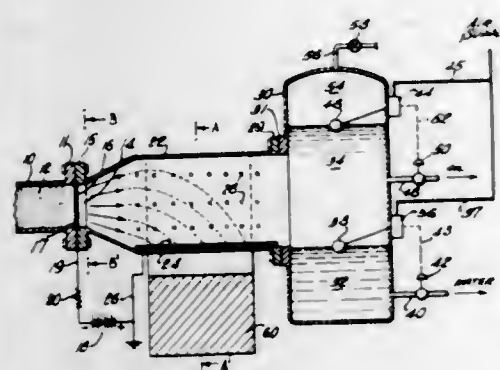
Laurence M. Hubby, Bellaire, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 22, 1964, Ser. No. 398,292  
18 Claims. (Cl. 204-180)

Emulsion flows through a screen electrode where par-

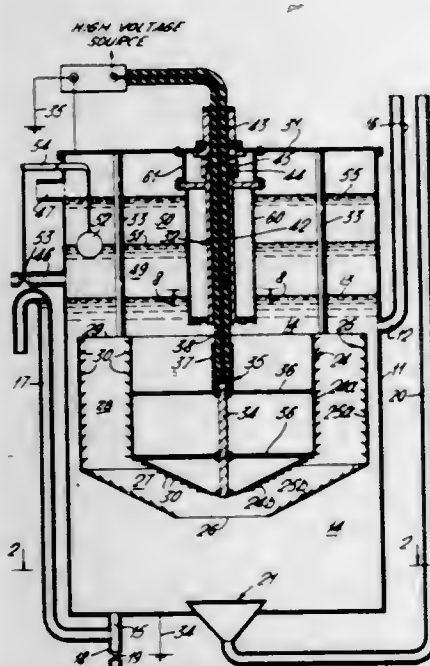


icles of dispersed phase pick up a charge. A subsequent magnetic field directs these charged particles toward op-



posite electrode where particles are neutralized causing coalescence. Settling in tank completes the separation.

**3,412,003**  
**METHOD FOR REMOVING OIL AND FOREIGN BODIES FROM WATER**  
Toshiyuki Tokumoto, Moricuchi, Osaka, Japan, assignor of one-half interest to Hiroji Yamada, Osaka, Japan  
Original application June 11, 1962, Ser. No. 201,705.  
Divided and this application Oct. 22, 1965, Ser. No. 517,163  
Claims priority, application Japan, June 12, 1961, 36/20,980; May 2, 1962, 37/18,034  
3 Claims. (Cl. 204-186)

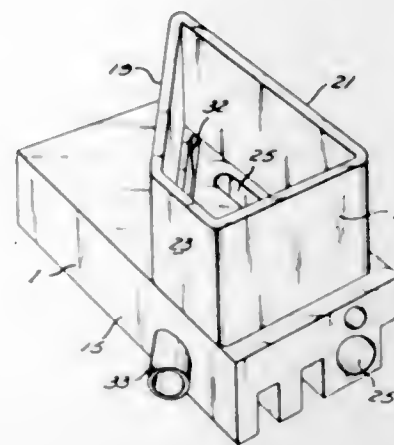


A method for removing oil from water by passing the liquid through a high voltage electrostatic field within a highly dielectric solvent.

**3,412,004**  
**TEST PLATING EQUIPMENT AND METHOD**  
John B. Winters, Bay Village, Ohio, assignor, by mesne assignments, to Enthone, Incorporated, West Haven, Conn., a corporation of Connecticut  
Filed Sept. 10, 1965, Ser. No. 486,413  
7 Claims. (Cl. 204-195)

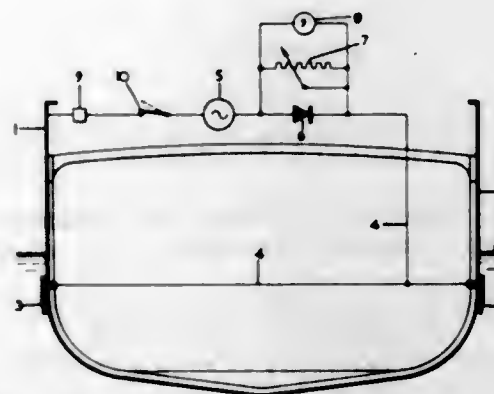
Laboratory test electroplating apparatus comprising a container for an electrolyte defined by a bottom wall and upright end and side walls connected thereto and adapted to contain an anode and cathode immersed in the electrolyte, an elongated horizontal recess in the bottom wall, a

compressed air-supply tube extending lengthwise within the horizontal recess and of lesser diameter than and spaced apart from the horizontal recess wall, the air supply tube having a plurality of spaced apart, small diameter, air exit holes extending through its surface, and an elongated annular space between the tube and the horizontal recess wall and defined thereby. A vertical elongated slot opening extends upwardly from the top of the horizontal recess or annular space through the top surface of the container bottom wall adjacent a lower edge



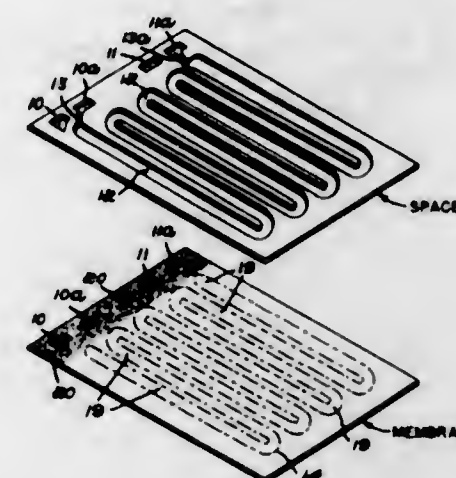
of the cathode therein. Compressed air emerging from the supply tube exit holes forms relatively small air bubbles in the electrolyte in the annular space, which combine with one another in the annular space to form larger air bubbles. The larger air bubbles grow to a still larger size in the electrolyte in the vertical elongated slot opening by combining with other air bubbles therein, and such still larger bubbles pass upwardly in random paths through the electrolyte in the container adjacent the cathode surface thereby causing considerable agitation and circulation of the electrolyte adjacent the cathode.

**3,412,005**  
**APPARATUS FOR CATHODIC PROTECTION**  
Ernst Beer, Sladzijde 22, The Hague, and Henri Bernard Beer, Nassaulaan 137, Schiedam, Netherlands  
Filed Jan. 16, 1964, Ser. No. 338,076  
Claims priority, application Netherlands, Jan. 18, 1963, 287,931  
3 Claims. (Cl. 204-196)



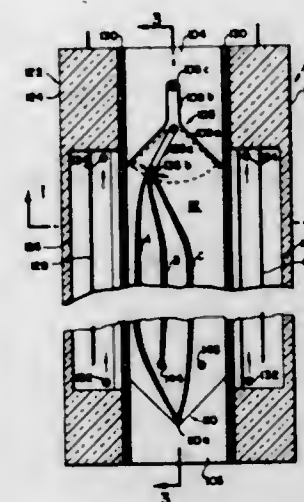
An apparatus for cathodically protecting a metal object against corrosion in an electrolyte, comprising a source of alternating current, a half wave rectifier, an electrode in an electrolyte, said source of current, rectifier and electrode being connected in series and the object and the source of current being connected in series, and an adjustable resistance shunting said half wave rectifier.

**3,412,006**  
**ION-EXCHANGE MEMBRANES**  
Samuel S. Alexander, Boxboro, and Vincent Cioffi, Braintree, Mass., assignors to Ionics, Incorporated, Cambridge, Mass.  
Filed Jan. 11, 1965, Ser. No. 424,770  
12 Claims. (Cl. 204-296)



This invention is directed to ion-exchange membranes for use in electrodialysis apparatus whereby certain areas of the membranes, especially the area around the manifold holes, are chemically treated by impregnating the area with a liquid monomer which is polymerized therein to form a cross-linked, substantially non-ionic polymer for the purpose of obtaining an area having increased stiffness and increased electrical resistance as compared to the untreated remaining area of the membrane.

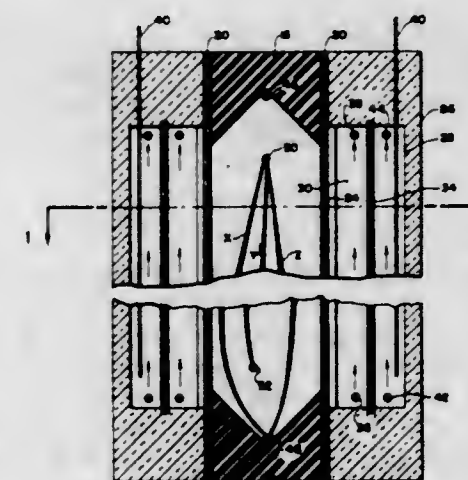
**3,412,007**  
**CONTINUOUS FLOW ELECTROPHORESIS APPARATUS**  
Allen Strickler, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California  
Filed Aug. 23, 1965, Ser. No. 481,855  
8 Claims. (Cl. 204-299)



1. An apparatus for continuous flow electrophoresis comprising  
a pair of substantially flat plates of electrically insulating material;  
means supporting said plates in substantially parallel, face-to-face relationship;  
spacer means for maintaining a separation between said plates and defining an electrophoresis working space therebetween;

means for introducing an electrolyte into said working space at a first point;  
means for venting said electrolyte from said working space at a second point, said electrolyte flowing as a laminar flow sheet in said working space between said first and second points;  
means for injecting into said working space downstream of said first point, a sample to be electrophoretically separated, said injecting means being adjustably positionable whereby said sample may be injected at any selected point across said flowing electrolyte sheet;  
means for removing a selected sample component band from said working space at a third point, downstream of said sample injection point, said sample component band removed depending upon the position of said sample injecting means; and,  
means for applying an electric potential gradient across said working space.

**3,412,008**  
**ELECTROPHORESIS APPARATUS**  
Allen Strickler, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California  
Filed Aug. 23, 1965, Ser. No. 481,679  
11 Claims. (Cl. 204-301)



1. In an apparatus for electrophoretically separating a sample into its components comprising means defining a working space for holding an electrolyte in which said electrophoretic separation of said sample takes place and including means adjoining each side of said working space whereby a potential gradient may be applied across said electrolyte in said working space, the latter means comprising

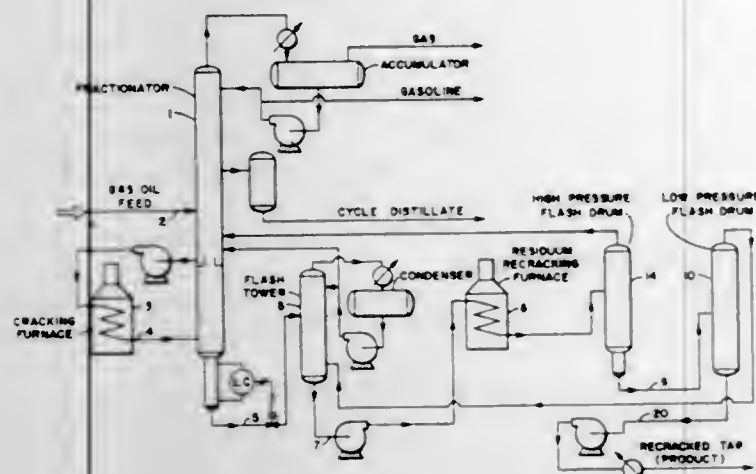
an ion-permeable barrier having an inner and an outer surface, said inner surface of said barrier being in contact with said electrolyte in said working space;  
means defining a chamber, said chamber being divided into an intermediate zone in communication with said outer surface of said ion-permeable barrier and an electrode space distal from said outer surface of said ion-permeable barrier;  
an electrode disposed in said electrode space;  
means for flowing buffer solution in said electrode space in contact with said electrode;  
means for flowing buffer solution in said intermediate zone in contact with said outer surface of said ion-permeable barrier, said intermediate zone substantially preventing bulk flow of said buffer solution from said electrode space to said working space and further substantially preventing transfer of ions generated at said electrode to said working space, yet affording a continuous electrically-conductive path between said electrode and said electrolyte in said working space; and  
a source of electrical power connected to said electrode.



### 3,412,009 PROCESS FOR PRODUCING CARBON BLACK OIL

John H. Smith, Carl D. Spangler, Jr., and Joseph R. Klovsky, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Mar. 15, 1967, Ser. No. 623,387  
6 Claims. (Cl. 208—72)

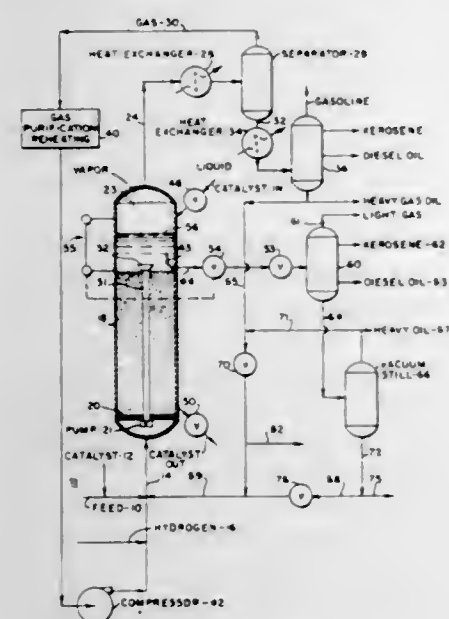


Process for the manufacture of carbon black feedstock oils by the thermal cracking of a tar derived from the thermal cracking of a virgin petroleum gas oil, followed by recovery of a cracked tar suitable for use as a carbon black oil.

### 3,412,010 HIGH CONVERSION LEVEL HYDROGENATION OF RESIDUUM

Seymour B. Alpert, Princeton, Ronald H. Wolk, Lawrence Township, Mercer County, and Michael C. Chervenak, Pennington, N.J., assignors to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey  
Continuation of applications Ser. No. 563,831 and Ser. No. 563,833, July 8, 1966. This application Nov. 21, 1967, Ser. No. 684,700

10 Claims. (Cl. 208—112)

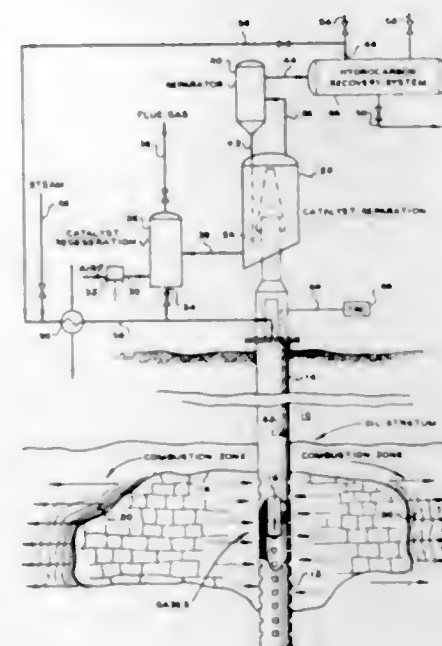


A process for the hydrogenation of a petroleum residuum containing at least 25 volume percent of material boiling above 975° F. by reacting the feed with hydrogen at elevated temperatures and pressures in an ebullated catalytic bed reactor, separating the vaporous from the liquid effluents, fractionating the effluents to produce fractions boiling above 680° F. and recycling one of these fractions to the reactor, which recycle results in product.

longed reactor life, increased conversion of the 975° F. plus material in the feed at lower severity levels and prevention of precipitation of asphaltenes in the feed.

### 3,412,011 CATALYTIC CRACKING AND IN SITU COMBUSTION PROCESS FOR PRODUCING HYDROCARBONS

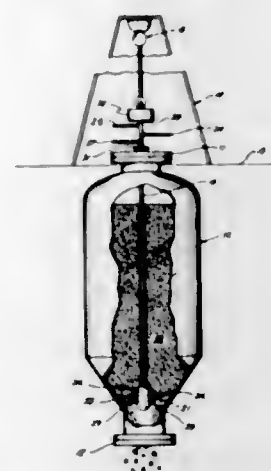
Robert E. Lindsay, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed Sept. 2, 1966, Ser. No. 577,062  
8 Claims. (Cl. 208—113)



A process for upgrading hydrocarbons produced in vapor form by in situ combustion within the subterranean oil stratum comprising contacting a vaporized hydrocarbon with a fluidized cracking catalyst within a production well, separating the catalyst from the resulting effluent, recovering the upgraded hydrocarbons, and recycling the catalyst to the subterranean oil stratum to crack the vaporous hydrocarbons.

### 3,412,012 PROCESS FOR DECKING A DELAYED COKER

John T. Patrick, Napa, Carl R. Walden, Rodeo, and Frank Heckel, Santa Maria, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California  
Filed Feb. 17, 1967, Ser. No. 616,825  
4 Claims. (Cl. 208—131)



The coke is formed around the drill stem used to remove coke from the delayed coker. The drill stem is rotated during coke formation.

### 3,412,013 REGENERATING A CRACKING CATALYST BY HYDROGEN AND OXYGEN TREATMENT

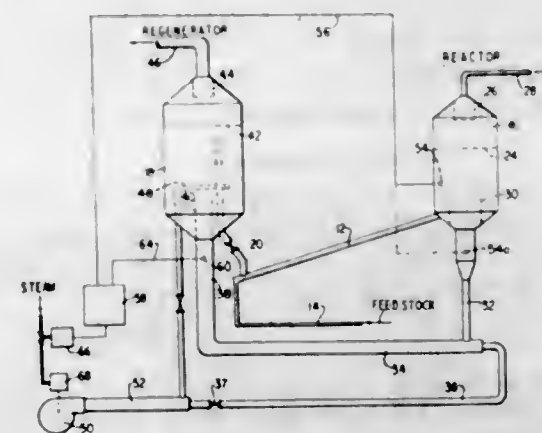
Vernon O. Bowles, Bedford, N.Y., assignor to Mobil Oil Corporation, a corporation of New York  
Continuation of application Ser. No. 318,694, Oct. 24, 1963. This application Feb. 15, 1967, Ser. No. 616,416  
9 Claims. (Cl. 208—120)



This document describes the cracking of hydrocarbons in a riser-cracking zone by contact with a crystalline aluminosilicate-containing catalyst. Deposition of carbonaceous material is limited during the conversion and subsequent hydrogenation can remove such materials from the catalyst without a need for oxidative regeneration of all the catalyst.

### 3,412,014 METHOD AND APPARATUS FOR CATALYTIC CRACKER CATALYST REGENERATION

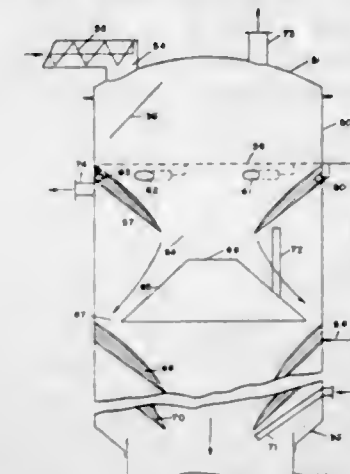
Emory D. Mattix and Richard A. Sharp, Lake Charles, La., assignors to Cities Service Oil Company, Tulsa, Okla., a corporation of Delaware  
Filed Mar. 14, 1967, Ser. No. 623,103  
10 Claims. (Cl. 208—164)



A fluid bed catalytic cracking process for controlling the coke content of regenerated catalyst by varying the supply of combustion supporting gases to the spent catalyst in response to an indication of coke content as obtained from a differential temperature reading across a point at the spent catalyst fluid bed adjacent the stripper in the reactor and a point in the spent catalyst air mixture stream at the inlet to the regenerator.

### 3,412,015 THIN FILM EVAPORATOR IN AN ADDUCTION PROCESS AND APPARATUS SYSTEM

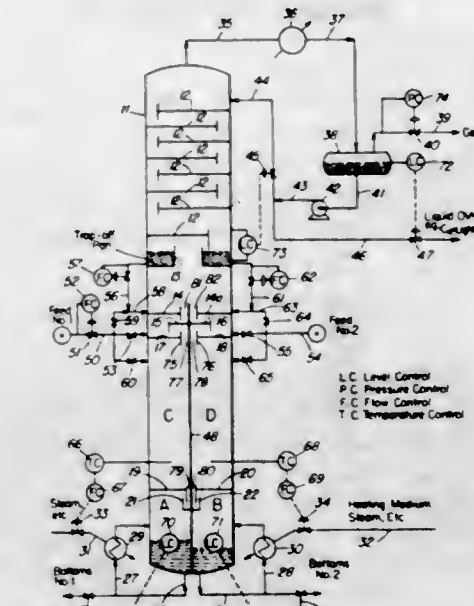
Klaus G. F. Schulze zur Wiesche, Petrus J. Antonissen, Willem van der Bunt, The Hague, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware  
Filed Aug. 9, 1965, Ser. No. 478,058  
Claims priority, application Netherlands, Aug. 10, 1964, 6409163  
24 Claims. (Cl. 208—308)



Separating organic liquids, at least one of which forms a solid adduct, by mixing the liquid with an adduct-forming compound and a volatile liquid, separating the solid adduct from the remaining liquid and introducing the adduct into a vertical cylindrical vessel containing conical baffles into which a hydrocarbon maintained at temperatures at least as high as the adduct-decomposition temperature is introduced tangentially to cause the adduct to decompose and the volatile liquid to vaporize from a thin film thereby avoiding clogging due to foaming. The disclosure also includes coating the conical baffles with material to which the adduct will not adhere and to the baffled vessel with tangential inlets in which the process is performed.

### 3,412,016 METHOD AND APPARATUS FOR CONTEMPORANEOUSLY FRACTIONATING A PLURALITY OF HYDROCARBON MIXTURES

Richard G. Graven, Armonk, N.Y., assignor to Mobil Oil Corporation, a corporation of New York  
Filed Mar. 29, 1967, Ser. No. 626,754  
5 Claims. (Cl. 208—354)



A single fractionating tower design is provided for obtaining at least two separate bottoms products thereof each having a desired composition by providing in the lower portion of the tower two or more compartments for.



retaining the separate liquid bottoms fractions. The tower is provided with a common refluxing section in the upper portions in combination with an intermediate tray arrangement about the upper end of the vertical baffle or baffles to provide for controlled distribution of liquid refluxed to the upper part of each compartment.

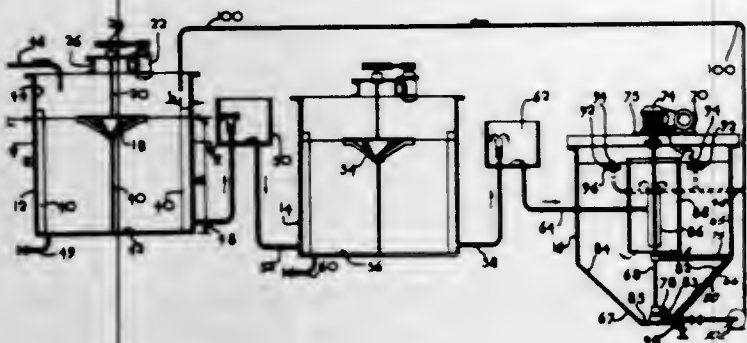
3,412,017

## SEWAGE TREATMENT

James W. Abson, Stockport, and Eric I. Clark, Cheadle, England, assignors to Simon-Carnes Limited, Stockport, Cheshire, England, a British company

Filed May 27, 1966, Ser. No. 553,386  
Claims priority, application Great Britain, June 17, 1965, 25,597/65

2 Claims. (Cl. 210-7)



In the treatment of sewage by the activated sludge process, primary settled sewage is aerated and then passed to a settling stage, from which stage the sludge is recycled to the aeration stage so as to maintain the suspended solids concentration in the aeration stage between 12,240 and 30,000 parts per million and provide a dissolved oxygen concentration of material passing from the aeration stage to the settling stage of at least 30% of saturation.

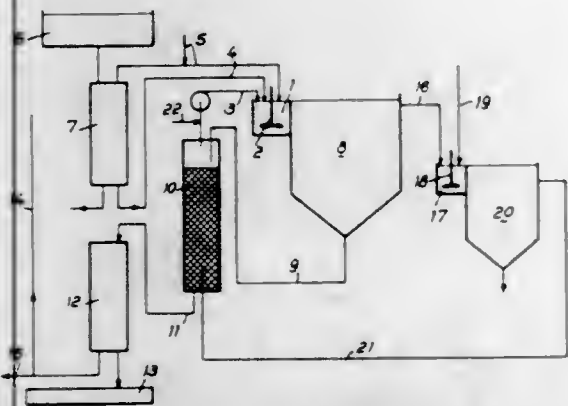
3,412,018

## WATER PURIFYING PROCESS

Pierre Monzie, Talence, France, assignor to Centre Technique de l'Industrie des Papiers, Cartons et Celluloses, Giers, Isere, France, and Institut du Pin, Cours de la Liberation at Gragnan, Gironde, France, both establishments of France

Filed Nov. 14, 1966, Ser. No. 593,807  
Claims priority, application France, Nov. 15, 1965, 38,337

10 Claims. (Cl. 210-21)



Residual waters containing wood and vegetable incrusting media and their degradation products, such as effluents from manufacture of cellulose and chemical and semi-chemical paper pulp, are purified by adjusting their pH to 2-5, contacting them with an organic phase con-

taining an amine insoluble in water and of molecular weight of at least 250 in solution in a diluting agent non-miscible in water and having a dielectric constant lower than 4.8 to form substantially water insoluble organophilic amine complexes and compounds of the organic matters and colored products of the water, following which the organic phase containing said complexes and the compounds is decanted from the purified water.

3,412,019

## METHOD OF FLOCCULATING SUSPENDED PARTICULATE MATTER FROM AN AQUEOUS MEDIUM

Merwin Frederick Hoover, Bethel Park, and Raymond J. Schaper and Jerry E. Boothe, Pittsburgh, Pa., assignors to Calgon Corporation, Pittsburgh, Pa.

No Drawing. Filed May 25, 1965, Ser. No. 458,753  
6 Claims. (Cl. 210-54)

Suspended matter is flocculated in aqueous media with polymers comprising repeating units derived from diallyl amine and quaternary ammonium monomers containing groups condensed through a Michael addition reaction from a vinyl type activated double bond compound.

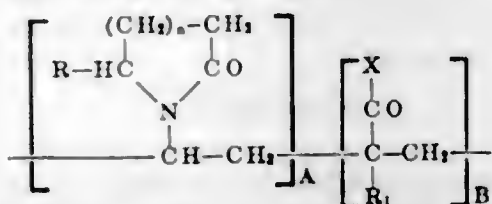
3,412,020

## METHOD FOR FLOCCULATING SUSPENDED INORGANIC SOLIDS

Julian Louis Azorlosa, Dover, Del., assignor to GAF Corporation, a corporation of Delaware

No Drawing. Filed Aug. 8, 1966, Ser. No. 570,755  
9 Claims. (Cl. 210-54)

1. In a process for flocculating mineral solids from aqueous dispersions, the improvement which comprises using as the flocculant agent in amounts of about 1/4 to 20 pounds per ton of mineral solids present in said dispersions, a hydrolyzed vinyl lactam/acrylamide copolymer having the following general formula:



wherein R representing a radical selected from the group consisting of hydrogen, methyl and ethyl radicals, wherein  $n$  represents an integer of from 1 to 3 inclusive, wherein  $R_1$  represents a radical selected from the group consisting of hydrogen and methyl, wherein X represents both -OH and -NH<sub>2</sub> in the ratio from about 3 to 50% of -OH and about 50-97% of -NH<sub>2</sub>, wherein A represents from about 40-90% by weight of the lactum moiety in said copolymer and wherein B represents from about 10-60% by weight of the acrylamide moiety in said copolymer.

3,412,021

## WATER-TREATING METHOD AND AGGLOMERATES OF N-HALOGENATED ORGANIC COMPOUNDS FOR USE THEREIN

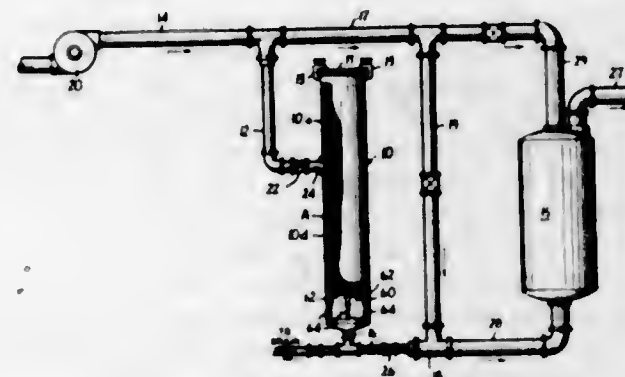
Laurene O. Paterson, 1219 E. Church St., Adrian, Mich. 49221

Continuation-in-part of application Ser. No. 6,052, Feb. 1, 1960. This application Sept. 15, 1964, Ser. No. 405,320

20 Claims. (Cl. 210-62)

1. An autonomic method of treating impure water, comprising passing the water in flowing contact with water-stable agglomerates of an N-halogenated organic compound having a low solubility in water of from 0.0001 to 1% by weight at 20° C., the labile N-halogens being selected from the group consisting of bromine and chlorine and at least one halogen being bromine, and imparting to the water at saturation at least 1 mg. per liter of active halogen, said agglomerates having good

shape retention in water, to dissolve substantially only from their exposed surfaces, and at a dissolution rate in distilled water to provide thereto a quantity of active halogen in the range of about 1 to about 3,000 mg. per minute per pound of agglomerated material exposed to the water, the exposed surfaces of said agglomerates reacting



automatically to provide halogen to the impure water in contact therewith, and maintaining a surface area exposure of agglomerates in continuous contact with the water being treated, the surface area exposure being sufficiently large to provide a predetermined active halogen residual to water flowed thereover.

3,412,022

## SCROUPING AGENT FOR BULKED MULTI-FILAMENT YARNS

James E. Obetz, Chester, and Kimon C. Dardoufas, Colonial Heights, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed May 18, 1965, Ser. No. 456,820  
15 Claims. (Cl. 252-8.7)

The invention provides multi-filament bulked yarn of novel frictional characteristics, namely inter-filamentary slip-stick frictional force of 300-800 grams as the low up to 600-1200 grams as the high by the method of Schlatter et al., Textile Research Journal, volume XXIX, pages 200-210 (1959). These forces are imparted by applying to the filaments either a substituted diphenyl ether or a substituted naphthalene, containing at least one alkyl substituent and containing an acidic group in each of the rings of the ether or in the non-alkylated ring of the naphthalene. Preferably a yarn-to-metal lubricant is also applied to the yarn, especially a polyalkylene ether, imparting yarn-to-metal frictional force between 30 and 120 grams as measured by the above Schlatter et al. method.

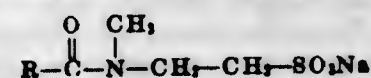
3,412,023

## SOLUBLE OIL COMPOSITION FOR USE IN LUBRICATING COMPOSITIONS

Charles L. Zaraw, Harvey, Ill., and David B. Sheldahl, Griffith, Ind., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 1, 1967, Ser. No. 619,582  
9 Claims. (Cl. 252-33.2)

A soluble oil composition which forms stable emulsions when mixed with substantial amounts of water and which contains a major amount (e.g. about 85 to 95 wt. percent) of mineral lubricating oil, a small amount (e.g. about 1 to 3 wt. percent) of water, at least about 0.1 wt. percent of an alkyl sulfo-amide (e.g. having the structure



wherein RCO is derived from tall oil acid) and at least about 2 wt. percent of either (1) an oil-soluble alkali metal or ammonium aromatic sulfonate (e.g. sodium mahogany sulfonate) or (2) an oil soluble alkali metal

3,412,024

## INHIBITION OF CORROSION OF METALS

James R. Stanford, Houston, Tex., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 7, 1964, Ser. No. 358,119  
7 Claims. (Cl. 252-8.55)

1. Corrosion inhibiting compositions wherein the active, corrosion inhibiting compounds consist essentially of (A) salts of (a) alkylbenzene sulfonic acids having 8-16 carbon alkyl groups and (b) partial amides of at least one of monomeric, dimeric and trimeric higher fatty acids and organic amines having a plurality of basic nitrogens, substantially all of which are in the form of amine salt groups with said alkylbenzene sulfonic acids, said amines selected from the group consisting of poly-alkylene polyamines having 3-10 amino groups and 2-6 carbon alkylene groups and N-aminoalkyl substituted piperazines wherein the aminoalkyl group has the formula H(HNR-)<sub>x</sub> wherein R is an alkylene group of 2-6 carbons and x is a small whole number, and (B) 10-150% by weight, based on said salts, of at least one of monomeric, dimeric and trimeric free higher fatty acids.

3,412,025

## METHOD FOR SCALE AND CORROSION INHIBITION

Anton G. Ostroff, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Sept. 22, 1965, Ser. No. 489,423  
5 Claims. (Cl. 252-8.55)

A method for inhibiting the corrosion of metal surfaces, and the formation of scale thereon, which surfaces are in contact with an aqueous solution (sour brine water) that is normally corrosive and scale forming to such surfaces. A mixture of cocoamine condensed with a plurality of mols of ethylene oxide and a water-soluble glassy polyphosphate is added to the solution in a small effective amount to inhibit corrosion and scale-formation on the metal surfaces.

3,412,026

## LUBRICANT COMPOSITIONS CONTAINING DITHIOCARBAMATES

Russell L. Booher, Edwardsville, Ill., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 12, 1966, Ser. No. 601,821  
8 Claims. (Cl. 252-33.3)

Oil compositions of outstanding oxidation stability are provided by incorporating therein a minor amount of an antimony dithiocarbamate and a hydroxybenzyl dithiocarbamate.

3,412,027

## LUBRICATING GREASES CONTAINING ETHYLENE-PROPYLENE COPOLYMER OR HALOGENATED ETHYLENE-PROPYLENE COPOLYMER

Arnold J. Morway, Clark, and Delmar L. Cottle, Highland Park, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed July 20, 1966, Ser. No. 566,472  
4 Claims. (Cl. 252-40.7)

Rubbery copolymers, of 30 to 80 wt. percent ethylene and 70 to 20 wt. percent propylene, having a viscosity average molecular weight of about 20,000 to 1,200,000 and which can be halogenated to 0.5 to 15 wt. percent halogen, impart stringiness and adhesiveness to lubricating greases thickened with calcium soap of C<sub>13</sub> to C<sub>20</sub> fatty acid or



a mixture of calcium salts of  $C_1$  to  $C_{10}$  fatty acid with calcium soap of  $C_{12}$  to  $C_{30}$  fatty acid.

3,412,028

# SYNTHETIC ESTER BASE LUBRICATING COMPOSITION CONTAINING A COPPER OR COBALT ACETYLACETONATE

Arthur W. Godfrey, Fishkill, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware  
No Drawing. Filed Dec. 13, 1966, Ser. No. 601,336  
5 Claims. (Cl. 252-42.7)

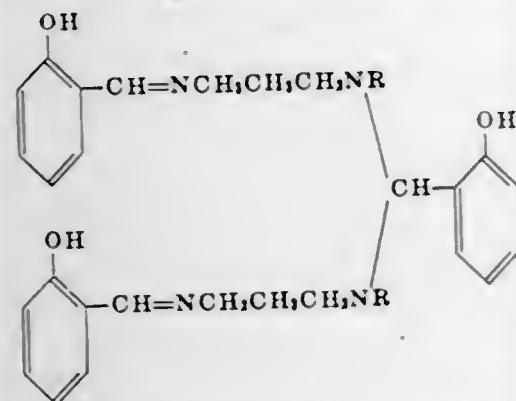
A synthetic lubricating oil composition for turbine engines is disclosed comprising a synthetic base oil and a metal bis(trifluoroacetylacetonate) from the class consisting of copper (II) and cobalt (II) in an amount ranging from 0.01 to 1.0 weight percent based on the weight of the lubricating oil composition.

3,412,029

# ORGANIC COMPOSITIONS

Harry J. Andress, Jr., Pittman, and Paul Y. C. Gee, Woodbury, N.J., assignors to Mobil Oil Corporation, a corporation of New York  
No Drawing. Filed Nov. 18, 1965, Ser. No. 508,563  
9 Claims. (Cl. 252-51.5)

1. Lubricant and liquid hydrocarbon fuel compositions normally susceptible of causing deterioration of metal surfaces, containing a small amount, sufficient to inhibit said deterioration, of a salicylaldehyde having the structure:



in which R is an alkyl group having from about 8 to about 18 carbon atoms.

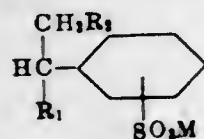
3,412,030

# PROCESS OF MELTING SNOW AND ICE

Nils Gösta Wahlberg, Ornskoldsvik, Sweden, assignor to Moench Domsjö Aktiebolag, Ornskoldsvik, Sweden, a limited company of Sweden  
No Drawing. Continuation-in-part of application Ser. No. 208,563, July 9, 1962. This application Jan. 27, 1965, Ser. No. 428,548  
Claims priority, application Sweden, July 10, 1961, 7,142/61

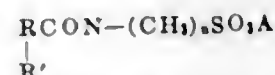
4 Claims. (Cl. 252-70)

1. A method of accelerating the melting of layers of snow or ice, which comprises causing the water formed by the natural melting of the snow or ice to penetrate the snow or ice more readily, by dissolving therein in situ as the water is formed a water-soluble organic wetting agent applied to the surface of the snow or ice in an amount of at least 0.01 gram per square yard of surface and selected from the group consisting of anionic, non-ionic and cationic wetting agents, in the absence of other melt-accelerating agents, the anionic wetting agent being selected from the group consisting of alkyl aryl sulfonates having the structure:

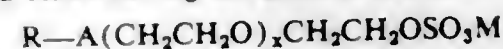


wherein M is selected from the group consisting of hydrogen, alkali metals, ammonium and organic amine cations,

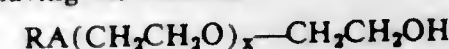
$R_1$  and  $R_2$  are alkyl, and at least one R is polypropylene, the entire alkyl group containing from about twelve to about fifteen carbon atoms; keryl benzene sulfonates; dodecyl benzene sulfonates; amidoalkane sulfonates having the formula:



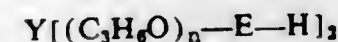
where A is selected from the group consisting of hydrogen, alkali metal or ammonium, n is a small whole number from one to about five, R' is selected from the group consisting of hydrogen, alkyl, aryl, and cycloaliphatic groups, and R is selected from the group consisting of alkyl and alkylene; esters of sulfuric acid with aliphatic alcohols of from ten to eighteen carbon atoms; sulfonated fatty oils; esters and ethers of isothionic acid; long chain fatty acid esters and long chain alkyl ethers of 2,3-dihydroxypropane sulfonic acid; sulfuric acid esters of monoglycerides and glycerol monoethers; sulfated ethoxylated derivatives of alkyl oxyethers and esters and thioethers and esters having the general formula:



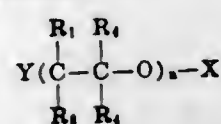
where M is selected from the group consisting of hydrogen, alkali metals and organic amine cations, R is a saturated or unsaturated hydrocarbon group having from eight to eighteen carbon atoms, or an aralkyl group having a saturated or unsaturated hydrocarbon group having from eight to eighteen carbon atoms attached to the aryl nucleus, and attached to A through the aryl nucleus, A is selected from the group consisting of ethereal oxygen and sulfur, amino, carboxylic ester and thiocarboxylic ester groups, and x is a number from eight to twenty; the nonionic wetting agent being selected from the group consisting of alkyl oxyethers and esters and thioethers and esters having the formula:



where A is selected from the group consisting of ethereal oxygen and sulfur, amino, carboxylic ester, and thiocarboxylic ester groups, R is a saturated or unsaturated hydrocarbon group having from eight to eighteen carbon atoms or an aralkyl group having a saturated or unsaturated hydrocarbon group of from eight to eighteen carbon atoms attached to the aryl nucleus, and attached to A through the aryl nucleus, and x is a number from eight to twenty; poly-1,2-alkyleneoxide wetting agents having the formula:



where E is a polyoxyalkylene chain wherein the oxygen/carbon atom ratio is at least 0.5, Y is the residue of an organic compound containing active hydrogen atoms, n is an integer and x is an integer greater than one, the values of n and x being such that the molecular weight of the compound exclusive of E is at least 900, as determined by hydroxyl number; and poly-1,2-alkyleneoxide wetting agents having the formula:



wherein Y is the residue of an organic compound containing a single hydrogen atom capable of reacting with a 1,2-alkylene oxide,  $R_1$ ,  $R_2$ ,  $R_3$  and  $R_4$  are selected from the group consisting of hydrogen, aliphatic and aromatic radicals, at least one such substituent being a radical other than hydrogen, n is a number greater than 6.4, and X is a water-solubilizing group; and cationic wetting agents selected from the group consisting of the higher fatty acid esters of hydroxy amide quaternary salts; quaternary ammonium halides; sulfonated quaternary ammonium halides; sulfated quaternary ammonium halides; fatty amines having from eight to eighteen carbon atoms; polyamines made from the reduction of polymerized un-

saturated fatty nitriles; quaternary compounds from alkyl halides and hexamethylene tetramine; the reaction products of alpha-halogenated fatty acid anilides or esters with tertiary amines; reaction products of long chain alkyl phenols with amines and aldehydes, wherein the alkyl group of the phenol has from six to eighteen carbon atoms; the aminoalkylene amines having the formula:



where R is an alkyl group having from six to eighteen carbon atoms, and  $R_1$  and  $R_2$  are alkyl or hydroxyalkyl groups of from one to five carbon atoms; the amidoalkylene quaternary ammonium salts having the formula:



where R is an alkyl group having from six to eighteen carbon atoms,  $R_1$ ,  $R_2$  and  $R_3$  are alkyl, aryl, or alkaryl, and x is an anion; alkyl ether amines having the formula:



and their quaternary ammonium salts:



where R is an alkyl group of from six to eighteen carbon atoms,  $R_1$ ,  $R_2$  and  $R_3$  are alkyl, aryl, or alkaryl, and X is an anion; the alkyl thioether amines:



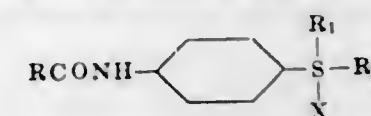
and their quaternary ammonium salts:



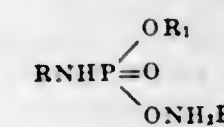
where R is an alkyl group having from six to eighteen carbon atoms,  $R_1$ ,  $R_2$  and  $R_3$  are alkyl, aryl, or alkaryl, and X is an anion; alkyl sulfonium compounds of the type:



where R is an alkyl group having from six to eighteen carbon atoms,  $R_1$  and  $R_2$  are alkyl, aryl, or alkaryl, and X is an anion; amidosulfonium salts having the formula:



where R is an alkyl group having from six to eighteen carbon atoms,  $R_1$  and  $R_2$  are alkyl, aryl, or alkaryl, and X is an anion; and aminophosphonates having the formula:



where R is an alkyl group having from six to eighteen carbon atoms, and  $R_1$  is alkyl, aryl, or alkaryl.

3,412,031

# ELECTRIC-FIELD-RESPONSIVE COMPOSITIONS

Thomas W. Martinek, Crystal Lake, and Donald L. Klass, Barrington, Ill., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Original application Mar. 29, 1962, Ser. No. 183,630, now Patent No. 3,250,726. Divided and this application Mar. 16, 1966, Ser. No. 555,660

12 Claims. (Cl. 252-75)

An electroviscous fluid comprising a non-polar oleaginous vehicle, such as mineral oil, and particulate silica having not less than about 6 silica-bonded hydroxyl groups per square millimicron of surface area. The fluid is useful in devices such as clutches, chucks, etc. that employ electric field-responsive fluids.

3,412,032

# ETCHING BATH COMPOSITION

Richard H. Jenks, Sauquoit, N.Y., assignor to Revere Copper and Brass Incorporated, Rome, N.Y., a corporation of Maryland

No Drawing. Filed Feb. 1, 1965, Ser. No. 429,635

1 Claim. (Cl. 252-79.4)

1. A metal controlled-etching bath consisting essentially of an aqueous solution containing by volume about 5 to 7%  $H_2SO_4$  and about 5 to 6%  $H_2O_2$ , said solution further containing about 0.1 to 1% by weight of an organic corrosion inhibitor.

3,412,033

# GERMICIDAL DETERGENT COMPOSITIONS

Kenneth S. Karsten, Westport, and Wilbur S. Taylor, Norwalk, Conn., assignors to R. T. Vanderbilt Company, Inc., New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 85,005, Jan. 26, 1961. This application Oct. 21, 1965, Ser. No. 500,173

7 Claims. (Cl. 252-107)

1. A hydrophilic skin cleansing composition consisting essentially of at least one synthetic organic detergent selected from the group consisting of nonsoap anionic, nonionic, cationic and amphoteric detergents and fatty acid soaps and a germicide selected from the group consisting of 1-hydroxy-2-pyridinethione, 2,2'-dithiopyridine-1,1-dioxide, and inorganic metal salts of 1-hydroxy-2-pyridinethione in which the cation is selected from the group consisting of sodium, zinc, titanium, iron, manganese, zirconium, tin, cadmium, and barium, in an amount of from about .01% to about 10% by weight, said germicide being both skin-substantive and germicidally active in said composition.

3,412,034

# METHOD FOR PRODUCING FINE PIGMENT PARTICLES IN A LIQUID VEHICLE

Maurice Dwight McIntosh, Willoughby, Zenon Kazenas, Euclid, and Joseph L. Switzer, Gates Mills, Ohio, assignors to Switzer Brothers, Inc., Cleveland, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of applications Ser. No. 70,927, Nov. 22, 1960; Ser. No. 274,971, Apr. 22, 1963; and Ser. No. 291,272, June 28, 1963. This application July 15, 1966, Ser. No. 565,377

26 Claims. (Cl. 252-301.2)

1. A method of producing an improved solid-film-forming dispersion of solid particles in a liquid vehicle, which comprises agitating a dispersed phase of normally solid meltable synthetic organic resin in molten form in a continuous phase that is formed of an organic solid-film-forming normally liquid vehicle in which the dispersed phase is substantially insoluble, while maintaining said vehicle in liquid form, converting the dispersed phase from molten to solid state, and promoting conversion of the dispersed phase resin to the solid state by addition of a separate resin-forming reactant to the dispersed phase resin to effect a chemical reaction raising the dispersed phase resin melting temperature.

14. A method of producing an improved solid-film-forming dispersion of solid particles in a liquid vehicle, which comprises agitating a dispersed phase of normally solid meltable synthetic organic resin in molten form in a continuous phase that is formed of an organic solid-film-forming normally liquid vehicle in which the dispersed phase is substantially insoluble, while maintaining said vehicle in liquid form, incorporating a compatible fugitive plasticizer in the dispersed phase resin for depressing the melting temperature thereof and facilitating formation of fine liquefied discrete particle size thereof as a dispersed phase in such continuous phase vehicle, and converting







thereof;  $R_4$  is a member selected from the group consisting of hydrogen, hydroxypolyalkylenearylalkyl, alkoxy, alkyl and cycloalkyl radicals;  $n$  is a number having a value of at least one;  $x$  is an integer having a value of 0 to 1; and  $y$  is an integer of 1 to 3.

3,412,048

**FLAME RETARDANT POLYURETHANES**

Alec V. Mercer, Heald Green, and Janet E. Jones, Sale, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware  
No Drawing. Filed Mar. 8, 1965, Ser. No. 438,081  
Claims priority, application Great Britain, Mar. 11, 1964, 10,262/64

6 Claims. (Cl. 260—2.5)

Flame retardant rigid polyurethane foams having satisfactory humid aging properties are prepared by reacting an organic polyisocyanate or polyisothiocyanate with a hydroxy reactant consisting essentially of (1) a phosphorus-containing polyol, (2) an epichlorohydrin-based polyol and (3) a non-halogen-containing polyether polyol, said hydroxy reactant containing from 1 to 2% by weight phosphorus and from 10 to 20% by weight halogen.

3,412,049

**PLASTIC FOAMS AND METHODS OF MAKING SAME AND COMPOSITIONS USED THEREIN**

George T. Gmitter, Akron, Ohio, assignor to The General Tire & Rubber Company, a corporation of Ohio  
No Drawing. Filed May 3, 1965, Ser. No. 452,907

6 Claims. (Cl. 260—2.5)

Plastic foams are made in a one-shot process by the protovinylation of divinyl sulfone or comparable polymethylene sulfonyl compound with an active hydrogen material which, at least in part, is a trifunctional active hydrogen compound, e.g., trithiol glycerol, in the presence of a pneumatogen, e.g., trichloro trifluoroethane. The resulting plastic foams may be rigid or flexible of a closed cell type or an open cell type, have a density, for example, of 25–30 kg./m.<sup>3</sup> and exhibit high thermal stability.

3,412,050

**COAL TAR PREPOLYMERS AND THE CURE PRODUCTS THEREOF**

Harold L. Elkin, Levittown, Chauncey C. De Pugh, Springfield, and Joseph L. Schwartz, Philadelphia, Pa., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 248,441, June 17, 1963. This application July 19, 1966, Ser. No. 566,209

10 Claims. (Cl. 260—2.5)

Liquid polyurethane prepolymers which are reaction products of a coal tar having an active hydrogen content and an organic diisocyanate. Also, the cured polyurethanes and polyurethane foams obtained from such prepolymers.

3,412,051

**PENTAERYTHRITOL PHOSPHITES AS FLAME-RETARDANTS IN FOAMS AND ELASTOMERS**

Charles F. Baranuckas and Irving Gordon, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York  
No Drawing. Original application July 16, 1963, Ser. No. 295,503, now Patent No. 3,310,609, dated Mar. 21, 1967. Divided and this application Aug. 25, 1966, Ser. No. 600,283

3 Claims. (Cl. 260—2.5)

This invention is directed to the novel composition such as polyvinyl chloride resin or a polyurethane foam which includes novel phosphites formed by reacting a pentaerythritol-type product with a triorgano phosphite, for example.

3,412,052

**NOVEL FLAME RETARDANT PLASTIC COMPOSITIONS**

Bert S. Taylor, New York, N.Y., and Martin R. Lutz, Arlesheim, Basel-Land, Switzerland, assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Application Oct. 15, 1963, Ser. No. 316,423, now Patent No. 3,325,563, dated June 13, 1967, which is a continuation-in-part of application Ser. No. 233,505, Oct. 25, 1962. This application Oct. 5, 1966, Ser. No. 608,237

6 Claims. (Cl. 260—25)

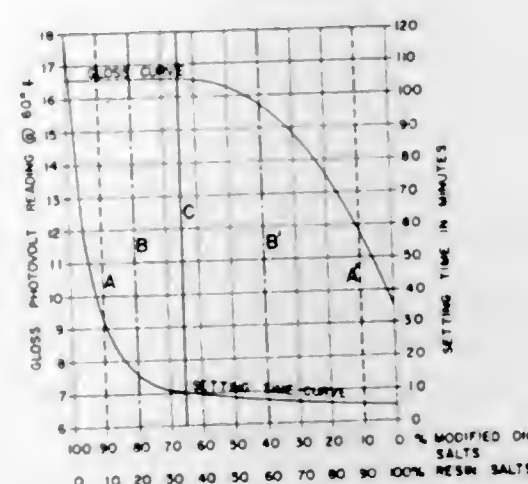
This application discloses the use of novel bis(bromohalopropyl) bromohalopropylphosphonates, whose bromohalopropyl radicals are selected from the group consisting of 1-bromo-3-halo-2-propyl, 2-bromo-3-halo-1-propyl and 2-halo-3-bromo-1-propyl, and corresponding polyphosphonates as flame retardants for cellulose acetate, polystyrene and polyolefin plastics.

3,412,053

**PRINTING INKS AND VARNISHES**

Michael Pugliese, Passaic, N.J., assignor to J. M. Huber Corporation, Locust, N.J., a corporation of New Jersey  
Continuation-in-part of application Ser. No. 464,535, June 16, 1965. This application July 7, 1966, Ser. No. 563,607

18 Claims. (Cl. 260—18)



A high gloss, quick drying printing varnish, or a corresponding ink, containing an organic solvent, a soluble salt of an acidic resin of an acid number of at least 40 and a nitrogenous base, and a soluble salt of an acidic modified drying oil of acid number of at least 40 and a nitrogenous base, is applied to a porous substrate. Upon decomposition of the respective salts to free base and acidic resin and the acidic modified drying oil, said acidic resin and said acidic modified drying oil are insolubilized and deposit on the porous substrate.

3,412,054

**WATER-DILUTABLE POLYURETHANES**

Charles L. Milligan, South Charleston, and Kenneth L. Hoy, St. Albans, W. Va., assignors to Union Carbide Corporation, a corporation of New York  
No Drawing. Filed Oct. 31, 1966, Ser. No. 590,476

7 Claims. (Cl. 260—18)

Water dilutable polyurethanes are prepared by reacting an amine or ammonia with a urethane polymer containing free carboxyl groups. Said urethane polymer is prepared by reacting an organic polyisocyanate with a 2,2-di(hydroxymethyl)carboxylic acid. The water-dilutable polyurethanes are useful as surface coatings and printing inks.

3,412,055

**RESINOUS COATING COMPOSITIONS COMPRISING THE LATENT CURING AGENT PHOSPHORUS TRICHLORIDE**

Jerry Norman Koral, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine  
No Drawing. Filed May 23, 1966, Ser. No. 551,908  
10 Claims. (Cl. 260—21)

A stable, high gloss imparting low temperature curable coating composition which comprises a resinous component (A) of from about 95 to 60% by weight of:

- (1) a curable resinous component which consists of a free hydroxyl function containing resin selected from the group consisting of acrylic resins, vinyl resins, polyester resins and polyepoxide resins, and from 5 to 40% by weight of
  - (2) a cross-linking agent composed of a substantially fully etherified hexamethylol melamine and
- (B) as a curing agent component from 0.5 to 6% by weight based on the total resin solids of the latent curing catalyst phosphorus trichloride.

3,412,056

**WATER-SOLUBLE ALKYD RESINS**

Raymond V. Crawford, Greasby, Alan G. Roberts, Wallace, and Patrick A. Toseland, Woolton, England, assignors to J. Bibby & Sons Limited, Liverpool, England, a British company

No Drawing. Filed Sept. 13, 1963, Ser. No. 308,686  
Claims priority, application Great Britain, Sept. 21, 1962, 35,930/62

5 Claims. (Cl. 260—22)

1. A method of preparing a water-soluble alkyl resin which comprises partially esterifying with a polyhydric alcohol at an alkyl resin forming temperature of at least 160° C., a tri-carboxylic acid which is a Diels-Alder adduct prepared by reaction of a dibasic dienophile with a substance selected from the group consisting of conjugated polysaturated fatty acids and lower alkyl esters thereof, the dienophile being present in an amount substantially equivalent to the conjugated diene content of the fatty acid compound, said polyunsaturated compounds containing a conjugated trans-trans diethenoid system until the reaction product has an acid value of between 50 and 100.

3,412,057

**POLYOLEFIN-ACETOGLYCERIDE COMPOSITIONS HAVING REDUCED GAS PERMEABILITY**

Shigeo Fujitani, Kanagawa-ken, Japan, assignor to Union Carbide Corporation, a corporation of New York  
No Drawing. Filed Mar. 10, 1965, Ser. No. 438,748  
Claims priority, application Japan, Mar. 16, 1964, 39/14,487

10 Claims. (Cl. 260—23)

The gas permeability of films obtained from polyolefin compositions can be significantly decreased by incorporating in the polyolefin composition specific amounts of acetoglycerides of fat forming fatty acids or mixtures of monoacetoglycerides and diacetoglycerides of fat forming fatty acids.

3,412,058

**ANTICHECKING WAX FOR RUBBER**

Jackson S. Boyer, Claymont, Del., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey  
No Drawing. Filed Apr. 20, 1966, Ser. No. 543,788  
12 Claims. (Cl. 260—4)

A rubber composition having improved resistance to oxidation comprising rubber containing 1–30 parts per 100 parts by weight of rubber of an antichecking wax composition consisting essentially of, by weight, 70–99%

paraffin wax melting in the range of 120°–138° F. and 1–30% ethylene-vinyl acetate copolymer containing 1 to 60 weight percent copolymerized vinyl acetate.

3,412,059

**AQUEOUS DISPERSION COATING CONTAINING WAX AND CERTAIN ACRYLATE TYPE POLYMERS**

Jerome H. Stickelmeyer and John C. Safranski, Jr., Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Filed Dec. 12, 1963, Ser. No. 329,983  
4 Claims. (Cl. 260—28.5)

Aqueous dispersions containing wax and a water soluble copolymer solution wherein the copolymer contains methyl methacrylate, a polymerizable carboxylic acid, and an acrylate type monomer are employed to form a scratch resistant, clear, relatively block free coating having excellent slip characteristics on polystyrene-type shaped articles.

3,412,060

**METHOD OF PREPARING AQUEOUS SOLUTIONS OF ACRYLAMIDE POLYMERS WITH DIMETHYL SULFOXIDE**

Amir M. Sarem, Yorba Linda, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California  
No Drawing. Filed Dec. 13, 1965, Ser. No. 513,571  
20 Claims. (Cl. 260—29.6)

Difficultly water soluble solid polymers which are insoluble in dimethyl sulfoxide can be rendered readily water soluble by contacting the solid polymer with liquid dimethyl sulfoxide prior to dissolution in aqueous solvent. The invention includes a composition comprising minor proportions of water soluble acrylamide polymer and dimethyl sulfoxide in aqueous solution.

3,412,061

**WATER-DISPERSED HIGH-SOLIDS-CONTENT ADHESIVES OF ELASTOMERS AND TACKIFIERS AND THE METHOD OF PRODUCTION OF THE AQUEOUS DISPERSION**

John Jacob Drukker, Wyckoff, N.J., assignor to The Flintkote Company, New York, N.Y., a corporation of Massachusetts  
No Drawing. Filed Nov. 3, 1964, Ser. No. 408,649  
5 Claims. (Cl. 260—29.7)

A process for producing improved aqueous dispersions of tackified rubber adhesives having high solids content is taught involving first providing sufficient surface active agents in a rubber latex to disperse subsequently added tackifier resins and thereafter dispersing tackifier resins in the latex in an amount sufficient to tackify the rubber of the latex.

3,412,062

**PRODUCTION OF CARBON FIBRES AND COMPOSITIONS CONTAINING SAID FIBRES**

William Johnson, Leslie Nathan Phillips, and William Watt, Farnborough, England, assignors to National Research Development Corporation, London, England, a British company  
No Drawing. Filed Apr. 19, 1965, Ser. No. 449,320  
Claims priority, application Great Britain, Apr. 24, 1964, 17,128/64

17 Claims. (Cl. 260—37)

According to the invention carbon fibres having high tensile strength and high Young's modulus are made by the conversion of organic polymer fibre, such as polyacrylonitrile, by the combined effect of heating in a non-oxidising atmosphere to a carbonising temperature of up to about at least 1000° C. and the application of longitudinal tension at some stage of the conversion. The pro-



ess preferably includes a preliminary step of heating the polymer fibre in an oxidising atmosphere at from 200–250° C. for sufficient time to achieve complete permeation of oxygen throughout the fibre whilst held under tension such that during oxidation there is little or no longitudinal shrinkage of the fibre. The oxidised fibre may subsequently be carbonised and heat treated without tension to give carbon fibre in some cases having an ultimate tensile strength of  $260 \times 10^3$  lb. per square inch of a Young's modulus of  $60 \times 10^6$  lb. per square inch.

3,412,063

# LOW TEMPERATURE CURED CERAMIC COATING COMPOSITION

Enos Dean Jarboe and Prosper Louis Soucy, St. Louis, Mo., assignors to Plas-Chem Corporation, St. Louis, Mo., a corporation of Missouri  
No Drawing. Filed Sept. 7, 1965, Ser. No. 485,621  
5 Claims. (Cl. 260—37)

A liquid coating composition that can be air-cured or heat-cured, using a silicate base typified by tetraethyl orthosilicate and aluminum oxide to provide a hard infusible coating for various types of substrata. Titanium dioxide may be added for improved results, together with trimethyl borate or tetra butyl titanate as reaction accelerators and various suspension agents to provide a one package liquid composition providing a hard infusible and fast curing coating with high dielectric strength and a high degree of inflammability.

3,412,064

# OLEFIN POLYMER COMPOSITION

Gordon D. Brindell, Wayne, N.J., assignor to Uniroyal, Inc., a corporation of New Jersey  
No Drawing. Filed Nov. 8, 1965, Ser. No. 506,867  
8 Claims. (Cl. 260—45.85)

Polypropylene is stabilized by addition of (1) a phenolic phosphite which is a reaction product of a substituted hydroquinone [e.g., di(t-butyl) hydroquinone] with phosphorus trihalide or triphenyl phosphite, with or without an alkyl phenol (e.g., nonylphenol), and (2) a dialkyl thiodipropionate (e.g., dilauryl thiodipropionate).

3,412,065

# CROSS-LINKABLE HETEROCYCLIC POLYMERS

Morris L. Nielsen and Leo P. Parts, Dayton, Ohio, assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware  
No Drawing. Filed Dec. 28, 1964, Ser. No. 421,658  
15 Claims. (Cl. 260—47)

New heterocyclic polymers containing in the polymer chain a diazadiphosphetidine dioxide unit from which is pendant a cross-linkable group, —NH(Y), wherein Y is hydrocarbyl; together with the process for making same by means of diimidazol-1-yl phosphorus compounds. Said polymers are useful as adhesives for laminates.

3,412,066

# POLYCONDENSATION CATALYSTS FOR THE PREPARATION OF POLYESTERS AND POLYETHERESTERS

Robert Schmegg, Dormagen, Herbert Pelousek, Dormagen-Horrem, Robert Dippelhofer, Dormagen, and Herbert Nordt and Helmut Adolf Dortmann, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany  
No Drawing. Filed Feb. 9, 1965, Ser. No. 431,471  
5 Claims. (Cl. 260—47)

As a catalyst for the preparation of polyesters and polyetheresters by polycondensation, a member selected

from the group consisting of (1) substantially equal parts of antimony triphenyl and germanium dioxide, and (2) substantially equal parts of antimony triphenyl and zinc acetyl acetate.

3,412,067

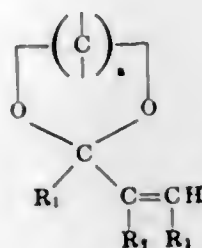
# CURABLE COMPOSITIONS

James J. Sanderson, Chester Springs, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 1, 1964, Ser. No. 400,952

20 Claims. (Cl. 260—47)

This application claims curable compositions consisting essentially of (A) units of a compound containing a plurality of cyclic radicals having the structural formula



wherein:



represents carbon atoms in the ring,  $a$  is an integer of 2 or 3; all but one of the valences of the carbon atoms are satisfied by a monovalent radical, the one remaining valence connecting the cyclic radical to at least one other such cyclic radical through an innocuous polyvalent chain radical having 4–8 carbon atoms in the connecting portion;  $R_1$  and  $R_2$  are H or  $CH_3$  free radicals; and  $R_3$  is a monovalent radical, and (B) units of a phenolic compound having at least three reactive sites per molecule in an amount of greater than 0.5 to about 1.7 equivalents per equivalent of the (A) compound. These compositions form, upon curing, solid infusible resins which are especially useful for electrical insulation and encapsulation.

3,412,068

# WATER-SOLUBLE RESINS AND THEIR PREPARATION, SAID RESINS RESULTING FROM SIMULTANEOUS CONDENSATION OF A KETONE, AN ALDEHYDE, A MONOHYDRIC PHENOL AND RESORCINOL

Robert M. Gemmill, Jr., Woodbury, and John W. Schick, Cherry Hill, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Continuation of application Ser. No. 369,008, May 20, 1964. This application Sept. 28, 1967, Ser. No. 671,485

8 Claims. (Cl. 260—50)

An improved water-soluble, thermosettable resin is produced by reacting an aldehyde, a ketone, and a phenol in a one-step polycondensation reaction that is catalyzed with a base, in which 1–25 mole percent of the phenol is resorcinol. In the final resin product, the molar pro-

portions of aldehyde, ketone, and phenol present are between about 3 and about 6 moles of the aldehyde, between about 1 and about 1.5 moles of the ketone per mole of the phenol. These resins are useful as binders for bonded products made from fibers, particles, or sheets, which bonded products possess properties of high bond strength and are resistant against weakening of the bond from exposure to water. The use of resorcinol provides resins having improved solubility and longer shelf life. Resorcinol is the only polyhydroxy phenol found to give such improvement.

3,412,069

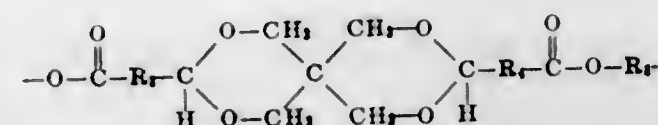
# POLYESTERS WITH SPIRO STRUCTURE

Leonard M. Rice, Ardmore, Pa., and John B. Clements, Short Hills, N.J., assignors to Celanese Corporation, a corporation of Delaware

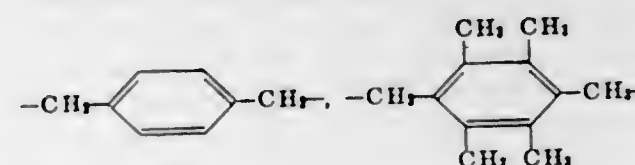
Continuation of application Ser. No. 782,885, Dec. 24, 1958. This application May 20, 1966, Ser. No. 551,806

3 Claims. (Cl. 260—75)

Polyesters of 2,4,8,10 tetroxaspiro [5.5] undecane dicarboxylic acids and dihydroxy compounds consisting essentially of recurring units of the structure



where  $R_3$  and  $R_4$  are alkylene radicals and  $R_5$  is selected from the group consisting of



and



3,412,070

# FIBERS OF A TEREPHTHALATE/ETHYLENE GLYCOL POLYESTER CONTAINING LESS THAN 0.5 PERCENT BY WEIGHT OF PHOSPHORUS INCORPORATED THEREIN BY PHOSPHONIC ACID ESTER LINKAGES

Franz Jakob, Hofheim, Taunus, and Hans Hoyer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main-Hochst, Germany, a company of Germany

No Drawing. Continuation-in-part of application Ser. No. 204,044, June 21, 1962. This application Oct. 11, 1966, Ser. No. 585,754

Claims priority, application Germany, June 24, 1961, F 34,265

8 Claims. (Cl. 260—75)

Readily dyeable fibers and filaments of a thermostable polyester containing 0.05 to 0.5 percent by weight of phosphorus incorporated therein by phosphonic acid linkages and prepared by condensing (A) isophthalic acid and/or

terephthalic acids or their esters with (B) ethylene glycol and (C) a phosphonic acid ester



or a polymeric product obtained by heating a phosphonic acid di(β-chloroethyl) ester.

3,412,071

# POLYURETHANES CURED WITH POLYAMINE CURING AGENTS

Norman K. Sundholm, Middlebury, Conn., assignor to Uniroyal, Inc., a corporation of New Jersey  
No Drawing. Application Dec. 23, 1964, Ser. No. 420,784, which is a continuation-in-part of application Ser. No. 383,974, July 20, 1964. Divided and this application Oct. 4, 1966, Ser. No. 584,084

1 Claim. (Cl. 260—75)

Mixtures of polyamines formed by condensation, in the presence of an acid, of aniline, 2-chloroaniline, and formaldehyde are improved curing agents for liquid isocyanate-terminated polyurethanes.

3,412,072

# POLYUREAS

Constantine J. Boubouls, Union, and Isidor Kirshenbaum, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware  
No Drawing. Filed Dec. 30, 1964, Ser. No. 422,405  
11 Claims. (Cl. 260—77.5)

Improved polyureas, useful for molding compounds, yarns and the like, having high melting points below their decomposition temperature and high hardness are prepared by reacting a proto-urea compound with a mixture of diamines comprising about 75 to about 85 mole percent acyclic diamine and about 25 to about 15 mole percent cyclic diamine.

3,412,073

# PROCESS FOR POLYMERIZING PIVALOLACTONE

Milton Jones Hogsed, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 28, 1965, Ser. No. 517,078

1 Claim. (Cl. 260—78.3)

1. A process for polymerizing pivalolactone comprising mixing said lactone with tribenzylstibine and heating the mixture at a temperature in the range of about 50° to about 300° C. until poly(pivalolactone) is formed.

3,412,074

# 2-HYDROXYALKYL ACRYLATE COPOLYMER-α,β-UNSATURATED DICARBOXYLIC ACID PARTIAL ESTERS

Kenneth S. Derrick, College Station, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 7, 1964, Ser. No. 388,301

9 Claims. (Cl. 260—78.4)

1. A thermosettable resin composition which comprises the product of reaction of (A) an α,β-unsaturated dicarboxylic acid anhydride with (B) a copolymer containing pendant hydroxyl groups; the molar ratio of the anhydride to the hydroxyl group being in the range of 0.8:1 to about 1.2:1 and the copolymer comprising about 20 to about 60 percent by weight of a 2-hydroxyalkyl ester of acrylic acid or methacrylic acid and about 80 to about 40 percent by weight of at least one other copolymerizable monomer selected from the group consisting of vinyl aromatic monomers, vinyl chloride and vinylidene chloride.



3,412,075

## PRODUCTION OF 1,3-DIENE POLYMERS

Herbert Naarmann, Ludwigshafen (Rhine), and Ernst-Guenther Kastning, Assenheilm, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany  
No Drawing. Filed Mar. 9, 1965, Ser. No. 438,407  
Claims priority, application Germany, Mar. 13, 1964, B 75,895

4 Claims. (Cl. 260—78.5)

A process for producing 1,3-diene polymers in which polymerization catalysts are used consisting of complex compounds of trivalent or tetravalent cobalt having ligands containing nitrogen and organic halogen compounds which are water inert. One of the advantages of the process is that stabilizers such as trionylphenyl phosphite can be added before or during polymerization as well as after polymerization. The polymers are obtained in the form of an aqueous dispersion which in general contains from 5 to 50% by weight of polymer.

3,412,076

## RESIN PROVIDING COMPOSITIONS OF POLYHALOMETHYLATED AROMATIC COMPOUNDS AND HYDROXYALKYL MERCAPTANS

Hugh A. Farber and Richard A. Hickner, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Original application Oct. 29, 1964, Ser. No. 407,561, now Patent No. 3,338,975, dated Aug. 29, 1967. Divided and this application June 9, 1967, Ser. No. 651,087

4 Claims. (Cl. 260—79)

A thermoset resin prepared by heating at about 80 to about 200 C., a composition of matter prepared from the condensation of a polyhalomethyl aromatic compound and a hydroxyalkyl mercaptan. The compositions are useful in the preparation of films, castings and coatings.

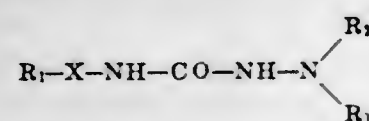
3,412,077

## POLYMERS OF ACRYLONITRILE WITH OLEFINICALLY UNSATURATED SEMICARBAZIDE

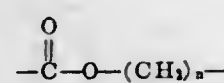
Jenő Szita, Horst Wieden, Herbert Marzolph, Karl Hurm, and Günther Nischk, Dormagen, and Helmut Kleiner, Cologne-Riehl, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany  
No Drawing. Filed July 12, 1965, Ser. No. 471,462  
Claims priority, application Germany, July 16, 1964, F 43,456

13 Claims. (Cl. 260—79.3)

A novel class of copolymers and a process of preparing the same. The polymers comprise (1) at least 80% by weight of acrylonitrile and (2) 0.1 to 20% by weight of a member of the group of (a) olefinically unsaturated semicarbazide monomers having the formula:



wherein  $R_1$  is alkenyl, X is



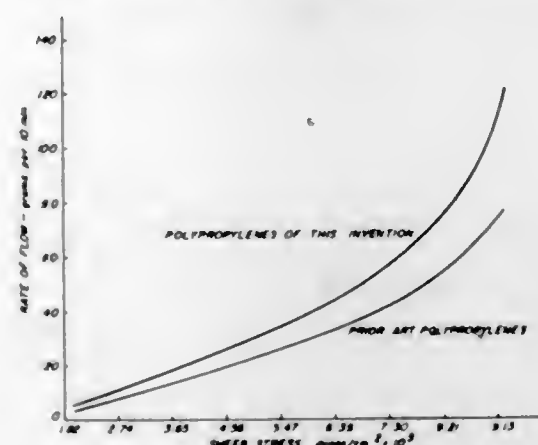
wherein  $n$  has a value of 2 to 4 and  $R_2$  and  $R_3$  are each lower alkyl, (b) the acid addition salts of said semicarbazide and (c) the quaternary ammonium compounds of said semicarbazide.

The above copolymers are obtained by copolymerizing acrylonitrile with said semicarbazide monomer in an aqueous medium at a pH value of 3 to 5, at a temperature of from 10 to 70° C. in the presence of a redox catalyst system.

## POLYPROPYLENE HAVING A HIGH DEGREE OF UNSATURATION

Hugh J. Hagemeyer, Jr., and Marvin B. Edwards, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
Continuation-in-part of application Ser. No. 210,835, July 18, 1962. This application Feb. 16, 1966, Ser. No. 527,851

8 Claims. (Cl. 260—93.7)



Polypropylene having a high degree of unsaturation which has outstanding film-forming and flow properties.

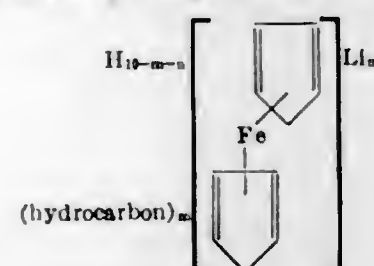
3,412,079

## PROCESS OF POLYMERIZING CONJUGATED DI-OLEFINS BY CONTACTING SAME WITH A CATALYST COMPRISING A COMPLEX OF A LITHIUM HYDROCARBON WITH A FERROCENE

Adel F. Halasa, Akron, and Harold E. Adams, Cuyahoga Falls, Ohio, assignors to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio  
No Drawing. Filed Feb. 1, 1966, Ser. No. 523,887

6 Claims. (Cl. 260—94.3)

Conjugated diolefins are polymerized in the presence of catalysts comprising compounds of the formula



wherein

$m$  is an integer from 0 to 3

$n$  is an integer from 1 to  $(8-m)$

and

(hydrocarbon) indicates a hydrocarbon group containing up to 10 carbon atoms

The resulting polymers are characterized by excellent green strength and building tack, broad molecular weight distribution, high cis-1,4 structure, desirable microgel content, and by the excellent properties of vulcanizates made therefrom.

3,412,080

## THERMAL TREATMENT OF HIGH-DENSITY POLYOLEFINS

Joseph J. Smith, Upper Montclair, and Walter A. Miller, North Caldwell, N.J., and Frederick P. Reding, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation of application Ser. No. 650,100, Apr. 2, 1957. This application July 5, 1966, Ser. No. 562,923

17 Claims. (Cl. 260—94.9)

1. Process for improving the extrudability of solid high density polyethylene which comprises continuously

moving a mass of normally solid polyethylene having an initial density of at least 0.94 through a pyrolysis zone maintained at a temperature of from about 325° C. to about 475° C., the residence time of said polyethylene within said pyrolysis zone being within the range of 10 to 600 seconds, and recovering a normally solid polyethylene having a melt index in the range of from 0.1 to 50 and a lower molecular weight.

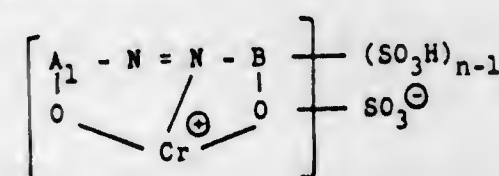
3,412,081

## CHROMIUM CONTAINING MIXED REACTIVE AZO DYESTUFFS

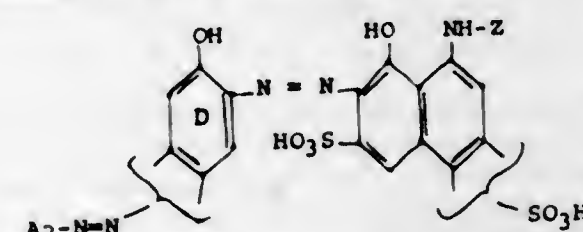
Hans Ackermann, Riehen, Switzerland, assignor to J. R. Gelgy A.G., Basel, Switzerland  
No Drawing. Filed Oct. 5, 1964, Ser. No. 401,639  
Claims priority, application Switzerland, Oct. 7, 1963, 12,301/63

7 Claims. (Cl. 260—145)

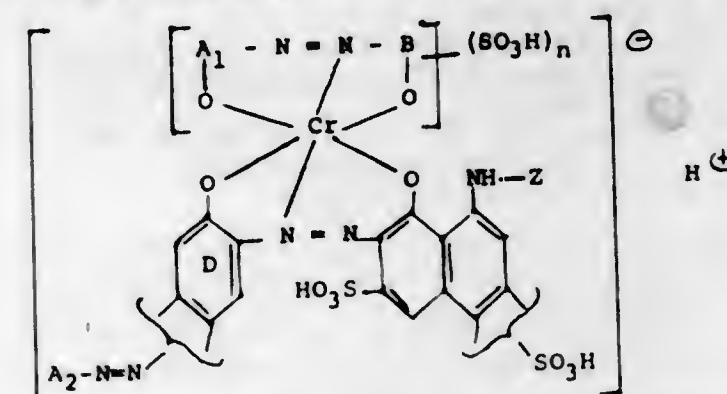
A complex chromium compound of the formula



wherein  $A_1$  is a phenyl or a naphthyl group with no reactive substituents, B is a phenyl or a naphthyl or a pyrazolyl group with no reactive substituents, each —O— is ortho to —N=N—, and  $n$  is at most 3, is reacted with a metallizable disazo dyestuff of the formula



wherein  $A_2$  is a sulfonated phenyl or a sulfonated naphthyl group with no reactive substituents and no further ionogenic substituents, Z is a group containing a substituent which can split off as anion, and D can also contain lower alkyl or lower alkoxy, to form the chromium-containing reactive azo dyestuff of the formula



which is useful in dyeing a wide variety of fibers. Since the dyeings are very deep, the new dyes are well suited to attain full black shades.

3,412,082

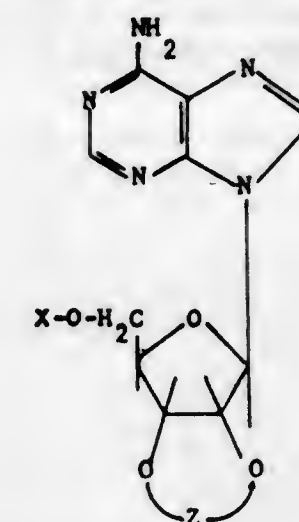
## ADENOSINE DERIVATIVES

Max Thiel and Kurt Stach, Mannheim, and Wolfgang Schaumann and Karl Dietmann, Mannheim-Waldhof, Germany, assignors to C. F. Boehringer & Soehne G.m.b.H., Mannheim-Waldhof, Germany, a corporation of Germany  
No Drawing. Filed Oct. 11, 1966, Ser. No. 585,726  
Claims priority, application Germany, Oct. 15, 1965, B 84,115

10 Claims. (Cl. 260—211.5)

Adenosine derivatives constituting highly effective car-

diac and circulatory agents having the following formula:



wherein X is hydrogen or acyl derived from a dibasic carboxylic acid such as succinic, glutamic and the like and Z is cycloalkylidene such as cyclohexylidene, cycloheptylidene, cyclooctylidene and the like where X is hydrogen or cycloalkylidene or benzylidene where X is acyl.

3,412,083

## AZAURIDINE DERIVATIVES

Albert Robert Restivo, Belleville, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 247,816, Dec. 28, 1962. This application Apr. 17, 1967, Ser. No. 631,162

10 Claims. (Cl. 260—211.5)

This invention relates to the new chemical compounds, the 3-substituted-2-ribofuranosyl-as-triazin-5(2H) - ones (i.e., 3-substituted azauridines), which are useful as disinfectants and as antibacterial agents. The compounds are prepared by treating a 3-substituted-mercapto-2-tri-O-benzoylribofuranosyl-as-triazin-5(2H)-one with ammonia or halogen to yield the corresponding 3-substituted final products. Alternatively, the final products can be formed by treating a 3-substituted-thio-as-triazin-5(2H)-one with an amine, ammonia or halogen to yield the 3-substituted-as-triazin-5(2H)-one, then with a mercuric salt to yield the corresponding 2-mercuri derivative, then with tri-O-benzoyl-D-ribofuranosyl chloride to yield the corresponding 2-tri-O-benzoylribofuranosyl derivative, and finally with a strong base to yield the final product.

3,412,084

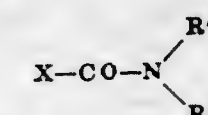
## DERIVATIVES OF GLYCIRRHETINIC AND OLEANOLIC ACIDS

John Cameron Turner, West Wickham, and William Alan McFarlane Davies, Ilford, England, assignors to Biorex Laboratories Limited, London, England

No Drawing. Filed Feb. 9, 1966, Ser. No. 526,072  
Claims priority, application Great Britain, Feb. 11, 1965, 5,891/65; Oct. 7, 1965, 42,551/65

21 Claims. (Cl. 260—239)

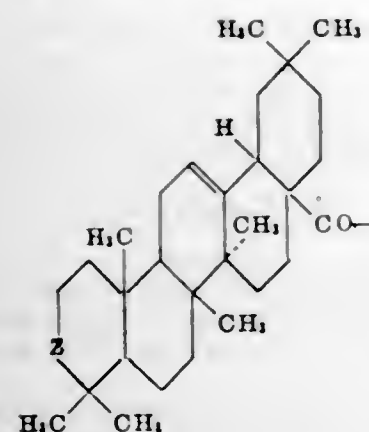
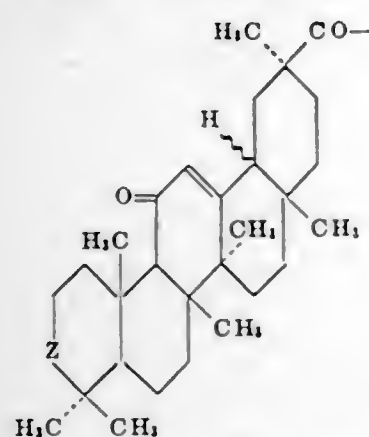
1. A compound of the formula



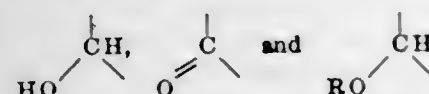
wherein  $R'$  is a member selected from the group consisting of alkyl with 1 to 6 carbon atoms, cycloalkyl with 4 to 8 carbon atoms, phenyl, carboxyphenyl, lower alkoxy-carbonylphenyl and trifluoromethylphenyl,  $R''$  is a member selected from the group consisting of H and alkyl with 1 to 6 carbon atoms, and wherein  $R'$  and  $R''$  can be joined together to form, with the nitrogen atom to which



they are attached, a member selected from the group consisting of heptamethyleneimido, piperazino, N-methyl piperazino and morpholino, and X-CO is a member selected from the group consisting of radicals of the formulae



Z being one of the atom groupings



wherein R is selected from the group consisting of alkyl-carbonyl with up to 20 carbon atoms, carboxy(lower) alkylcarbonyl and carboxy(lower)alkenylcarbonyl.

3,412,085

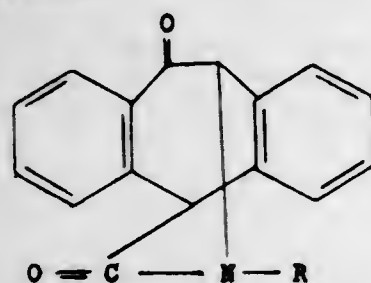
### 10,5 - (IMINOMETHANO) - 10,11 - DIHYDRO - 5H - DIBENZO[a,d] - CYCLOHEPTEN - 11,13 - DIONE AND DERIVATIVES

Thomas A. Dobson, St. Laurent, Quebec, and Martin A. Davis, Montreal, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 19, 1966, Ser. No. 580,209

5 Claims. (Cl. 260-239.3)

This invention relates to novel 10,5-(iminomethano)-10,11-dihydro-5H-dibenzo[a,d]cycloheptene-11,13-diones of the formula:



wherein R represents hydrogen or an organic group such as, lower alkyl containing from 1-4 carbon atoms, an aralkyl group containing from 7-10 carbon atoms, a substituted aminoalkyl group containing from 4-9 carbon atoms or a heterocyclic substituted alkyl group containing from 5-8 carbon atoms and from 1-2 hetero atoms. The compounds of this invention are useful as anti-convulsants and as trichomonocidal agents.

### 3,412,086 3-H-1,4-BENZODIAZEPIN-2(1H)-ONES AND THEIR PREPARATION

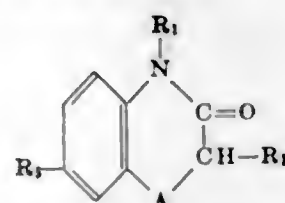
Gabriel Saucy, Riehen, Switzerland, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of abandoned application Ser. No. 182,133, Mar. 23, 1962, which is a continuation-in-part of applications Ser. No. 2,605, Jan. 15, 1960 and Ser. No. 103,727, Apr. 18, 1961. This application Oct. 27, 1964, Ser. No. 406,906

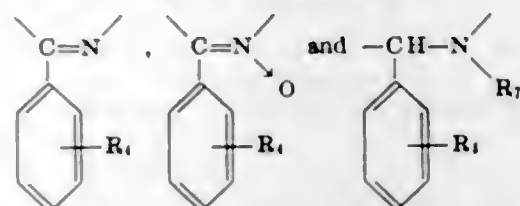
Claims priority, application Switzerland, Dec. 2, 1960, 13,490/60; 13,492/60; 13,493/60; 13,494/60; 13,495/60

6 Claims. (Cl. 260-239.3)

1. A compound selected from the group consisting of those represented by the formula



wherein A represents a carbon nitrogen grouping which completes the seven-membered diazepine ring and which is selected from the group consisting of



R1 is selected from the group consisting of hydrogen, lower alkyl and lower alkenyl; R2 and R7 each represent a member of the group consisting of hydrogen and lower alkyl; R4 is trifluoromethyl and R5 is selected from the group consisting of hydrogen, halogen, nitro, amino and trifluoromethyl; and acid addition salts thereof with pharmaceutically acceptable acids.

3,412,087

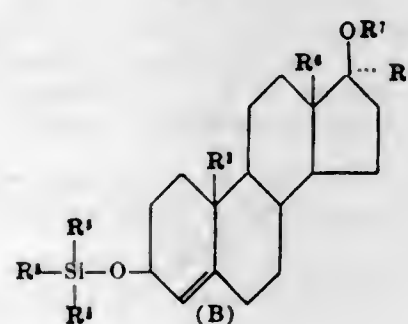
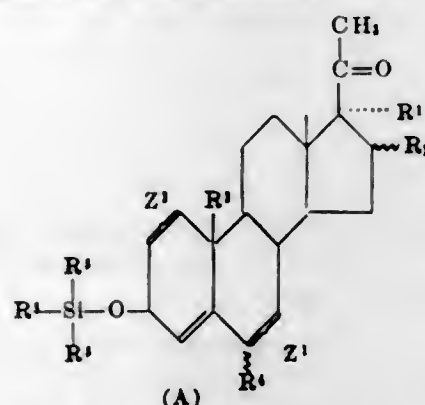
### 3β - TRI(HYDROCARBON SUBSTITUTED)SILYL ETHERS OF THE PREGNANE AND ANDROSTANE SERIES

John A. Edwards, Los Altos, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Nov. 14, 1966, Ser. No. 593,722

22 Claims. (Cl. 260-239.55)

1. A compound of the formulas:



wherein Z<sup>1</sup> is a carbon-carbon single bond, a carbon-carbon double bond or a fused methylene group of the type



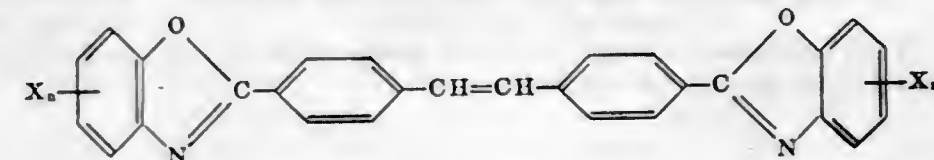
in which X is hydrogen, chloro or fluoro;

Z<sup>2</sup> is a carbon-carbon single bond or a fused methylene group of the type

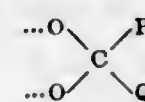


in which X is hydrogen, chloro or fluoro;

R<sup>1</sup> is hydrogen, hydroxy or a hydrocarbon carboxylic acyloxy group;



R<sup>2</sup> is hydrogen, α-methyl, β-methyl or methylene; R<sup>1</sup> and R<sup>2</sup> together is the group



in which P is hydrogen, lower alkyl or aryl and Q is lower alkyl or aryl;

R<sup>3</sup> is hydrogen or methyl;

R<sup>4</sup> is hydrogen, methyl, trifluoromethyl, fluoro or chloro, the configuration of R<sup>4</sup> being alpha when Z<sup>1</sup> is a carbon-carbon single bond and the configuration of R<sup>4</sup> being beta when Z<sup>1</sup> is the group



in which X is hydrogen, chloro or fluoro; each of R<sup>5</sup> independently is alkyl, aryl, alkaryl, aralkyl or cycloalkyl;

R<sup>6</sup> is hydrogen, methyl or ethyl;

R<sup>7</sup> is hydrogen, a hydrocarbon carboxylic acyl group, tetrahydropyran-2'-yl or tetrahydrofuran-2'-yl; and R<sup>8</sup> is hydrogen, methyl, ethyl, vinyl, ethynyl, propynyl or chloroethynyl.

3,412,088

### CINNAMOYLAMINO-ISOTHIAZOLEANTHRONES

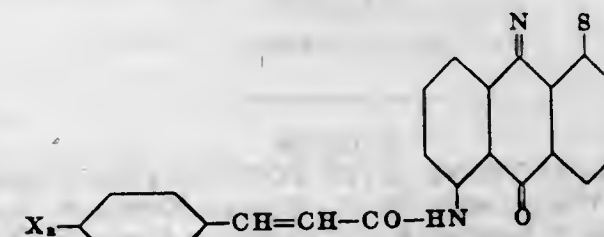
Visvanathan Ramanathan, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Aug. 12, 1965, Ser. No. 479,317

Claims priority, application Switzerland, Sept. 7, 1964, 11,667/64

4 Claims. (Cl. 260-240)

5-cinnamoylamino-1:9-isothiazoleanthrones of formula



in which X is a hydrogen or halogen atom, an alkyl, alkoxy- or nitro- group, and n is an integer having a value of 1 to 3 are valuable dyestuffs particularly adapted for coloring polyester fibers.

3,412,089

### MANUFACTURE OF 4,4'-DIBENZOXAZOL-2-YL STILBENE

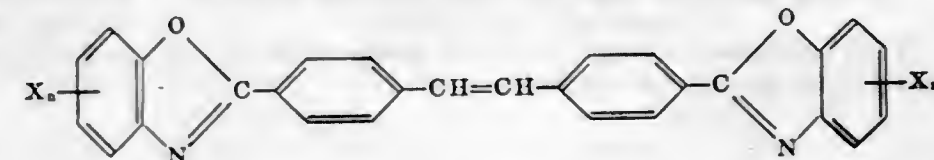
Masaaki Ohkawa, Toyonaka-shi, and Tadao Konoshita, Nishinomiya-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Sept. 16, 1964, Ser. No. 397,001

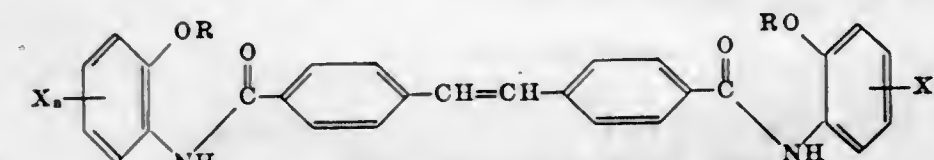
Claims priority, application Japan, Sept. 18, 1963, 38/50,130; Oct. 19, 1963, 38/56,485; Nov. 21, 1963, 38/62,715

6 Claims. (Cl. 260-240)

1. A method for producing 4,4'-di-[benzoxazolyl-(2)]-stilbene compounds having the following formula,



wherein each X is a member selected from the group consisting of hydrogen and halogen atoms, alkyl and aryl radicals, and n is an integer of 1 to 4 inclusive, which comprises heating an acylamide compound having the following formula,



wherein each X and n have the same meanings as identified above, and R is a lower alkyl radical, in the presence of a solvent amount of a dehydrated phosphoric acid.

3,412,090

### ORGANOTIN-SUBSTITUTED s-TRIAZINES

Enrico Knaul, Riehen, and Denis Varsanyi, Arlesheim, Basel-Land, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 469,893, July 6, 1965. This application Aug. 17, 1967, Ser. No. 661,203

Claims priority, application Switzerland, July 10, 1964, 9,044/64

12 Claims. (Cl. 260-242)

Organotin substituted s-triazines, which possess insecticidal, acaricidal, ovicidal, fungicidal, bactericidal, bacteriostatic, molluscicidal, algacidal and herbicidal activity, are used also as anthelmintics. The production of the active components themselves, their combination with carriers in compositions, and their application as pesticides and especially as anthelmintics are described.

3,412,091

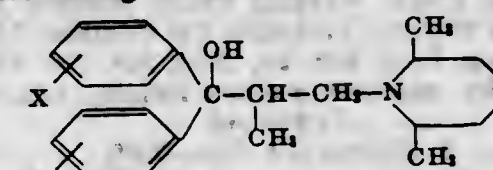
### 1,1-DIPHENYL-2-METHYL-3-(3,5-DIMETHYL-MORPHOLINO)PROPANOLS

Robert Bruce Moffett, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Mar. 14, 1966, Ser. No. 533,778

4 Claims. (Cl. 260-247.1)

1. A compound selected from the group consisting of compounds having the formula:



wherein X is a member selected from the group consisting of hydrogen, fluorine, chlorine, bromine, and lower-alkyl



having from 1 to 4 carbon atoms, inclusive, and the acid addition salts thereof.

3. The compound of claim 1 wherein the compound is 1,1-diphenyl-2-methyl-3-(3,5-dimethylmorpholino)propanedi methanesulfonate.

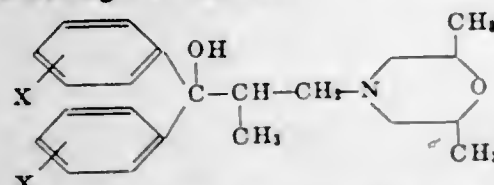
3,412,092

# 1,1-DIPHENYL-2-METHYL-3-(2,6-DIMETHYL-MORPHOLINO)PROPANOLS

Robert Bruce Moffett, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Michigan

No Drawing. Filed Mar. 14, 1966, Ser. No. 533,773  
4 Claims. (Cl. 260-247.7)

1. A compound selected from the group consisting of compounds having the formula:



wherein X is a member selected from the group consisting of hydrogen, fluorine, chlorine, bromine, and lower-alkyl having from 1 to 4 carbon atoms, inclusive, and the acid addition salts thereof.

3,412,093

# NEW ADENINE DERIVATIVES AND METHOD FOR THEIR PREPARATION

Ctirad Poděšva and Kitty Vagi, Montreal, Quebec, Canada, assignors to Delmar Chemicals Limited  
No Drawing. Filed Dec. 15, 1966, Ser. No. 601,863  
Claims priority, application Canada, Dec. 21, 1965, 948,370

19 Claims. (Cl. 260-252)

Adenine is reacted in an organic solvent with a  $\beta$ -di-alkylaminopropiophenone or a salt thereof to obtain an adenine derivative substituted on the nitrogen at position 9 with a 3-phenyl-3-oxopropyl group or a derivative thereof wherein the phenyl group is substituted by groups such as, halogens, methyl, methoxy or nitro and/or the propyl group is substituted on the central carbon atom by lower alkyl. The corresponding 3-hydroxy-propyl derivatives are also prepared by reduction. The products are useful as fungistats and as intermediates.

3,412,094

# 5-ALKYL-2-AMINO-4-AZIDO-6-PHENYL-PYRIMIDINES AND CONGENERS

Kurt J. Rorig, Glenview, and Hans A. Wagner, Skokie, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 568,401, July 28, 1966. This application June 21, 1967, Ser. No. 647,600

27 Claims. (Cl. 260-256.4)

Disclosed herein are diuretic and otherwise pharmacologically-valuable 4-azidopyrimidines and their salts, e.g., 2-amino-4-azido-5-ethoxyethyl-6-phenylpyrimidine.

3,412,095

# CHLORINATION OF ALKYL PYRIDINES

Nicholas Rex Clark, Weeping Cross, Stafford, England, assignor to Midland-Yorkshire Tar Distillers Limited  
No Drawing. Filed July 28, 1965, Ser. No. 475,558  
Claims priority, application Great Britain, Aug. 5, 1964, 31,851/64

8 Claims. (Cl. 260-290)

A process for chlorinating alkyl pyridines and alkyl quinolines such that the chlorine is contained only in the alkyl side chain by reacting an alkyl pyridine or alkyl quinoline in the vapor phase with gaseous chlorine at an

elevated temperature in the presence of an inert diluent such that the contact time of the reactants and products at the elevated temperature does not exceed sixty seconds.

3,412,096

# ALKYLPYRIDINE PRODUCTION

Charles R. Adams, Ippendorf, Germany, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 19, 1965, Ser. No. 473,188  
11 Claims. (Cl. 260-290)

Alkylpyridines, useful as organic bases and chemical intermediates, are prepared by the vapor-phase reaction of hydrocarbon carbonyl compounds and ammonia in the presence of a calcium nickel phosphate catalyst.

3,412,097

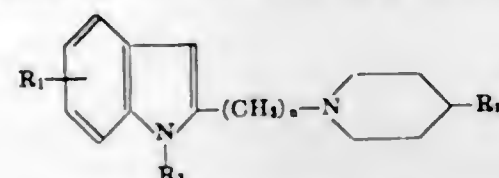
# INDOLE DERIVATIVES

Gerardus J. B. Cortis, Haarlem, Netherlands, assignor to N.V. Koninklijke Pharmaceutische Fabrieken v/h Brocades Scheeman en Pharmacia, Amsterdam, Netherlands, a corporation of the Netherlands

No Drawing. Filed May 17, 1965, Ser. No. 456,510  
Claims priority, application Great Britain, Sept. 7, 1964, 36,618/64

6 Claims. (Cl. 260-293)

According to the present invention, there are provided the new piperidinoalkylindoles of the general formula



wherein  $R_1$  represents a hydrogen or chlorine atom,  $R_2$  represents a hydrogen or lower alkyl group,  $R_3$  represents a lower alkyl or chloro or methylenedioxy-substituted phenyl, and  $n$  represents 1 or 2.

The aforesaid piperidinoalkylindoles are therapeutically active compounds having analgesic and muscle relaxant activity.

3,412,098

# SUBSTITUTED N-PHENYL-N'-PYRIDYLETHYL-PHENYL THIOUREAS

Erhardt Winkelmann, Kelkheim, Taunus, and Wolf-Helmut Wagner, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Nov. 2, 1965, Ser. No. 506,116  
Claims priority, application Germany, Nov. 6, 1964, F 44,382

7 Claims. (Cl. 260-294.8)

N-phenyl-N'-pyridylethylphenyl thioureas that are substituted in the N-phenyl moiety by alkyl, alkoxy, or cycloalkyl groups. These compounds are effective against tuberculosis and leprosy.

3,412,099

WITHDRAWN

3,412,100

# ANTHRAQUINONE DYES FOR TEXTILE FIBERS

David J. Wallace and Max A. Weaver, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,458  
7 Claims. (Cl. 260-329.2)

1,4-dihydroxyanthraquinone compounds having a sulfonamylamino group in the 2-position are useful as dyes for hydrophobic fibers.

3,412,101

# SUBSTITUTED 2-TRIFLUOROMETHYL-BENZIMIDAZOLES

Kenneth D. Zwahlen, Modesto, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 22, 1966, Ser. No. 544,360  
3 Claims. (Cl. 260-309.2)

1. 2-trifluoromethyl-5-alkylsulfonyl benzimidazole wherein the alkyl radical has up to 2 carbon atoms.

3,412,102

# PRODUCTION OF COPPER PHTHALOCYANINES

Gerhard Schulz, Ludwigshafen (Rhine), and Rudolf Polster, Frankenthal, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

Filed June 22, 1966, Ser. No. 559,521  
Claims priority, application Germany, June 25, 1965, B 82,552

10 Claims. (Cl. 260-314.5)

Production of a copper phthalocyanine by reaction of a phthalodinitrile with copper salts in an inert solvent and in the presence of ammonia or tertiary organic bases wherein the reaction is carried out at elevated temperatures up to about 220° C. and in the presence of specific molybdenum, iron and titanium catalysts. The copper phthalocyanine products are useful dyes obtained in excellent yields and very good purity.

3,412,103

# PROCESS FOR THE REDUCTION OF THIOPHENE-SUBSTITUTED KETOACIDS

Sheldon Chibnik, Plainfield, Harold M. Foster, Middlesex, Laverne A. Glick, Edison, and Harold A. Kaufman, Piscataway Township, Middlesex County, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Mar. 3, 1965, Ser. No. 436,922

3 Claims. (Cl. 260-332.2)

An aliphatic ketoacid ( $C_2-C_{14}$ ) attached to a heterocyclic sulfur substituent is reduced to the corresponding heterocyclic substituted alkanolic acid. An aqueous solution of a water-soluble alkali or alkaline earth metal salt of the ketoacid and hydrogen are contacted with an insoluble sulfide of group 6a or 8 metal, and in the presence of  $H_2S$ . The product alkanolic acids are subjected to ring closure and to dehydrogenation to 4-hydroxybenzothio-phenone, which is the precursor for 4-benzothienyl carbamate insecticides.

3,412,104

# PRINTING INK PRODUCTION

Maurice Dwight McIntosh, Willoughby, Zenon Kazenas, Euclid, and Joseph L. Switzer, Gates Mills, Ohio, assignors to Switzer Brothers, Inc., Cleveland, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of applications Ser. No. 70,927, Nov. 22, 1960, and Ser. No. 274,791, Apr. 22, 1963. This application June 28, 1963, Ser. No. 291,272

7 Claims. (Cl. 260-33.6)

1. A process of producing a printing ink composition, which comprises the steps of (a) subjecting a dispersion of (1) a dispersed phase of substantially uniform fine globules formed essentially of substantially water-insoluble substantially translucent synthetic aromatic resin body in a (2) continuous liquid phase formed of a substantially-translucent-solid-film-forming ink vehicle, in which the dispersed phase is substantially insoluble, to time-temperature conditions effecting solidification in situ of dispersed phase particles in the liquid phase in a size range of not more than 0.0003 inch; and (b) intimately dispersing in the dispersion a selective light absorbing

agent which is retained by the resin body, in a size range of not more than one-fifth the average dispersed phase particle size, said continuous phase liquid vehicle being composed of at least substantially 40 weight percent oil-modified benzenoid alkyd resin, and the weight ratio of dispersed phase to continuous phase being substantially 2:1 or less.

3,412,105

# $\beta$ -ARYL-N-GUANIDINO- $\beta$ -ALANINES

Andre L. Langis, St. Laurent, Montreal, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 5, 1966, Ser. No. 518,776

11 Claims. (Cl. 260-340.5)

New  $\beta$ -aryl-N-guanidino- $\beta$ -alanines wherein the aryl substituent is phenyl, 2- and 4-chlorophenyl, 2,4- and 3,4-dichlorophenyl, 1-naphthyl, 3,4-dimethoxyphenyl, 3,4-methylene-dioxyphenyl and 2-methylphenyl. Compounds having a carboxylic acid group in the  $\alpha$ -position are also disclosed. The new compounds are monoamine oxidase inhibitors, as well as long acting hypotensive agents and dosage forms are disclosed. Also disclosed is a method of preparation wherein a substituted benzaldehyde is reacted with malonic acid and aminoguanidine bicarbonate in the presence of acetic acid.

3,412,106

# 2,6-DIHYDROCARBYL BENZYL HALIDE-DIOXANE COMPLEX AND METHOD OF MANUFACTURE

Joseph D. Odenweller, Bloomfield Hills, and Joseph T. Paruch, Warren, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 31, 1964, Ser. No. 422,519

11 Claims. (Cl. 260-340.6)

A crystalline complex is formed by reacting 2,6-dihydrocarbyl benzyl halides with dioxane. It is useful in the preparation of 3,5-dialkyl-4-hydroxybenzyl sulfides and dialkyl (3,5-dialkyl-4-hydroxybenzyl)phosphonates. The latter compounds are antioxidants.

3,412,107

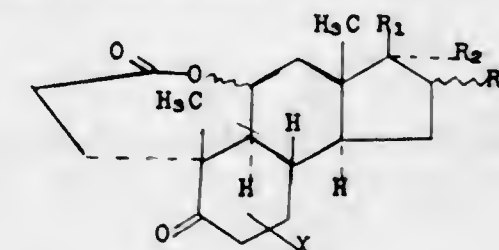
# 11-HYDROXY-5-OXO-3,5-SECO-A-NOR-ANDROSTAN-3-OIC ACID 3,11-LACTONES

Milan Radoje Uskokovic, Upper Montclair, and Thomas Henry Williams, Passaic, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 29, 1964, Ser. No. 400,206

1 Claim. (Cl. 260-340.9)

11-hydroxy-5-oxo-3,5-seco-A-nor-androstan-3-oic acid, 3,11-lactones of the formula



wherein  $R_1$  is, individually, selected from the group consisting of hydroxy and lower alkanoyloxy;  $R_2$  is, individually, lower alkyl and  $R_1$  and  $R_2$  taken together are selected from the group consisting of (17 $\beta$ -OH, 17-lower alkanoyl acid lactone) and lower alkylene dioxy;  $R_3$  is selected from the group consisting of hydrogen, lower alkyl, hydroxy, and lower alkanoyloxy; and X is a substituent in the 6- or 7-position selected from the group consisting of hydrogen, lower alkyl, lower alkylthio, lower alkanoylthio and halogen. The compounds are intermediates which can be converted to 9 $\beta$ ,10 $\alpha$ -steroids which are pharmaceutically useful as anabolic agents.



### 3,412,108 A-HOMO- $\Delta^{1(10),2,4a(5)}$ -ESTRATRIEN-4-ONES AND THEIR PREPARATION

Arthur J. Birch, Manchester, England, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama  
No Drawing. Continuation-in-part of application Ser. No. 302,718, Aug. 16, 1963. This application Mar. 7, 1966, Ser. No. 532,960  
Claims priority, application Mexico, Feb. 14, 1963, 70,907

20 Claims. (Cl. 260—345.9)  
A-homo- $\Delta^{1(10),2,4a(5)}$ -estratrien-4-one steroids having a keto group at C-17 or hydroxy, acyloxy, tetrahydrofuran-yl, or tetrahydropyran-yl at C-17 $\beta$  and hydrogen, lower alkyl, lower alkenyl, or lower alkynyl at C-17 $\alpha$  which compounds are useful as anabolic agents having anti-gonadotrophic and anti-fibrillatory properties and in fertility control, lowering of blood cholesterol levels, relieving premenstrual tension, and diminishing the output of the pituitary gland and the preparation of such compounds.

### 3,412,109 PROCESS FOR 2-ALKOXY-2,3-DIHYDRO 5-BENZOFURANOLS

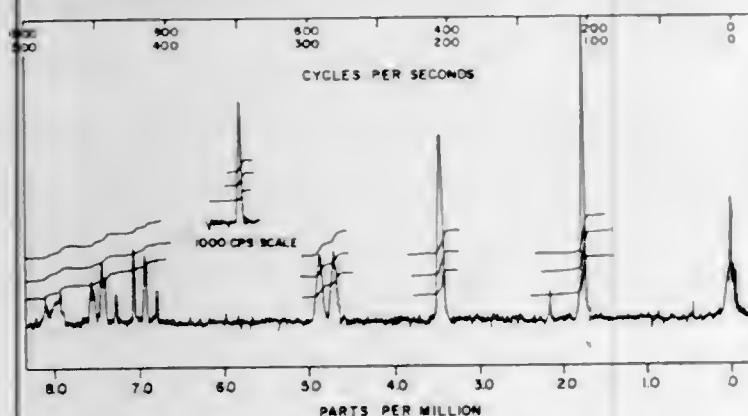
Louis L. Skaletzky, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware  
No Drawing. Filed Sept. 25, 1964, Ser. No. 399,368  
6 Claims. (Cl. 260—346.2)

A process is described for preparing 2-lower-alkoxy-2,3-dihydro-3-substituted 5-benzo furanols from alpha-substituted - (2,5 - dihydroxyphenyl) - acetaldehyde diacrylate and an alkanol and in the presence of an alkali metal alkoxide or hydroxide.

### 3,412,110 2,3-DIHYDRO-2,2-DIMETHYL-7- NITROBENZOFURAN

William G. Scharpf, West Amwell Township, Hurderton County, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware  
Filed Mar. 1, 1965, Ser. No. 436,169  
1 Claim. (Cl. 260—346.2)

NUCLEAR MAGNETIC RESONANCE SPECTRUM OF 6-(2-METHALLYL)-2-NITROPHENOL



1. 2,3-dihydro-2,2-dimethyl-7-nitrobenzofuran.

### 3,412,111 PROCESS FOR REACTING AN OLEFIN WITH MALEIC ANHYDRIDE TO OBTAIN AN AL- KENYL SUCCINIC ANHYDRIDE

Philip G. Irwin, Verona, and Charles M. Selwitz, Pittsfield, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware  
No Drawing. Filed June 2, 1965, Ser. No. 460,837  
5 Claims. (Cl. 260—346.8)

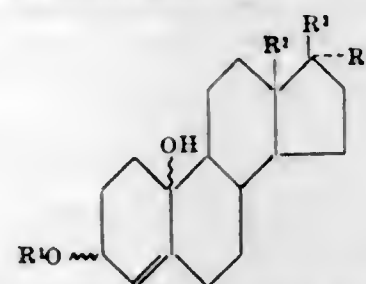
A process for reacting an olefin with a maleic anhydride to obtain an alkenyl succinic anhydride wherein the reac-

tion is carried out in the presence of a hydroxy aromatic or an amino aromatic in order to reduce polymer during the reaction.

### 3,412,112 3 $\beta$ ,10 $\alpha$ -17 $\beta$ -TRIOL-GON-4-ENES AND DERIVATIVES THEREOF

Theodore J. Foell, King of Prussia, Richard W. Rees, Newtown Square, and Herschel Smith, Wayne, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware  
No Drawing. Filed Oct. 12, 1966, Ser. No. 586,030  
7 Claims. (Cl. 260—397.5)

1. A steroid of the formula:

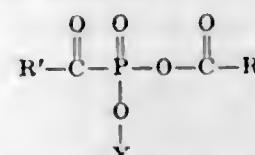


wherein R<sup>1</sup> is selected from the group consisting of hydrogen and acyl; R<sup>2</sup> is a lower alkyl group of 2 to 4 carbon atoms; R<sup>3</sup> is hydroxy; and R<sup>4</sup> is selected from the group consisting of hydrogen, lower alkyl, lower alkynyl, halo alkynyl and trifluoromethyl substituted lower alkynyl groups each containing 2 to 4 carbon atoms, and together R<sup>3</sup> and R<sup>4</sup> is oxo (=O).

### 3,412,113 MIXED ANHYDRIDES OF ACYL- PHOSPHONIC ACIDS

Steven J. Fitch, Beltsville, Md., and Riyad R. Irani, Olivette, and Kurt Moedritzer, Webster Groves, Mo., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware  
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,306  
13 Claims. (Cl. 260—403)

Anhydrides of the formula



wherein R and R' are either alkyl of from 1 to 20 carbon atoms, phenyl or tolyl and Y is either alkyl of from 1 to 8 carbon atoms or -C(O)-R.

### 3,412,114 PROCESS FOR PREPARING 2,5-DIENOIC ACIDS AND THE ESTERS THEREOF

Hans Fernholz, Bad Soden, Taunus, and Ludwig Schläfer, Sulzbach, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany  
No Drawing. Filed July 21, 1964, Ser. No. 384,253  
Claims priority, application Germany, July 27, 1963, F 40,355

8 Claims. (Cl. 260—404)  
A process has been provided for preparing 2,5-dienoic acid and esters of the formula



by reacting unsaturated chlorocarbonic esters of the formula



wherein R is hydrogen or a hydrocarbon radical from 1 to 20 carbon atoms containing also inert substituents, R<sub>1</sub> and R<sub>2</sub> each represent a hydrogen atom or an alkyl group from 1 to 5 carbon atoms or 5 to 6 member isocyclic ring.

The reaction is carried out in the presence of nickel carbonyl or finely divided nickel at a temperature from 10 to 80° C. and in the presence of acetylene, carbon monoxide and a compound of the formula R<sub>2</sub>OH wherein R<sub>2</sub> is a hydrogen, saturated linear or branched aliphatic radical or a cycloaliphatic radical having at least 5 carbon atoms in the ring and araliphatic radicals having 6 carbon atoms in the ring, the total number of carbon atoms being 20. A suitable range of nickel carbonyl compound is 0.02 to 0.3 mol of nickel carbonyl per mol of chlorocarbonic ester.

### 3,412,115 POLYAMIDE RESIN

Don E. Floyd, Robbinsdale, and David W. Glaser, St. Paul, Minn., assignors to General Mills, Inc., a corporation of Delaware  
No Drawing. Filed Nov. 2, 1964, Ser. No. 408,364  
11 Claims. (Cl. 260—404.5)

There is disclosed polyamides of a polymeric fat acid, an alkylene diamine and a hexanoic acid and solutions thereof. Alcoholic solutions of the polyamides are useful as flexographic ink vehicles.

3,412,116  
METHOD OF PRODUCING  $\gamma$ -KETO ACIDS  
Heinz Reinbeckel, Berlin, Klaus Haase, Berlin-Pankow, and Rita Gensike, Berlin-Baumtschulenweg, Germany, assignors to Deutsche Akademie der Wissenschaften zu Berlin, Berlin-Adlershof, Germany  
No Drawing. Filed Nov. 1, 1965, Ser. No. 505,966  
5 Claims. (Cl. 260—413)

$\gamma$ -Keto acids are prepared by reacting dicarboxylic dihalides with organic aluminum chlorides or bromides in solutions in partially halogenated hydrocarbons at temperatures of +20 to -50° C. and hydrolyzing the product of this reaction.

### 3,412,117 PREPARATION OF HEAVY METAL COMPLEX SALTS OF ETHYLENEBISDITHIOCARBAMIC ACID AND DIMETHYLDITHIOCARBAMIC ACID

Emilio Gagliardini, Milan, Italy, assignor to SIPCAM—Societa Italiana Prodotti Chimici e per l'Agricoltura Milan S.p.A., Milan, Italy, an Italian company  
No Drawing. Filed Feb. 3, 1964, Ser. No. 342,235  
Claims priority, application Italy, Feb. 14, 1963, 31,915/63

8 Claims. (Cl. 260—429)  
Heavy metal complexes of ethylenebisdithiocarbamates and dimethyldithiocarbamates are prepared by reacting a solution containing about 71 parts of an alkaline salt of ethylenedisithiocarbamic acid and about 19 parts of the same cation salt of dimethyldithiocarbamic acid with a soluble salt of zinc, divalent iron or divalent manganese. The resulting complex salt precipitate has unexpectedly high fungicidal activity at low concentrations.

### 3,412,118 SALTS OF 2,6- AND 2,4,6-SUBSTITUTED PRIMARY ARYL PHOSPHITES

Francis M. Kujawa, Tonawanda, and Alvin F. Shepard and Bobby F. Daniels, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York  
No Drawing. Continuation-in-part of application Ser. No. 220,902, Aug. 31, 1962. This application Jan. 5, 1965, Ser. No. 423,583

The portion of the term of the patent subsequent to Sept. 6, 1983, has been disclaimed  
16 Claims. (Cl. 260—429)

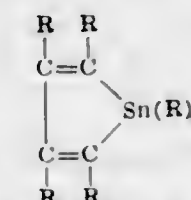
Salts of 2,6- and 2,4,6-substituted primary alkyl phosphites are new compounds, useful for inhibiting

peroxidation of organic materials, such as petroleum hydrocarbons.

### 3,412,119 SUBSTITUTED STANNOLES, PHOSPHOLES, ARSOLES, AND STIBOLES

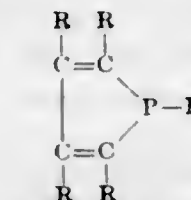
Frederick C. Leavitt, Midland, Mich., and Francis Johnson, Newton Lower Falls, Mass., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 811,513, May 7, 1959. This application July 22, 1963, Ser. No. 296,481

11 Claims. (Cl. 260—429.7)  
5. A compound having a formula given by the following:



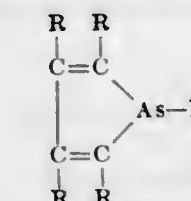
wherein R may be the same and is a chemical moiety independently selected from the group consisting of vinyl, aryl, alkyl, halogen, alkoxy, carboxyl, nitrile.

6. A compound having a formula given by the following:



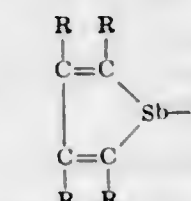
wherein R may be the same and is a chemical moiety independently selected from the group consisting of vinyl, aryl, alkyl, halogen, alkoxy, carboxyl, nitrile.

7. A compound having a formula given by the following:



wherein R may be the same and is a chemical moiety independently selected from the group consisting of vinyl, aryl, alkyl, halogen, alkoxy, carboxyl, nitrile.

8. A compound having a formula given by the following:

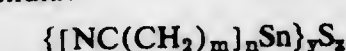


wherein R may be the same and is a chemical moiety independently selected from the group consisting of vinyl, aryl, alkyl, halogen, alkoxy, carboxyl, nitrile.

### 3,412,120 CYANOALKYLENETIN SULFIDES AND THE PREPARATION THEREOF

William J. Considine, Somerset, and Gerald H. Reifenberg, Plainfield, N.J., assignors to M&T Chemicals Inc., New York, N.Y., a corporation of Delaware  
No Drawing. Filed Jan. 3, 1966, Ser. No. 517,924  
14 Claims. (Cl. 260—429.7)

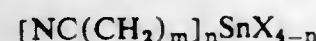
1. A method for preparing an organotin compound of the general formula:



in which m is an integer at least about 2, n is an integer 1-3, y is 1 or 2, z is 1 or 3, and the combinations of n, y



and  $z$  satisfy a tetravalent structure, which comprises reacting a sulfide selected from the group consisting of alkali metal sulfides and alkali hydrogen sulfides with an organotin halide

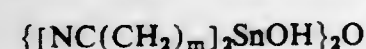


in which  $X$  is selected from the group consisting of chlorine, bromine, and iodine, and recovering said organotin compound.

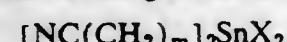
3,412,121

**BIS(CYANOALKYLENE-, HYDROXYTIN) OXIDES**  
William J. Considine, Somerset, and Gerald H. Reiffenberg, Plainfield, N.J., assignors to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware  
No Drawing. Filed Jan. 3, 1966, Ser. No. 517,939  
7 Claims. (Cl. 260-429.7)

1. A method for preparing organotin of the general formula:



in which  $m$  is an integer at least about 2, which comprises reacting (i) a nitrile of the general formula:



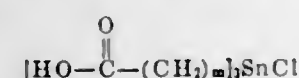
in which  $X$  is selected from the group consisting of chlorine, bromine and iodine with (ii) a hydroxide selected from the group consisting of ammonium hydroxide and an alkali metal hydroxide recovering said organotin.

3,412,122

**TRIS( $\omega$ -CARBOXYPOLYMETHYLENE) TIN CHLORIDE**

William J. Considine, Somerset, and Gerald H. Reiffenberg, Plainfield, N.J., assignors to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware  
No Drawing. Filed Jan. 3, 1966, Ser. No. 518,002  
8 Claims. (Cl. 260-429.7)

1. A method for preparing an organotin compound of the formula:



in which  $m$  is at least about 2, which comprises reacting initially an excess amount of a hydroxide selected from the group consisting of sodium hydroxide, potassium hydroxide, lithium hydroxide, calcium hydroxide, barium hydroxide, and strontium hydroxide with a compound of the formula:



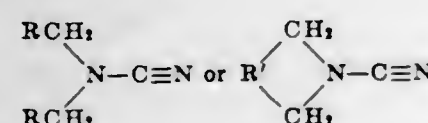
and subjecting the product of the initial reaction to acidification with an excess amount of hydrochloric acid at a temperature above about 20° C.

3,412,123

**SUBSTITUTED CYANAMIDE-ACCELERATED TETRAETHYL LEAD PROCESS**

David John Klinke, Salem, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Filed Apr. 27, 1966, Ser. No. 545,551  
6 Claims. (Cl. 260-437)

1. A process for making tetraethyl lead which comprises reacting ethyl chloride in liquid phase with a sodium-lead alloy containing from 10 to 20% by weight sodium and 90 to 80% by weight lead at a temperature of 80° to 130° C., in the presence of 0.001 to 0.1 mole, per gram atom of sodium in the alloy, of a substituted cyanamide of the formula



in which each  $R$  is hydrogen or an aliphatic hydrocarbon radical having 1 to 4 carbon atoms, and  $R'$  is an alkylene radical having 2 to 3 carbon atoms.

3,412,124

**PROCESS FOR THE PREPARATION OF ALKYLALUMINUM HALIDES**

Giorgio Moretti, Milan, and Gianfranco Corsi, Ferrara, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy  
No Drawing. Filed Feb. 19, 1963, Ser. No. 259,740  
Claims priority, application Italy, Feb. 21, 1962, 3,389/62

7 Claims. (Cl. 260-448)

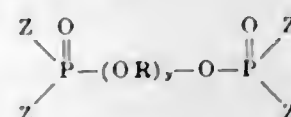
1. A process for preparing dialkylaluminum monohalides which comprises reacting in two distinct steps (1) a dialkyl aluminum monohydride, (2) aluminum trihalide and (3) an olefin; the first step of said process comprising mixing the dialkylaluminum monohydride with the aluminum trihalide in a molar ratio of about 2:1 and heating the mixture at a temperature of from about 50° to 100° C.; and the second step of said process comprising adding at least 1 mol of the olefin per mol of the dialkylaluminum monohydride under a pressure of from about 1 to 20 atmospheres to the mixture obtained in said first step and heating at a temperature of from about 50 to 100° C.

3,412,125

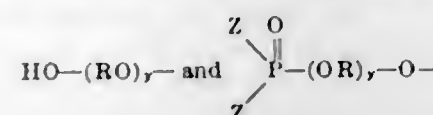
**COORDINATION COMPLEXES OF NORMAL HALIDE SALTS OF ANTIMONY, TIN AND TITANIUM AND HYDROXYALKYL POLYPHOSPHATES**

Frank J. Welch, Charleston, and Herbert J. Paxton, Jr., Elkview, W. Va., assignors to Union Carbide Corporation, a corporation of New York  
No Drawing. Filed Oct. 30, 1963, Ser. No. 320,006  
9 Claims. (Cl. 260-446)

1. A coordination complex of a normal halide salt of a metal selected from the group consisting of antimony, tin and titanium, with a hydroxyalkyl polyphosphate represented by the formula



wherein  $R$  is a divalent residue of a vicinal epoxide;  $y$  is an integer having a value of at least 1; and each  $Z$  is individually selected from the group consisting of



wherein  $R$ ,  $y$  and  $Z$  are as above defined; said complex being prepared by admixing the normal metal halide salt and polyphosphate in a ratio of from about 0.25 mole to about 10 moles of the normal metal halide salt per mole equivalent of  $\text{P}=\text{O}$  in the polyphosphate.

3,412,126

**PROCESS FOR PRODUCING TRIALKYL ALUMINUM COMPOUNDS**

Marcellan F. Gautreaux, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia  
Filed July 12, 1962, Ser. No. 209,405  
4 Claims. (Cl. 260-448)

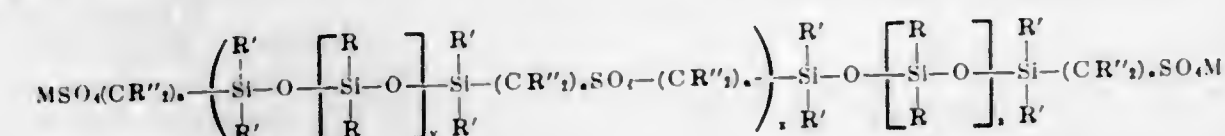
1. An improved process for the manufacture of a trialkyl aluminum product having alkyl substituents in a predetermined chain length range, comprising in combination: (i) chain growing of ethylene on alkyl groups of a tri-lower alkyl aluminum feed (including a fresh tri-

lower alkyl aluminum and a recycled tri-lower alkyl aluminum) to generate thereby an intermediate tri-alkyl-aluminum stream including higher and lower alkyl aluminum moieties,

(ii) separating the intermediate tri-mixed alkyl aluminum into a tri-higher alkyl aluminum fraction and a

aliphatic unsaturation having no more than 7 carbon atoms;  $R''$  is the same as  $R'$ , and, additionally, hydrogen;  $a$  is an integral number of from 3 to 8, inclusive;  $x$  is from 1 to 10;  $y$  is from 0 to 150; and  $z$  is from 0 to 150.

5. A method for forming an organosilicon material having the formula:



tri-lower alkyl aluminum fraction, said fractions containing more of the higher and lower alkyl aluminum moieties, respectively than predicted on the basis of a perfect separation of trialkyl aluminum molecular species, said tri-lower alkyl aluminum fraction predominating in alkyl groups lower than the desired product, and

(iii) recycling at least a portion of the tri-lower alkyl aluminum fraction to the chain growing step.

3,412,127

**ALKYLALUMINUM OXIDATION PROCESS**  
Donald R. Napier, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware  
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,448  
9 Claims. (Cl. 260-448)

Aluminum trialkyls are oxidized initially at a temperature below about 20° C., gradually reducing the temperature until the oxygen uptake decreases to a rate too low to be practical, adding a low-molecular-weight metal alkyl, increasing the temperature at about 20° C. or above and completing the oxidation. Such procedure is said to reduce the formation of impurities by side reactions.

3,412,128

**METHOD FOR HYDROLYZING HALOSILANES**  
John M. Nielsen, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York  
No Drawing. Filed May 13, 1964, Ser. No. 367,248  
19 Claims. (Cl. 260-448.2)

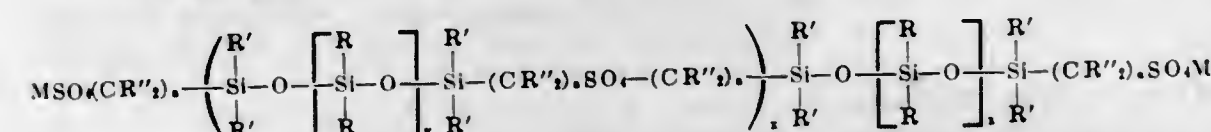
A partial hydrolysis method is provided for making low molecular weight halogen-terminated organopolysiloxane from organohalosilane. A nitrogen-containing catalyst, such as pyridine, is employed in combination with hydrogen halide to minimize the formation of cyclopolysiloxane and higher molecular weight organopolysiloxane. The low molecular weight halogen-terminated organopolysiloxane which is provided can be employed as an intermediate for making organopolysiloxane block copolymers.

3,412,129

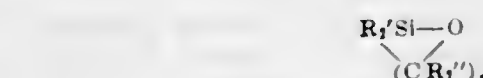
**ALKALI METAL SULFATE SUBSTITUTED ORGANOSILOXANES CONTAINING INTERNAL SULFATE GROUPS AND PROCESS THEREFOR**

Norman G. Holdstock, Scotia, N.Y., assignor to General Electric Company, a corporation of New York  
No Drawing. Filed Dec. 23, 1965, Ser. No. 516,099  
12 Claims. (Cl. 260-448.2)

1. An organosilicon material having the formula:



where  $M$  is selected from the class consisting of sodium and potassium;  $R$  is an alkyl radical of from 1 to 3 carbon atoms;  $R'$  is a monovalent hydrocarbon radical free of



where  $R'$ ,  $R''$ , and  $a$  are as previously defined with from 0.5 to 1.1 mole per mole of the siloxacycloalkane of a material selected from the class consisting of concentrated sulfuric acid and oleum.

3,412,130

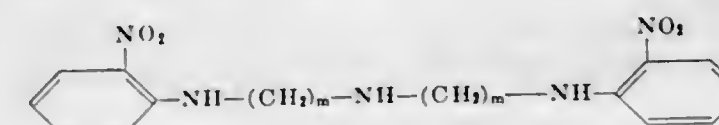
**QUATERNARY AMMONIUM DYESTUFFS OF O-NITRO-PHENYL SUBSTITUTED DILOWER ALKYLENE TRIAMINES**

Gustav Schafer, Frankfurt am Main, Johann Ostermeier, Offenbach (Main), and Norbert Ottawa, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany.

No Drawing. Filed Oct. 21, 1966, Ser. No. 588,283  
Claims priority, application Germany, Aug. 27, 1966, F. 50,058

4 Claims. (Cl. 260-459)

Water-soluble N-(lower alkyl) quaternary dyestuffs of the formula



having as an anion a halide<sup>-</sup>, an  $-\text{SO}_4^{--2}$ , a lower alkyl $-\text{O}-\text{SO}_3^-$  or a  $\text{CH}_3\text{COO}^-$  group and wherein  $m$

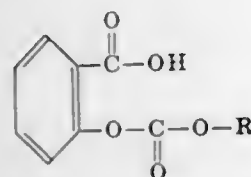
represents an integer of 2 to 6, which dyestuffs are highly suitable for dyeing and printing fibrous materials of polyacrylonitrile.



3,412,131

**ALKYL CARBONATES OF SALICYLIC ACID**  
Joseph V. Swintosky, Perkiomenville, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania  
No Drawing. Filed Aug. 2, 1966, Ser. No. 569,591  
3 Claims. (Cl. 260-463)

1. A compound of the formula:



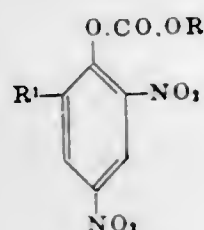
wherein R is an alkyl group comprising from four to eight carbon atoms.

3,412,132

**2-BRANCHED ALKYL-4,6-DINITROPHENYL ALKYL CARBONATES**  
Max Pianka, St. Albans, and John Duncan Edwards, Luton, England, assignors to The Murphy Chemical Company Limited, St. Albans, England, a British company  
No Drawing. Filed Aug. 2, 1965, Ser. No. 476,754  
Claims priority, application Great Britain, Aug. 7, 1964, 32,306/64

7 Claims. (Cl. 260-463)

There are provided compounds of the formula



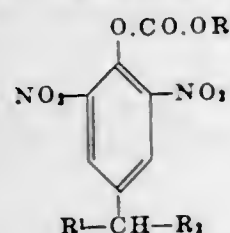
in which R is an alkyl group which may be branched, containing from 1 to 6 carbon atoms and in which R<sup>1</sup> represents 1-ethyl-n-hexyl or 1-n-propyl-n-pentyl. The compounds of the invention are of low phytotoxicity and have good acaricidal and in some instances also particular fungicidal properties.

3,412,133

**ALKYL CARBONATE ESTERS OF 2,6-DINITRO-4-BRANCHED ALKYL-PHENOLS**  
Max Pianka, St. Albans, and John Duncan Edwards, Luton, England, assignors to The Murphy Chemical Company Limited, St. Albans, England, a British company  
No Drawing. Filed Aug. 2, 1965, Ser. No. 476,707  
Claims priority, application Great Britain, Aug. 7, 1964, 32,306/64; July 14, 1965, 29,892/65

18 Claims. (Cl. 260-463)

There are provided compounds of the formula



in which R is an alkyl group of from 1-12 carbon atoms, which may be branched, and in which R<sup>1</sup> and R<sup>2</sup> are n-alkyl groups containing from 2 to 5 carbon atoms each, and together containing a total of 6 to 10 carbon atoms. The compounds display mildewicidal activity.

3,412,134

**PROCESS FOR THE PREPARATION OF UNSATURATED NITRILES**  
Daniel G. Jones, Pennington, N.J., assignor to Mobil Oil Corporation, a corporation of New York  
No Drawing. Filed Feb. 24, 1965, Ser. No. 435,039  
13 Claims. (Cl. 260-465)

A process for the preparation of a nitrile which comprises reacting a mixture containing ammonia, oxygen and an unsaturated hydrocarbon having at least one activated methyl radical wherein the activated methyl radical is one that is connected to a carbon atom which in turn is connected to another carbon atom through an unsaturated bond (e.g., propylene, toluene, propyne and etc.) in the presence of a catalyst comprising a zeolite molecular sieve having an ordered internal structure to produce a nitrile corresponding to the unsaturated hydrocarbon in the mixture.

3,412,135

**PROCESS FOR PREPARING ACRYLONITRILE AND METHACRYLONITRILE BY CATALYTIC AMMOXIDATION OF PROPYLENE AND ISOBUTYLENE**  
Jamal S. Eden, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York  
No Drawing. Filed Jan. 21, 1966, Ser. No. 522,074

9 Claims. (Cl. 260-465.3)

Propylene or isobutylene, ammonia and oxygen are contacted at an elevated temperature with a catalyst containing molybdenum oxide, tellurium oxide and a uranium phosphate to form acrylonitrile or methacrylonitrile.

3,412,136

**PROCESS FOR THE PREPARATION OF ALIPHATIC NITRILES**  
Dorothee M. McClain and Irving L. Mador, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia  
No Drawing. Filed Oct. 11, 1965, Ser. No. 494,860  
15 Claims. (Cl. 260-465.3)

A process for the preparation of aliphatic nitriles such as alkyl nitriles, alkenyl nitriles and mixtures thereof by the reaction of a lower alkene, ammonia and oxygen in the presence of Group VIII noble metal-containing catalyst, e.g., palladium or platinum group metals, salts and oxides. The reaction may be carried out at temperatures ranging from about 90° to 175° C. and at atmospheric or near atmospheric pressures.

3,412,137

**PROCESS FOR THE PREPARATION OF NITRILES**  
Joseph W. Stutts, Jackson, Ala., assignor to Geigy Chemical Company, Greenburgh, N.Y., a corporation of Delaware  
No Drawing. Filed Oct. 14, 1965, Ser. No. 496,179  
6 Claims. (Cl. 260-465.5)

Process for the preparation of iminodiacetonitrile by reacting hexamethylenetetramine, with about 6 molar equivalents of hydrogen cyanide in a buffered aqueous medium at a pH of from about 5 to about 6.5 and at a temperature of between about 0° and about 75° C. In a preferred embodiment the buffer comprises about 1.5 moles of acetic acid per mole of hexamethylenetetramine and the temperature ranges from about 40° to about 50° C.

3,412,138

**ALKYLATION OF TYROSINE**  
Samuel L. Solar, San Jose, and Robert R. Schumaker, Los Gatos, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
No Drawing. Filed Dec. 17, 1965, Ser. No. 514,696  
17 Claims. (Cl. 260-471)

A method for preparing O-alkyltyrosine and ester of O-alkyltyrosine by reacting tyrosine with alkyl halide in a reaction solvent of dimethyl sulfoxide under a highly alkaline condition. Examples of compounds by this method include O-butyltyrosine, heptyl-O-heptyltyrosine, O-octadecyltyrosine, and phenethyl-O-phenethyltyrosine. The O-alkyltyrosine compounds are useful as monomers in the preparation of polypeptides and the esters of O-alkyltyrosine have utility because of their antifungal and antibacterial activity.

3,412,139

**AMINOCARBOXYLIC ACID ESTERS OF THIOETHERS**  
Heinz Eggensperger, Gaderndorf über Bensheim, Volker Franzen, Heidelberg, and Hans Stephan, Bensheim an der Bergstrasse, Germany, assignors to Deutsche Advance Produktion GmbH, Lautern, Odenwald, Germany  
No Drawing. Filed Oct. 20, 1965, Ser. No. 499,015  
Claims priority, application Germany, Dec. 2, 1964, D 45,968

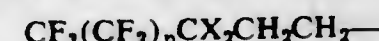
2 Claims. (Cl. 260-482)

Aminocrotonic and 2-amino-cyclohexanecarboxylic acid esters in which the ester group contains at least one thioether group are useful stabilizers for polyvinyl chloride.

3,412,140

**POLYFLUORINATED GLUTARATE ESTERS**  
Christian A. Sell, Santa Monica, Robert H. Boschan, Los Angeles, and James P. Holder, Woodland Hills, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland  
No Drawing. Filed Aug. 3, 1964, Ser. No. 387,189  
11 Claims. (Cl. 260-485)

Bis(polyfluoroalkyl)-3-methyl glutarate esters in which the fluoroalkyl groups have the formula



where n is an integer of from 0 to 5, preferably 1 to 3, and X is a member selected from the group consisting of hydrogen and fluorine, and is preferably fluorine, said glutarates having properties of high fire resistance, increased temperature stability, liquidity over a relatively wide temperature range, and improved hydrolytic stability, said glutarates being particularly valuable as functional fluids, e.g., as hydraulic fluids, heat transfer fluids and as lubricants.

3,412,141

**PRODUCTION OF TERTIARY-ALKYL ACRYLATES AND METHACRYLATES**  
Hugo Kroeper, Heidelberg, Hans-Martin Weitz, Frankenthal (Pfalz), Rolf Platz, Mannheim, and Karl Schloemer, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen am Rhine, Germany  
No Drawing. Filed Aug. 9, 1965, Ser. No. 478,446  
Claims priority, application Germany, Aug. 12, 1964, B 78,065

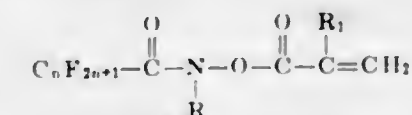
4 Claims. (Cl. 260-486)

Production of t-alkyl acrylates and methacrylates from acrylic acid or methacrylic acid and tertiary olefins in the presence of an active bleaching earth at a temperature of from 0 to 40° C.

3,412,142

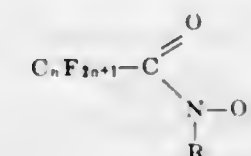
**ACRYLYL PERFLUOROHYDROXAMATES**  
Pier Luigi Pacini, Dobbs Ferry, N.Y., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware  
No Drawing. Filed June 27, 1966, Ser. No. 560,853  
6 Claims. (Cl. 260-500.5)

1. A compound of the formula:



wherein n is a whole number of from 1 to 18  
R is hydrogen or alkyl of from 1 to 6 carbon atoms; and  
R<sub>1</sub> is hydrogen or methyl.

6. A compound of the formula:



wherein n is a whole number from 2 to 18, R is hydrogen or alkyl of from 1 to 6 carbon atoms and M is hydrogen or a replaceable metallic cation.

3,412,143

**PROCESS FOR THE PRODUCTION OF AMINE SALTS OF SULFAMIC ACID**  
Charles E. Villars, Golden Valley, and Darrel D. Mitchell, South Minneapolis, Minn., assignors to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware  
Filed June 21, 1965, Ser. No. 465,494  
11 Claims. (Cl. 260-501.12)

Amine salts of sulfamic acid (e.g., cyclohexylamine cyclohexylsulfamate) are prepared by injecting gaseous sulfur trioxide at a pressure of less than 100 mm. Hg absolute into a turbulent reaction zone containing a primary and/or secondary amine. The molar ratio of amine to injected sulfur trioxide is at least 20:1 and turbulence of the reaction zone is maintained at a Reynolds number of at least 5,000. Temperature of the reaction zone is maintained between about 15° C. to about 65° C.

3,412,144

**PROCESS FOR PRODUCING SULFENAMIDES**  
Joseph E. Dunbar and Joan A. Rogers, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Filed Oct. 4, 1965, Ser. No. 492,879  
4 Claims. (Cl. 260-501.19)

Sulfenamides and amine salts of sulfonic acids are prepared by reacting a thiol-sulfonate with a primary aromatic amine.

3,412,145

**SEPARATION OF CHLORINATED PHENOL ISOMERS**  
Delbert L. Hanna, Oak Park, Ill., assignor to Velsicol Chemical Corporation, a corporation of Delaware  
No Drawing. Filed July 7, 1964, Ser. No. 380,935  
4 Claims. (Cl. 260-512)

1. A method for the selective sulfonation of 2,5-dichlorophenol which comprises reacting 2,5-dichlorophenol in a mixture consisting essentially of this compound and 2,4-dichlorophenol with an amount of sulfonating agent selected from the group consisting of fuming sulfuric acid, sulfuric acid and sulfur trioxide less than equimolar to the total dichlorophenol isomers.

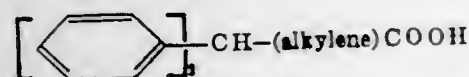


3,412,146

## PROCESS FOR PREPARATION OF DIPHENYL ALKANOIC ACIDS

William G. Kofron, Dobbs Ferry, N.Y., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware  
No Drawing. Filed Aug. 13, 1965, Ser. No. 479,664  
4 Claims. (Cl. 260—515)

Acids of the formula



are prepared by reacting acids having the formula  $\text{X-(alkylene)-COOH}$  with at least two molar equivalents of an alkali metal diphenylmethyllide. X is iodo, bromo and chloro and alkylene is a divalent branched or straight hydrocarbon chain.

3,412,147

## CHLORO DERIVATIVES OF GLUTAMIC ACID

James Kollonitsch, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey  
No Drawing. Continuation-in-part of application Ser. No. 331,363, Dec. 18, 1963. This application July 25, 1966, Ser. No. 573,142

2 Claims. (Cl. 260—534)

Processes for preparing C-chloro  $\alpha$ -amino acids, C-hydroxy  $\alpha$ -amino acids, and diamino acids, via chlorination of an  $\alpha$ -amino acid in an acidic medium in the presence of a free radical initiating catalyst. Novel chloro-amino acids.

3,412,148

## POLYMERIZATION OF HEXAFLUOROPROPYLENE OXIDE

Frederick Lowell Arbogast, Richmond, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
Filed May 2, 1966, Ser. No. 546,682

7 Claims. (Cl. 260—544)

1. A process for the polymerization of hexafluoropropylene oxide to polymers having an average molecular weight of at least 5500 which comprises

- (a) maintaining a plurality of reaction zones wherein not more than 67% of the total reaction volume is in the first reactor zone,
- (b) continuously charging hexafluoropropylene oxide and an alkali metal fluoride liquid catalyst composition to the first reaction zone at the rate of 75 to 225 moles of hexafluoropropylene oxide per mole of alkali metal fluoride, said liquid catalyst composition being prepared by
  - (1) mixing an alkali metal fluoride with at least an equal weight of an ethylene glycol dimethyl ether of the formula,  $\text{CH}_3\text{O(CH}_2\text{CH}_2\text{O)}_n\text{CH}_3$ , wherein  $n$  is 1 to 4, and
  - (2) reacting the alkali metal fluoride with 2 to 3 moles of hexafluoropropylene oxide per mole of alkali metal fluoride,
- (c) passing the reaction mass sequentially through the plurality of reaction zones while maintaining the reaction mass under agitation at a temperature of  $-45^\circ$  to  $-10^\circ$  C. until at least 85% of the hexafluoropropylene oxide has been converted to polymer, and
- (d) continuously withdrawing crude reaction product from the final reaction zone and separating a polymer fraction having an average molecular weight of at least 5500 as a product of the process.

3,412,149

## PHENYL-MERCAPTOMETHANE-SULFONAMIDE

Hanselmuht Schlör, Wuppertal-Barmen, and Ferdinand Grewe, Burscheld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany  
No Drawing. Filed Mar. 11, 1966, Ser. No. 533,449  
Claims priority, application Germany, Mar. 12, 1965, F 45,504

1 Claim. (Cl. 260—556)

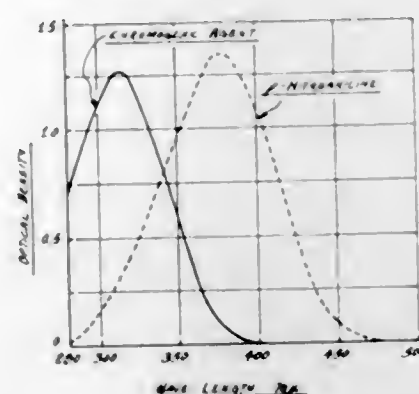
Phenyl-mercaptomethane-sulfonamide which possesses fungicidal properties and which may be produced by conventional methods.

3,412,150

 $\alpha$ -BENZOYL ARGININE P-NITROANILIDE HYDROCHLORIDE

Bernard F. Erlanger, Beechhurst, N.Y., assignor to the United States of America as represented by the Secretary of the Navy  
Continuation-in-part of application Ser. No. 231,605, Oct. 18, 1962. This application Jan. 15, 1965, Ser. No. 425,979

1 Claim. (Cl. 260—558)



The compound  $\alpha$ -benzoyl arginine p-nitroanilide hydrochloride is useful in facilitating the study of enzymes, particularly in providing a colored product which is released as a direct result of enzyme activity. It is synthesized by adding p-nitroaniline and tri-n-butylamine to a solution containing  $\alpha$ -benzoyl L-arginine, diethyl phosphate and phosphoric acid. The mixture then is poured into a solution of phosphorus pentoxide in diethyl phosphite, with the diethyl phosphite later removed before adding the residual oil to N HCl. Crystalline D, L, and DL isomers of benzoyl arginine p-nitroanilide hydrochloride are recovered in a yield of substantially 74%.

3,412,151

## DIMETHYLFORMAMIDE PRODUCTION

Kenzie Nozaki, El Cerrito, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware  
No Drawing. Filed June 17, 1966, Ser. No. 558,249  
4 Claims. (Cl. 260—561)

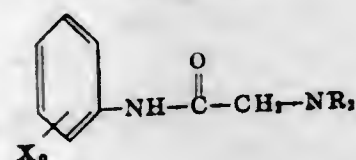
Dimethylformamide is produced by carbonylation of trimethylamine in the presence of water and dicobalt octacarbonyl catalyst.

3,412,152

## NUCLEARLY HALOGENATED DIALKENYL-AMINOACETANILIDES

George F. Deebel, Dayton, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware  
No Drawing. Filed June 24, 1965, Ser. No. 466,813  
4 Claims. (Cl. 260—562)

Aminoacetanilides of the formula



wherein X is halogen with atomic weight greater than 35,  $n$  is 1 to 5, and R is an alkenyl hydrocarbon radical of 3 to 6 carbon atoms, together with their hydrohalides; useful as fungicides.

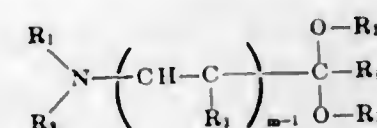
3,412,153

## PROCESS FOR THE MANUFACTURE OF AMIDE-ACETALS

Hans-Heinrich Bosshard, Binningen, and Heinrich Zollinger, Kuesnacht, Zurich, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland  
No Drawing. Filed Dec. 15, 1960, Ser. No. 75,943  
Claims priority, application Switzerland, Dec. 18, 1959, 81,994/59

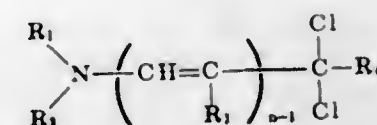
9 Claims. (Cl. 260—563)

1. A process for the manufacture of a compound of the formula



or

wherein a compound of the formula



or

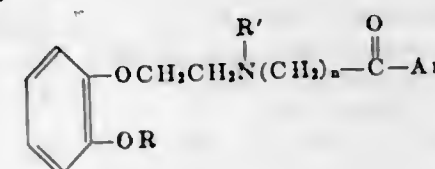
is reacted at a temperature not exceeding  $20^\circ$  C. in an inert organic solvent with an alkali metal alcoholate of the formula  $\text{R}_3\text{OM}$ , in which  $\text{R}_1$  and  $\text{R}_2$  each represent lower alkyl,  $\text{R}_3$  and  $\text{R}_4$  each represent a member selected from the group consisting of hydrogen, lower alkyl and phenyl,  $\text{R}_5$  is a member selected from the group consisting of lower alkyl, cyclohexyl, benzyl and phenyl, M is an alkali metal atom and  $n$  is a positive whole number of up to 2.

3,412,154

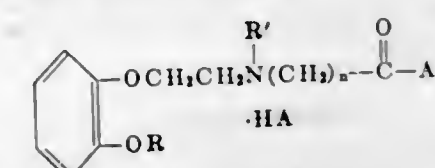
## AMINO-SUBSTITUTED PHENONE COMPOUNDS

Robert W. Fleming, Cincinnati, Ohio, and Fred P. Hauck, Jr., Ann Arbor, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan  
No Drawing. Filed Aug. 12, 1964, Ser. No. 389,224  
4 Claims. (Cl. 260—570.5)

1. A member of the class consisting of compounds of the formula



and compounds of the formula



where R is alkyl of fewer than 4 carbon atoms;  $\text{R}'$  is a member of the class consisting of hydrogen and alkyl of fewer than 4 carbon atoms;  $n$  is a member of the class consisting of the integers 3 and 4; Ar is a member of the class consisting of phenyl, monofluorophenyl, monochlorophenyl, tolyl, monomethoxyphenyl, and mono(trifluoromethyl)phenyl; and A is one equivalent of a pharmaceutically-acceptable anion.

3,412,155

## FATTY BRANCHED AMINE DIOXIDES

Eugene J. Miller, Jr., Wheaton, and Ago Mais, La Grange Park, Ill., assignors, by mesne assignments, to Armour Industrial Chemical Company, a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 402,921, Oct. 9, 1964. This application Sept. 15, 1965, Ser. No. 487,606

7 Claims. (Cl. 260—583)

Fatty branched amine dioxides made by oxidizing the fatty diamine precursor with a strong oxidizing agent such as  $\text{H}_2\text{O}_2$ . These are useful as detergents.

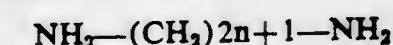
3,412,156

PROCESS FOR PRODUCING  $\omega,\omega'$ -DIAMINOALKANES

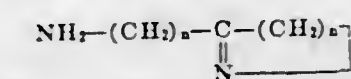
Keizo Ueda, Kobe-shi, Hyogo-ken, Tsuneo Ohakwahara, Hirakata-shi, Osaka-fu, and Takahiro Kubo, Houfu-shi, Yamaguchi-ken, Japan, assignors to Kanegafuchi Boseki Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan  
No Drawing. Filed Sept. 10, 1964, Ser. No. 395,566  
Claims priority, application Japan, Sept. 11, 1963, 38/48,719

16 Claims. (Cl. 260—583)

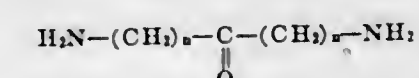
A process for producing  $\omega,\omega'$ -diaminoalkanes of the general formula



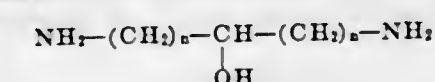
wherein  $n$  is an integer from 3 to 6, which process comprises converting a compound selected from the group consisting of compounds represented by the formulas



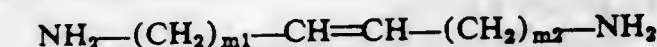
and



and mixtures thereof to said  $\omega,\omega'$ -diaminoalkanes by reducing the said compound by heating it with an aliphatic hydroxy compound having 1 to 6 carbon atoms and an alkali metal hydroxide to obtain diaminoalcohols of the general formula

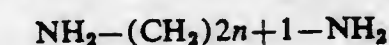


then dehydrating said diaminoalcohols in the presence of a dehydrating catalyst to obtain diaminoalkenes of the formula

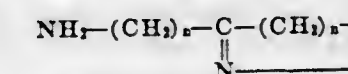


wherein  $m_1+m_2$  is an integer 5, 7, 9 or 11 and then catalytically hydrogenating said diaminoalkenes.

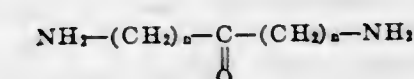
A process for producing  $\omega,\omega'$ -diaminoalkanes of the general formula



wherein  $n$  is an integer from 3 to 6, which process comprises converting a compound selected from the group consisting of compounds represented by the formulas



and



and mixtures thereof to the corresponding diaminoalcohols and directly reducing said carbonates to  $\omega,\omega'$ -diaminoalkanes.



3,412,157

**POLYAMINE-SO<sub>2</sub> REACTION PRODUCT**

Philip J. Ralfsnyder, Oklahoma City, Okla., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 259,431, Feb. 18, 1963. This application Oct. 6, 1965, Ser. No. 493,536

6 Claims. (Cl. 260—583)

A corrosion inhibiting reaction product concentrate obtained by reacting in an alcoholic medium a polyamine and sulfur dioxide in the ratio of about 0.8 to 1 mole of sulfur dioxide per amine group.

3,412,158

**PROCESS FOR THE PREPARATION OF ALIPHATIC AMINES**

Dorothee M. McClain, Cincinnati, Ohio, assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,858

9 Claims. (Cl. 260—585)

Preparation of primary alkyl amines from low molecular weight olefins and ammonia. The process is carried out by contacting the reactant with a noble metal-containing catalyst of Group VIII of the Periodic Table at moderately elevated temperatures in the range of about 90° C. to 175° C. and at ambient or elevated pressures.

3,412,159

**PROCESS OF PREPARING NORBORNANDIOLS**

Jan W. H. Faber and William F. Fowler, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 27, 1965, Ser. No. 451,302

3 Claims. (Cl. 260—617)

Polyhydric alcohols containing norbornane nuclei are prepared by reacting one part bicyclo[2.2.1]heptadiene or bicyclo[2.2.1]hept-5-ene-2-ol acrylate with from 2 to 8 parts water or diol, and catalyzing the reaction with from 0.3 to 5% acid, based on the weight of the water or diol.

3,412,160

**METHOD FOR THE PRODUCTION OF LOW VOLATILITY ALCOHOLS, ACIDS, ALDEHYDES AND THEIR DERIVATIVES**

Joseph Schierholt, Spitzwegstrasse 10, Kapellen, near Moers, Germany

Continuation-in-part of application Ser. No. 835,419, Aug. 24, 1959. This application Aug. 7, 1964, Ser. No. 388,246

2 Claims. (Cl. 260—637)

1. A process for separating soluble higher alcohols from aqueous solutions selected from the group consisting of 2,3 - butanediol, 1,3 - butanediol, glycerine and erythrite by reaction with acetaldehyde to produce an acetal of the group consisting of cyclical 2,3-butanediol-acetaldehyde acetal, 1,3-butanediol acetal, glycerine acetaldehyde acetal and erythrite-acetaldehyde acetal at temperatures between room temperature and 100° C. which is extracted by a substantially water-immiscible solvent selected from the group consisting of xylol, methylene chloride, o-dichlorobenzol, diphenyleneoxide, diphenylmethane, triphenylphosphate, chloroform and benzophenone; allowing the aqueous phase to separate from the water immiscible solvent phase, separating the reaction product from the solvent phases, and splitting it into acetaldehyde and the alcohol to be separated.

3,412,161

**PREPARATION OF ALKYL CHLORIDES**

Pieter M. Bakker and Pieter L. Kooljman, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 9, 1965, Ser. No. 447,067  
Claims priority, application Netherlands, Aug. 12, 1964, 6409267

9 Claims. (Cl. 260—663)

In producing alkyl chlorides by reacting hydrogen chloride with an olefin of eight to twenty carbon atoms, in the presence of a chloride of zinc, iron, titanium or bismuth, the reaction is carried out at 60 to 90° C., in the presence as diluent of sulfolane, an alkyl sulfolane of up to six carbons, a nitroalkane of up to six carbons or a dialkylsulfoxide of up to four carbons.

3,412,162

**METHOD OF PREPARING PENTAFLUOROPHENYL MAGNESIUM CHLORIDE**

William Kenneth Rodgeron Musgrave, Potters Bank, Durham City, England, assignor to Imperial Smelting Corporation (N.S.C.) Limited

No Drawing. Filed Feb. 28, 1964, Ser. No. 348,251  
Claims priority, application Great Britain, Mar. 1, 1963, 8,250/63

2 Claims. (Cl. 260—665)

The invention relates to pentafluorophenyl magnesium chloride which is prepared by reacting chloropentafluorobenzene with finely divided magnesium in a dry ether in the presence of ethylene dibromide. The Grignard reagent obtained is used to prepare pentafluorobenzoic acid and methyl pentafluorophenyl mercury.

3,412,163

**ISOMERIZATION PROCESS**

Armand J. De Rosset, Clarendon Hills, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Aug. 30, 1966, Ser. No. 575,985

10 Claims. (Cl. 260—666)

Isomerization of olefins in contact with a group VIII metal, such as platinum, on a refractory inorganic oxide, such as alumina, which has been chemically combined with aluminum monofluoride vapor or silicon difluoride vapor at about 650–1200° C.

3,412,164

**PREPARATION OF BUTENYL CYCLOHEXENES**

Wolfgang Schneider, Broadview Heights, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 20, 1966, Ser. No. 587,955

1 Claim. (Cl. 260—666)

Butenyl cyclohexene is prepared by codimerizing ethylene with vinyl cyclohexene in the presence of a catalyst of a nickel salt and an alkyl aluminum or alkyl aluminum halide compound, alternatively in the presence of an electron donor.

3,412,165

**PHENYLCYCLOHEXANE PROCESS**

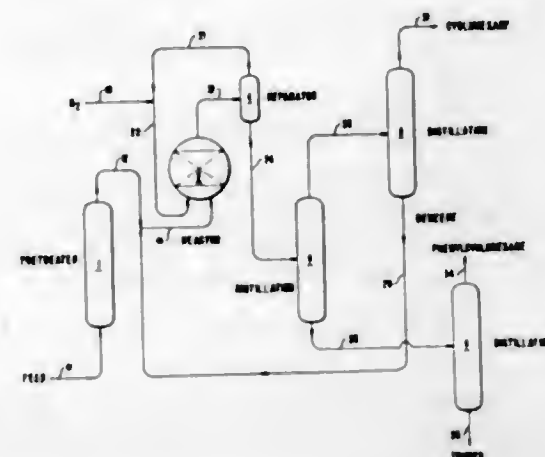
Lynn H. Slauch, Lafayette, Calif., and John A. Leonard, Swindon, Wilts, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Feb. 15, 1967, Ser. No. 616,356

8 Claims. (Cl. 260—667)

A process for the production of phenylcyclohexane in which benzene is contacted in the presence of hydrogen and a catalyst which is composed of tungsten and another hydrogenation metal component supported on a halogen activated and containing solid support. Catalytic selec-

tivity is maintained by minimizing sulfur and water content of the benzene feed and conducting the reaction under



conditions where benzene feed and phenylcyclohexane product are maintained in substantially the liquid phase.

3,412,166

**CONVERSION OF HYDROCARBONS CONTAINING THE NUCLEUS OF 1,2,3,4-TETRAHYDRONAPHTHALENE TO HYDROCARBONS CONTAINING THE NUCLEUS OF INDENE**

Ronald D. Bushick, Glen Mills, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Sept. 20, 1966, Ser. No. 580,599  
11 Claims. (Cl. 260—668)

Hydrocarbons containing the carbon atom nucleus of 1,1-di-lower-alkyl-1,2,3,4-tetrahydronaphthalene and dissolved in an aromatic or aliphatic solvent are converted in the presence of HF—BF<sub>3</sub> to hydrocarbons containing an indene nucleus. For example, 1,1,4,4,5,5,8,8-octamethyl-1,2,3,4,5,6,7,8-octahydroanthracene is converted to 1-isopropyl-3,3-dimethylindene. Although the product always contains an indene nucleus, the specific product depends upon the type of solvent employed.

3,412,167

**PREPARATION OF p-XYLYLENES**

Joseph W. Lewis, Middlesex, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 9, 1966, Ser. No. 600,385

7 Claims. (Cl. 260—668)

1. In a method for preparing p-xylylenes by pyrolysis of p-xylene generating p-xylylene diradicals and thereafter condensing said diradicals to said p-xylylenes, the improvement which comprises contacting said p-xylene with methane during the pyrolysis thereof, said methane being present in an amount such that the molar ratio of methane to p-xylene is between 25/1 to 100/1 whereby the process efficiency is improved.

3,412,168

**METHOD OF RECOVERING MONOMETHYLNAPHTHALENES**

Philip X. Masciantonio, Penn Township, Westmoreland County, and Francis P. Mullooly, Maestown, Pa., assignors to United States Steel Corporation, a corporation of Delaware

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,531  
3 Claims. (Cl. 260—674)

1. A method of recovering a high-purity monomethylnaphthalenes fraction from a fraction having a nominal boiling range of 230°–270° C. comprising treating said fraction at a temperature between 10° and 80° C. with sulfuric acid having a concentration between about 10%

and 50%, the mole ratio of acid to bases in said fraction being between about 0.5 and 2.0 of acid to 1 of bases, separating said fraction from an acid layer, treating said fraction at a temperature between about 150° and 190° C. with at least about 3% by weight of said fraction of sulfuric acid having a concentration between about 90% and 100% until a friable resin is formed, filtering to separate said fraction and resin, treating said fraction with about 10% to 20% by weight of a 10% to 50% aqueous caustic solution, separating said fraction from a caustic layer, treating said fraction with a volume of water at least about 10% of the volume of said fraction, separating said fraction from a water layer, fractionating said fraction and collecting a distillate comprising a said monomethylnaphthalenes fraction having a boiling range of 235° to 247° C.

3,412,169

**SELECTIVE HYDROGENATION OF ACETYLENE**

Robert G. Clark, Louisville, Ky., assignor to Catalysts and Chemicals, Inc., Louisville, Ky., a corporation of Delaware

No Drawing. Filed June 27, 1966, Ser. No. 560,814

6 Claims. (Cl. 260—677)

In the selective hydrogenation of acetylenic components in gas mixtures containing high concentrations of olefins, should hydrogenation of olefins begin, a temperature control problem is presented. Both hydrogenation reactions are exothermic. The temperature of the hydrogenation process can be conveniently controlled by separating the required quantity of palladium catalyst into a series of beds with interbed quench cooling stages therebetween.

3,412,170

**PRODUCTION OF ISOPRENE**

Claiborne A. Duval, Jr., Howard S. Bryant, Jr., and David H. F. Liu, Beaumont, Tex., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Dec. 23, 1964, Ser. No. 420,798

9 Claims. (Cl. 260—680)

A process for producing isoprene which includes the steps of reacting ethylene and a methyl acetylene-propadiene mixture at a temperature from about 350° to 550° F. and at superatmospheric pressures in the presence of a heterogeneous solid catalyst, e.g. phosphoric acid on silica, or preferably, a crystalline aluminosilicate containing transitional metal and/or heavy metal cations within an ordered internal structure and recovering a product containing isoprene.

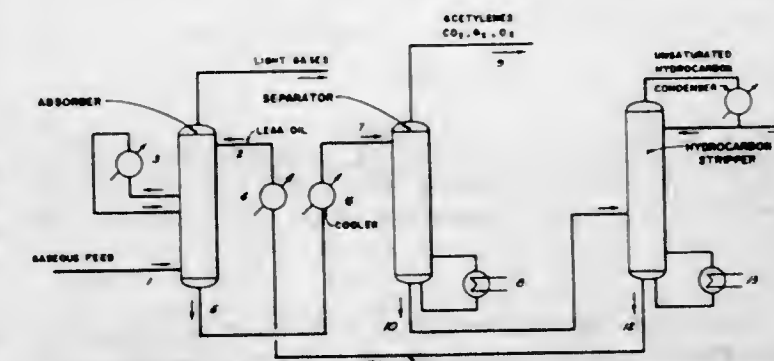
3,412,171

**PURIFICATION OF HYDROCARBONS**

Lester M. Welch, Seabrook, and Lloyd D. Tschopp and Rudolph C. Woerner, Houston, Tex., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

Filed June 27, 1966, Ser. No. 560,639

5 Claims. (Cl. 260—681.5)



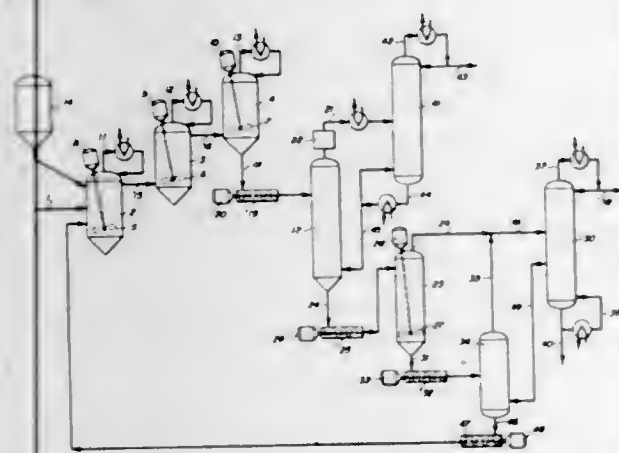
A process for the purification of unsaturated hydrocarbons, particularly diolefins such as butadiene-1,3 or



isoprene from a gaseous mixture containing hydrocarbons including acetylenic hydrocarbons and relatively noncondensable gases including oxygen. Gases to be purified may be obtained by oxidative dehydrogenation. Purification by a particular process including the use of benzene or toluene as an absorber oil.

### 3,412,172 RECOVERY OF HIGH PURITY BUTADIENE BY CUPROUS SALT PARTICLES IN ALL-SLURRY PROCESS

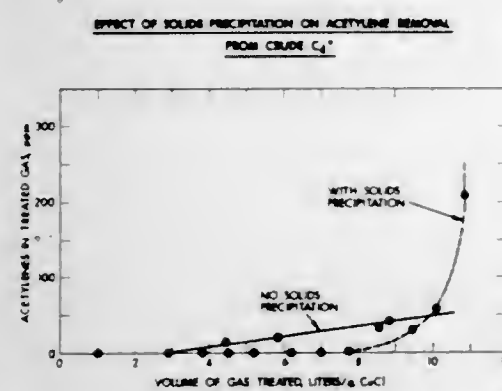
Richard J. De Feo, Baton Rouge, La., Robert P. Cahn, Millburn, N.J., Jesse M. Carr, Jr., Baton Rouge, La., Robert B. Long, Atlantic Highlands, N.J., Thornton L. Cappel, Baton Rouge, La., and Ralph Cecchetti, Hanover, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware  
Filed Sept. 19, 1966, Ser. No. 580,436  
41 Claims. (Cl. 260—681.5)



Recovery of high purity butadiene by liquid phase slurry complexing is conducted with an active cuprous halide sorbent slurried in a paraffin-containing organic diluent, followed by slurry stripping and desorption of complexed butadiene in the presence of the diluent.

### 3,412,173 ACETYLENE REMOVAL PROCESS

Robert B. Long, Atlantic Highlands, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware  
Continuation-in-part of application Ser. No. 423,227, Jan. 4, 1965. This application May 17, 1967, Ser. No. 639,099  
16 Claims. (Cl. 260—681.5)



Acetylenes are removed from gaseous or liquid streams by contacting with a cuprous salt to form a complex, said salt being initially dissolved in a basic solvent. The basic solvent should have appreciable solubility for the salt but a low solubility for the complex.

### 3,412,174 HYDROGENATION PROCESS EMPLOYING A TRANSITION METAL CATALYST

Wolfram R. Kroll, Linden, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 378,034, June 25, 1964. This application Aug. 19, 1966, Ser. No. 573,497  
36 Claims. (Cl. 260—683.9)

Active hydrogenation catalysts are prepared by the reaction of organoaluminum or organoaluminum monoalkoxide reducing agents with transition metal salts; the catalysts may be further activated by the addition of Lewis bases, weak organic acids, or oxygen.

### 3,412,175 GRAFT COPOLYMERS OF FLUOROCARBON GROUPS ON POLYAMIDE OR POLYESTER SUBSTRATES

Eugene Edward Magat, Spring Valley, Wilmington, Del., and David Tanner, Charlottesville, Va., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 578,414, Sept. 9, 1966. This application Dec. 21, 1966, Ser. No. 603,409  
8 Claims. (Cl. 260—857)

A graft copolymer comprising a polyamide or polyester substrate having grafted thereto a fluorocarbon gives increased resistance to aqueous soil, oils, oily soil, and dry soil.

### 3,412,176 GRAFT COPOLYMERS OF UNSATURATED ALCOHOL SIDE CHAINS ON POLYAMIDE OR POLYESTER SUBSTRATES

Eugene Edward Magat, Spring Valley, Wilmington, Del., and David Tanner, Charlottesville, Va., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 578,414, Sept. 9, 1966. This application Dec. 21, 1966, Ser. No. 603,460  
7 Claims. (Cl. 260—857)

Graft copolymers of unsaturated alcohol side chains on a polyamide or polyester substrate give improved dyeability, improved static resistance, and are more wickable.

### 3,412,177 INTERPOLYMERIZATION OF ACRYLONITRILE MONOMER AND POLYMER AT AN ELEVATED PRESSURE

Russell K. Griffith, Chagrin Falls, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio  
No Drawing. Filed Feb. 28, 1966, Ser. No. 530,408  
4 Claims. (Cl. 260—881)

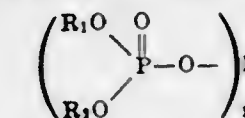
Void-free, 3-dimensional solid articles can be prepared by a process consisting of heating a consolidated polymerizable mixture comprising acrylonitrile monomer and an acrylonitrile polymer at a temperature of from about 50° C. to about 300° C. at a pressure of at least 1000 p.s.i.g. in as short a time as a minute or less up to a maximum of about two hours or more.

### 3,412,178 ETHYLENE COPOLYMER

Francis E. Brown, Orange, Tex., assignor, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
No Drawing. Filed Apr. 16, 1964, Ser. No. 360,422  
5 Claims. (Cl. 260—897)

Copolymers of ethylene and 2-allyloxymethyl-2-ethyl-1,3-propanediol are prepared by a high pressure free-radical catalyst polymerization process and the co-

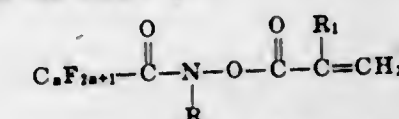
polymers so prepared are employed to render a polyolefin resistant to the accumulation of a static electric charge. obtained by reacting a metallic salt of an organic-phosphoric acid of the formula



### 3,412,179 POLYMERS OF ACRYLYL PERFLUORO- HYDROXAMATES

Eduard K. Kleiner, New York, N.Y., assignor to Gelgy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware  
No Drawing. Filed June 27, 1966, Ser. No. 560,869  
19 Claims. (Cl. 260—900)

Polymers of acrylyl perfluorohydroxamate monomer compounds of the formula:



wherein  $n$  is a whole number of from 1 to 18,  $R$  is hydrogen or alkyl of from 1 to 6 carbon atoms and  $R_1$  is hydrogen or methyl; have valuable soil repellent properties. The polymers are used in oil and water repellent finishes useful in treating materials such as textiles, paper, leather, and painted wooden and metallic surfaces. Both homopolymers of the hydroxamates and copolymers thereof with at least one other ethylenically unsaturated comonomer are contemplated. Preferred are polymers of methacrylyl perfluorooctanoyl hydroxamate, methacrylyl  $N$ -methyl - perfluorooctanoylhydroxamate, and methacrylyl perfluorobutyrylhydroxamate, especially copolymers thereof with, for example, octyl methacrylate.

### 3,412,180 PRODUCT OF GLUCOHEPTONIC ACID OR ITS ALKALI METAL SALTS AND ALKALI METAL HEXAMETAPHOSPHATE

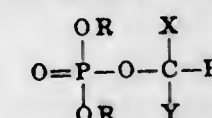
Hoyt M. Corley, Midlothian, Ill., assignor to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware  
No Drawing. Filed Nov. 6, 1964, Ser. No. 409,555  
4 Claims. (Cl. 260—920)

Combining glucoheptonic acid or a salt thereof, such as sodium glucoheptonate or potassium glucoheptonate, with an alkali metal phosphate, such as sodium hexametaphosphate, provides a new and highly useful sequestrant.

### 3,412,181 PERFLUORO PHOSPHATES

Robert A. Braun, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Filed Apr. 9, 1965, Ser. No. 447,088  
3 Claims. (Cl. 260—955)

Phosphate esters of the formula



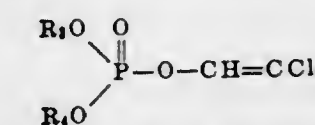
where  $R$  can be substituted and unsubstituted aliphatic hydrocarbon radicals or substituted and unsubstituted phenyl radicals, and  $X$  and  $Y$  are perfluoroalkyl radicals, useful as wetting agents, high temperature lubricants and anti-fouling additives for gasoline and motor oil.

### 3,412,182 COMPLEX METAL SALTS OF PHOSPHATO ESTERS

Ken Fukuda, Shoichiro Hayashi, Takashi Owada, and Takashi Munekata, Nakoso-shi, Japan, assignors to Kureha Kagaku Kogyo Kabushiki Kaisha  
No Drawing. Filed June 28, 1965, Ser. No. 467,682  
Claims priority, application Japan, July 1, 1964, 39/38,119; June 5, 1965, 40/33,228, 40/33,229, 40/33,230  
12 Claims. (Cl. 260—957)

Complex metal salts of organo-phosphorous compounds

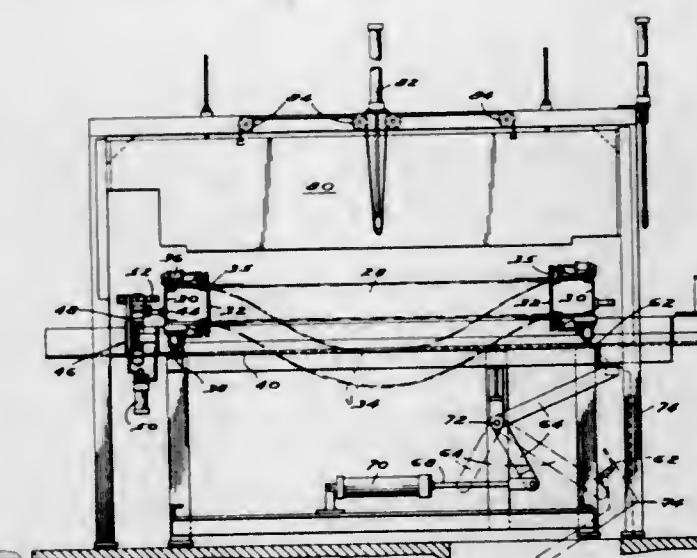
wherein  $R_1$  is alkyl, substituted alkyl, aryl or substituted aryl and  $R_2$  is a substituted alkyl or substituted aryl group containing 1 or more negative radicals, with an  $O,O$ -di-alkyl- $O-(\beta_1,\beta$ -dichlorovinyl)phosphate compound of the formula



wherein  $R_3$  and  $R_4$  are alkyl groups of 1 to 4 carbon atoms. These compounds are useful as insecticides and acaricides.

### 3,412,183 METHOD OF AND APPARATUS FOR FORMING HOLLOW PLASTIC STRUCTURES

David P. Anderson, Lathrup Village, and Leslie J. Berridge, Detroit, Mich., assignors to Woodall Industries, Inc., Detroit, Mich., a corporation of Michigan  
Filed Sept. 24, 1965, Ser. No. 489,968  
7 Claims. (Cl. 264—40)



This disclosure relates to a method and apparatus for forming two-ply plastic structures. The apparatus includes a continuous forming machine which routes the sheets to be formed through various stages, including a heating station, where the sheets are heated to their fusion temperature while suspended in spaced relation, and a forming station where the sheets are individually vacuum formed. The die apparatus of the forming station includes a shiftable die which is moved into contact with one of the spaced sheets, where the sheet is formed. The shiftable die and the formed and unformed sheets are then shifted to contact the unformed sheet with the other die, where it is formed. And the shiftable die then brings predetermined portions of the plastic sheets together into fusion.

### 3,412,184 PROCESS FOR THE PREPARATION OF CELLU- LOSIC ESTER REVERSE OSMOSIS MEMBRANES

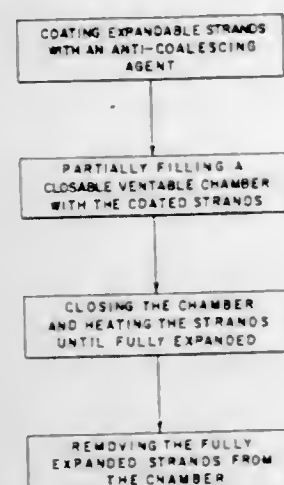
Allan Sharples and William Banks, Edinburgh, Scotland, assignors, by direct and mesne assignments, of one-half each to Arthur D. Little Research Institute, Inveresk, Midlothian, Scotland, and the United States of America as represented by the Secretary of the Interior  
No Drawing. Filed Feb. 17, 1966, Ser. No. 536,172  
7 Claims. (Cl. 264—49)

A method for preparing reverse osmosis membranes is presented. The procedure involves; casting a thin film



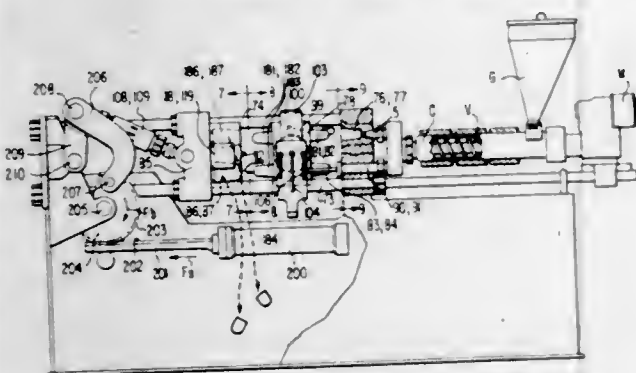
from a mixture comprising cellulosic ester and casting solvent, removing a portion of the casting solvent from the film, and contacting the film with a liquid comprising an organic leaching solvent which is miscible with the casting solvent to remove leachable components in the film. The casting solvent may be acetone and the leaching solvent may be methanol.

**3,412,185**  
**METHOD FOR EXPANDING DISCREET ARTICLES OF FOAMABLE POLYMERIC MATERIAL**  
Charles Klenzle, Ayer, Mass., assignor to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware  
Filed Dec. 14, 1964, Ser. No. 418,312  
4 Claims. (Cl. 264—51)



A method for individually expanding a plurality of strands of foamable polymeric material by coating the strands with an anti-coalescing agent, placing the strands in a vented chamber, closing the chamber and heating the strands to a temperature at which they individually expand.

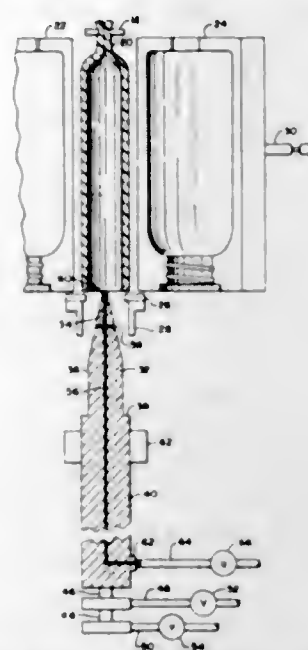
**3,412,186**  
**METHOD FOR THE MANUFACTURE OF HOLLOW ARTICLES OF THERMOPLASTIC MATERIAL**  
Tadeusz Plotrowski, Montreuil-sous-Bois, France, assignor to Worson S.A., Geneva, Switzerland, a corporation of Switzerland  
Continuation-in-part of application Ser. No. 225,604, Sept. 24, 1962, which is a continuation-in-part of application Ser. No. 765,662, Oct. 6, 1958. This application May 27, 1966, Ser. No. 553,486  
Claims priority, application France, Oct. 12, 1957, 749,319; July 1, 1958, 769,190  
12 Claims. (Cl. 264—89)



1. A method of forming hollow articles of thermoplastic material comprising the steps of injecting said thermoplastic material onto at least one preform core contained in an injection chamber, simultaneously blowing a thermoplastic preform contained on at least one second preform core in a blowing mold by means of a fluid under pressure, the base of said second preform core being disposed opposed to the base of said first preform core, the bases of both cores being disposed on a common plate, simultaneously withdrawing, by translational motion, the injection mold and the blow mold containing the finished

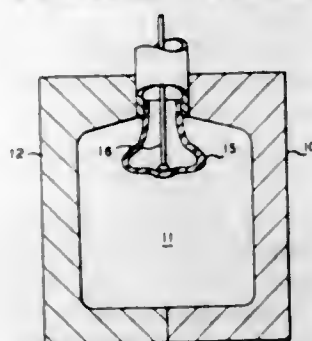
article from the first and second preform cores, said blow mold also simultaneously separating to permit the finished article to fall from the mold, rotating the plate containing said preform cores about an axis normal to the translational motion and inserting, by translational motion, said first core into the blowing mold and said second core into the injection mold.

**3,412,187**  
**METHOD FOR FORMING PLASTIC ARTICLES**  
Clement V. Fogelberg, Richard H. Crawford, and Donald E. Oberbeck, Boulder, Colo., assignors, by mesne assignments, to Ball Brothers Company, Muncie, Ind., a corporation of Indiana  
Continuation of application Ser. No. 554,214, May 31, 1966, which is a continuation of application Ser. No. 242,213, Dec. 4, 1962. This application Feb. 16, 1967, Ser. No. 616,731  
12 Claims. (Cl. 264—89)



A process for forming plastic articles wherein expandable plastic tubing is placed in a mold of the desired configuration and expanded into conformity with the mold. Fluid is initially introduced into the tubing at a pressure sufficient to partially expand at least a portion of the tubing adjacent to the end or neck-forming portion of the mold so that said portion of said tubing contacts the mold to at least partially form that portion of the article, and the applied fluid pressure is thereafter increased to expand the tubing into final configuration in the mold. Pressure is also exerted by press molding to complete formation of a neck portion of the article.

**3,412,188**  
**PROCESS FOR BIAXIALLY ORIENTED BOTTLES**  
Charles L. Seefuth, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed Jan. 10, 1966, Ser. No. 519,639  
1 Claim. (Cl. 264—92)



Biaxially oriented bottles are blown from temperature conditioned preformed parisons having a wall which increases in thickness starting at the open end thereof. A

centering/stretching pin forces the closed end of the parison toward the opposite mold wall as the bottle is being blown at a rate such that the bubble stretches longitudinally and not the parison, thus imparting biaxial orientation to the wall of the bottle.

**3,412,189**  
**APPARATUS AND PROCESS FOR USE IN THE EXPANSION OF TUBULAR FILM**  
Richard M. Sullivan, Madison, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
Filed Oct. 31, 1962, Ser. No. 234,397  
2 Claims. (Cl. 264—95)



2. A process comprising the steps, in sequence, of extruding thermoplastic polymeric material in the form of molten tubing; advancing the tubing over and in contact with the surface of a cooling mandrel; thereafter, advancing the tubing over a resiliently deformable collar projecting from the surface of said mandrel, the projecting collar in its relaxed position making an obtuse angle with the upstream portion of the mandrel; passing a gaseous medium into the interior of said tubing at a point downstream from said mandrel and said collar; deflecting said resilient collar into contact with the inner surface of the tubing; and withdrawing gaseous medium at spaced intervals around the surface of said mandrel at locations adjacent to and upstream from said collar whereby gas is prevented from flowing back to the point of extrusion.

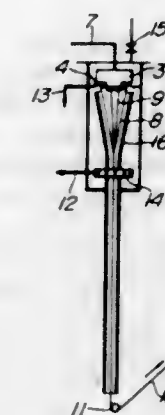
**3,412,190**  
**LOWERING BLOOD LIPIDS AND TREATING RHEUMATOID ARTHRITIS WITH DIPHOSPHOPYRIDINE NUCLEOTIDE**  
Paul Francis O'Hollaren, Seattle, Wash., assignor to Enzomedic Laboratories, Inc., Seattle, Wash., a corporation of Washington  
No Drawing. Continuation-in-part of application Ser. No. 438,751, Mar. 10, 1965. This application Jan. 11, 1968, Ser. No. 697,023  
9 Claims. (Cl. 424—177)

A composition containing diphosphopyridine nucleotide is used to lower elevated blood lipids and to treat rheumatoid arthritis when administered orally or parenterally.

**3,412,191**  
**METHOD FOR PRODUCING ARTIFICIAL FIBERS**  
Joichi Kitajima, Kyohel Nose, and Shigeru Kikuchi, Ohtake-shi, Japan, assignors to Mitsubishi Rayon Co., Ltd., Tokyo, Japan, a corporation of Japan  
Filed Oct. 22, 1965, Ser. No. 501,684  
Claims priority, application Japan, Dec. 18, 1964, 39/71,377  
11 Claims. (Cl. 264—181)

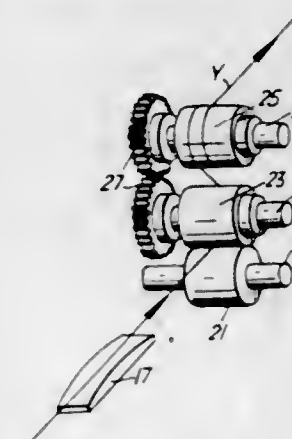
A portion of at least one spinning solution is extruded directly into a coagulating bath from spinning orifices dis-

posed within said bath to form filaments, while the other portion of said spinning solution is first extruded into a



gaseous medium and then directed into the coagulating bath to form filaments.

**3,412,192**  
**PROCESS OF ADVANCING HEATED YARN THROUGH FREE-RUNNING NIP ROLLS UNDER LOW TENSION**  
Brian Edward Clapson, Cwmbran, England, assignor to British Nylon Spinners Limited, Pontypool, Monmouthshire, England  
Filed May 7, 1964, Ser. No. 365,743  
Claims priority, application Great Britain, May 17, 1963, 19,677/63  
5 Claims. (Cl. 264—290)



Yarn is heated, passed through the nip of a pair of freely-rotatable pressure rolls, and is wound up in the form of a package. One of the pressure rolls is gear-driven from a third roll which is driven by the forward movement of the yarn as it passes to the wind-up mechanism. This has the effect of reducing the tension in the yarn on the downstream side of the nip, thereby eliminating fraying or tearing of low-denier yarn.

#### ERRATUM

For Class 424—170 see:  
Patent No. 3,412,190

**3,412,193**  
**11 - (4 - METHYL - 1 - PIPERAZINYL)DIBENZ[b,f][1,4]OXAZEPINES OR THIAZEPINES FOR CONTROLLING FERTILITY**  
John Anthony Coppola, Spring Valley, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine  
No Drawing. Filed Dec. 13, 1965, Ser. No. 513,553  
4 Claims. (Cl. 424—250)  
Compositions containing 2-chloro (or hydrogen) 11-(4-methyl-1-piperazinyl)dibenz[b,f][1,4]oxazepines or thiazepines are described. They are useful for controlling fertility in warm-blooded animals.



## ELECTRICAL

### 3,412,194 GLASS-MELTING ELECTRODES FOR GLASS-MELTING FURNACES

Egon Pipitz, Gerolf Strohmeyer, and Karl Sedlatschek, Reutte, Tyrol, Austria, assignors to Schwarzkopf Development Company, New York, N.Y., a corporation of New York

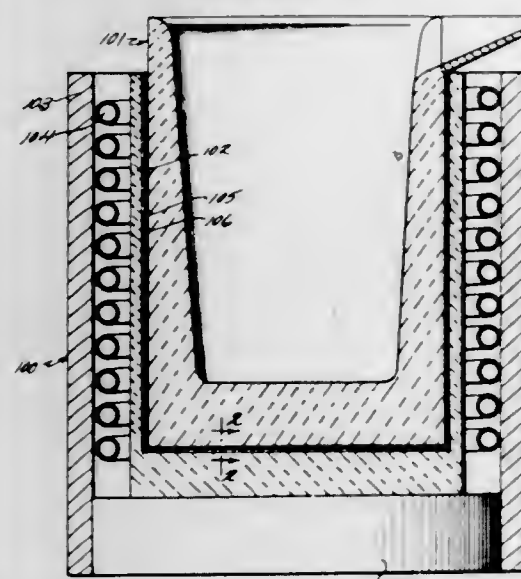
No Drawing. Filed Nov. 19, 1965, Ser. No. 508,775  
Claims priority, application Austria, Nov. 20, 1964, 9,849/64; Nov. 30, 1964, 10,069/64; Dec. 7, 1964, 10,332/64; Dec. 10, 1964, 10,493/64  
6 Claims. (Cl. 13-6)

Glass-melting electrodes for glass-melting furnaces combine 80 to 15 vol. percent of a ceramic phase with the balance 20 to 85 vol. percent of a metal phase consisting either of molybdenum or tungsten or a tungsten-molybdenum alloy. The ceramic phase is selected from the group of ceramics consisting of zirconium oxide containing 4 to 10 wt. percent calcium oxide, zirconium oxide containing 4 to 10 wt. percent magnesium oxide, such zirconium oxide ceramics containing up to 50 wt. percent thorium oxide, such zirconium oxide ceramics containing up to 50 wt. percent titanium oxide and combinations of two and more of said ceramics. Extremely good results are obtained with the specified metal phase combined with 25 to 60 vol. percent of a ceramic phase consisting of the zirconium oxide containing 4 to 10 wt. percent magnesium oxide or calcium oxide as the balance of the body.

### 3,412,195 INTERMEDIATE FURNACE BARRIER

Thomas O. Mumper, Wilmington, Del., assignor to Haveg Industries, Inc., Wilmington, Del., a corporation of Delaware

Filed Aug. 5, 1965, Ser. No. 477,460  
6 Claims. (Cl. 13-27)



A metallurgical furnace wall construction, which protects against inadvertent discharge of molten metal, is disclosed, wherein a high silica fabric layer is inserted between the crucible and the induction coil refractory support.

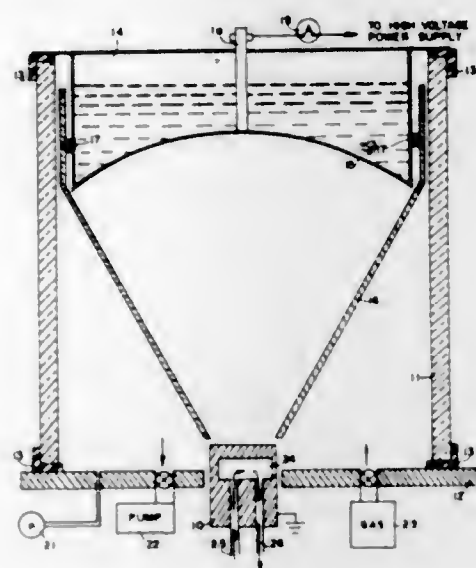
### 3,412,196 ELECTRON BEAM VACUUM MELTING FURNACE

William D. Figgins, Nashua, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware

Filed July 13, 1966, Ser. No. 564,957  
19 Claims. (Cl. 13-31)

An electron-ion beam device, and more particularly a

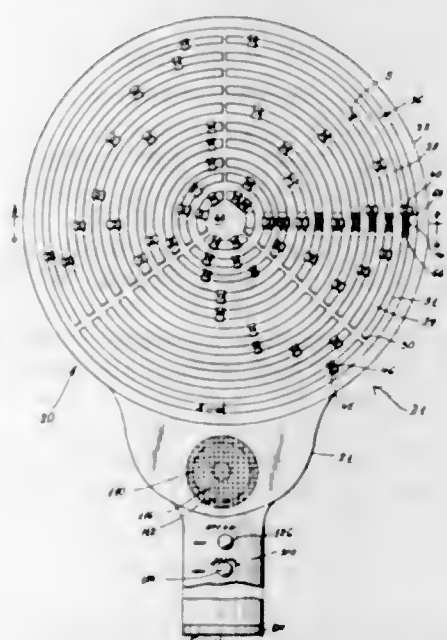
furnace operating under a condition of partial vacuum, for heating, melting, welding, or evaporating materials, employing electron beam techniques. A vacuum chamber is filled to a low pressure with a gas after prior evacuation to remove undesirable vapors and gases. A high volt-



age is applied to an electrode to produce a plasma between a concave cathode surface and an anode, which anode is used as a crucible. Electrons are extracted from the plasma and mechanically focused by means of a converging focusing cone to produce an intensified electron stream at the crucible.

### 3,412,197 CYCLICALLY REPEATING SOUND PRODUCING DEVICE

Dorothea M. Weltzner, 8 E. 62nd St., New York, N.Y. 10021  
Filed July 26, 1965, Ser. No. 474,674  
12 Claims. (Cl. 84-1.03)



1. A device for cyclically producing sounds, comprising a casing, said casing having a cylindrical wall, a closed back and open front, a framework set in the open front of the casing, said framework having a plurality of concentric rings supported in radially spaced positions to define a plurality of circular spaces therebetween, a plurality of sliders movably disposed between said rings in movable

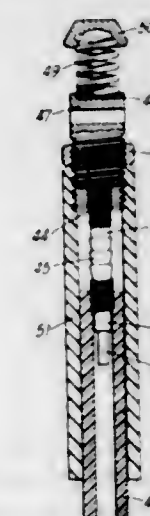
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## ELECTRICAL

925

relation along said spaces, said sliders having projecting portions extending radially inward of the casing, a motor supported axially of the casing at the back thereof, said motor having a shaft extending axially into the casing, an arm extending radially of the shaft and carrying a plurality of switches, said switches being spaced apart longitudinally of the arm and aligned with the respective circular spaces for actuation respectively by said projecting portions of the sliders, magnetic recording pickup heads carried by said arm in spaced positions longitudinally of the arm and facing the back of the casing, and a magnetic record medium in the casing at the back thereof located for tracking by said heads to pick up magnetically recorded sounds therefrom.

### 3,412,198 ELECTROLYTIC CONDUCTOR Neil Rudolph Wallis, Carlad, Goring-on-Thames, Oxfordshire, England Filed Mar. 18, 1965, Ser. No. 440,750 Claims priority, application Great Britain, Sept. 26, 1964, 39,302/64; Dec. 5, 1964, 49,577/64 10 Claims. (Cl. 174-9)



An electrolytic conductor for supplying electric current from a high voltage direct current source to a utilisation device such as a manually held electrostatic spray painting gun, said conductor comprising a flexible tube containing a solution of a metal salt in a composition comprising a major proportion of glycerine and a minor proportion of water. The flexible tube is sealed at each end by a plug and an electrode consisting of the metal of the salt contained in the electrolyte is fitted into the inner end of each plug.

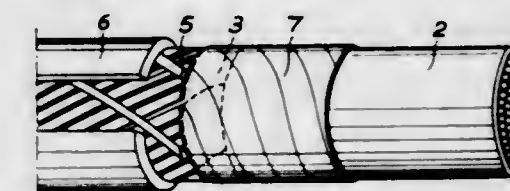
### 3,412,199 ELECTRIC POWER TRANSMISSION CABLE Paul P. Yeh, Westminster, Calif., assignor, by mesne assignments, to Research Corporation, New York, N.Y., a nonprofit corporation of New York Filed Jan. 12, 1967, Ser. No. 608,923 8 Claims. (Cl. 174-32)



A high voltage power cable is provided with alternate conductive windings sandwiched between correspondingly

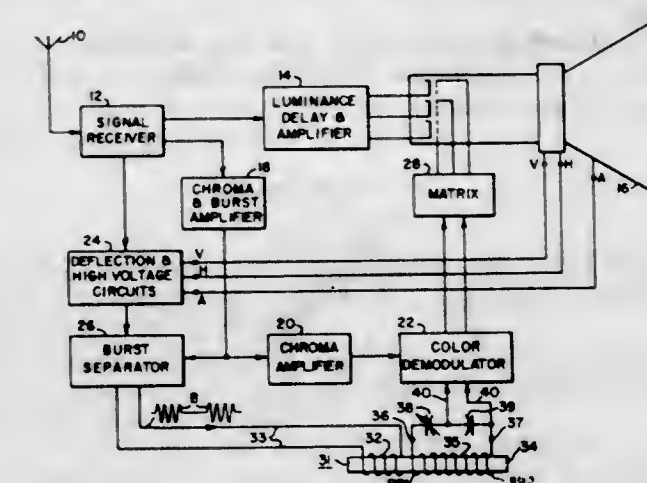
alternate insulating layers. The conductive windings are connected together to define a serial/zig-zag electrical path from a central conductor to an external sheath, the sheath adapted to be coupled to ground. This structure yields an inductance in parallel with a capacitance, thereby reducing to a minimum the charging current required on account of electrical capacitance due to the geometry of power cables.

### 3,412,200 HIGH VOLTAGE CABLE WITH POTENTIAL GRADIENT EQUALIZATION MEANS Lars-Goran Virnberg, Vasteras, and Lars-Goran Laurell, Stockholm, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden Continuation of application Ser. No. 546,673, May 2, 1966. This application Dec. 8, 1966, Ser. No. 600,273 10 Claims. (Cl. 174-102)



A high voltage means comprising a cable with an electrical insulation applied around the conductor and a body of conducting material surrounding the insulation and having a potential considerably different from that of the conductor. The body of conducting material leaves a portion of the insulation exposed outside an edge of the body. A coating of a material having a substantially voltage dependent resistivity is applied to the surface of the exposed portion of the insulation and in electrical contact with the body of conducting material. The coating comprises a wrapping of a tape comprising a binding material selected from the group consisting of thermoplastics and elastomers and silicon carbide particles intermixed in the binding material.

### 3,412,201 DERIVING A CONTINUOUS WAVE SIGNAL Charles B. Heffron, Metuchen, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania Filed Jan. 5, 1965, Ser. No. 423,543 9 Claims. (Cl. 178-5.4)



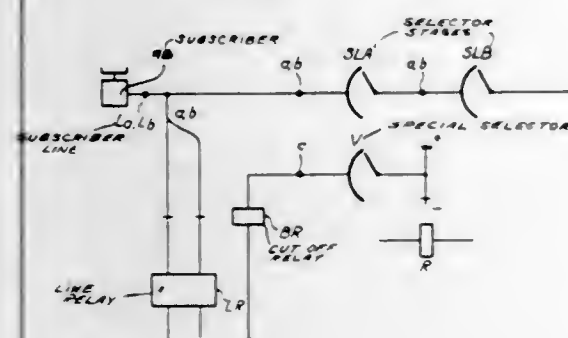
The present disclosure relates to a reconstructor circuit for use in a color television receiver for providing a continuous wave from color burst signals which are spaced from each other a predetermined time period.







chronism with the input selector stage (a crossbar selector) of the selector network is a cut-off relay selector



(an additional bridge unit of the crossbar selector) for connecting the cut-off relays to a source of controlled current pulses for operating the relays.

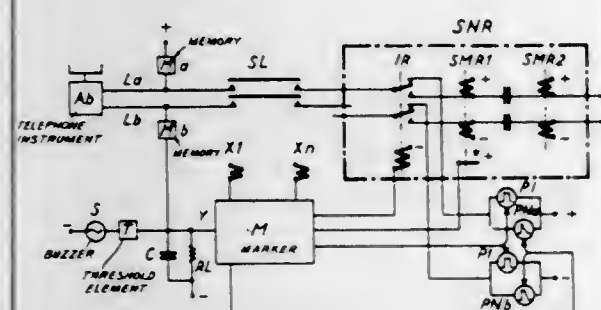
3,412,210

### LINE CIRCUIT HAVING SOLID STATE MEANS WITH MARKER FOR ESTABLISHING CONNECTIONS

Nils Herbert Edstrom, Vallingby, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed July 12, 1965, Ser. No. 471,268  
Claims priority, application Sweden, Sept. 11, 1964,  
10,879/64

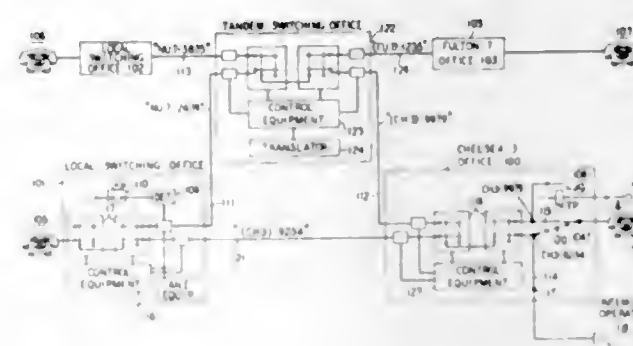
3 Claims. (Cl. 179-18)



An automatic telephone exchange including at least one marker for establishing connections. Each wire in a subscriber's two-wire line includes a memory which can be transformed from a high resistance condition to a low resistance condition by means of a current pulse with a slowly decreasing trailing flank and from a low resistance condition to a high resistance condition by means of a current pulse with a steeply decreasing time curve. The memories are included in a circuit network which connects the terminals of a source of current through the subscriber's line and comprises a resistance across which the voltage drop at the low resistance condition of the memories causes a calling potential. The presence of such potential indicates to the marker the occurrence of a call. When the memories are in their high resistance condition the network is blocked. The exchange further comprises a first source of current for supplying a pulse with a steep trailing flank and a second source of current for supplying a pulse with a sloping trailing flank. The two current sources are controlled by the marker so that the first source is connected to the line when a connection has been established whereby the memories are transformed to the higher resistance condition and the calling potential ceases. Upon termination of a call the marker connects the second current source to the line whereby the memories are transformed to the low resistance condition thus readying the exchange for another call.

3,412,211  
CALL TRACING METHOD AND ARRANGEMENT  
Charles Abert, Mantoloking, and William C. Sand, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 7, 1965, Ser. No. 493,627  
13 Claims. (Cl. 179-18)



The disclosure sets forth a method and arrangement for tracing annoyance calls in a telephone network. The annoyed customer's regular telephone number is disconnected and all calls to that number are intercepted. An intercept operator or automatic equipment communicates a fictitious number to the calling party which will route him through centralized call tracing and holding equipment to the called subscriber. If the call is a nuisance call, the called subscriber actuates the tracing equipment from his subset. The subscriber can be removed from the service by removing his directory number from intercept.

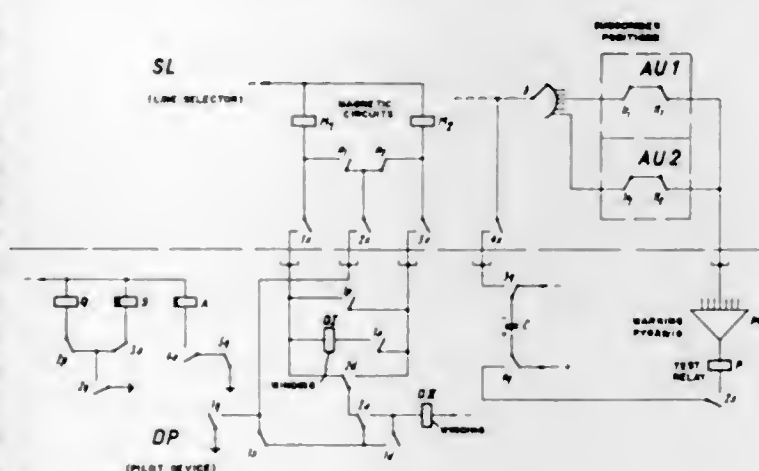
3,412,212

### LINE CONNECTOR CIRCUIT ARRANGEMENT IN AUTOMATIC TELECOMMUNICATION SWITCHING SYSTEMS PARTICULARLY FOR TELEGRAPHIC EXCHANGES

Sabatino Orlandini, Milan, Italy, assignor to Societa Italiana Telecomunicazioni Siemens S.p.A.

Filed Nov. 29, 1965, Ser. No. 510,259  
Claims priority, application Italy, Nov. 27, 1964,  
25,590/64

4 Claims. (Cl. 179-18)



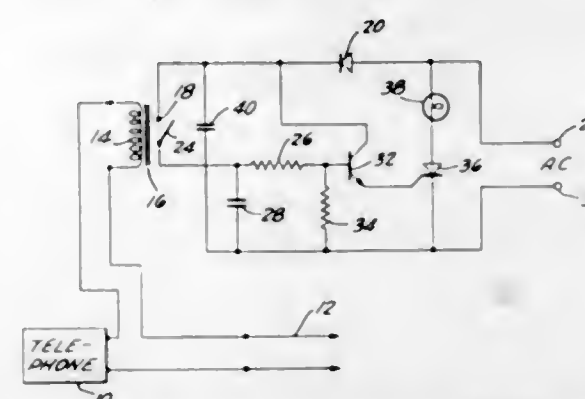
A circuit arrangement for selective line connectors controlled by marking circuits through a central station in an automatic telecommunication switching exchange comprises a line connector and means for stepping said line connector at least one step during the period between the end of a seizure of a line and the closing of a marking circuit for the next line seizure.

3,412,213

### AUTOMATIC TELEPHONE OPERATED SWITCH

Thomas E. McCay, Norman, Okla., assignor to Kaymet Electronics, Incorporated, Norman, Okla., a corporation of Oklahoma

Filed July 20, 1965, Ser. No. 473,412  
9 Claims. (Cl. 179-81)



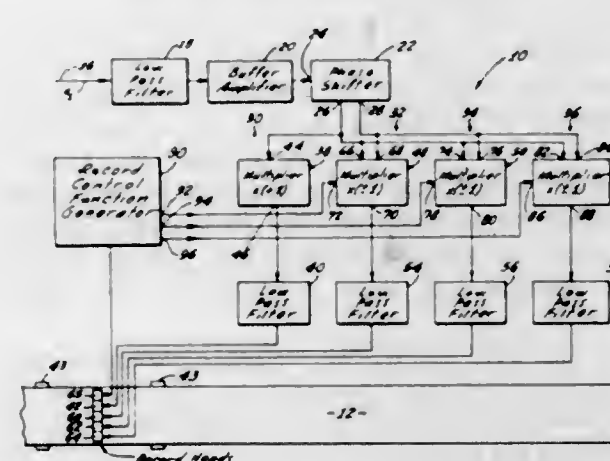
1. An electronic switching circuit comprising: a load; electronic switch means having an input electrode, an output electrode and a control electrode; means for connecting said load and said input and output electrodes of said electronic switch means in series with an alternating current source; rectifying means; a capacitor; switch means having current passing and current blocking states; means connecting said rectifying means, said switch means and said capacitor in series across said load and said electronic switch means; means coupled to said switch means for establishing said switch means in said current passing state whereby said capacitor can be charged; and means coupled to said capacitor and to the control electrode of said electronic switch means and responsive to the charging of said capacitor for causing a signal to be applied to said control electrode whereby said electronic switch means is rendered conductive to permit a current to pass through said load.

3,412,214

### FREQUENCY DIVISION MULTIPLEX RECORDER

Dennis Gabor, London, England, assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Mar. 18, 1964, Ser. No. 352,770  
24 Claims. (Cl. 179-100.2)



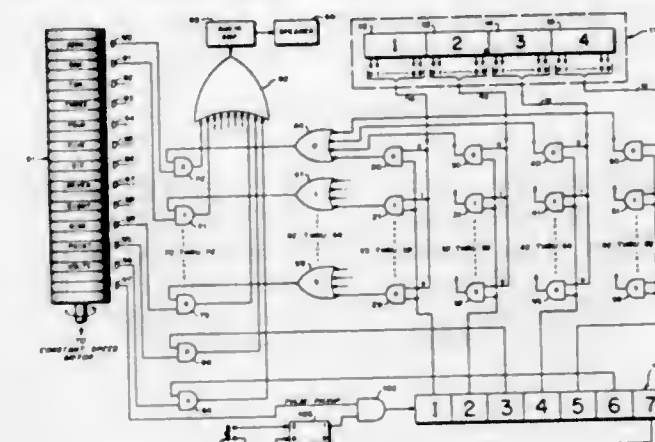
A system for converting a wide band signal into a plurality of signals of narrower bandwidth. The narrower bandwidth signals are produced by modulating the side band signal with square waves of selected frequencies and phase displacements and then passing the modulated signals thru low pass filters. The narrower bandwidth signals may be recorded in separate recording tracks, and subsequently detected, and modulated by square waves of selected frequencies and phase displacements similar to those used in the division process, and combined to reproduce the original wide band signal.

3,412,215

### DIGITAL-TO-AUDIO READOUT SYSTEM

John R. Rawley, 1838 Rockwell Road, Abington, Pa. 19001

Filed Dec. 21, 1964, Ser. No. 420,229  
1 Claim. (Cl. 179-100.2)



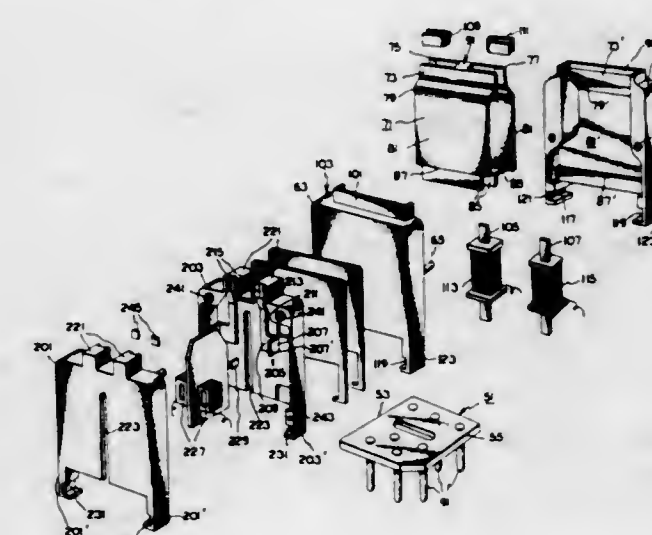
A device for audibly indicating the output signal of a digital voltmeter having four parallel output stages which includes a recorder having a plurality of parallel, endless recording tracks upon which are prerecorded a clock pulse, "point," "volts" and the numerals corresponding to the respective numeral assigned to each of the plural output bits in a given voltmeter output stage. The device includes a seven stage ring counter whose output stages each provide an output signal in sequence in response to a series of clock pulses derived from the clock track and applied thereto by an AND gate enabled by a flip-flop which is reset by the last stage of the counter. The counter output signals are applied to enable successive banks of AND gates, the AND gates of each of the banks which are connected to the output bit assigned the same numeral being connected through an OR gate to enable a gate connected to an amplifier and speaker and associated with the pick-up sensing the corresponding numeral.

3,412,216

### COMBINATION RECORD-REPRODUCE AND ERASE MAGNETIC HEAD

Ferdinand H. Rosado and David A. Tribbey, Rio Piedras, Puerto Rico, assignors to Headmaster Electronics Corporation, Santurce, Puerto Rico, a corporation of Puerto Rico

Filed Jan. 13, 1965, Ser. No. 425,254  
9 Claims. (Cl. 179-100.2)

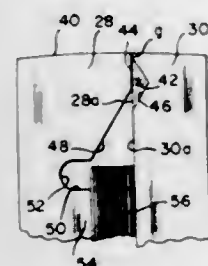


A true combination magnetic head comprising a casing having a plurality of longitudinal slots and a transverse slot spaced from the longitudinal slots, an erase head



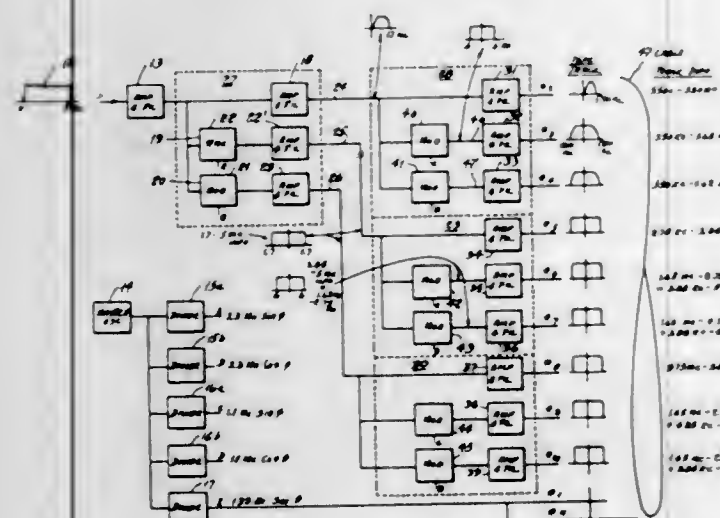
housing including a neck portion having a plurality of erase gaps disposed therein, the neck portion being indexed to the transverse slot, a read-record housing including a plurality of hollow ridge portions each having a read-record gap disposed therein, the plurality of hollow ridge portions being indexed to the longitudinal slots, and a terminal board common to the erase head housing and the read-record housing and adapted to anchor the housings by being inserted in recessed tracks in the housings.

**3,412,217**  
**RECORDER HEAD WITH ELECTRICALLY CONDUCTIVE FILLER WEDGE**  
Perry Alan Bygdnes, 3880 Bret Harte Drive, Redwood City, Calif. 94061  
Filed Jan. 27, 1965, Ser. No. 428,341  
8 Claims. (Cl. 179-100.2)



A recorder head made up of two pole pieces with complementary mating surfaces. In one mating surface there is a triangular segment of non-magnetic, electrically conductive material to prevent flow of flux and focus it in the gap outward of the segment. A right triangular notch is formed in the second pole piece, beginning at a point opposite the segment to provide a core for a coil. The pole pieces are secured in holders which are secured together by releasable means.

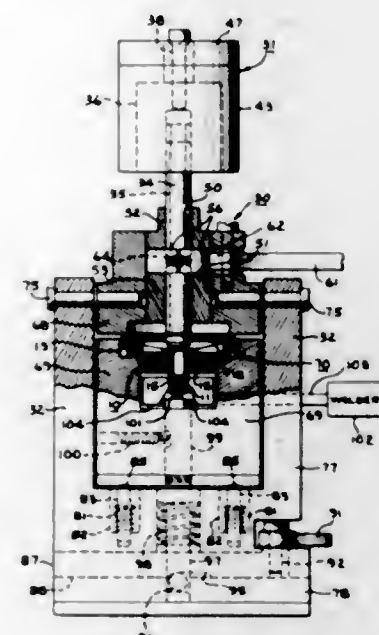
**3,412,218**  
**WIDE FREQUENCY BAND RECORDING**  
Frank A. Comercl, Stamford, Conn., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy  
Filed Oct. 12, 1965, Ser. No. 495,357  
7 Claims. (Cl. 179-100.2)



Apparatus for recording a wide frequency signal as a plurality of separate low frequency bands on channels of a recording medium that have been modulated by a pair of quadrature square wave signals, and for simul-

taneously recording the quadrature signals, on another two channels.

**3,412,219**  
**METHOD OF ADJUSTING AIR GAP IN CENTRAL ARMATURE RECEIVERS**  
Norbert B. Karau, Indianapolis, Ind., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York  
Filed Dec. 28, 1965, Ser. No. 516,863  
6 Claims. (Cl. 179-114)

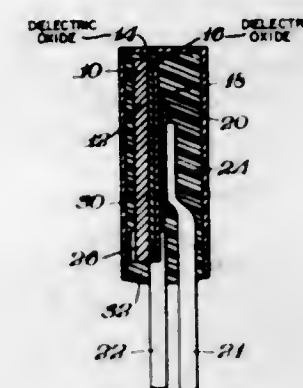


1. A method of adjusting the air gap of central armature receivers, which include magnet-pole piece and diaphragm-armature assemblies mounted on a common frame, while compensating for variations in stiffness of the diaphragms thereof, the method comprising: supporting the frame of the receiver in a fixed position; applying a constant predetermined force against at least the central region of the diaphragm-armature assembly to displace said assembly in the direction of the magnet-pole piece assembly a distance dependent, at least in part, on the degree of stiffness of the diaphragm, said force being at least greater than the finally adjusted magnetic attractive force subjected on the diaphragm-armature assembly by the magnet of the receiver after final assembly; displacing the central region of the diaphragm-armature assembly an additional predetermined distance independently of the force required, the latter distance being of a magnitude which, when combined with the distance moved by the diaphragm-armature assembly in response to the constant force initially applied thereto, produces a net air gap which is slightly greater than average for the more flexible diaphragms and slightly less than average for the stiffer diaphragms, and biasing the pole tips of the magnet-pole piece assembly firmly against the underside of the armature while said assembly is secured to the frame of the receiver after the air gap has been adjusted.

**3,412,220**  
**VOLTAGE SENSITIVE SWITCH AND METHOD OF MAKING**  
Henry F. Puppulo, North Adams, and Albert E. Scherr III, Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts  
Filed Nov. 26, 1963, Ser. No. 326,152  
5 Claims. (Cl. 200-2)

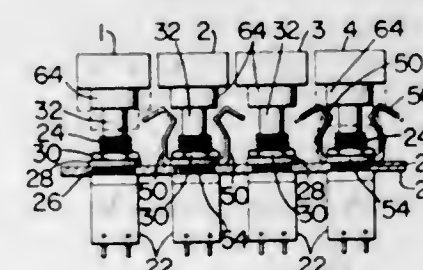
An electrode overlies porous and dense oxides formed

on the surface of an aluminum foil. Contact is made to the electrode by an electrically conducting resin. A second the plate is eccentrically mounted with respect to the shaft, whereby both the advantage of eccentric mounting



lead is welded to the aluminum foil. The assembly is potted in a non-conducting quantity of the same resin.

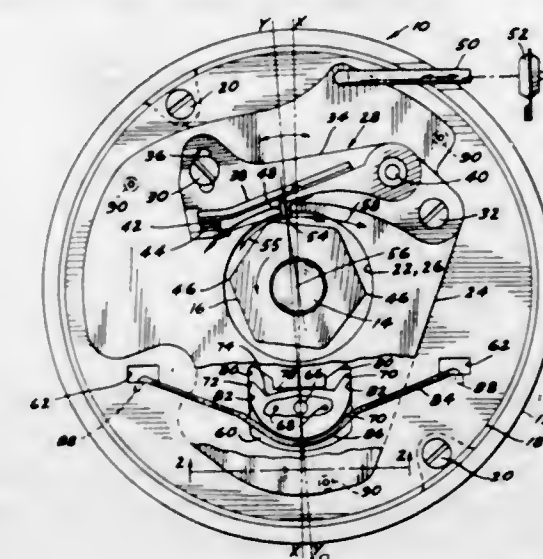
**3,412,221**  
**PLURAL PUSHBUTTON ASSEMBLY WITH SAFETY CLIP INTERLOCK MEANS**  
Anthony A. Di Pilla, Philadelphia, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware  
Filed Feb. 14, 1967, Ser. No. 616,115  
8 Claims. (Cl. 200-5)



A block building assembly, or switchboard, has a plurality of switch pushbuttons, which include pushbuttons which are adjacent to each other and pushbuttons that are unadjacent to each other, such as in rows. Means are provided to prevent the adjacent pushbuttons from being pushed down to actuated positions, so that adjacent pushbuttons cannot be simultaneously in actuated positions, whereas pushbuttons that are unadjacent to each other can be simultaneously in actuated position. This prevents accidental or wrong pushing of adjacent buttons, such as by straddling the space between the buttons with a finger or fingers, as is accidentally likely otherwise to be done.

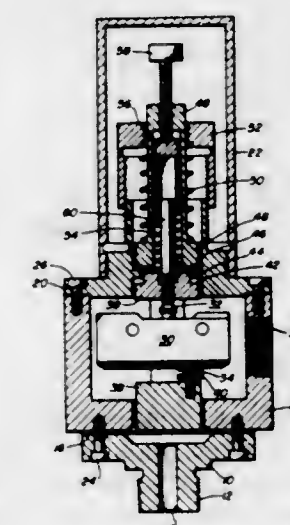
**3,412,222**  
**IGNITION DISTRIBUTOR**  
Raymond A. Soeters, Royal Oak, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan  
Filed Sept. 27, 1965, Ser. No. 490,507  
13 Claims. (Cl. 200-19)

An ignition distributor includes a housing, a shaft journaled in the housing, a movable ignition advance plate in the housing and preferably disposed at right angles to the axis of the shaft, the plate being pivotally mounted in the housing by means displaced from the axis of the shaft, means for causing movement of the plate in the plane thereof with respect to the shaft, the mounting means including means for permitting and causing a point on the plate to move substantially in a circular arc having the axis of the shaft as its center even though



and the uniform dwell angle advantage of concentric mounting of the advance plate are substantially obtained.

**3,412,223**  
**PRESSURE SWITCH**  
Charles A. Schad, 6720 E. 25th Place, Tulsa, Okla. 74129  
Filed Aug. 1, 1966, Ser. No. 569,177  
7 Claims. (Cl. 200-83)



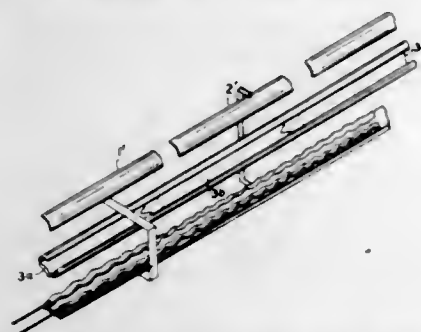
1. A step responsive fluid pressure switch setting and resetting actuating mechanism comprising, in combination: a housing including means to attach said switch thereto; a fluid pressure actuated piston movable relative to said housing and said switch so as to set or reset said switch at a point of travel in one direction of movement and reset or set, respectively, said switch at a point of travel in the other direction of movement; a high pressure piston movable, after contact with said pressure actuated piston during one direction of movement, against a first predetermined spring force; and a second low pressure predetermined spring force means operable between said high pressure piston and said pressure actuated piston when said pressure is below said first predetermined spring force.



3,412,224

**SELECTIVE TAPE SWITCH**

Robert H. Koenig, Cambria Heights, N.Y., assignor to Tapeswitch Corporation of America, Elmont, N.Y.  
Filed Sept. 5, 1967, Ser. No. 665,572  
6 Claims. (Cl. 200—86)

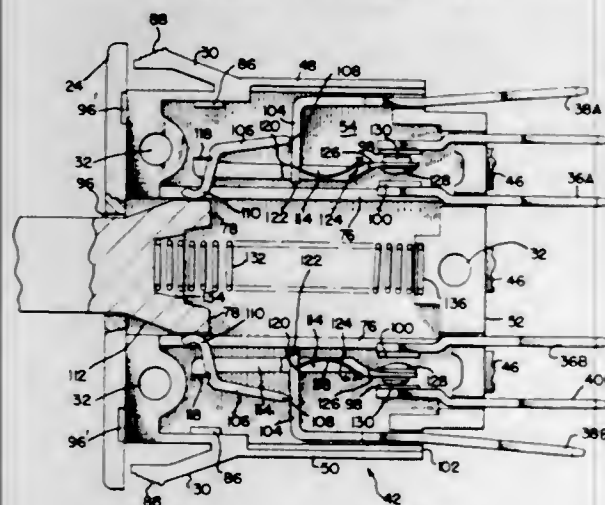


A tape switch having one continuous ribbon conductor and one segmented conductor, the segments being spaced so that a circuit is completed only when two spaced segments are pressed simultaneously, for instance by vehicle wheels so that the switch is responsive to vehicles and not to pedestrians.

3,412,225

**SWITCH WITH HINGED SWITCH BASE AND COVER**

Gilbert Rogers, Grove City, and Werner Robert Bauer, Columbus, Ohio, assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware  
Filed July 12, 1965, Ser. No. 471,363  
4 Claims. (Cl. 200—168)



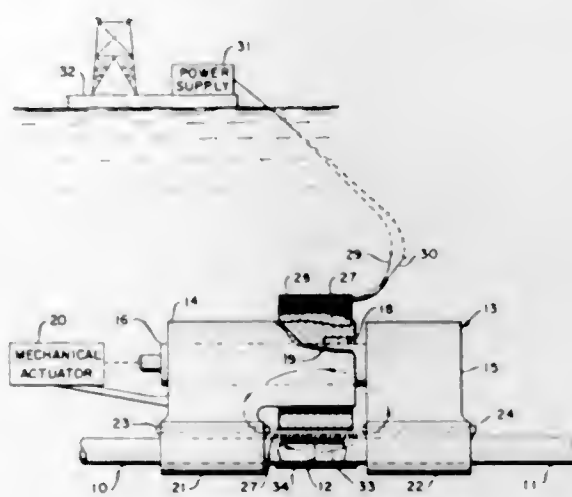
1. In combination: a homogeneous, plastic material, casing base having a front wall, two side walls, a bottom wall, and a rear wall, said walls being relatively rigid; a homogeneous, plastic material, casing top, said top being relatively rigid and having a formation to engage and close upon said front, side and rear walls; homogeneous, plastic material, flexible hinge means homogeneously and hingedly joining said casing base and said casing top; switch means in said casing base having line connector means extending through at least one of said walls; and plunger actuator means actuating said switch means and extending through at least one of said walls and including snap together means on said base and top to snappingly secure said casing base and casing top in closed condition when said base and top are closed together by hinge movement on said hinge means in which said switch means comprises: a common rod connector extending through a supporting slot in one of said walls, having a rearwardly extending outer end, and having a rod pivot extension into said base; an actuating lever having a pivot end on said pivot extension and having a plunger means actuated end; first and second rod connectors extending backwardly through said rear wall and supporting first and second stationary contacts in said casing base; a snap blade means supporting movable contact means to be reciprocated between and against said stationary contacts at

one end of said blade and engaging said lever at the other end; a snap spring having one engagement with said rod pivot extension and another engagement with said snap blade means producing a pull on said lever; and lever actuating means on said plunger means actuating said lever in response to inward and outward movement of said plunger means to cause said snap blade to snap said contact means alternately against said first and second stationary contacts; said plunger extending through said front wall.

3,412,226

**METHOD AND APPARATUS FOR RESISTANCE BUTT WELDING UNDER WATER**

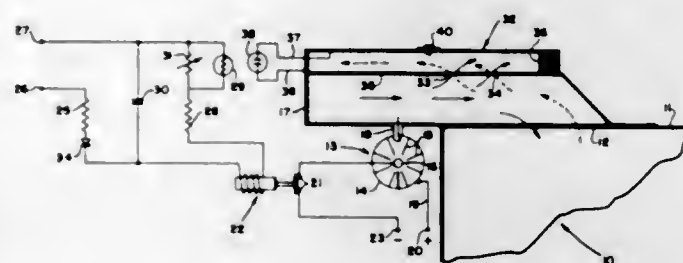
Robert H. Kolb, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware  
Filed Nov. 24, 1964, Ser. No. 413,436  
5 Claims. (Cl. 219—8.5)



A method and apparatus for resistance welding under water wherein a conductive metal clamping means is used to hold the two workpieces in an abutting relationship. The clamping means and workpieces form a single-turn, low-impedance conductive path. A large welding current is induced in the conductive path by a toroidal coil that surrounds a portion of the clamping structure.

3,412,227

**ELECTRONIC OVEN PROTECTION CIRCUIT**  
Carl L. Anderson, Shiloh, Ohio, assignor to The Tappan Company, Mansfield, Ohio, a corporation of Ohio  
Filed Nov. 18, 1965, Ser. No. 508,539  
5 Claims. (Cl. 219—10.55)

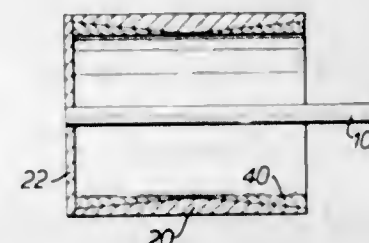


A no-load electronic oven protection circuit for controlling the application of power to the high frequency oscillator tube wherein the power is transmitted to the cavity by means of a waveguide, consisting of an enclosure coupled with the waveguide by means of common apertures and containing energy absorbent material at one end and a neon bulb sensor and photocell transducer at the other end for varying the energization current of the power tube control relay as a function of reflected energy.

3,412,228

**HEATING ROTARY DRUM APPARATUS**

Harumi Miyagi, Higashiyama-ku, Kyoto, Japan, assignor to Tokushu Denki Kabushikikaisha, a company of Japan  
Filed Nov. 22, 1965, Ser. No. 509,004  
Claims priority, application Japan, Nov. 21, 1964, 39/66,111; Jan. 20, 1965, 40/2,953  
9 Claims. (Cl. 219—10.61)

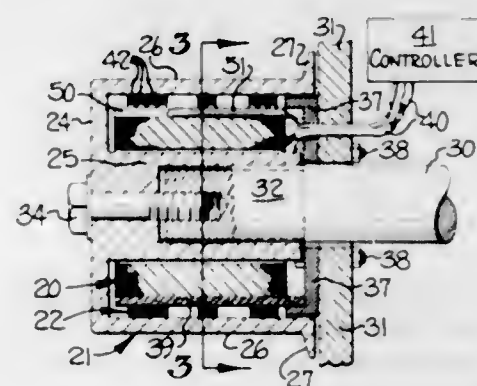


This disclosure relates to an apparatus provided with a rotary drum for use in heating a fiber, filament, tape or the like as it passed around the drum surface. The rotary drum is heated by electric currents electromagnetically induced therein with various embodiments being disclosed for obtaining different amounts of heating along the length of the drum.

3,412,229

**ELECTRIC HEATING MEANS**

Earl M. Seagrave, Jr., Charlotte, N.C., assignor, by mesne assignments, to Cameron-Brown Capital Corporation, Raleigh, N.C., a corporation of North Carolina  
Filed Oct. 20, 1966, Ser. No. 588,201  
4 Claims. (Cl. 219—10.61)



Means for heating an article of indeterminate length as the article is advanced in contact therewith wherein an alternating magnetic flux is passed through a rotatable ferromagnetic shell in a predetermined direction and means are provided for intercepting the flux upon alternation thereof, for generating heat in response to a flow of current thusly induced therein, and for conducting such heat to the surface of the rotatable shell.

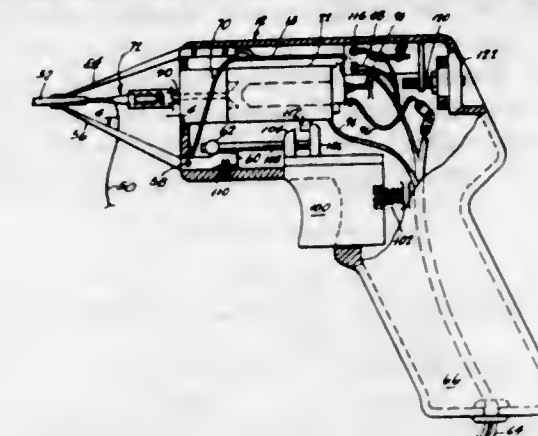
3,412,230

**WELDING SYSTEM**

James Ernest Cordner, San Gabriel, Calif., assignor to Matrix Science Corporation, Burbank, Calif., a corporation of Delaware  
Filed Apr. 29, 1965, Ser. No. 451,768  
10 Claims. (Cl. 219—95)

This disclosure relates to electrical welding systems of the resistance type. The disclosure involves improved electronic circuitry which gives close control of percus-

sion timing and pressure and close regulation of welding current as well. The weld circuit includes a monitoring

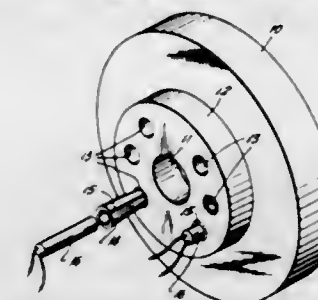


gauge which enables the operator to adjust the welding time.

3,412,231

**EXTRUSION DIE INCLUDING ELECTRICAL CARTRIDGE HEATERS**

John F. McElligott, Birmingham, Ala., assignor to International Paper Company, New York, N.Y., a corporation of New York  
Filed Mar. 29, 1966, Ser. No. 538,323  
7 Claims. (Cl. 219—201)

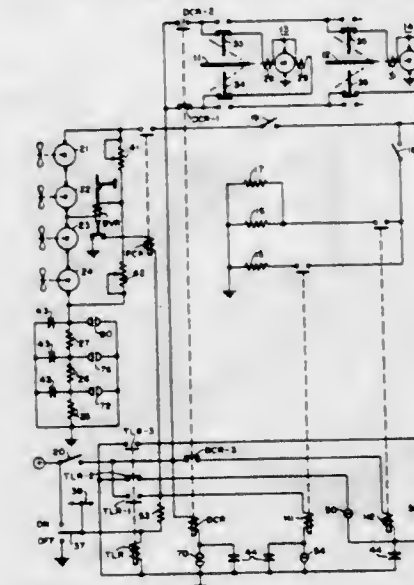


1. In an apparatus adapted to heat, in combination, a heat-conductive flange, a heating element, a heat-conductive tapered annular bushing adapted to receive the heating element interiorly, means defining a longitudinal slot in the bushing, and means defining a tapered hole in the heat-conductive flange adapted to receive the bushing and undersized relative thereto.

3,412,232

**RAILWAY CAR HEATING AND VENTILATING SYSTEMS**

Terry D. Sanders, Penn Hills Township, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Dec. 31, 1963, Ser. No. 334,809  
8 Claims. (Cl. 219—202)

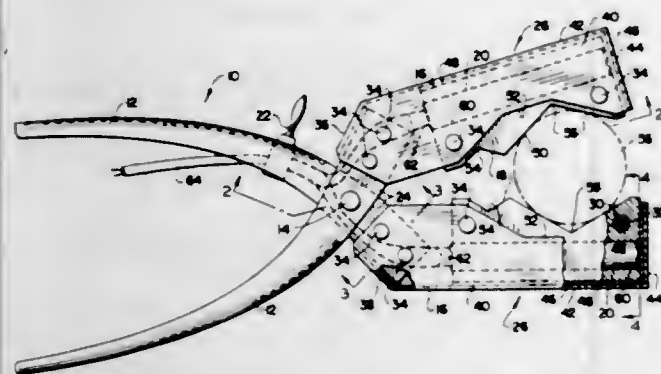


A heating and ventilating system for railway or rapid transit cars including motor-driven fans for circulating



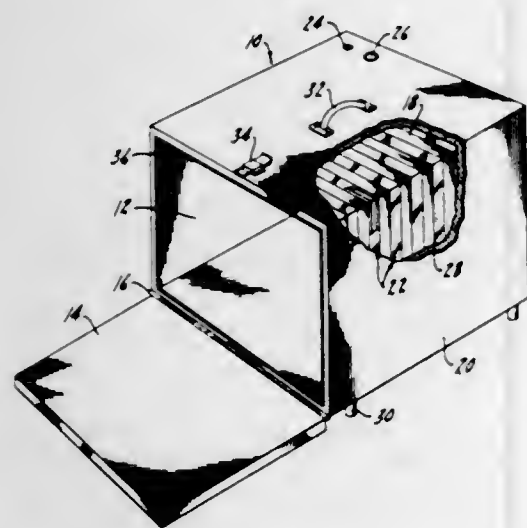
air in the car, electric heaters and dampers for admitting outside air. The speed of the fan motors and the position of the dampers are thermostatically controlled and energization of the heaters is controlled by thermostats. Means are provided for energizing at least one heater with thermostatic control when the car is not in service, and means are provided for deenergizing the fan motors in case of failure of one or more motors.

**3,412,233**  
**ELECTRICALLY HEATED PLIER-TYPE SOLDERING TOOL**  
Lon H. Wilkie, 6092 Estes St.,  
Arvada, Colo. 80002  
Filed Dec. 30, 1965, Ser. No. 517,733  
3 Claims. (Cl. 219-230)



A plier-type soldering tool for making sweated joints between copper pipes and fittings has a pair of insulated jaws carrying electric resistance heating elements. Interconnecting the handles and the jaws of the tool are shields that encase all but the workpiece engaging surfaces of the jaws. The shields are insulated from the jaws and also hold the latter in spaced relation to the handles so as to keep the handles from getting too hot to hold. The workpiece engaging surfaces of each jaw is provided with a pair of V-shaped notches of different depths so as to accommodate pipes and fittings of various diameters.

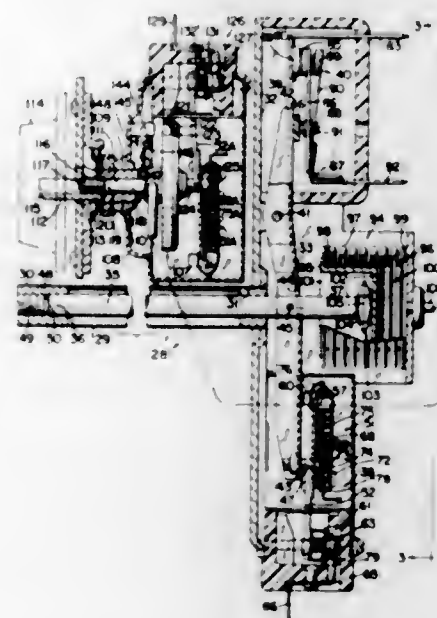
**3,412,234**  
**HEATER ELEMENT AND PORTABLE HEATED CONTAINER**  
Michael A. Otavka, 8016 Highland Ave.,  
Downers Grove, Ill. 60515  
Filed Oct. 25, 1966, Ser. No. 589,353  
5 Claims. (Cl. 219-406)



1. A container having an inner and outer wall, at least one heating element attached to the external surface of said inner wall, insulating material between said heating

elements and the internal surface of said outer wall, said heating elements including a first strip of electrical insulating tape adhering to the external surface of said inner wall, at least one resistive electrical conductor member adhering to, paralleling and co-extensive with the external surface of said first tape strip, a second strip of electrical insulating tape adhering to, overlying and co-extensive with said first tape strip and said resistive electrical conductor, said tape strips together enclosing said conductor therebetween, said heating element containing a first high resistance electrical conductor and a second low resistance electrical conductor adhered in spaced parallel relationship to said external surface of said first tape strip so that said container may be heated using more than one voltage power source.

**3,412,235**  
**OVEN CONTROL MEANS AND PARTS THEREFOR OR THE LIKE**  
Henry F. Hild and Siegfried E. Manecke, Indiana, Pa., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware  
Filed Mar. 7, 1966, Ser. No. 532,463  
15 Claims. (Cl. 219-412)

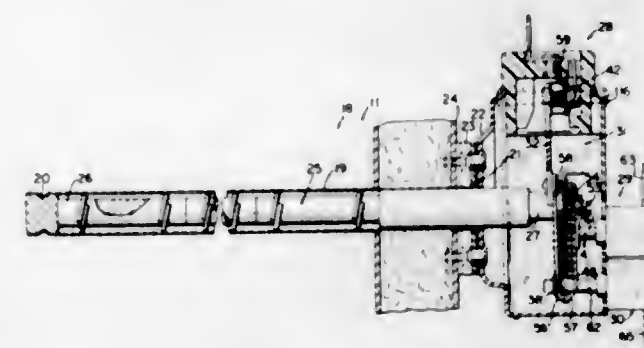


1. A control system for a cooking apparatus having an oven provided with heating means therefor, said system comprising selector means for selecting a normal temperature cooking operation of said oven and a high temperature burn-off cleaning operation of said oven, and rod and tube temperature sensing means operatively interconnected to said heating means and to said selector means for thermostatically controlling said heating means during both of said cooking and burn-off cleaning operations of said heating means as selected by said selector means.

**3,412,236**  
**OVEN CONTROL SYSTEM AND METHOD FOR OPERATING THE SAME OR THE LIKE**  
Henry F. Hild and Siegfried E. Manecke, Indiana, Pa., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware  
Filed Mar. 7, 1966, Ser. No. 532,237  
20 Claims. (Cl. 219-413)

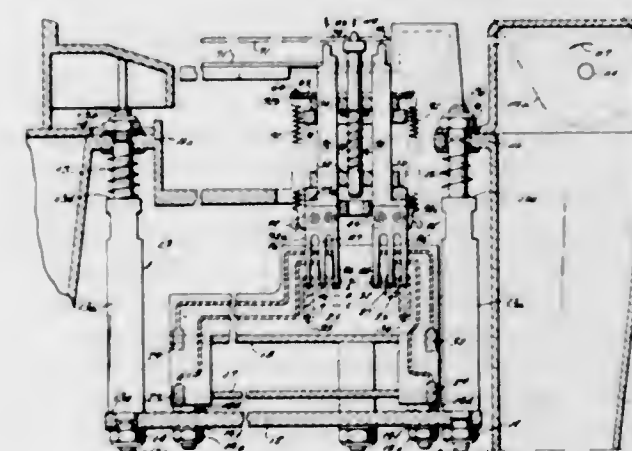
1. A control system for cooking apparatus having an oven provided with heating means therefor, said system comprising selector means for selecting a normal temperature cooking operation of said oven and a high temperature burn-off cleaning operation of said oven, a first rod and tube temperature sensing unit for thermostatically controlling said heating means during said cooking

operation when selected by said selector means, and a transmitted to a central unit where they are totaled. second rod and tube temperature sensing unit for thermo- The central unit includes a plurality of mode selection



statically controlling said heating means during said cleaning operation when selected by said selector means.

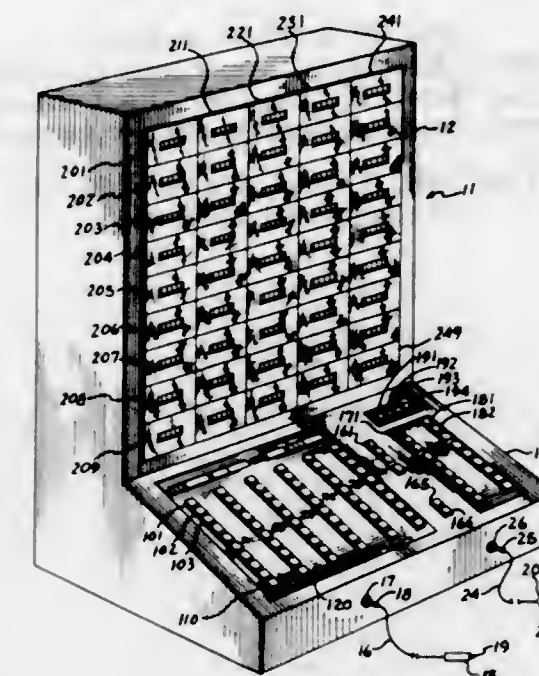
**3,412,237**  
**CARD READER MEANS**  
Abraham Brothman, Dumont, and Nathaniel L. Kahn, Glen Rock, N.J., assignors, by mesne assignments, to Sangamo Electric Company, Springfield, Ill., a corporation of Delaware  
Filed Mar. 6, 1964, Ser. No. 349,983  
12 Claims. (Cl. 235-61.11)



Electromechanical card reading device for converting punched card information into electrical signals using a plurality of rows with each row having a predetermined number of sensing fingers, the sensing portion of each finger having three discrete thicknesses and thereby being capable of assuming three different physical positions in readout of a card, the different physical positions completing different electrical circuits to effect transmission of different information bits.

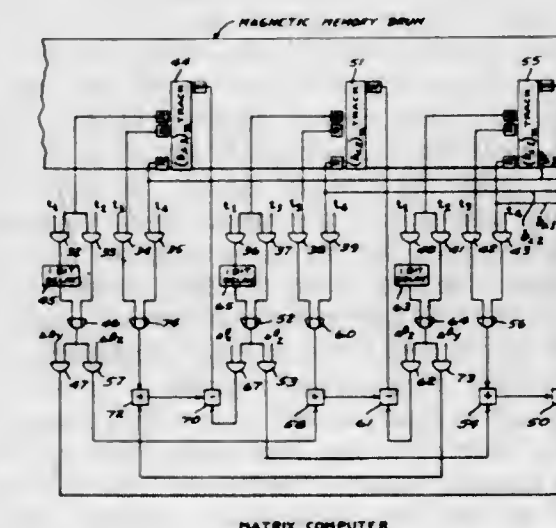
**3,412,238**  
**SYSTEM FOR MEASURING AND ACCUMULATING DATA REPRESENTED ON BLUEPRINTS OR THE LIKE**  
Franklin H. Lineback, Des Plaines, Ill., assignor to Henry Newgard & Company, Chicago, Ill., a corporation of Illinois  
Filed Feb. 9, 1965, Ser. No. 431,292  
9 Claims. (Cl. 235-92)

This invention is an apparatus for aiding a cost estimator by converting information on an engineering drawing or blueprint into data pulses. A manually operated device with a magnetic wheel adapted to be rolled over a drawing produces pulses representing lengths or distances. An auxiliary button switch on the same manual means is used to generate single pulses representing the number of fixtures shown on the drawing. The data pulses are



switches which permit the incoming data pulses to be analyzed in several different manners.

**3,412,239**  
**ALGEBRAIC-INTEGRATION INERTIAL NAVIGATION SYSTEM**  
Victor H. Seliger, North Caldwell, N.J., and Henry Blazek, Nyack, Joseph Levine, North Bellmore, Alvin Zechnowitz, Howard Beach, and Joseph Stahl, Queens Village, N.Y., assignors to Sperry Rand Corporation, Ford Instrument Company Division, Long Island City, N.Y., a corporation of Delaware  
Filed Jan. 22, 1963, Ser. No. 253,531  
8 Claims. (Cl. 235-150.25)



1. An inertial navigation system having as sensors an altimeter, orthogonally arranged gyros and accelerometers and a radar Doppler, means connected to said gyros for determining direction cosines of the velocity and displacement incremental outputs of the accelerometers and Doppler, respectively, from the body to inertial frame, a coordinate converter connected to the direction cosine determining means, a means for computing  $\omega_s^2$  connected to said altimeter, an  $\bar{R}$  position determining computer arranged to receive the output of the coordinate converter and  $\omega_s^2$  computing means and a whole number computer for determining course, velocity and longitude and latitude position connected to said  $\bar{R}$  position determining computer, wherein  $\omega_s$  is Schuler



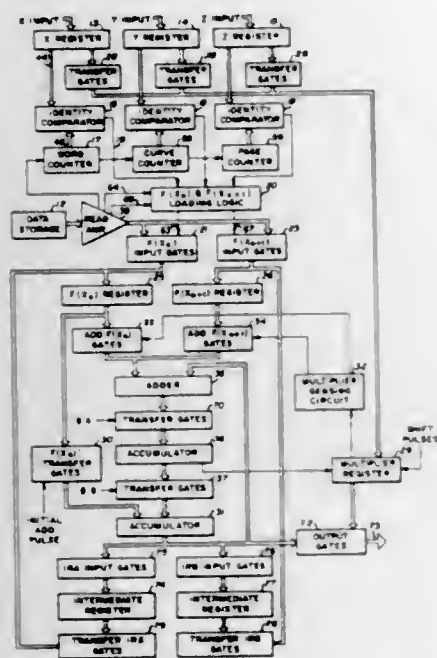
frequency and R is a vector quantity representing distance to the center of the earth.

3,412,240

## LINEAR INTERPOLATER

John M. Hunt, Hillcrest, N.Y., and John Kaufmann, Sunnyvale, and Harold R. Dell, Palo Alto, Calif., assignors to General Precision Systems Inc., a corporation of Delaware

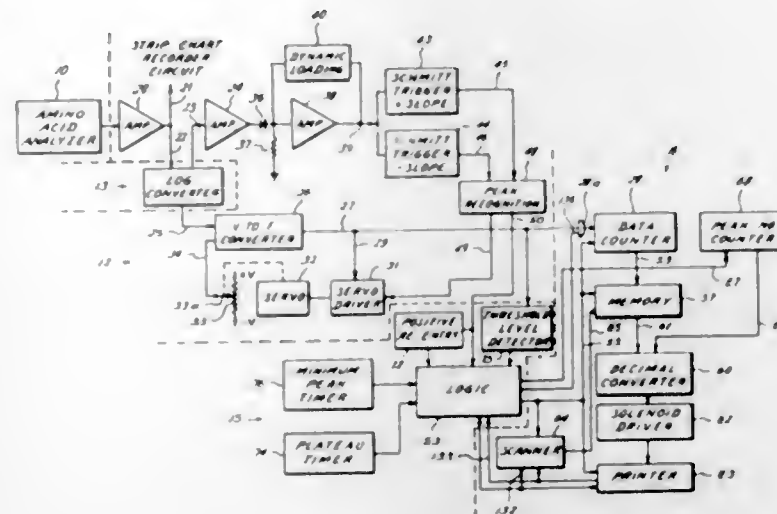
Filed Feb. 21, 1963, Ser. No. 260,160  
17 Claims. (Cl. 235-164)



3. Computing apparatus for generating output signals corresponding to the value of a pre-determined function of an independent quantity which is represented by a plurality of binary coded input signals received in parallel, said apparatus comprising a storage means wherein values of the function are recorded corresponding to points which are spaced uniformly with respect to the independent quantity, amplifier means for reproducing successive point values of the function from the storage means, each function point value being reproduced as binary coded words wherein binary digits are reproduced in parallel, counting means coupled to the amplifier means for providing a numerical count of the words reproduced from the storage means, an input register for receiving and storing the input signals in parallel, a comparator coupled to the input register and to the counting means for comparing the most significant binary digits of the input signals with the numerical count of the reproduced binary coded words, a first multiplicand register and a second multiplicand register for receiving and storing respective binary words in parallel, gating means responsively coupled to the comparator and operable to pass a first selected binary coded word from the amplifying means to the first multiplicand register and being further operable to pass the next successively reproduced binary coded word from the amplifying means to the second multiplicand register, a multiplier register coupled to the input register for receiving and storing the binary digits of lesser significance of the input signals, a parallel adder, an accumulator means coupled to the adder and operable to receive and store a binary coded signal in parallel constituting a partial product quantity, gating means coupled between the first multiplicand register and the accumulator for initially entering the value of the first bracketing function point into the accumulator, selective gating means responsively coupled to the multiplier register and operable to pass a quantity from a selected one of the multiplicand registers in accordance with a value stored in the multiplier register.

### 3,412,241 ANALOG-DIGITAL INTEGRATOR AND RECORDER FOR ANALYSIS

David W. Spence and Clinton D. Frisby, Houston, Tex., assignors to Infotronics Corp., a corporation of Texas  
Filed Dec. 14, 1964, Ser. No. 418,064  
27 Claims. (Cl. 235-183)



An automatic system for digital integration of analog signals wherein the amplitude of the analog signal is non-linearly related to its encoded information. A log converter is used to linearize the analog signal and a voltage to frequency converter digitizes the linearized analog signal by producing a frequency modulated signal consisting of a pulse train having an instantaneous frequency which is proportional to the amplitude of the linearized analog signal. The pulses are counted according to the direction of logic circuits which detect, identify, and separate valid peaks by correlating various combinations of waveform slope, slope sequence, amplitudes, and timing. The base line value of the analog signal is automatically corrected during the absence of a valid signal excursion in the analog signal which is indicated by the logic circuitry. The valid accumulations of the counter are temporarily stored in a memory and are thereafter recorded in a permanent form.

### 3,412,242 METHOD OF CHARGING A ZINC OXIDE PHOTOCONDUCTIVE LAYER WITH A POSITIVE CHARGE

Edward C. Gialmo, Jr., Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware  
Filed Dec. 10, 1965, Ser. No. 512,904  
4 Claims. (Cl. 250-49.5)

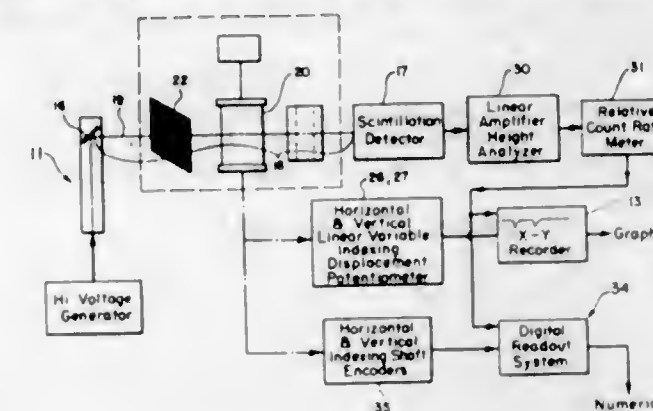
A method of charging a zinc oxide layer with a useable positive charge comprises the steps of: (1) directing a negative corona discharge to the layer to charge it negatively; and (2) then directing a positive corona discharge to the negatively charged layer to change the charge from negative to positive.

### 3,412,243 X-RAY APPARATUS FOR MEASURING INTERNAL STRAINS IN AN ELASTOMERIC BODY HAVING SPACED PARTICLES EMBEDDED THEREIN

Russell D. Williams, Eugene L. Anderson, and Leonard U. Rastrelli, San Antonio, Tex., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy  
Filed Jan. 25, 1965, Ser. No. 427,993  
5 Claims. (Cl. 250-51.5)

This invention relates to an apparatus for determining internal stresses in a specimen having a predetermined

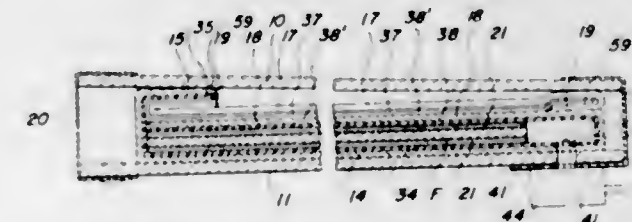
density variation which varies the X-ray absorption of the specimen so that stressing the specimen will vary the local



tion of density-variation which variations are reproduced on an X-Y recorder.

### 3,412,244 FOLDED FLEXIBLE VACUUM EXPOSURE HOLDER FOR RADIOGRAPHY

Harold Frank Sherwood, West Bloomfield, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
Filed Jan. 17, 1966, Ser. No. 520,924  
4 Claims. (Cl. 250-68)



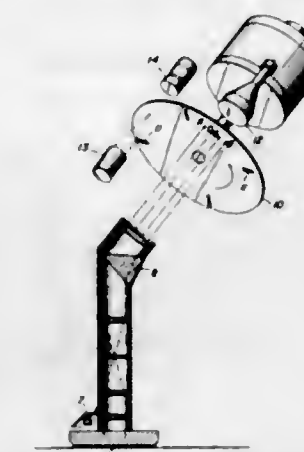
A reloadable X-ray film holder comprising a foldable envelope into which a sheet of film and an intensifying screen are placed in face-to-face relation for exposure, said envelope being made of a very flexible plastic material, two overlapping layers of which will form an airtight seal when they are pressed firmly into face-to-face contact with one another, and means being provided to evacuate said envelope after the flaps thereof have been folded around the edges of the film and screen and into surface contact with one another.

### 3,412,245 METHOD AND APPARATUS OF RETRIEVAL OF CODED INFORMATION FROM SYMBOLS HAVING CODED INKS HAVING PHOTOLUMINESCENT COMPONENTS WITH SHORT AND LONG TIME CONSTANTS OF DECAY AFTER SHORT WAVE ILLUMINATION

Frederick Halverson, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine  
Filed Feb. 9, 1966, Ser. No. 526,184  
6 Claims. (Cl. 250-71)

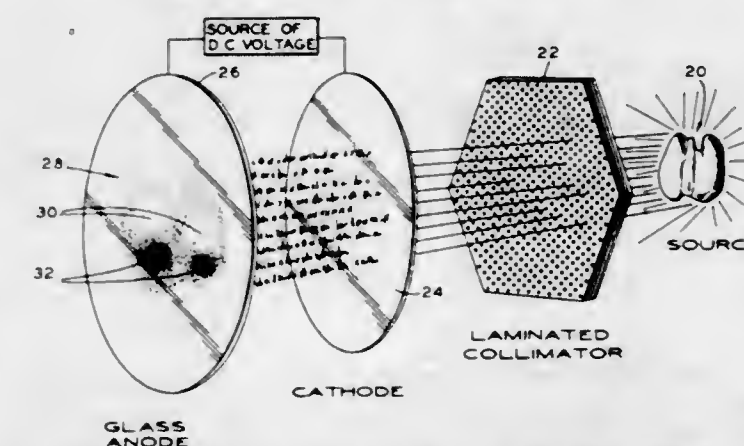
Coded information in which the code is based on the presence or absence of photoluminescent constituents in an ink, which constituents have different rates of decay of photoluminescent radiation after excitation with ultraviolet light. The coded symbols are illuminated with ultraviolet light, which may be steady or pulsed but should have a definite repetition rate even if steady, i.e., an AC component. Photoluminescence is received by a detector and the signal is processed in processing circuits which separate DC from AC. When the reciprocal of the time constant or period to decay to a certain value after irradiation is very large compared to the AC component in the illumination, the luminescence mimics the excitation. On the other hand, when it is small compared to the

AC component, the luminescent output is of approximately constant intensity, with only a small AC ripple. The ratios of AC to DC components vary greatly with the decay time, and the signal from the processing circuits determine the presence or absence of the different components. When pulsed radiation is used with filters, a synchronous time sequence can be produced, for example with a disc having various slots. The short time constant components will produce photoluminescence which is detected only by the first slot, whereas the longer time



### 3,412,246 SPARK IMAGING DEVICE FOR MAPPING DISTRIBUTION OF RADIATION

Norman H. Horwitz, 8741 Woodside Court, Oak Park, Mich. 48237, and James E. Lofstrom, 265 Williams, Grosse Pointe, Mich. 48236  
Filed Apr. 2, 1965, Ser. No. 445,127  
18 Claims. (Cl. 250-83.6)



This disclosure relates to a spark imaging device for mapping distribution of radiation, including a plate-like photosensitive cathode for subjection to the radiation to be imaged, a plate-like light-transmitting anode spaced from the cathode on the side thereof opposite the source of the radiation to be imaged and through which scintillation activity between the electrodes may readily be observed, and a glass medium capable of supporting a voltage between the electrodes. A source of current potential is applied across the electrodes for impressing a voltage therebetween, above the sparking potential of the gas medium, to support a discharge avalanche in the gas upon secondary emission of photoelectrons from the cathode generated by the impinging radiation. And a collimating

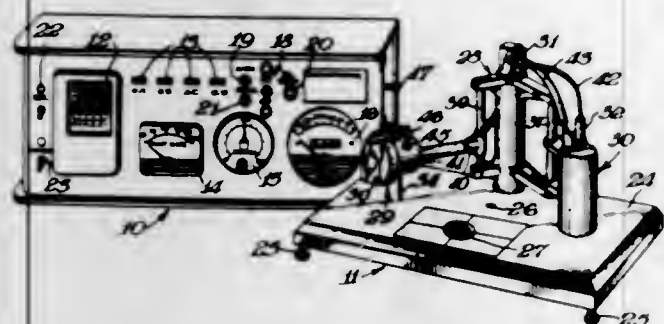


means is provided between the source of radiation and the cathode which absorbs radiation not generally perpendicular to the plane of the cathode.

### 3,412,247 MEANS OF DETECTION OF SURFACE CONTAMINANTS UTILIZING A VOLATILE RADIOACTIVE CHEMICAL

John Lynde Anderson, Orlando, Fla., assignor, by mesne assignments, to Ametek, Inc., a corporation of Delaware  
Continuation-in-part of application Ser. No. 161,246, Dec. 21, 1961. This application Nov. 5, 1965, Ser. No. 506,566

17 Claims. (Cl. 250—83.3)

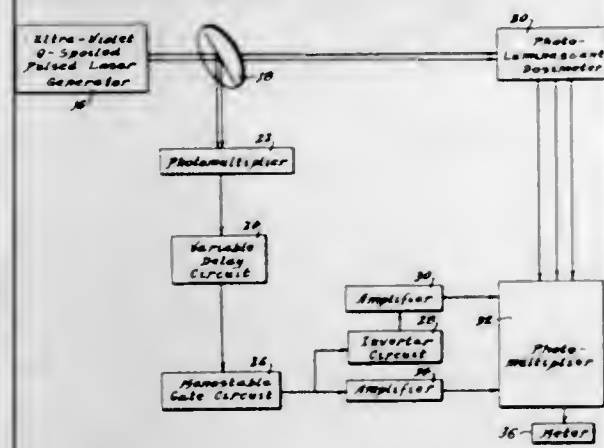


4. Apparatus for detecting contamination on surfaces which apparatus comprises means for applying a radioactive material to any contamination on said surfaces; means for passing a gas over the resultant modified surfaces; and means for measuring the rate said radioactive material leaves the said contamination.

### 3,412,248 METHOD AND MEANS UTILIZING A PULSED ULTRAVIOLET LASER FOR READOUT OF PHOTOLUMINESCENT DOSIMETERS

Jacob Kastner, Park Forest, Delbert N. Eggenberger, Downers Grove, and Louis Voyvodic, Hinsdale, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Nov. 19, 1965, Ser. No. 508,871  
12 Claims. (Cl. 250—83.3)

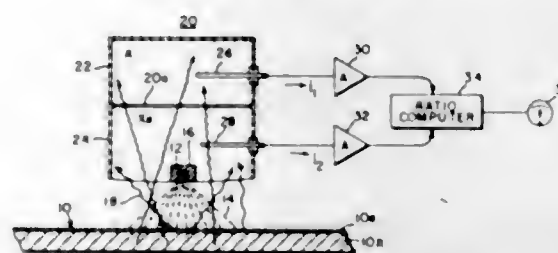


A dosimetry readout system for photoluminescent material includes a pulsed ultraviolet laser beam focused upon the photoluminescent material whose output is detected by a first photomultiplier. Using a slotted mirror, the pulsed ultraviolet laser beam is also transmitted to a second photomultiplier whose output is delayed in time and fed to the first photomultiplier to control the operation thereof. The output of the second photomultiplier is delayed in time a period which is equal to the duration of the output pulse of the laser beam plus a duration greater than the time required for the decay of the component of the visible fluorescence of the photoluminescent dosimeter which is due to the predose or fluorescent background of the dosimeter. The output of the first photomultiplier, which is proportional to the radiation to which the photoluminescent material has been exposed, is then recorded.

### 3,412,249 BACKSCATTER THICKNESS MEASURING GAUGE UTILIZING DIFFERENT ENERGY LEVELS OF BREMSSTRAHLUNG AND TWO IONIZATION CHAMBERS

Albert F. G. Hanken, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio  
Substitute for abandoned application Ser. No. 122,956, July 10, 1961. This application Aug. 4, 1964, Ser. No. 387,525

12 Claims. (Cl. 250—83.6)



4. Apparatus for determining the thickness of a coating of one material on a base of another material comprising: a radiation source for directing a beam of beta particles into the exposed surface of said coating to generate in said materials bremsstrahlung radiation having a spectral distribution which varies with said thickness. a first ionization chamber having one side mounted adjacent said coating for detecting the intensity of the low energy photons in said spectral distribution, a second ionization chamber mounted adjacent said first ionization chamber on the opposite side thereof from said coating for detecting the intensity of said high energy photons in said spectral distribution which have passed through said first chamber without being absorbed therein, means connected to said chambers for computing the ratio of one of said detected intensities to the other, and means for indicating said thickness as a function of said computed ratio.

### 3,412,250 IRRADIATION DEVICE FOR USE IN SWIMMING POOL NUCLEAR REACTORS

Philippe A. P. Arragon, Grenoble, Jean Gentil, Condrieu, and Maurice Seguin, Grenoble, France, assignors to Commissariat à l'Energie Atomique, Paris, France

Filed June 7, 1965, Ser. No. 461,686  
Claims priority, application France, June 10, 1964, 977,826

8 Claims. (Cl. 250—106)

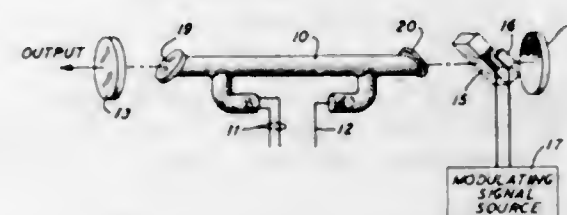


Sample cells to be irradiated in the flux of a nuclear reactor are mounted in a holder and spaced about its circumference. The holder is mounted on a shaft for rotation therewith and means are provided to rotate the shaft and holder in the nuclear flux.

### 3,412,251 MODE LOCKING IN A SYNCHRONOUSLY MODULATED MASER

Logan E. Hargrove, Bernardsville, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 24, 1964, Ser. No. 362,319  
4 Claims. (Cl. 250—199)



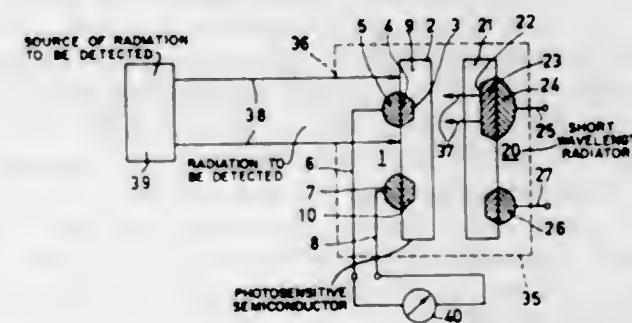
"Mode locking" or "phase locking" of maser modes refers to the maintaining of a fixed phase relationship, with respect to time, among the oscillating maser frequencies corresponding to the longitudinal modes of the maser resonant cavity. In accordance with the present invention, mode locking is achieved by the intracavity modulation of the maser oscillations at a "synchronous" frequency of the maser cavity. The resulting successive reinforcement of the modulation effect causes all longitudinal modes to couple together with a well-defined amplitude and phase.

### 3,412,252 INFRARED SENSING BY QUENCHING IN JUNCTION SEMICONDUCTOR

Hermann Georg Grimmelas, Aachen, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 15, 1965, Ser. No. 432,456  
Claims priority, application Netherlands, Feb. 12, 1964, 6401190

5 Claims. (Cl. 250—211)



A detector for long wavelength radiation comprising a photosensitive semiconductor having p and n regions forming a p-n junction in an output circuit connected to the p and n regions. Means are provided for irradiating the semiconductor to generate free minority carriers to increase the electrical output. The semiconductor has the property that on being irradiated with the long wavelength radiation, the lifetime of the minority carriers is reduced thereby reducing the electrical output. A very sensitive detector especially for infrared radiation is obtained.

### 3,412,253 ARRANGEMENT FOR MEASURING HYDROMETEORS

Holger L. Marcus, Lidings, Sweden, assignor to AGA Aktiebolag, Lidings, Sweden, a corporation of Sweden

Filed Jan. 12, 1967, Ser. No. 608,822  
Claims priority, application Sweden, Jan. 17, 1966, 545/66

4 Claims. (Cl. 250—218)

An apparatus for measuring hydrometeors in the atmosphere comprising a light transmitter for transmitting a beam of light and a receiver for receiving light reflected from the hydrometeors present in the surrounding atmosphere.

phere. Either the transmitter or the receiver is provided with optical correcting means for producing a radiation

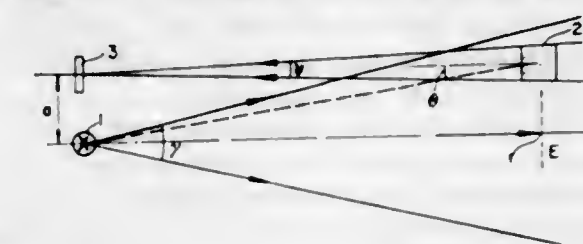


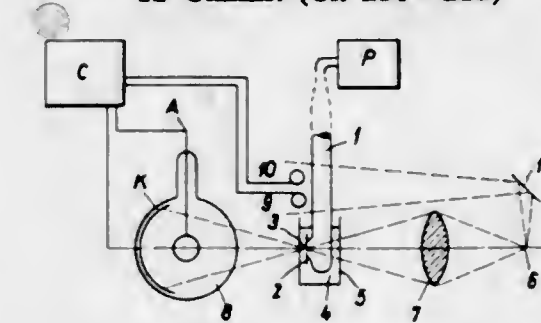
diagram in a plane comprising the principal axes of the transmitter and the receiver which prevents ambiguity in the results of the measurement.

### 3,412,254 APPARATUS FOR COUNTING PARTICLES SUSPENDED IN TRANSPARENT FLUIDS

Hans Meyer-Döring, Hamburg-Othmarschen, and Friedrich Knauer, Hamburg-Volkendorf, Germany, assignors to Quarzlampengesellschaft m.b.H.

Filed June 4, 1965, Ser. No. 461,336

12 Claims. (Cl. 250—222)

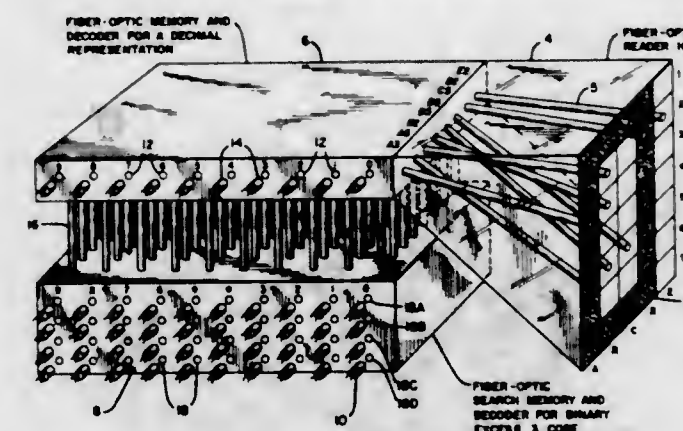


An apparatus for counting particles suspended in a transparent fluid in which the fluid containing the particles to be counted passes through a restricted opening in an opaque element, and a beam of light is directed through the opening and onto a photocell which controls the operation of a counting circuit for advancing a counter or recorder every time a particle passes through the opening.

### 3,412,255 CHARACTER RECOGNITION SYSTEM USING SELECTIVELY POSITIONED LIGHT CONDUCTING RODS AND INCLUDING CONVERSION TO EXCESS THREE BINARY CODE

Edward L. Krieger, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 22, 1964, Ser. No. 420,327  
14 Claims. (Cl. 250—227)

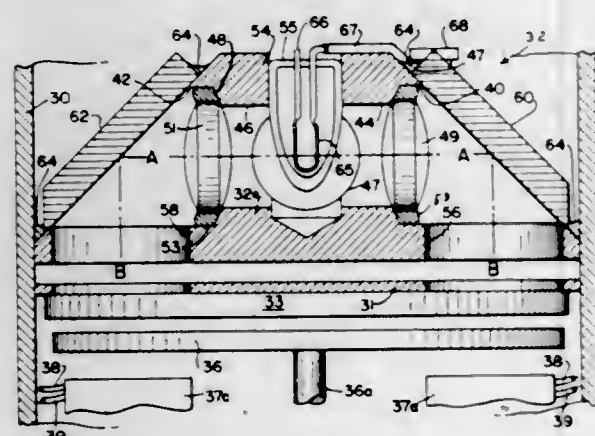


1. A fiber optic encoder comprising:  
(a) a plurality of input fiber optic rods,  
(b) a numeric character viewing area,  
(c) a plurality of light sensitive fiber optic rods,  
(d) means for positioning an end of each of said light sensitive fiber optic rods in a particular portion of said viewing area,



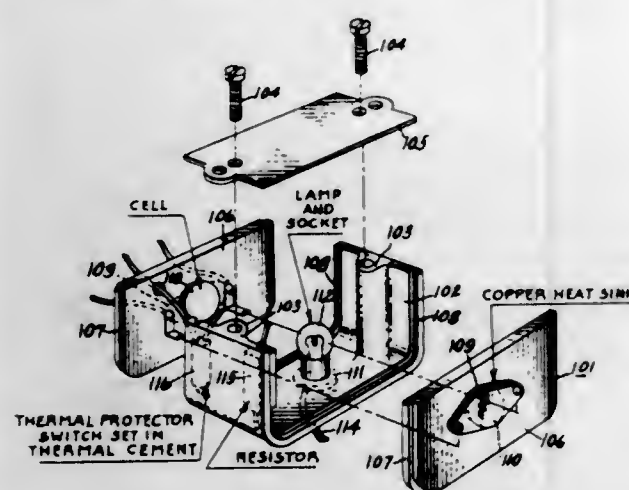
- (e) means for superposing one of a set of unique numeric characters on said viewing area to selectively cover the ends of a unique group of said light sensitive rods to prevent light from entering the covered rods,  
 (f) means for coupling the light and no-light from said light sensitive rods to said input rods,  
 (g) a plurality of output fiber optic rods, and  
 (h) means for selectively light coupling each of said output rods to individual ones of said input rods, said output rods providing light and no-light outputs indicative of said represented numeric character.

**3,412,256**  
**OPTICAL ENCODER USING COMMON LIGHT SOURCE WITH BEAM SPLITTER MEANS**  
 David V. Cronin, West Peabody, Mass., assignor to Dynamics Research Corporation, Stoneham, Mass., a corporation of Massachusetts  
 Filed Oct. 30, 1964, Ser. No. 407,753  
 9 Claims. (Cl. 250—231)



An optical shaft encoder in which a single illumination source provides a plurality of light beams which uniformly illuminate respective areas of a pair of ruled discs. Light from a centrally located source is directed via transverse passageways and lenses in a unitary housing to respective reflective surfaces of the housing which direct the light to predetermined portions of the ruled discs.

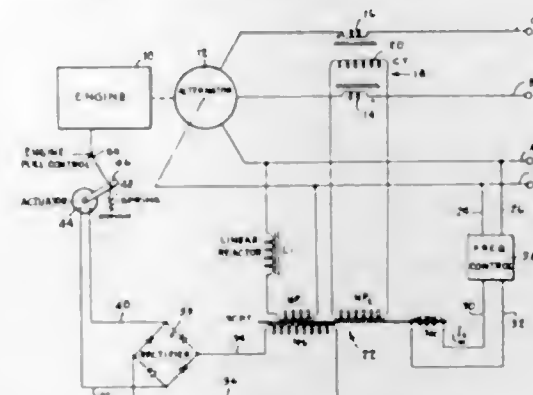
**3,412,257**  
**LAMP AND LIGHT-SENSITIVE CELL HOUSING**  
 Robert F. Miller and Johan Lund, Kokomo, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
 Original application Feb. 26, 1965, Ser. No. 435,663, now Patent No. 3,320,505, dated May 16, 1967. Divided and this application Feb. 20, 1967, Ser. No. 617,175  
 3 Claims. (Cl. 250—239)



This specification discloses two embodiments of a switching structure housing. In one embodiment, an end plate and an injection molded light and cell housing are tightly secured to opposite sides of a magnetic inductor

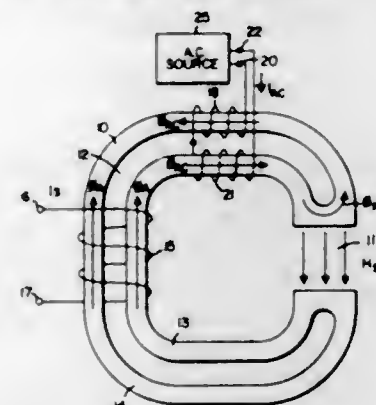
core member having a tapped winding thereon to form a unitary assembly. In the other embodiment, the structure comprises a U-shaped body portion having a pair of enlarged side segments and corresponding U-shaped grooving along opposite edges. A pair of side walls are dovetail fit into the corresponding U-shaped grooves and a cover is secured to the enlarged side segments to form a unitary enclosure.

**3,412,258**  
**ELECTRIC GOVERNOR SYSTEMS**  
 Harvey William Satter, Stamford, Conn., assignor to Condec Corporation, Stamford, Conn., a corporation of New York  
 Filed Mar. 3, 1966, Ser. No. 531,493  
 8 Claims. (Cl. 290—40)



1. An electric governor for controlling speed of an engine so as to maintain a constant output frequency of an alternating current generator coupled to said engine comprising, in combination, electromagnetic means connected to output leads of said generator for withdrawing a portion of alternating current energy therefrom, a rectifier for converting said alternating current energy to direct current energy, means for converting said direct current energy to mechanical energy, and mechanical means responsive to said converting means for controlling fuel input to said engine, whereby the speed of said engine is accordingly varied, said electromagnetic means including a saturable transformer having a pair of primary windings and a secondary winding, a linear reactor interposed between said generator output leads and one of said primary windings, and a current transformer interposed between said generator output leads and the other of said primary windings, said secondary winding being connected to said rectifier.

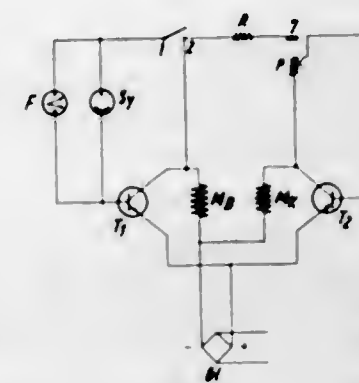
**3,412,259**  
**NEUTRALIZATION OF REMANENT MAGNETISM**  
 Robert Schept, St. Louis Park, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware  
 Filed May 19, 1965, Ser. No. 457,153  
 2 Claims. (Cl. 307—101)



A low hysteresis magnetic core structure employing an AC-excited winding separate from the main winding to re-

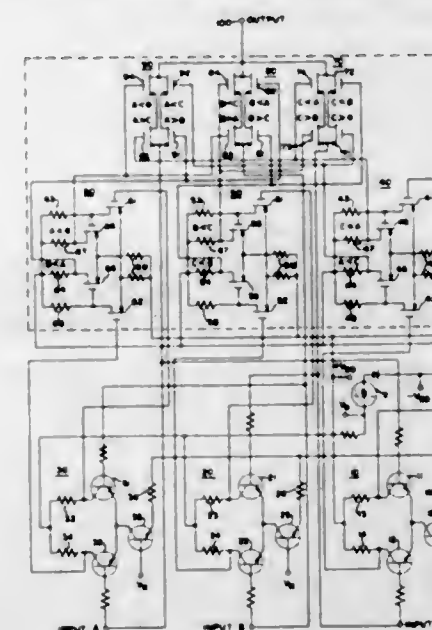
set the core periodically. The core structure is provided with minor magnetic loops through slotting of the core. The AC-induced flux flows in these minor magnetic loops so as not to affect the flux produced by the main winding.

**3,412,260**  
**ELECTRICAL DRIVE MEANS, PARTICULARLY FOR SEWING MACHINES**  
 Alfred Heldt, Schwetzingen, Baden, Germany, assignor to Frankl & Kirchner, Schwetzingen, Baden, Germany  
 Filed Sept. 18, 1964, Ser. No. 397,528  
 Claims priority, application Germany, Sept. 20, 1963, F 40,807  
 3 Claims. (Cl. 307—112)



Drive control means for a machine having a clutch and a brake with control circuits including transistors controlling the clutch and the brake winding and with a speed control switch and a position control switch in the brake transistor circuit which cooperate to disengage the coupling and brake the machine only in a predetermined position of the position control switch.

**3,412,261**  
**ANALOG VOTER**  
 Charles W. R. Hickin and Richard P. Quinlivan, Binghamton, N.Y., assignors to General Electric Company, a corporation of New York  
 Filed Oct. 18, 1965, Ser. No. 496,961  
 5 Claims. (Cl. 307—219)

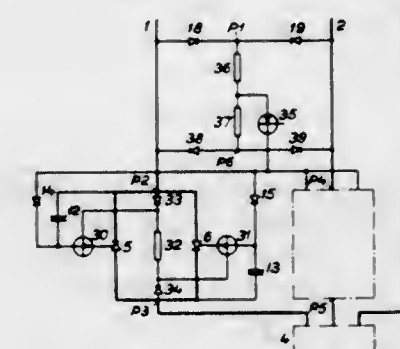


1. A median selector, for accepting three redundant electrical analog D-C signals and making available an output signal having the median value of the three at any instant so that before or after a single failure in the sources of the redundant signals only a correct signal is available for the system, comprising:

- (a) six pairs of series connected switches, each pair being adapted to select an input signal to an output terminal;

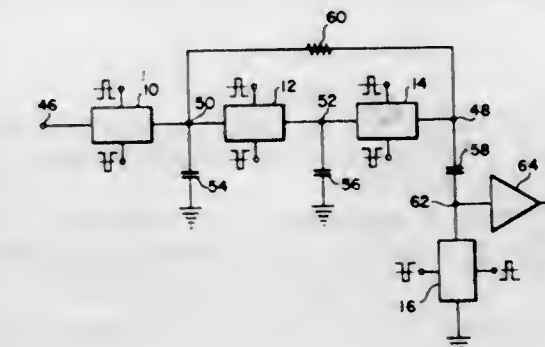
- (b) a set of comparators for comparing redundant input signals in pairs and generating a set of signals representing which input signals are greater and their complements;
- (c) means to apply said set of signals to gates on said switches so as to provide median selection;
- (d) said median selector including a set of three parallel, normally open, semiconductor switches formed on a grounded body and arranged in series with the respective input signals and adapted to have one switch closed in accordance with which of said pairs of switches is closed.

**3,412,262**  
**ALTERNATING CURRENT STATIC SWITCH**  
 Karl Lennart Grees, Irsta, and Jörgen Gustafsson, and Börje Allan Johansson, Vasteras, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation  
 Filed June 8, 1965, Ser. No. 462,275  
 Claims priority, application Sweden, June 22, 1964, 7,564/64  
 5 Claims. (Cl. 307—225)



An AC static switch for three-phase networks and comprising switching units for at least two phases. Each switching unit comprises two reverse-parallel-connected rectifiers, of which at least one is a thyristor. To turn on the thyristor at the time of zero current crossover and without regard to the load power factor, a capacitor is connected in series with a transistor between the gate and the cathode of the thyristor. Charging current to the capacitor is taken from the network and is supplied through a control device from a feed point which is common to all switching units.

**3,412,263**  
**DERIVATIVE CIRCUIT**  
 William R. Boyd, Oakland, and Robert C. Franklin, San Jose, Calif., assignors to Beckman Instruments, Inc., a corporation of California  
 Filed Apr. 11, 1966, Ser. No. 541,833  
 5 Claims. (Cl. 307—229)



1. A circuit for obtaining as an input to a high input impedance device, the finite difference approximation to the derivative of a function  $y=f(x)$ , in which  $f(x)$  represents any independent variable, said function being rep-

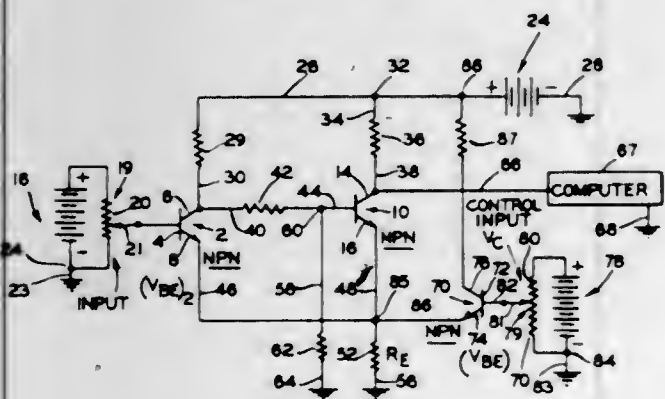


represented by an electrical signal whose voltage, with respect to a reference potential, varies in accordance with said function, comprising

- first, second and third normally open gates connected in series, said first gate having an input for receiving said electrical signal and said third gate having an output;
- first and second analog voltage storage elements, said first element being connected between said reference potential and the junction of said first and second gates, said second element being connected between said reference potential and the junction of said second and third gates;
- a third analog voltage storage element;
- a fourth normally open gate, said third storage element and said fourth gate being connected, in the order stated, between said output of said third gate and said reference potential, the input of the high input impedance device being connected to the junction of said third storage device and said fourth gate;
- an impedance connected between said output of said third gate and said junction of said first and second gates; and
- means connected to said gates for closing said first, third and fourth gates as a group alternately with said second gate.

#### 3,412,264 CONTROLLED THRESHOLD VOLTAGE TRIGGERING DEVICE

Francis R. Preston, Wayne Township, Passaic County, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware  
Filed May 28, 1965, Ser. No. 459,572  
7 Claims. (Cl. 307-235)



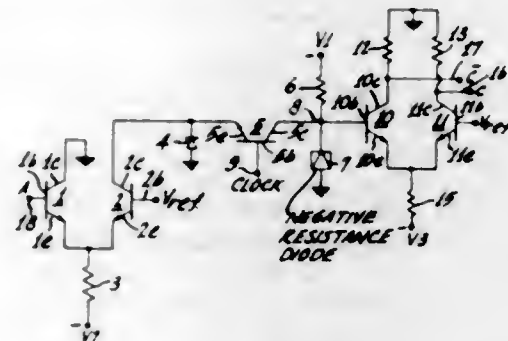
Apparatus for controlling the threshold voltage of a triggering circuit and for rendering said circuit effective for providing logic outputs. A control means is responsive to a control voltage input for affecting the device so that the output therefrom is proportional to the control voltage input.

#### 3,412,265 HIGH SPEED DIGITAL TRANSFER CIRCUITS FOR BISTABLE ELEMENTS INCLUDING NEGATIVE RESISTANCE DEVICES

Eldon C. Cornish, Pennsauken, N.J., assignor to Radio Corporation of America, a corporation of Delaware  
Filed Nov. 24, 1965, Ser. No. 509,484  
6 Claims. (Cl. 307-247)

High speed digital transfer circuit for bistable elements including negative resistance devices, such as tunnel diodes. The transfer circuit includes a first current mode switch and a control means for controlling the state of the tunnel diode in response to unipolar clock pulses. In one disclosed circuit, the control means includes a transistor having its collector emitter path connected between the tunnel diode and the current mode switch. The clock

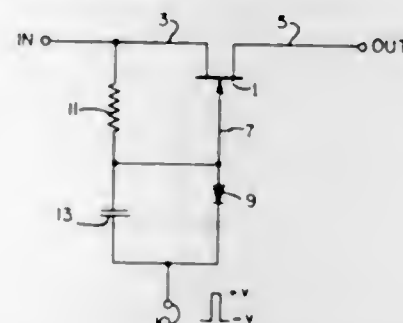
pulses are applied to the base of the transistor. In another disclosed circuit, the control means includes a second current mode switch for inhibiting the steering of the current



to one of the current paths of the first current mode switch during the absence of the clock pulses. A charge storage device is also provided for placing the tunnel diode in one of its stable states.

#### 3,412,266 ELECTRONIC SWITCH

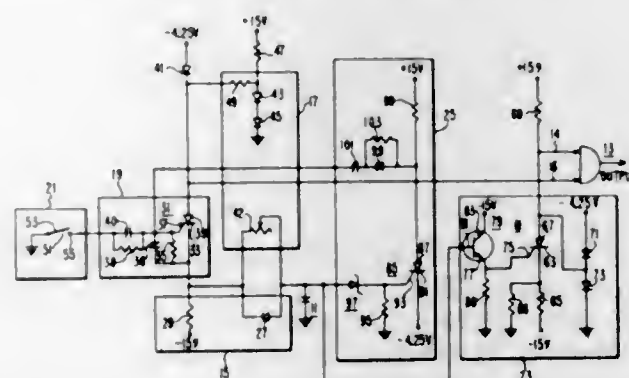
Leroy Frank Tarico, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois  
Filed Dec. 22, 1965, Ser. No. 515,699  
4 Claims. (Cl. 307-251)



A field-effect transistor (FET) is switched between current conductivity and nonconductivity by a unidirectional current-conducting device, such as a diode, connected to the gate electrode and pole to make the FET nonconductive when the device is conducting current. A capacitor is connected across the device and a resistor is connected between the gate electrode to another electrode of the transistor.

#### 3,412,267 ELECTRONIC TIME DELAY CIRCUIT

Gunter Bohle, Livonia, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan  
Filed Sept. 20, 1965, Ser. No. 488,678  
12 Claims. (Cl. 307-293)

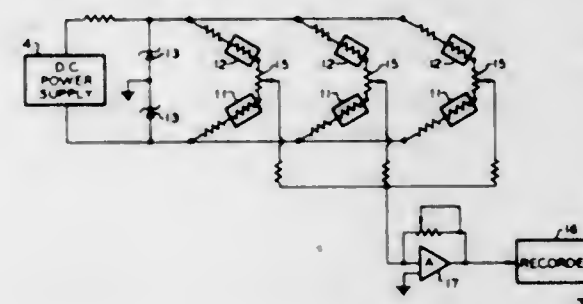


1. A time delay circuit comprising, in combination, coincidence gating means having at least two inputs; capacitor means;

a charge path circuit for said capacitor means;  
a discharge path circuit for said capacitor means;  
switching means for enabling one input of said gating means only in response to a substantially fully charged condition of said capacitor means;  
bi-stable means for enabling another input of said gating means and for enabling said charge path circuit to permit charging of said capacitor means when said bi-stable means is in its first state, and for disabling said charge path circuit and said other input of said gating means and for completing said discharge path circuit when said bi-stable means is in its second state;  
means for setting said bi-stable means into its said second state to initiate discharging of said capacitor means; and  
feedback means for returning said bi-stable means to its first state in response to a predetermined partially discharged condition of said capacitor means.

#### 3,412,268 ZENER DIODES BALANCING CIRCUIT

Donald D. De Ford, Evanston, Ill., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed June 25, 1965, Ser. No. 467,033  
2 Claims. (Cl. 307-318)



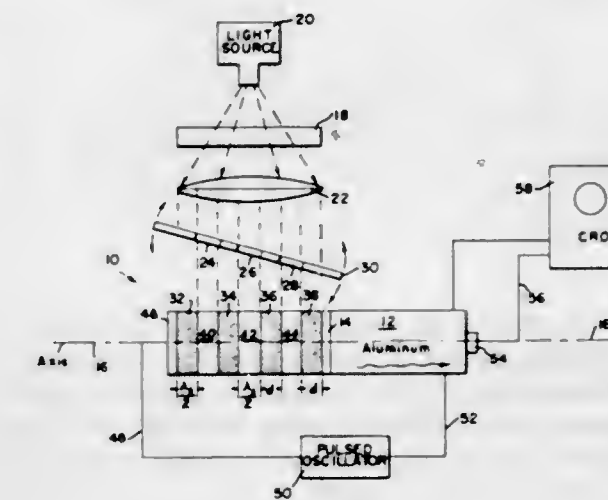
A high sensitivity balancing circuit suitable for use with a gas chromatographic detector has Zener diodes in two of its legs, and sensing and reference thermistors in the other two legs. In another embodiment, a series of sensing and reference thermistors are connected in parallel with the Zener diodes to form a summing balancing circuit. In another embodiment, two of the legs of the balancing circuit comprise oppositely disposed Zener diodes to form an AC balancing circuit.

#### 3,412,269 HYPERSONIC TRANSDUCER

Eugene C. Crittenden, Jr., Monterey, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio  
Filed Nov. 24, 1965, Ser. No. 509,583  
6 Claims. (Cl. 310-8.1)

A transducer useful for operation at frequencies on the order of 100 mc. and lower provided with a slab of cadmium sulfide which is exposed to light having a wavelength of 5770 angstroms such that alternate dark and light bands are established along the acoustic propagation axis of the cadmium sulfide. The dark and light bands are regions of high and low electrical impedance, respectively. The widths of the bands are such as to establish mechanical resonance of the slab of cadmium sulfide with an applied electrical signal and are equal in length along the axis of sound propagation to one half wavelength of the acoustical signal to be generated. The dark and light bands are established by a slotted member positioned between the source of light and the cadmium sulfide. The slotted member is adjustable to regulate the widths of the dark and light bands to thereby provide for the tuning of the cadmium sulfide slab into mechanical resonance

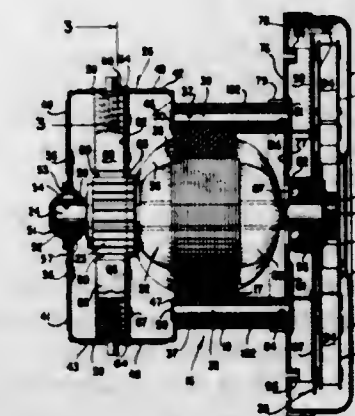
with the applied electrical signal. In another form of the transducer, useful at frequencies above 100 mc., there is employed wave interference phenomenon to produce standing optical waves in a slab of cadmium sulfide by introducing monochromatic light having a wavelength of 5770 angstroms into one end of the slab along its longitudinal axis. The opposite end of the slab is metallized to provide high reflectivity for the light. The light is directed into the cadmium sulfide slab either normal to the reflecting surface for maximum frequency operation or at some



lesser grazing angle for lower frequency operation. Interference between the direct and reflected light produces standing waves in the slab with maxima of intensity spaced at half-wavelengths of the light. Dark and light bands of high and low electrical impedance are thus produced as in the first form of transducer. Tuning of this form of transducer is obtained by adjusting the angle of incidence that the light makes with the reflecting surface to produce mechanical resonance of the slab with an applied electrical signal.

#### 3,412,270 MOTOR-FAN UNIT ASSEMBLY

Rudolph W. Wacek, Anderson, S.C., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey  
Filed Mar. 7, 1966, Ser. No. 532,143  
6 Claims. (Cl. 310-66)



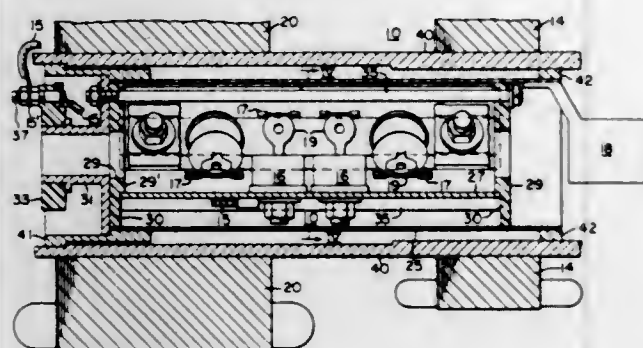
A motor-fan unit comprising a stator including a plurality of apertured stacked laminations, an armature, and a pair of brushes and brush holders carried by a brush-holder plate supported by an apertured end bracket disposed adjacent a commutator at one end of the stator, and at the other end of the stator is a fan assembly including an apertured plate. A pair of fastening members pass through the apertures provided in the fan assembly plate, the stator laminations and the end bracket for clamping them together.



### 3,412,271 BRUSHLESS TYPE ALTERNATING CURRENT MACHINE

Walter O. Hall, Lima, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 8, 1965, Ser. No. 512,427  
5 Claims. (Cl. 310-68)

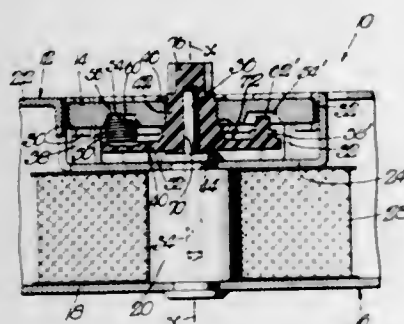


1. A dynamoelectric machine having an alternating current winding and a direct current field winding, said field winding disposed on a hollow rotatable shaft, exciting means for said field winding including a stationary field member, a rotating armature mounted on the hollow shaft, a semiconductor junction rectifier assembly disposed within the hollow shaft and electrically connected between the direct current field winding and the rotating armature, and means for supporting and energizing the rectifiers of said assembly in a crosswise manner with the axis of rotation parallel to the rectifying junctions, said means further supporting the rectifiers in an angularly spaced manner about the axial center of the hollow shaft so that the assembly is dynamically balanced.

### 3,412,272 SELF-STARTING SYNCHRONOUS REACTION MOTOR

Walter Kohlhausen, Elgin, Ill., and Harold K. Cummings, Whitewater, Wis., assignors to Amphenol Corporation, Broadview, Ill., a corporation of Delaware

Filed May 17, 1966, Ser. No. 550,761  
20 Claims. (Cl. 310-164)

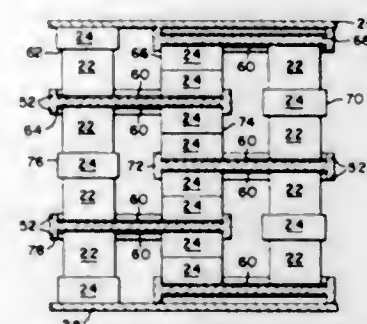


1. In a synchronous reaction motor, the combination with a field including field poles arranged circularly about a first axis, a coil acting when energized to excite said field, a shaft part journaled for rotation about said axis, and a permanent-magnet rotor part turnable on said shaft part and having poles of opposite polarities cooperating with said field poles, of a device providing for free relative rotary motion between said parts over a given angular range; and a resilient coupling between said parts providing a helical spring carried by one of said parts with its axis spaced from and parallel to said first axis and having a free length to one end thereof, and spaced shoulders on the other part between which said spring length extends and by which it is deflected transversely of said first axis on relative rotation between said parts in either direction within said free-motion range.

### 3,412,273 HIGH VOLTAGE LIGHTNING ARRESTER HAVING A PLURALITY OF ARRESTER ELEMENTS

Richard E. Kennon, Bloomington, and John E. Harder, Richland Township, Bloomington, Ind., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 28, 1964, Ser. No. 407,012  
9 Claims. (Cl. 313-1)

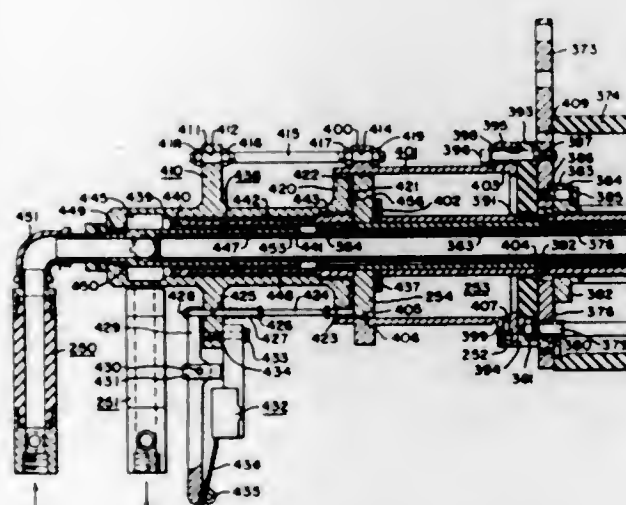


A high voltage lightning arrester having a plurality of columns of arrester elements divided into sections by insulating plates which also support the columns.

### 3,412,274 MOVABLE ELECTRODE FOR ARC HEATER

Charles B. Wolf, Irwin, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 4, 1966, Ser. No. 518,596  
12 Claims. (Cl. 313-32)



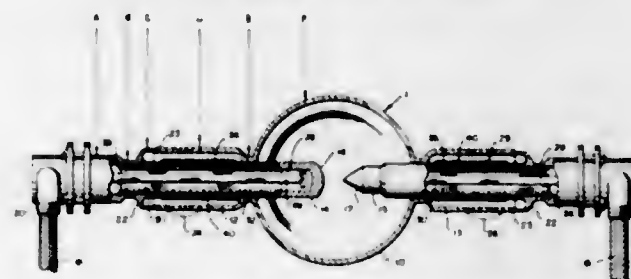
A movable fluid cooled electrode suitable for use in a gas arc heater has means forming an annular arcing surface with fluid flow passageways therein for conducting heat flux from the arcing surface. A plurality of coaxial tube arrangements bring fluid to and from, and current to the electrode to produce the arc, while maintaining the electrode insulated from the supporting structure to prevent the formation of parallel current paths which might cause sparking. One tube brings cooling fluid to the electrode, the fluid also exerting a force on the electrode tending to move it from an operating position to a contact position adjacent a stationary electrode to start the arc. A substantially cylindrical air space back of the electrode operating position cooperates with a cylindrical member carried by the movable electrode to equalize the pressures on the back and front (arcing surface) of the electrode to make movement of the electrode relatively uninfluenced by gas pressure in the arc chamber. In one embodiment, air trapped in an air space slowly exits thereby limiting the forward rate of movement of the electrode. An air-actuated piston attached to one of the coaxial tubes is employed to move the electrode back

to operating position. Means provides a fluid trap operative upon backward movement of the electrode, which fluid is slowly forced through, in one embodiment, a very narrow annular passageway, thereby limiting the rate of movement of the electrode. In another embodiment on the backward movement of the electrode, outlet fluid from the electrode is trapped and discharged through axially and peripherally spaced bores in a tube which continually decrease in number as the electrode and tube move toward the operating position thereby providing a shock absorber effect.

### 3,412,275 VAPOR DISCHARGE LAMP WITH COOLING MEANS FOR PORTION OF ELECTRODE

Wolfgang E. Thouret, North Bergen, N.J., assignor to Duro-Test Corporation, North Bergen, N.J., a corporation of New York

Filed Oct. 12, 1966, Ser. No. 586,065  
12 Claims. (Cl. 313-32)

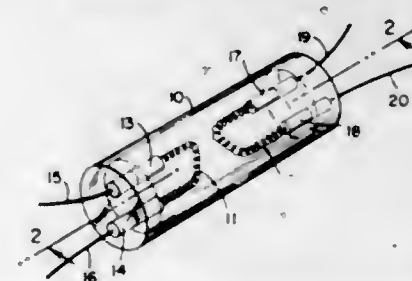


A compact arc discharge lamp in which one or both of the electrodes are fluid cooled internally. A portion of one or both electrodes spaced from the tip on which the arc is produced has a reduced thickness to increase the operating temperature of that portion of the electrode and the overall operating temperature of the lamp. The reduced thickness portion of an electrode is preferably insulated from the fluid by a member to prevent the temperature of this portion from dropping. The production of the elevated temperature in the lamp permits the use of a metal fill, and/or metal additive, and/or halogen to produce a halogen transport reaction.

### 3,412,276 TWIN FILAMENT LAMP

Gerald A. Curl, Van Nuys, Calif., assignor to Coastal Dynamics Corporation, a corporation of California

Filed Feb. 2, 1967, Ser. No. 613,577  
5 Claims. (Cl. 313-114)

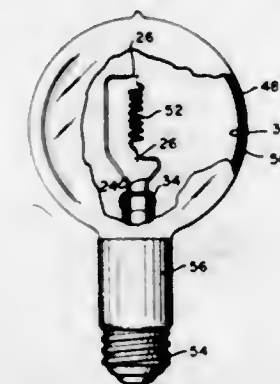


This disclosure relates to a miniature lamp in the form of a single elongated transparent enclosure such as a glass tube having first and second filaments respectively disposed in opposite ends of the enclosure. Suitable lead out wires are provided for each of the filaments and arranged to be connected in parallel in a circuit such that should one of the filaments become broken or fail, the other filament will remain energized. The miniature lamps are best suited for annunciator systems, edge-lighted panels, and like applications where redundancy is required for safety purposes. The filaments are preferably disposed in planes at right angles to each other within the tube so that when both are energized, fairly uniform illumination is provided omnidirectionally from the lamp.

### 3,412,277 INCANDESCENT LAMP WITH ADDITION OF FLUORINE COMPOUNDS TO THE OPERATING GAS FILLING

Wolfgang E. Thouret, North Bergen, N.J., assignor to Duro-Test Corporation, North Bergen, N.J., a corporation of New Jersey

Filed Apr. 8, 1966, Ser. No. 541,175  
21 Claims. (Cl. 313-222)



An incandescent lamp with fluorine additive in which the ends of the filament are protected by a metal which resists attack by the fluorine and/or the filament ends are constructed to operate at a relatively higher temperature.

### 3,412,278 HOLLOW CATHODES HAVING A MATRIX MATERIAL WITH PARTICLES INTERSPERSED

Carl R. Sebens, Stratford, and John W. Vollmer, Norwalk, Conn., assignors to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York

Filed Dec. 1, 1965, Ser. No. 510,754  
11 Claims. (Cl. 313-346)



7. A hollow cathode for a radiation source comprising: a generally cup-shaped hollow cathode, at least a substantial part of the interior emitting portion of which comprises a metallic mixture; said mixture comprising a first metallic component in the form of small precipitated grains; said small grains being scattered substantially throughout said mixture; the original surface layer of said interior emitting portion therefore including such small grains of said first metallic component, and additional such small grains being uncovered as said emitting portion sputters away, whereby said hollow cathode initially emits radiation corresponding to said first metallic component, and will continue to emit such radiation even after substantial use.

### 3,412,279 ELECTROMAGNETIC WAVE ENERGY ABSORBING ELEMENTS FOR USE IN HIGH FREQUENCY ELECTRON DISCHARGE DEVICES HAVING TRAVELING WAVE TUBE SECTIONS

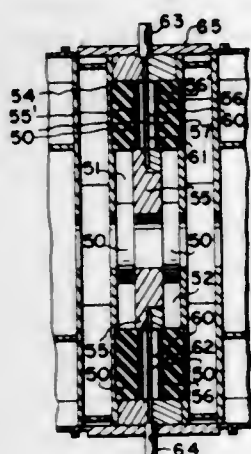
Richard R. Allen, Redwood City, and Rodney R. Rubert, Santa Clara, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Sept. 13, 1965, Ser. No. 486,924  
9 Claims. (Cl. 315-3.5)

Electromagnetic wave energy absorbing elements (attenuators) for use in high frequency electron discharge devices, particularly traveling wave type devices, and a specific means for mounting and cooling such elements.

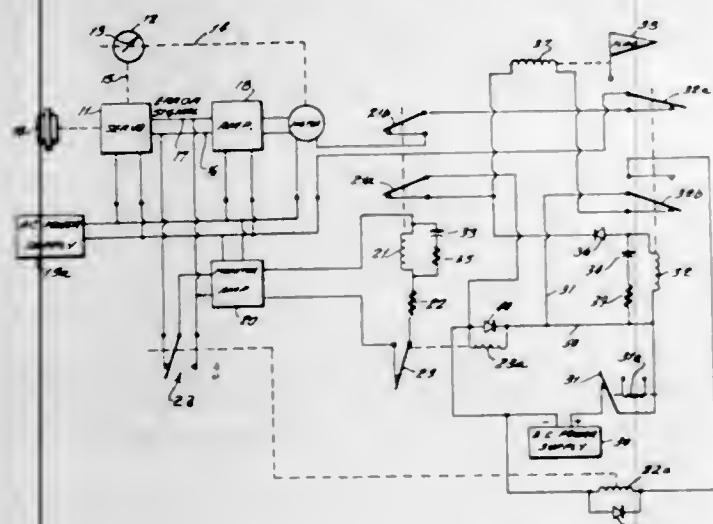


ments are disclosed. Various structural embodiments of such electromagnetic wave energy absorbing elements are



described as incorporated into certain specific types of high frequency electron discharge devices.

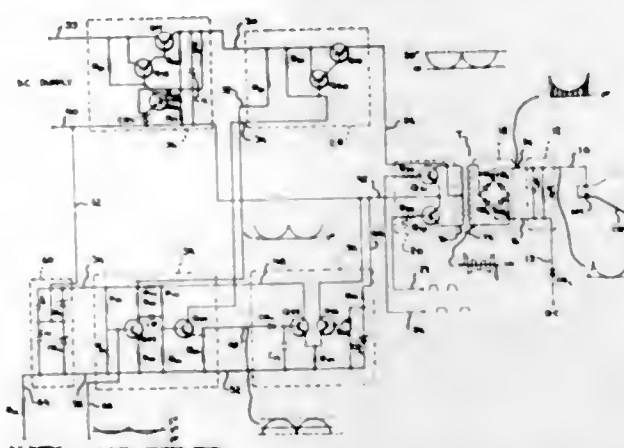
**3,412,280**  
**MONITORING DEVICE FOR SERVO SYSTEMS**  
Robert S. De Grande, Brooklyn, N.Y., assignor to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York  
Filed Oct. 28, 1965, Ser. No. 505,480  
5 Claims. (Cl. 318-18)



1. A servo monitoring system comprising a servo system having an output error signal, monitoring means having input terminals and output terminals, first and second relay switching means having respective open circuit positions and closed circuit positions and input connection circuits, and indicator means operable from a first position to an indication position responsive to error signals having at least a predetermined magnitude for at least predetermined length of time; said input terminals of said monitoring means connected to said output error signal; said output terminals of said monitoring means connected to said input connection circuit of said first relay switching means; said relay switching means operable from its said open circuit position to its said closed circuit position responsive to an output from said monitoring means which exceeds a predetermined value; said first relay switching means connected to said input connection circuit of said second relay switching means; said second relay switching means operating from said open circuit position and to said closed circuit position responsive to operation of said first relay switching means to its said open circuit position; said first relay switching means connected in series with said indicator means and

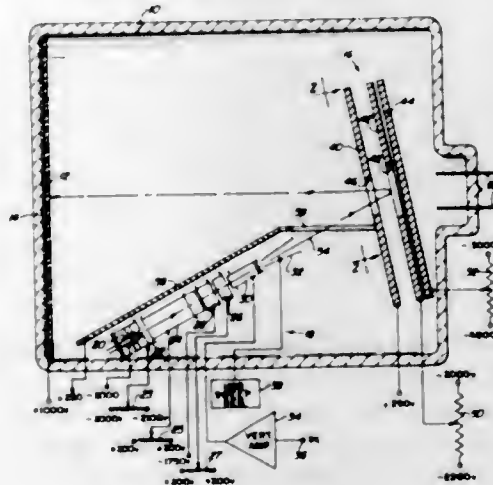
moving said indicator means from said first position to said indicator position responsive to operation of said first relay to said open circuit position; said second relay means connected to said input terminals of said monitoring means and short circuiting said input terminals responsive to operation of said first relay switching means.

**3,412,281**  
**D.C. CONTROLLED DYNAMIC FOCUS CIRCUIT**  
George Gilman Richards, Jr., Middletown, and Richard Farner Wells, Elizabethtown, Pa., assignors to AMP Incorporated, Harrisburg, Pa.  
Filed Sept. 18, 1964, Ser. No. 397,379  
7 Claims. (Cl. 315-22)



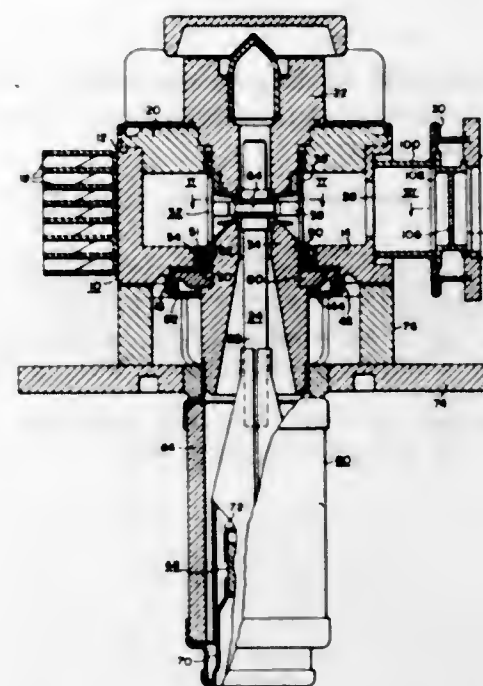
A dynamic focusing circuit for cathode ray tubes is disclosed which employs an A.C. control signal which is proportional to distortion due to defocusing inherent in tube faces, the A.C. control signal being converted into a D.C. control signal which may be added directly to the relatively high level constant voltage supplied by the tube focusing circuit. The invention circuit is all solid state and provides isolation to prevent the circuit from being affected by the relatively high tube focusing voltage.

**3,412,282**  
**CATHODE RAY TUBE EMPLOYING ELECTRON MIRROR**  
Jean F. De Lord, Portland, Oreg., and Robert W. Nelson, Vancouver, Wash., assignors to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon  
Filed Nov. 9, 1964, Ser. No. 409,789  
8 Claims. (Cl. 315-30)



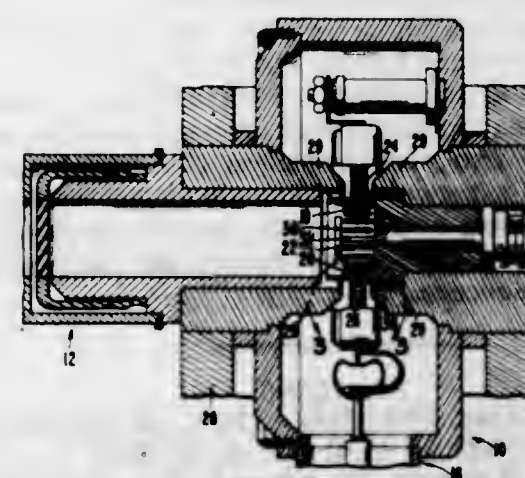
A cathode ray tube is described in which a magnifying electron mirror structure is employed to magnify and reflect electron images onto a fluorescent screen, such electron images being formed before transmission through such mirror structure in any suitable manner, such as by deflection modulation of an electron beam within such tube.

**3,412,283**  
**COAXIAL MAGNETRON IN WHICH THE ANODE IS WELDED TO THE BODY**  
Kenneth D. Powell, Lancaster, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Oct. 15, 1965, Ser. No. 496,350  
4 Claims. (Cl. 315-39.77)



A coaxial magnetron structure in which the main assembly components of the magnetron are assembled and secured by welding techniques.

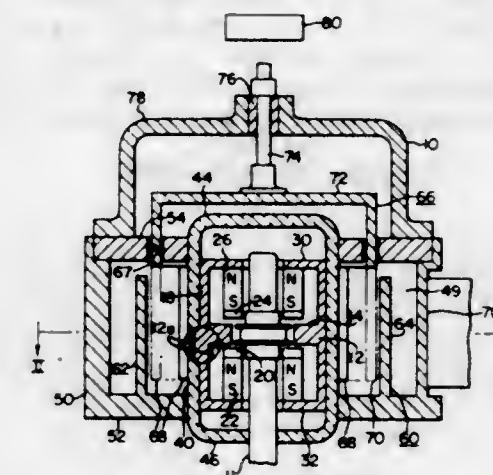
**3,412,284**  
**MICROWAVE TUBE APPARATUS HAVING AN IMPROVED SLOT MODE ABSORBER**  
George E. Glenfield, Scotch Plains, N.J., assignor to S-F-D Laboratories, Inc., Union, N.J., a corporation of New Jersey  
Filed Oct. 19, 1965, Ser. No. 497,791  
7 Claims. (Cl. 315-39.77)



A coaxial magnetron tube is disclosed. The tube includes a cathode electrode concentrically disposed of an anode electrode structure. The anode electrode structure includes a circular array of anode resonators facing the cathode electrode and defining a magnetron interaction region in the space therebetween. The anode structure includes a circular electric mode cavity resonator coaxially disposed of the array of anode resonators and communicating with the anode resonators via an array of axially directed coupling slots communicating through the anode structure between alternate ones of the anode resonators and the circular electric mode cavity resonator. The array of

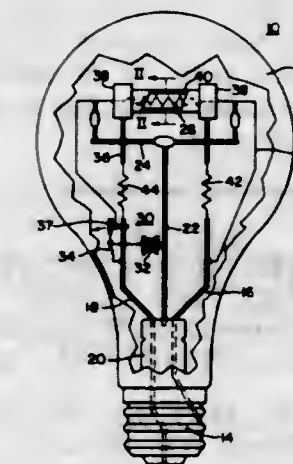
coupling slots serves to lock the  $\pi$  mode of the array of anode resonators to the circular electric mode of the cavity resonator. A slot mode absorbing member is disposed adjacent the ends of the slots for selectively damping unwanted oscillations associated with radio frequency energy storage in the slots. The slot mode absorbing member comprises a porous ceramic member impregnated with carbon. A metallic support member is bonded to the lossy ceramic member over a substantial surface area thereof which is on the opposite side of the lossy member from the slots, whereby thermal energy is uniformly distributed over the slot mode absorbing member to prevent fracture in use.

**3,412,285**  
**COAXIAL MAGNETRON WITH ROTATABLE TUNING MEANS**  
William A. Gerard, Horseheads, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Oct. 20, 1965, Ser. No. 498,921  
4 Claims. (Cl. 315-39.61)



A coaxial magnetron is described in which tuning of the magnetron is accomplished by rotation of a tuning member relative to a fixed tuning member within the outer cavity resonator of the magnetron whereby the frequency of the magnetron is modulated due to modifying the electric field within the outer cavity resonator by cooperation between the fixed and movable tuning members.

**3,412,286**  
**REFRACTORY-OXIDE INCANDESCENT LAMP WITH PREHEATER**  
Russell H. Atkinson, Fanwood, and Heinz G. Sell, Cedar Grove, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Dec. 14, 1966, Ser. No. 601,707  
8 Claims. (Cl. 315-116)



This invention relates to incandescent lamps and more particularly to an incandescent lamp having a refractory-



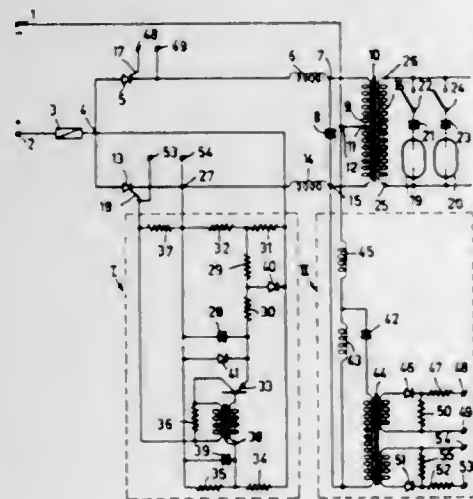
ceramic sleeve as its principal source of radiant energy. The lamp of the present invention includes a radiation transmitting outer envelope sealed to a standard threaded base and includes a pair of lead-in conductors extending from said base into the envelope having connected thereto a pair of electrically parallel circuit means. One of said pair of circuit means includes a thermal switch and a refractory metal heating filament. The other of said circuit means includes, in series, ballast means and a hollow refractory-ceramic radiator. Upon activation of said lamp said refractory metal heating filament heats said hollow refractory ceramic radiator until said radiator reaches a temperature, which due to its negative resistance characteristic, causes the radiator to become conductive and radiate substantial light in the visible spectrum. For maximum heating efficiency the refractory metal heating filament is axially disposed within the hollow refractory-ceramic radiator.

3,412,287

**ELECTRICAL ARRANGEMENT**

Theodorus Hehenkamp, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware  
Continuation of application Ser. No. 488,617, Sept. 20, 1965. This application Nov. 30, 1967, Ser. No. 687,071  
Claims priority, application Netherlands, Sept. 23, 1964, 6411058

6 Claims. (Cl. 315-258)



A DC-AC converter comprises the series-combination of a semiconductor controlled rectifier, an inductor, and a circuit arrangement having an equivalent circuit comprising the parallel combination of a capacitor and a second inductor. A load circuit comprising two or more parallel branches that can be selectively switched in or out of the circuit is coupled to the converter. Each parallel branch of the load comprises an electric discharge lamp in series with a capacitor. The load circuit forms part of an undercritically damped resonant circuit for the converter. The inductance ratio of the second inductor to the first inductor is chosen to be less than 15 to 1, and preferably less than 10 to 1.

3,412,288

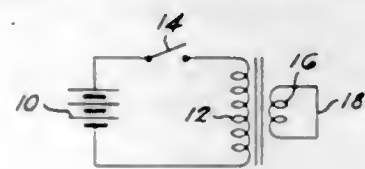
**ARC SUPPRESSION CIRCUIT FOR INDUCTIVE LOADS**

Burl W. Ostrander, Brown Deer, Wis., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 25, 1965, Ser. No. 427,881  
4 Claims. (Cl. 317-11)

1. An electrical system comprising a source of direct current, a dynamoelectric machine having a field winding, means electrically connecting said source of direct current and said dynamoelectric machine including a control

switch, and means for reducing the arcing at said control switch when said control switch is opened, said means comprising a winding means inductively coupled with



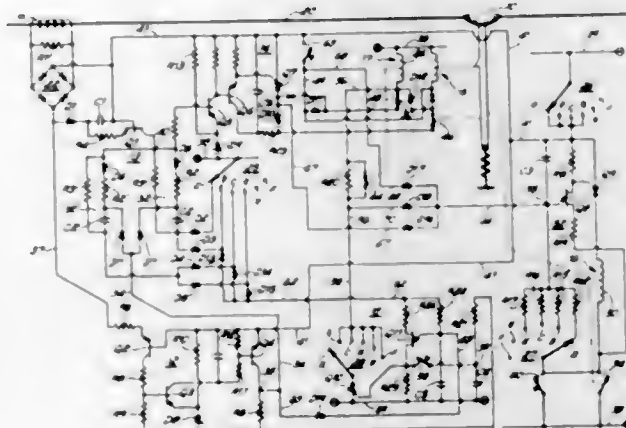
said field winding, said winding means being permanently short circuited and being permanently disconnected from said source of direct current.

3,412,289

**SEQUENCE CONTROL MEANS FOR REPEATING INTERRUPTERS**

Clyde Gilker, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Jan. 17, 1966, Ser. No. 521,167  
15 Claims. (Cl. 317-22)



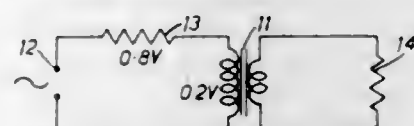
A repeating circuit interrupter having a main switch which is controlled by a sequencing circuit to perform a sequence of opening and closing operations. An opening operation is initiated by a switch opening means after a predetermined time delay in response to an overload sensing circuit and a closing operation is performed by a switch closing means actuated by a closing control circuit after a predetermined closing time delay. The sequencing circuit controls the number of such opening and closing operations and is reset to its initial condition by a reset means after the completion of an operating sequence. A first disabling circuit prevents operation of the closing control circuit until the completion of a switch opening operation and a second disabling circuit prevents operation of the closing control circuit until the sequencing is reset to its initial condition following the completion of an operating sequence.

3,412,290

**TEMPERATURE STABILIZATION OF THERMAL IGNITERS FOR OIL BURNERS**

John G. G. Hempson, Shoreham-by-Sea, England, assignor to Ricardo & Co. Engineers (1927) Limited  
Filed Oct. 7, 1966, Ser. No. 585,143

Claims priority, application Great Britain, Oct. 7, 1965, 42,692/65  
5 Claims. (Cl. 317-98)



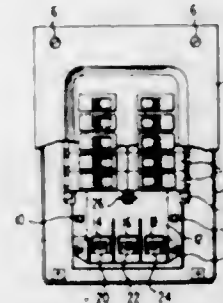
A stabilized voltage supply for energizing a hot surface electrical resistance heater, constituting an igniter and a fuel burner, has a conventional transformer which

is caused to operate above a nominal operating point on a selected range of its drooping characteristic so that variations in the supply voltage will provide a minimum temperature of the igniter element to ignite the fuel and a maximum temperature below that at which the igniter element will be destroyed. In a preferred embodiment a resistor, having a high temperature coefficient of resistance, is inserted in the primary circuit of the transformer to cause it to operate in a desired range of the drooping characteristic and also to modify the magnetizing current characteristic of the transformer.

3,412,291

**PANELBOARD HAVING MULTIBLADED CONTACTS**

Kenneth J. Stokes, Wethersfield, Conn., assignor to General Electric Company, a corporation of New York  
Filed Dec. 22, 1966, Ser. No. 603,994  
2 Claims. (Cl. 317-119)



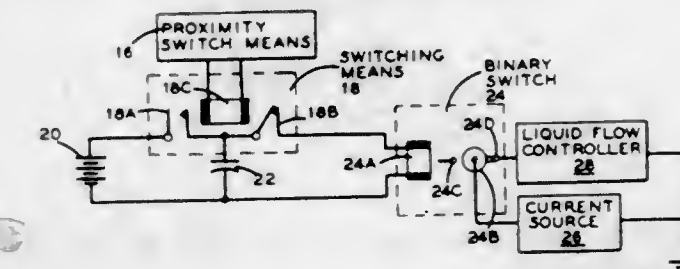
An electrical circuit control device panel assembly comprising a support having bus bars and a plurality of equally spaced multipart stationary contact members supported thereon each of the contacts being connected to one of the bus bars; each stationary contact includes a central blade-like portion and a pair of integral blade-like portions spaced therefrom at either side and extending parallel to the main portion; the panel assembly also includes two types of circuit breakers, one of which has a width or thickness substantially equal to one-half the space between adjacent stationary contacts and plugs onto one of the side portions of the stationary contact assemblies and the other of which has a width or thickness substantially equal to the spacing between adjacent stationary contact assemblies and plugs onto the central portion of the stationary contact assembly; the wider module breaker has a casing having recesses or clearances at each side of the central portion of the contact assembly without interference by the side portions whereby each stationary contact assembly may receive half-module control devices or full-module control devices selectively.

3,412,292

**CONTROL RELAY CIRCUITS EMPLOYING PROXIMITY SWITCHES FOR ENERGIZING LIQUID-FLOW CONTROLLERS**

Norman A. Forbes, Louisville, Ky., assignor to American Standard Inc., a corporation of Delaware  
Filed May 12, 1966, Ser. No. 549,721  
10 Claims. (Cl. 317-123)

1. In a liquid-flow control system wherein a proximity switch means controls the operation of an electromechanical liquid-flow controller, the proximity switch transmitting an electric current when activated and the liquid-flow controller permitting the flow of liquid when receiving an electric current, the improvement comprising: a source of electric current; an electric current operated switching means connected to the proximity switch means and energized when receiving electric current therefrom, said switching means including a first current-flow con-



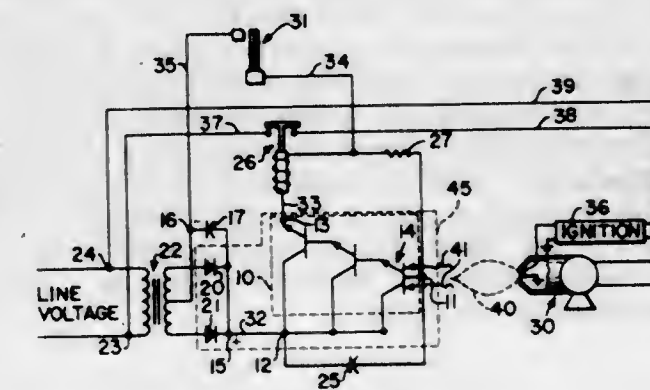
chargeable electric energy storage means connected to the output of said first current-flow control circuit and to the input of said second current-flow control circuit; and an electric-current controlled source of electric current connected to the output of said second current-flow control circuit for transferring electric current to the liquid-flow controller in response to electric current received from said electric current operated switching means.

3,412,293

**BURNER CONTROL APPARATUS WITH PHOTO-DARLINGTON FLAME DETECTOR**

Joseph T. Maupin, Deephaven, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Dec. 13, 1965, Ser. No. 513,320  
9 Claims. (Cl. 317-130)



A three-stage photodarlington semiconductor device is connected to energize a burner control relay. A thermostat charges a timing capacitor by means of a circuit which includes the input of the photodarlington to thereby energize the relay only so long as the capacitor charges. The photodarlington is exposed to the burner flame to maintain the relay energized after the capacitor has received a full charge.

3,412,294

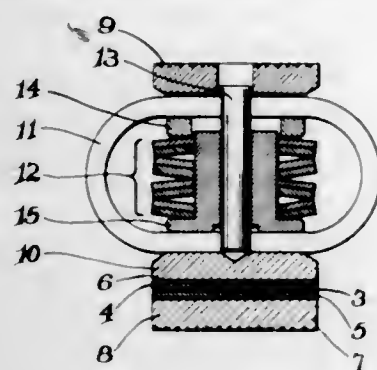
**ARRANGEMENT OF THE DIODE AS A SINGLE UNIT AND IN A GROUP**

David Sciaky, Chicago, Ill., assignor to Welding Research, Inc., Chicago, Ill., a corporation of Illinois  
Filed Aug. 30, 1965, Ser. No. 483,688  
9 Claims. (Cl. 317-234)

The present invention relates to a demountable semiconductor assembly for use in the rectification of very high currents. The invention is characterized by the use of spring means to maintain a force against the contacting surfaces to the semi-conductor element at a preset level and by the use of high current conductors surrounding the semi-conductor and the force producing means. Fur-



ther means are provided for removing the heat generated in the semi-conductor, the contacting surfaces and



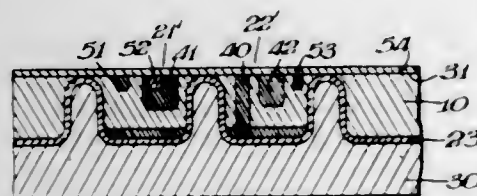
the current conductors resulting from the passage of the high current.

3,412,295

### MONOLITHIC STRUCTURE WITH THREE-REGION COMPLEMENTARY TRANSISTORS

Alan B. Grebene, Waterford, N.Y., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Filed Oct. 19, 1965, Ser. No. 497,830  
4 Claims. (Cl. 317-234)



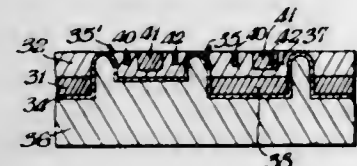
Complementary transistors are provided within dielectrically isolated pockets of a substrate which have upper zones of low conductivity and lower zones of high conductivity. The upper zones are of one conductivity type and one of the lower zones is of the other conductivity type. Regions of both conductivity types are provided in the upper zones such that upper and lower zones of the same conductivity provide a transistor collector in a first pocket whereas the lower zone of the second pocket provides a collector and its upper zone provides a base of a complementary transistor.

3,412,296

### MONOLITHIC STRUCTURE WITH THREE-REGION OR FIELD EFFECT COMPLEMENTARY TRANSISTORS

Alan B. Grebene, Waterford, N.Y., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Filed Oct. 19, 1965, Ser. No. 497,831  
9 Claims. (Cl. 317-234)

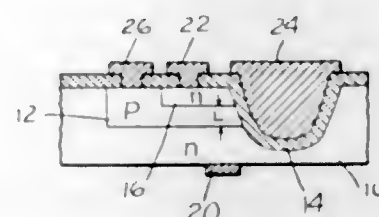


Each of a plurality of semiconductor pockets isolated within a substrate by a dielectric layer have spaced apart source and drain regions with an interposed gate region, and the gate regions are of substantially equal penetration within the pockets such that the relative thickness of the channel sandwiched between the gate and the dielectric layer is determined by the pocket depth.

### 3,412,297 MOS FIELD-EFFECT TRANSISTOR WITH A ONE-MICRON VERTICAL CHANNEL

Philipp R. Amlinger, Bloomfield, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Dec. 16, 1965, Ser. No. 514,207  
1 Claim. (Cl. 317-235)



An MOS field-effect transistor characterized by a very short, vertically oriented conduction channel. The device has an insulated, gate electrode which extends vertically into the host semi-conductor material a distance greater than the conduction channel which is to be induced between the source and drain regions.

### ERRATUM

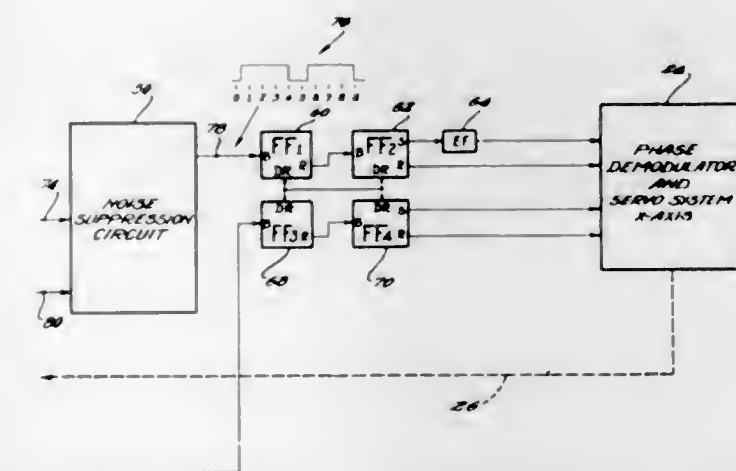
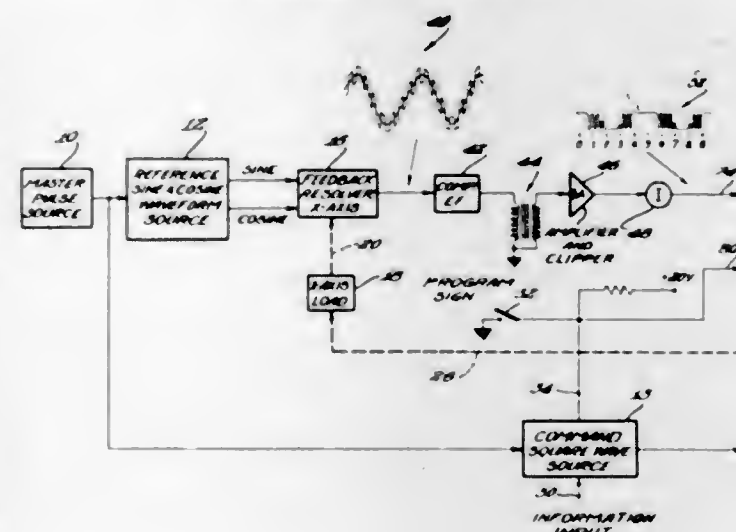
For Class 318-18 see:  
Patent No. 3,412,280

3,412,298

### DIRECT COUPLED MULTIVIBRATOR (DCMV) CIRCUIT FOR REJECTING NOISE IN A FEEDBACK SERVOMECHANISM

Harvey J. Rosener, Dayton, Ohio, assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed Nov. 27, 1964, Ser. No. 414,093  
11 Claims. (Cl. 318-18)



A feedback control system comprising a resolver supplying a sine wave feedback signal subject to noise, an

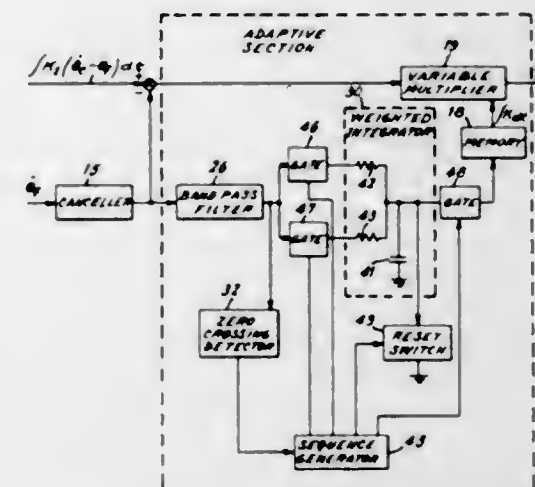
amplifier and clipper to convert to a square wave feedback signal, and a noise suppression circuit having a duty cycle to reject noise, the length of the duty cycle being automatically adjusted in response to positive and negative command input signals.

3,412,299

### ADAPTIVE CONTROL SYSTEM AND METHOD

Richard G. Buscher, Vestal, and Glenn W. Walker, Endicott, N.Y., assignors to General Electric Company, a corporation of New York

Filed Mar. 26, 1964, Ser. No. 355,042  
4 Claims. (Cl. 318-18)



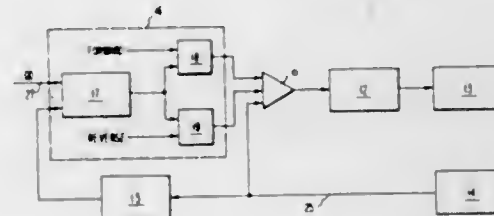
Improvement in self-adaptive control systems. A measurement of the requirement to raise or lower the gain of a feedback control system is made by sensing the damping of one mode of a systems response. The circuit includes a filter network passing the mode of response to be measured, an integrator to measure successive half-cycles, the ratio of which is proportional to damping of the selected mode, an area comparator to determine the error from the desired damping, a memory circuit and a gain changer to change the gain of the feedback system.

3,412,300

### OPTIMUM SWITCHING OF A BANG-BANG SERVO

Carl E. Westenskow, San Jose, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed June 1, 1965, Ser. No. 460,231  
3 Claims. (Cl. 318-18)



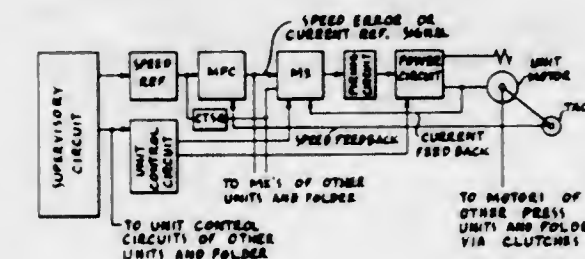
A bang-bang type of positioning servosystem for moving a load a discrete distance and employing a tachometer as the sole feedback means. A drive signal is supplied to an amplifier to drive the servomotor and accelerate the load. The drive signal saturates the amplifier to render the opposing tachometer feedback ineffectual. The velocity output of the tachometer is integrated until a predetermined voltage level is detected. Switching circuitry responds to the detection to block the drive signal and allows the velocity signal from the tachometer to decelerate the motor.

3,412,301

### PLURAL-MOTOR CONTROL SYSTEM FOR A COMMON LOAD WITH INDIVIDUAL LOAD SHARING CONTROLS AND DECOUPLING OF A MOTOR FOR INDEPENDENT OPERATION

Edward Q. Mead and Leroy C. Gall, Milwaukee, Donald J. Greening, Thiensville, and Roger J. Hayes, Waukesha, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed Jan. 6, 1965, Ser. No. 423,662  
18 Claims. (Cl. 318-99)



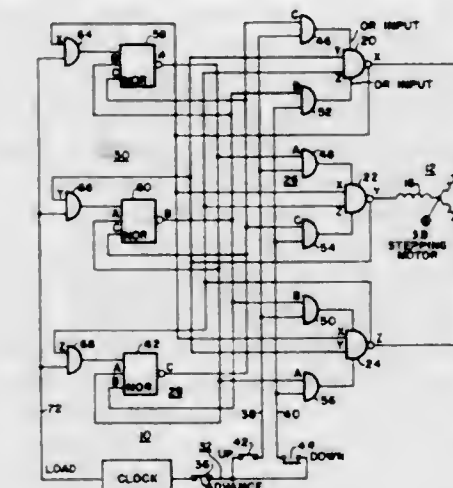
A plural-motor control system for controlling load sharing of a plurality of motors driving press units of a printing press coupled together. Preselected load sharing between the motors is maintained by individual current feedback regulation without interconnecting circuits between the load sharing control circuits of the motors. A motor can be decoupled for independent operation without disturbing the remainder of the system. System improvements include circuit arrangements for testing of the controller or controlled power output without running the motors, use of a minimum number of common control components, maintaining the current reference limit constant or setting it variable as a function of drive speed setting, current regulation control having very fast response to variation in motor load, and maintaining a pre-set load division when the number of motors in use is changed.

3,412,302

### REVERSIBLE DIRECT COUPLED DRIVE CIRCUIT FOR STEPPING MOTORS

Leonard C. Vercellotti, Verona, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 28, 1966, Ser. No. 545,893  
8 Claims. (Cl. 318-138)



1. A reversible direct coupled drive circuit for a multi-phase stepping motor having a permanent magnet rotor, said drive circuit comprising a power switch associated with each stator phase winding to control current flow therein, a memory circuit responsive to digital input LOAD pulses for storing information as to the state of each of said power switches during each step of motor operation, means responsive to said memory circuit for sequentially operating said power switches in a selectable order in response to digital input ADVANCE pulses

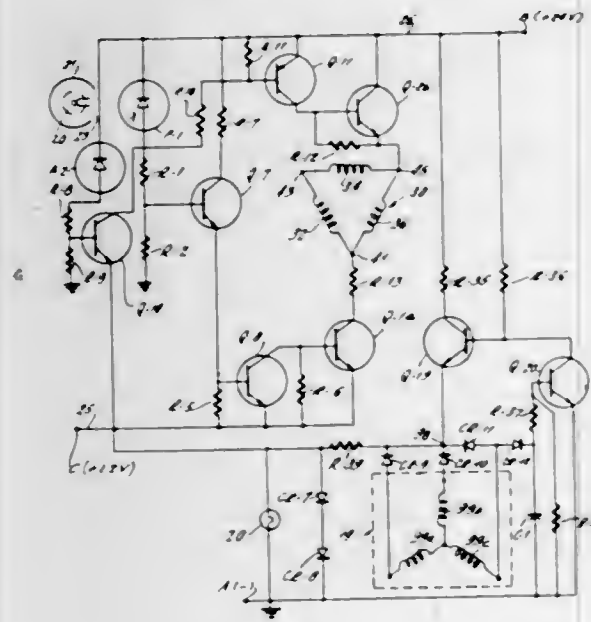


which are timed to occur alternately with and after the LOAD pulses, and means substantially free of capacitance interconnecting said power switches so that one of said power switches is conductive and the other power switches are non-conductive in each motor operating step.

3,412,303

### STARTING CIRCUIT FOR BRUSHLESS DIRECT CURRENT MOTOR

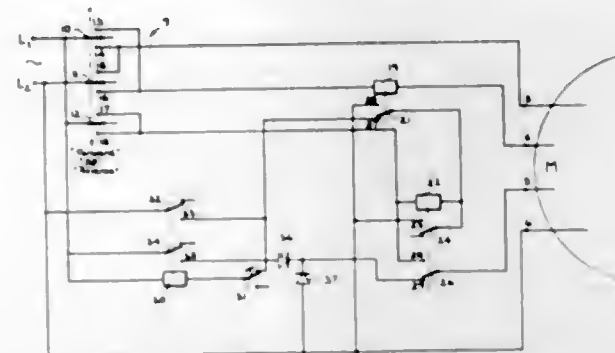
Rodney G. Rakes, Bristol, Tenn., assignor to Sperry Farragut Company Division, Sperry Rand Corporation, a corporation of Delaware  
Filed Apr. 28, 1966, Ser. No. 546,039  
7 Claims. (Cl. 318-138)



1. In a brushless D.C. motor having input terminals for the connection of D.C. power for energizing said motor, a torque producing unit and a static switching means; said unit including a stationary armature and a permanent magnet rotor mounted in magnetic coupling relationship; said armature including main winding means having a plurality of taps between which current flows through said main winding means; said static switching means including a radiation source, unidirectional current carrying switching sections interposed between said taps and said input terminals, devices responsive to radiation generated by said radiation source upon energization thereof, said devices connected in circuit with said switching sections whereby impingement of radiation from said radiation source upon predetermined elements operates predetermined switching sections from high to low impedance states, and means mounted to said rotor and physically spaced from said devices for directing radiation generated by said radiation source to impinge upon at least one of said devices for any given angular position of said rotor whereby portions of said static switching means connected to different ones of said taps provide portions of a complete unidirectional current path between said input terminals and through said main winding means; the improvement comprising a starting means for said radiation source; said radiation source and said main winding means connected in electrical series between said terminals, said starting means including a first and a second section; said first section providing a relatively low impedance current path through which said radiation source is connected to said terminals and energized upon the application of D.C. power to said terminals even prior to impingement of said radiation upon any of said devices; and said second section connected to said first section for operation thereof to a relatively high impedance state while said torque producing unit is in operation.

### 3,412,304 MOTOR STOPPING AND REVERSING CIRCUITS

Matthew C. Baum, 210 W. 101st St., New York, N.Y. 10025, and Samuel Small, 920 Val Park Ave., Valley Stream, N.Y. 11580  
Filed Oct. 23, 1965, Ser. No. 502,875  
9 Claims. (Cl. 318-203)



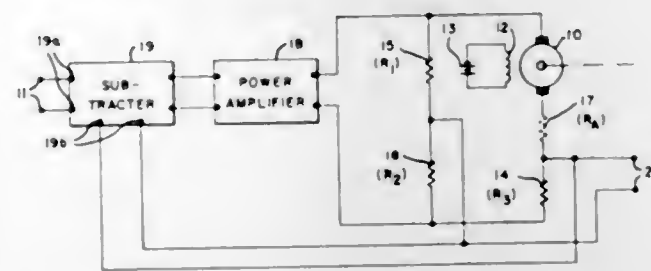
Circuits for stopping and reversing, or only stopping, single-phase A.C. motors, particularly of the induction type, featuring current sensing means, preferably in the form of a relay, electrically associated with the conventional centrifugal switch or other starting device of the motor to be controlled. A ganged manual switch is provided, the only one to be actuated manually in the inventive control circuits, which co-ordinates the operative functions of the motor, such as its inoperative position and operative position; the latter may have "Forward" and "Reverse" positions in the embodiment which is suitable for reversing the motor rotation.

Active circuit elements, such as for example relays, are provided for connecting and disconnecting the current paths. One or more relays may have self-locking circuits. The D.C. required for braking and stopping the motor is derived from a diode or from a controlled rectifier. Special means may be provided for releasing the D.C.-connecting relay when a predetermined time period has elapsed. Auxiliary activating means are also contemplated which may be remote-controlled or motor-operated.

3,412,305

### DIRECT-CURRENT MOTOR SERVO SYSTEM HAVING A SUBSTANTIALLY LINEAR VOLTAGE-SPEED CHARACTERISTIC

Martin Kanner, Plainview, N.Y., assignor to Fairchild Camera and Instrument Corporation, a corporation of Delaware  
Filed Jan. 25, 1966, Ser. No. 522,990  
3 Claims. (Cl. 318-331)



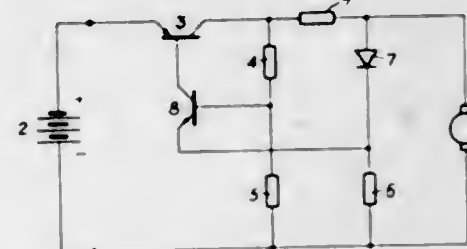
A direct-current motor servo system comprises a servo-signal input circuit, a first resistance element, and a power amplifier responsive to the signal at the input circuit for energizing the armature of a motor to be controlled in series with the first resistance element. The servo system further includes second and third serially connected resistance elements connected in parallel with the series-connected armature and first resistance element and in the same order. The ratio of the resistance of the first element to the armature resistance of the motor to be controlled is made substantially equal to the ratio of the resistance of the third element to that of the second element. The servo system further includes a subtracter circuit interposed be-

tween the input circuit and the power amplifier for differentially adding the voltage difference between the junctions of the elements of the two series circuits to the voltage of the input circuit to modify the response of the motor energizing circuit. An output circuit is connected between the junctions of the elements of the two series circuits to provide an output signal representative of the speed of the controlled motor.

3,412,306

### CIRCUIT ARRANGEMENT FOR CONTROLLING THE SPEED OF BATTERY-FED ELECTRIC MOTORS

Walter Fischer, Vienna, Austria, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware  
Filed Oct. 8, 1965, Ser. No. 494,006  
Claims priority, application Austria, Oct. 22, 1964, A 8,956/64  
8 Claims. (Cl. 318-331)

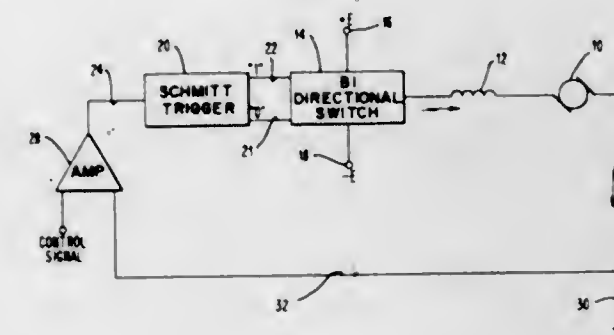


A temperature responsive speed control circuit for a DC motor energized via a battery. The circuit includes first and second directly coupled transistors of opposite conductivity type in which the base current of one transistor is supplied by the collector current of the other. The first transistor is connected in series with the battery and the motor with the battery connected in the emitter circuit thereof. A temperature compensating diode connected in the forward direction provides both a reference voltage for, and a temperature stabilizing effect on, the second transistor.

3,412,307

### CURRENT LIMITING MOTOR CONTROL CIRCUIT

Herbert Frazer Welsh, deceased, late of Philadelphia, Pa., by Julea S. Chapline, executrix, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware  
Filed Dec. 8, 1964, Ser. No. 416,934  
6 Claims. (Cl. 318-394)



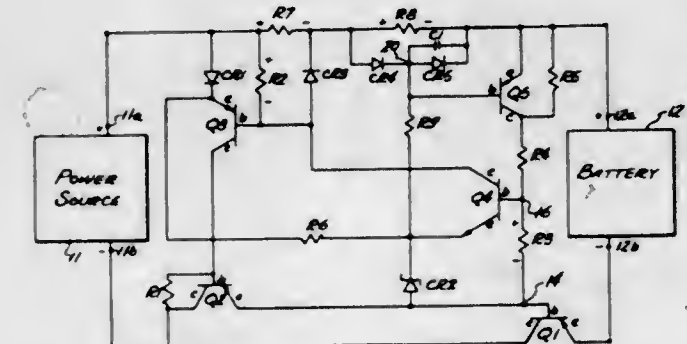
The present device provides bidirectional switch in a circuitry which is connected to a D.C. motor. Connected to the output of the D.C. motor is a feedback circuit which is connected to the bidirectional switching circuitry. The bidirectional switching circuitry includes a comparison device and a threshold device which enables the feedback circuit to be compared against a control

signal which further enables a binary signal to be produced at the threshold device. In response to the binary signal the bidirectional switching circuitry provides current in either a positive or a negative sense. Accordingly, the net current supplied to the D.C. motor in either polarity sense is limited and in this way the dangers which accompany an accelerating D.C. motor are eliminated.

3,412,308

### CURRENT AND VOLTAGE RESPONSIVE BATTERY CHARGING CIRCUIT

Harold J. Brown, Indianapolis, Ind., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware  
Filed Sept. 27, 1965, Ser. No. 491,078  
6 Claims. (Cl. 320-24)

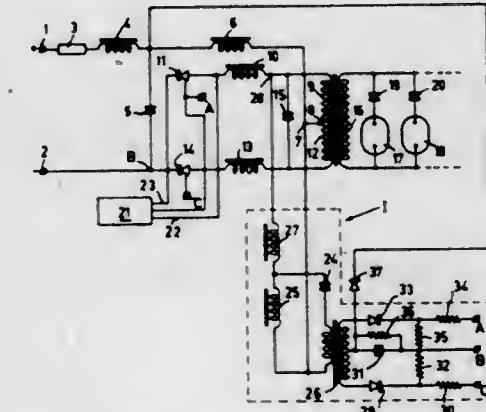


A battery charging circuit is shown which includes a transistor voltage regulator which controls the current delivered to the battery in response to a voltage developed across a resistive divider network connected across the battery terminals. The transistor regulator does not become operative until the voltage of the battery exceeds a predetermined level; prior to this, full charging current is supplied to the battery. Current to the battery is sensed and means are provided for limiting the maximum current to a safe level and for adjusting a float current level for a fully charged battery in response to sensing a predetermined minimum charging current.

3,412,309

### ARRANGEMENT INCLUDING A DC-AC CONVERTER WITH AT LEAST ONE CONTROLLED RECTIFIER

Lieuwe Boonstra, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Co., Inc., New York, N.Y., a corporation of Delaware  
Filed Dec. 28, 1966, Ser. No. 605,367  
Claims priority, application Netherlands, Jan. 25, 1966, 6600907  
4 Claims. (Cl. 321-12)

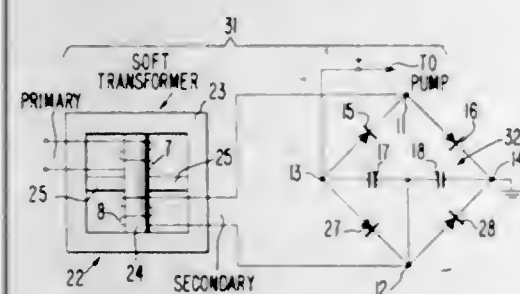


1. An arrangement including a DC-AC converter with at least one controlled rectifier for converting the voltage of a direct-current source into an alternating voltage and including a generator for producing pulses to make the controlled rectifier conducting and including an input



filter with a series-combination of an inductor and a capacitor, the ends of this series combination being connected to the direct current source, and the converter being connected in shunt with the capacitor, the said inductor having a value such that, as a result of an interference which keeps the controlled rectifier conducting, an oscillation is produced such that the voltage across the capacitor passes through zero, thereby extinguishing the controlled rectifier despite the interference, a voltage being derived from the said oscillator and preventing the pulses of the generator circuit from reaching the rectifier.

**3,412,310**  
**POWER SUPPLY FOR GLOW DISCHARGE TYPE VACUUM PUMPS EMPLOYING A VOLTAGE-DOUBLER BRIDGE-RECTIFIER AND A SOFT TRANSFORMER**  
Dale L. Quinn, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California  
Filed Mar. 6, 1967, Ser. No. 620,824  
8 Claims. (Cl. 321-15)

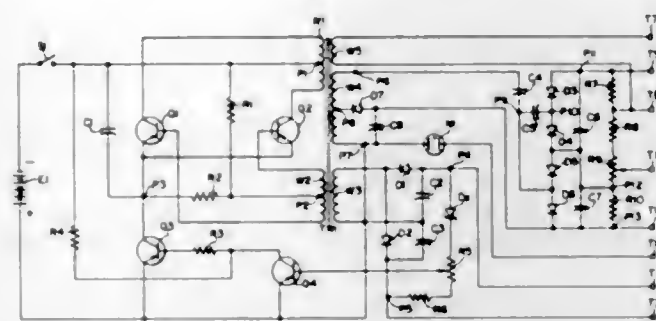


There is disclosed a power supply for glow discharge type vacuum pumps which employs a voltage doubling full wave bridge rectifier supplied from a "soft" transformer. This power supply is especially useful for supplying power to a multiple cell getter ion vacuum pump. This type of pump employs a multiplicity of separate Penning type, magnetically confined, glow discharge columns which serve to ionize the gas and drive the ions into a getter material to sputter the getter material and to bury the ions, thus, pumping by gettering and burial. Glow discharge pumps in general, and Penning type pumps in particular, present a load to the power supply which is characterized by a low impedance, high current regime at high pressures, as of  $10^{-3}$  torr, and a high impedance, low current regime at low pressures, as of  $10^{-11}$  torr. The "soft" transformer together with the bridge rectifier provides a controlled and limited high current to the pump at high pressures and the voltage doubler provides the high voltage low current power to the pump in the low pressure regime. The voltage doubler portion of the power supply is provided by a pair of capacitors series connected in a circuit branch shunting the output terminals of the bridge rectifier. The series capacitors are center-tapped to one of the input terminals of the bridge such that a capacitor is connected across each of the bridge diodes on one side of the bridge as divided by the output terminals.

**3,412,311**  
**BATTERY-OPERATED POWER SUPPLY CIRCUITRY FOR PROVIDING LONG BATTERY LIFETIME AND CLOSE REGULATION OF THE OUTPUT VOLTAGES**  
Melvin P. Siedband, Baltimore, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Mar. 28, 1966, Ser. No. 537,984  
9 Claims. (Cl. 321-2)

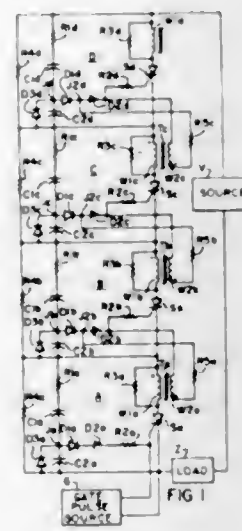
The present disclosure relates to a power supply circuit which is battery operated and ideally adaptable to supply the various output potentials required by an os-

cilloscope tube for example. An inverter is utilized in the power supply for converting the D.C. output of the battery into an alternating current output which is transformed to various predetermined potential levels. A voltage multiplier circuit is utilized for providing in response to a predetermined potential an output voltage substantially equal to the multiplier of the voltage multiplier. The multiplier circuit includes first and second submultiplier circuits with each of these circuits developing a por-



tion of the total output voltage of the voltage multiplier. A bleeder circuit is provided for one of the submultiplier circuits and is adapted to pass sufficient bleeder current therethrough to prevent the portion of the total output voltage appearing thereacross from dropping below a prescribed level. This predetermined portion of the total output voltage is ideally utilized to supply the high current consuming portions of an oscilloscope tube, for example.

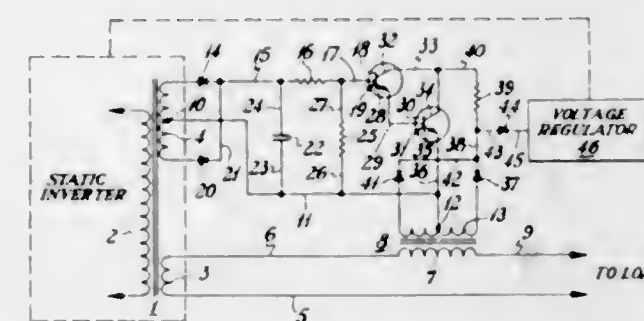
**3,412,312**  
**SERIES CONNECTED, SLAVE TRIGGERED, CONTROLLED RECTIFIER ASSEMBLIES**  
Leslie R. Rice, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Nov. 22, 1966, Ser. No. 596,261  
8 Claims. (Cl. 321-11)



1. A rectifier assembly operative with a source of alternating potential, comprising:  
a plurality of rectifier units operatively connected in series across said source,  
each of said units including:  
a controlled rectifier device having anode, cathode and gate electrodes,  
an inductive device operatively connected in the anode circuit of said controlled rectifier device,  
a voltage divider operatively connected across the anode-cathode circuit of said controlled rectifier device, and  
a breakdown device operatively connected between said voltage divider and the gate electrode of said controlled rectifier device so that when the voltage across said anode-cathode circuit of said controlled rectifier

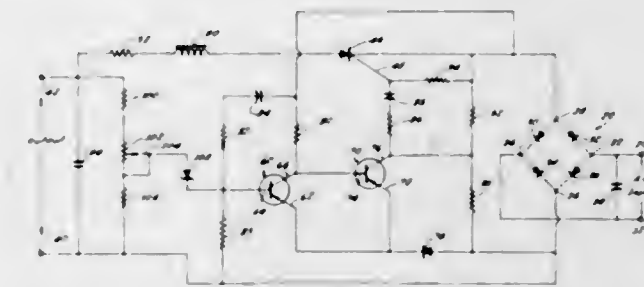
device exceeds a predetermined value said breakdown device breaks down and gates on said controlled rectifier device;  
pulse means for supplying a gating pulse to the gate electrode of a selected one of said controlled rectifier devices to gate on that controlled rectifier device in response thereto; and  
coupling means inductively coupling the inductive device in the rectifier unit including said selected controlled rectifier device to the gate electrode of at least one other of said controlled rectifier devices so as to gate on the coupled controlled rectifier device in response to the gating on of said selected controlled rectifier device.

**3,412,313**  
**SHORT CIRCUIT PROTECTIVE CIRCUIT**  
Albert Compoly, Marlboro, N.J., assignor to The Bendix Corporation, Easton, N.J., a corporation of Delaware  
Filed Feb. 23, 1967, Ser. No. 618,186  
6 Claims. (Cl. 321-14)



A circuit utilizing a time delay to allow a predetermined short circuit current to be delivered for a predetermined time and then reducing the current to a safe value.

**3,412,314**  
**CYCLICALLY REGULATED POWER SUPPLY**  
Paul J. Crane, Torrance, Calif., assignor to The Magnavox Company, Torrance, Calif., a corporation of Delaware  
Filed July 12, 1965, Ser. No. 471,158  
22 Claims. (Cl. 321-16)

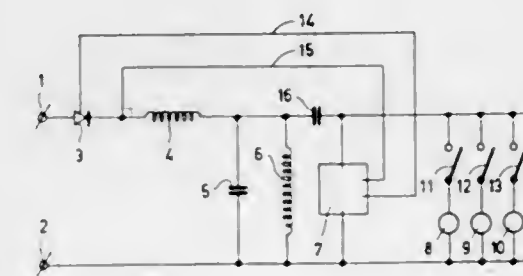


This invention relates to a system for regulating a cyclically pulsating input voltage of varying amplitude to provide a substantially constant output voltage. The system also regulates for variations in a load to maintain the substantially constant output voltage. The system operates to provide such regulation by controlling the time in which a control signal is produced in the pulsating cycles of the input voltage in accordance with the magnitude of the output voltage.

The system includes a switching member having conductive and non-conductive states and connected between the input and the output for introducing the cyclically pulsating input voltage to the output in the conductive state of the switching member. Means are connected in the switching member and to the output for producing a control signal for switching the switching member to the conductive state at a particular time in each cycle for output

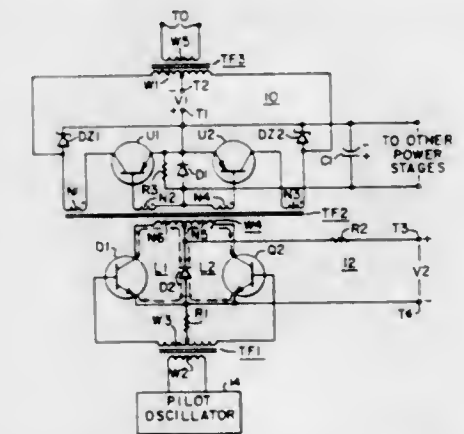
voltages approximately equal to a particular value and for switching the switching member to the conductive state at a displaced time in the cycles for output voltages greater or less than the particular value. Means are also included for inhibiting the use of the cyclically pulsating input voltage directly by the switching member to switch the switching member to the conductive state.

**3,412,315**  
**LOAD RESPONSIVE CONVERTER**  
Theodorus Hehenkamp, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware  
Filed June 28, 1966, Ser. No. 561,142  
Claims priority, application Netherlands, July 24, 1965, 6509623  
3 Claims. (Cl. 321-18)



A load responsive converter in which a thyristor in series with a D.C. voltage source is controlled by cyclic voltage variations across a variable load. The cyclic voltage variations are produced by a resonant circuit connected to the thyristor and are coupled to the load through a capacitor which advances the phase of the controlling load voltage in response to an increase in the load.

**3,412,316**  
**CONTROL CIRCUITRY FOR POWER INVERTER APPARATUS**  
Andress Kernick, Lima, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Dec. 1, 1966, Ser. No. 598,460  
9 Claims. (Cl. 321-45)



This disclosure describes power inverter apparatus including a power stage utilizing a pair of power switching devices, such as transistors, which alternately conduct to supply the output of the inverter. A biasing circuit including a storage element, such as a capacitor, is connected to the pair of power devices. A steering circuit including a pair of switching devices, such as transistors, is provided, with a transformer coupling the steering circuit to the power stage. Respective windings of the transformer are connected to the device of the power stage and steering circuit. A pilot circuit is provided to control the conductive state of the steering devices. The

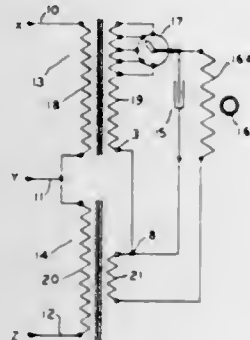


turning on of one of the steering devices instigates turn-off of the previously conductive power device. The biasing circuit completes turn-off by reverse biasing the turning off power device. The other power device is maintained non-conductive until the turning off power device is rendered non-conductive.

3,412,317

## PHASE BALANCING

James W. Williamson, Canfield, and Mario Tama, Cortland, Ohio, assignors to Ajax Magnethermic Corporation, Warren, Ohio, a corporation of Ohio  
Filed Dec. 29, 1965, Ser. No. 517,356  
32 Claims. (Cl. 321-52)

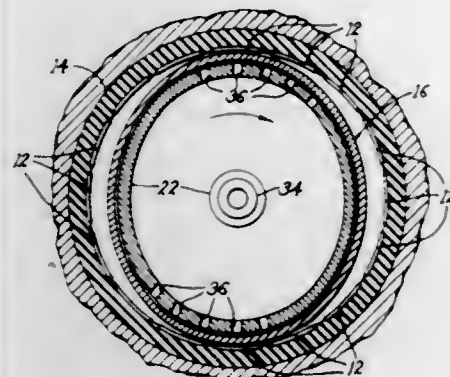


A phase balancing and power regulating circuit wherein a single-phase lagging power factor load is fed from a three-phase source, in addition single-phase variable output voltage is simultaneously applied to a load and to capacitance associated with the load.

3,412,318

## VARIABLE CAPACITOR ELECTRIC POWER GENERATOR

Hugh A. Robinson, Wenham, Vincent O'Gorman, Beverly, and Willard B. Spring, Topsfield, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey  
Filed Nov. 18, 1964, Ser. No. 412,178  
19 Claims. (Cl. 322-2)

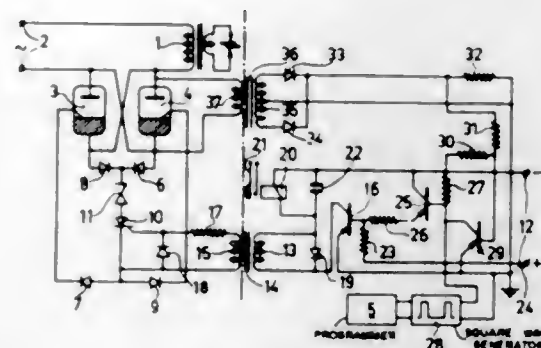


4. In an electric generating system, the combination with a lobar wave generator rotatable about an axis, of an hermetic flextube having a surface radially deflectible by the wave generator and coaxial therewith, a circumferential series of fixed capacitor plates arranged about the flextube and electrically insulated from one another, the deflectible surface of the flextube constituting with said fixed plates a plurality of circuit coupling capacitors having their respective gaps variable harmonically by the wave generator, means including a rectifier for applying low voltage to the respective capacitors, and a circuit including a rectifier connected to each capacitor for conducting to a load at higher voltage the output of said capacitors as their respective gaps are increased.

### 3,412,319 SCR IGNITRON CONTROL CIRCUIT HAVING MEANS FOR CONTROLLING THE SCR AS A FUNCTION OF THE IGNITRON ANODE VOLTAGE

Henri Joseph Antonius Marie Jacobs, Frans Hendrik De Jong, and Auke Vlagsma, Emmasingel, Eindhoven, Netherlands, assignors to North American Phillips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 14, 1966, Ser. No. 527,378  
Claims priority, application Netherlands, Feb. 27, 1965, 6502528  
17 Claims. (Cl. 323-24)

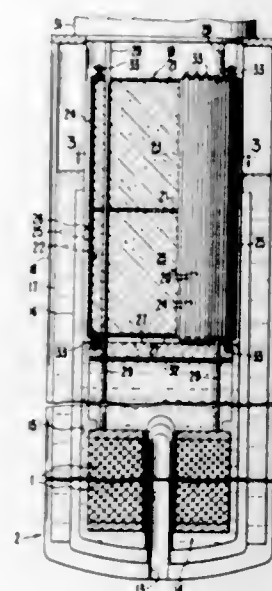


A control circuit for a pair of ignitrons connected in inverse parallel between an AC voltage source and an inductive load. The control circuit includes an SCR connected to the ignitor electrodes of the ignitrons and a first switching element for supplying control pulses to the gate electrode of the SCR. The control circuit also includes a second switching element arranged to control the switching of the first switching element as a function of the anode voltage of the ignitrons. The second switching element inhibits the switching of the first switching element until the ignitron anode-cathode voltage becomes positive.

3,412,320

## CRYOSTAT HAVING AN EFFECTIVE HEAT EXCHANGER FOR COOLING ITS INPUT LEADS AND OTHER LEAK PATHS

Harry L. Marshall, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California  
Filed May 16, 1966, Ser. No. 550,382  
10 Claims. (Cl. 324-5)



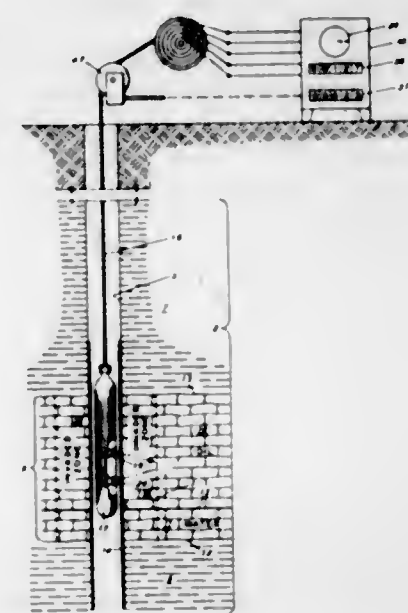
1. A cryostat apparatus including, means forming a device to be held at cryogenic temperatures, means forming a cryostat enveloping said device means and having a chamber for containing a cryogenic fluid for cooling said device means to its cryogenic temperature, means forming a plurality of electrical leads passing into said

cryostat and connecting to said device, said leads being made of thin conductor, means forming a plug partially closing off said chamber and defining a gas passageway in the space between said plug and the inside wall of said chamber and through which evolved gaseous cryogenic fluid is exhausted from said chamber for cooling the inside wall of said chamber, and wherein said leads are arranged about the periphery of said plug adjacent said gas passageway in heat exchanging relation to said exhaust gas for cooling of said leads.

3,412,321

## OIL-WATER CONTACT LOCATION WITH FREQUENCY MODULATED ELECTROMAGNETIC ENERGY

Robert R. Unterberger, Fullerton, and John E. Walstrom, Orinda, Calif., and Clyde T. Metz, New Orleans, La., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware  
Filed Nov. 14, 1966, Ser. No. 593,768  
5 Claims. (Cl. 324-6)



The oil-water contact line of an oil bearing earth formation is located relative to the well bore by positioning an electromagnetic generator in the well bore having an output signal of variable frequency within a frequency range of  $10^4$  to  $10^{11}$  cycles per second, and modulating the frequency of the output signal through a bandwidth of signals at a rate of repetition determined by the distance expected to be measured. After the formation has been irradiated with modulated energy, signals coming from the oil-water contact within the formation are detected and the instantaneous frequency of the transmitted and reflected signals are compared to indicate the frequency difference therebetween. The frequency difference is then converted to distance to locate the oil-water contact in the formation relative to the well bore, whether the contact lies below the bottom of the well bore or at a lateral distance from its side wall.

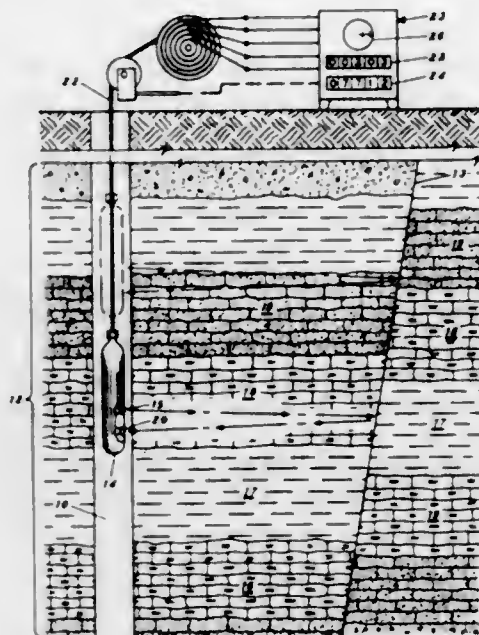
3,412,322

## DISCONTINUITY LOCATION BY FREQUENCY MODULATION ELECTROMAGNETIC ENERGY

Robert Ruppe Unterberger, Fullerton, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware  
Filed Nov. 14, 1966, Ser. No. 594,078  
7 Claims. (Cl. 324-6)

Electromagnetic discontinuities, such as faults, bedding planes, fractures, or the like, in close proximity of a well bore penetrating an earth formation—say a few inches to several hundred feet—are mapped relative to the well bore by positioning an electromagnetic wave generator in

the well bore having an output signal of variable frequency within a frequency range of  $10^4$  to  $10^{11}$  cycles per second and modulating the frequency of the output signal through a bandwidth of signals at a rate of repetition determined by the lateral distance expected to be measured. After the formation has been irradiated with the modulated energy, signals coming from the discontinuities within the formation are detected, and the instantaneous fre-

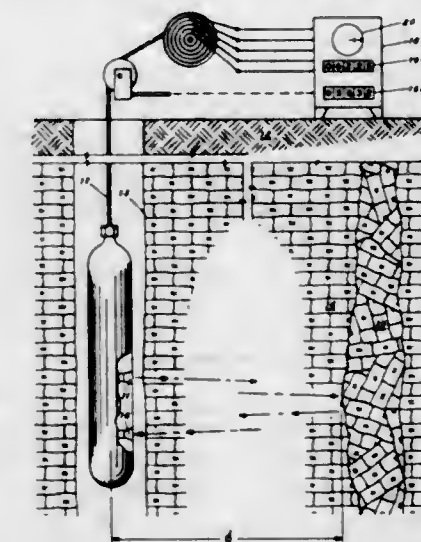


quency of the transmitted and reflected signals are compared to indicate the frequency difference therebetween. The frequency difference is then converted to lateral distance based on (1) the velocity of transmission of the energy through the formation, (2) the rate of modulation of the output signal, and (3) the bandwidth of the frequency modulation, to thereby indicate the location of the reflection discontinuities as a function of depth.

3,412,323

## SUBSURFACE ELECTROMAGNETIC IRRADIATION RANGING METHOD FOR LOCATING FRACTURES WITHIN FORMATIONS

Robert R. Unterberger, Fullerton, and Cullis Donald Jones, San Rafael, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware  
Filed Nov. 14, 1966, Ser. No. 594,079  
11 Claims. (Cl. 324-6)



Fractures within limestone rock formation that have been permeated by liquid materials having a different dielectric constant than the limestone, are located relative to a well bore penetrating the limestone, but preferably not the fractures, by positioning an electromagnetic wave generator in the well bore having an output signal



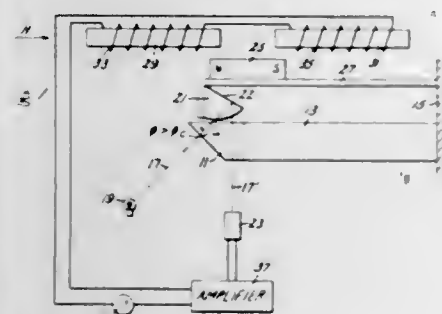
of variable frequency within a frequency range of  $10^6$  to  $10^{11}$  cycles per second and modulating the frequency of the output signal through a band width of signals at a rate of repetition determined by the lateral distance expected to be measured. After the formation has been irradiated with the modulated energy, signals coming from the fractures within the limestone formation are detected, and the instantaneous frequency of the transmitted and reflected signals are compared to indicate the frequency difference therebetween. The frequency difference is then converted to lateral distance based on (1) the velocity of transmission of the energy through limestone, (2) the rate of modulation of the output signal, and (3) the band width of the frequency modulation, to locate the fractures as a function of depth along the well bore.

3,412,324

### OPTICAL MAGNETOMETER BASED ON THE PRINCIPLE OF FRUSTRATED TOTAL INTERNAL REFLECTION OF LIGHT

Frederick A. Ludewig, Jr., Ballston Spa, N.Y., assignor to General Electric Company, a corporation of New York

Filed Aug. 24, 1966, Ser. No. 574,762  
8 Claims. (Cl. 324-43)



1. A magnetometer comprising a fixed optical element and a movable optical element mounted for movement with respect thereto to vary the separation between the elements within the range of zero to about one wavelength of incident light, means for directing an incident light ray at one of said optical elements at an angle greater than the critical angle, said ray being transmitted through the other optical element due to the frustration of total internal reflection, the amount of light transmitted decreasing with increased separation of the elements, means for detecting the amount of light transmitted through the other optical element and for generating a current dependent thereon, means for displacing said movable optical element from an initial position with respect to said fixed optical element by an amount proportional to the magnitude of the external magnetic field being measured, thereby changing the amount of light transmitted and the detected current, and means for measuring the current which is indicative of the magnitude of the external magnetic field.

3,412,325

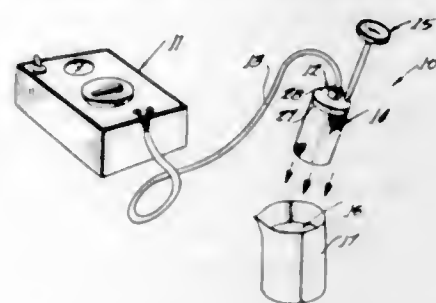
### ELECTRICAL CONDUCTIVITY TEST METHOD FOR DETERMINING ACTIVE CLAY CONTENT IN MOLDING SAND COMPOSITIONS

Lennart A. Soderling, Dolton, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Aug. 20, 1964, Ser. No. 390,866  
3 Claims. (Cl. 324-65)

A low-cost method for rapidly determining, quantitatively in weight-percent, the active clay present in a green sand molding composition whereby the foundryman is enabled to adjust accurately the active clay content

thereof to within prescribed limits. The method consists of measuring the electrical conductivity and temperature



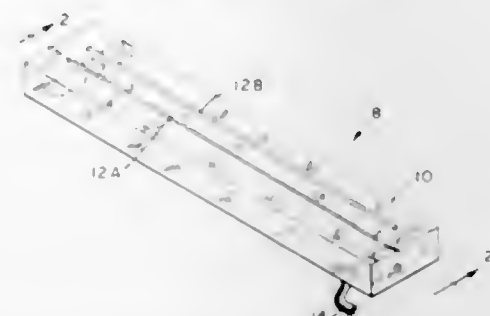
of an aqueous slurry extract of a green sand molding composition and translate the electrical conductivity value obtained to active clay content in terms of weight-percent.

3,412,326

### PROBE FOR SENSING MOISTURE INCLUDING A HEATING ELEMENT

Samuel O. Jones and Herbert M. Johnson, Tulsa, Okla., assignors to Nelson Electric Company, Tulsa, Okla., a corporation of Delaware

Filed Dec. 13, 1965, Ser. No. 513,434  
7 Claims. (Cl. 324-65)



1. A probe for sensing moisture under varying ambient temperature conditions comprising:  
a heating element having means of maintaining a temperature above the freezing point for the ambient temperature to which the probe is subjected; and  
a pair of spaced apart conductive elements each having one exposed moisture sensing surface, said spaced conductive elements having portions of said surface adjacent said heating element whereby the temperature thereof is maintained above the freezing point for the ambient temperature to which the probe is subjected and said spaced conductive elements having further portions of said surface extending at a substantial distance from said heating element whereby the temperature thereof is substantially at the ambient temperature.

3,412,327

### DUAL PURPOSE OSCILLOSCOPE AND LIKE PROBES HAVING SELECTIVELY CONNECTIBLE RESISTANCES

John Keith Murray, St. Albans, England, assignor to Marconi Instruments Limited, London, England, a British company

Filed Mar. 9, 1966, Ser. No. 532,935  
Claims priority, application Great Britain, Mar. 18, 1965, 11,609/65

9 Claims. (Cl. 324-72.5)

A dual purpose electrical probe for an oscilloscope or the like includes three coaxial metal tubular members, spaced from one another, the inner member being the input signal electrode and the middle and other members being the output signal electrodes of the probe. An axially positioned resistance is connected at one end to the inner member and at the other end to a sliding contact arrangement, in slidable contact with the middle member. The

inner member, resistance and sliding contact arrangement is movable longitudinally with respect to the middle member. A spring switch contact arrangement is electrically connected to the inner member and is relatively movable with respect to one of the inner and middle members.



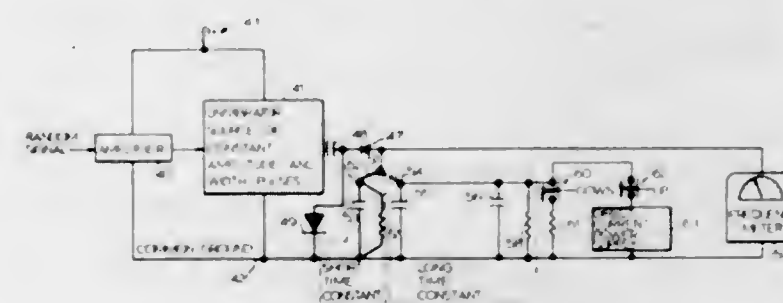
The member with respect to which the spring switch contact arrangement is relatively movable is so shaped that in one position in the range of relative movement the switch contact arrangement contacts the middle member and in a further position in the range of relative movement the switch contact arrangement does not so contact.

3,412,328

### COUNTING RATEMETER WITH MANUAL OVERRIDE OF LONG TIME CONSTANT

Andrew Lowery, Durham, N.C., assignor to Troxler Electronic Laboratories, Inc., Raleigh, N.C., a corporation of North Carolina

Filed Aug. 9, 1965, Ser. No. 478,102  
2 Claims. (Cl. 324-78)



A ratemeter circuit for frequency or rate counting as required for nuclear measuring gauges and the like includes both long and short time constant circuits and means to selectively boost or discharge the current from the long time constant circuit such that the operator by manual switching is able to obtain a quick approximate short time constant reading and to accelerate both up scale and downscale long time constant movements by overriding the normal functioning of the long time constant circuit.

3,412,329

### FREQUENCY METER

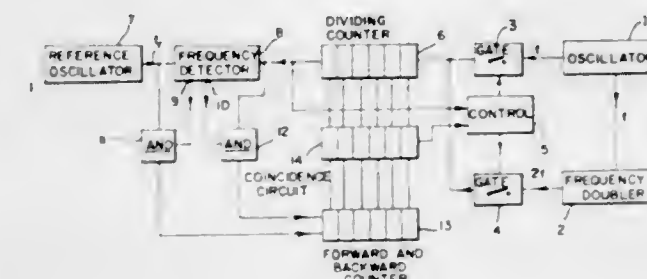
Carl-Erik Granqvist, Lidings, Sweden, assignor to AGA Aktiebolag

Filed Apr. 1, 1966, Ser. No. 539,497  
Claims priority, application Sweden, Apr. 9, 1965, 4,608/65

6 Claims. (Cl. 324-79)

1. An arrangement for measuring the frequency of a pulsating voltage, and comprising a frequency dividing counter connected to a source of pulsating voltage and producing an output signal, a frequency detector connected to the output of said dividing counter to receive the output therefrom and connected to a reference frequency source, said frequency detector having two output circuits with output pulses being produced in either of said two output circuits when said reference frequency differs from the frequency of the output signal of said dividing counter, a forward and backward counter having an input circuit connected to said detector output circuits, a coincidence circuit connecting said forward and backward counter with said dividing counter and having an

output, said coincidence circuit producing an output pulse when a predetermined number of pulses of the frequency of the pulsating voltage have been supplied to said dividing counter, control means connected to said output of said coincidence circuit and said dividing counter, means connected to said control means and said dividing counter output for producing pulses of a second frequency having a fixed relation to the frequency of said source of pulsating



voltage, said control means being triggered by said output pulse of said coincidence circuit to supply to said dividing counter a number of further pulses of said second frequency up to the full capacity of said dividing counter when an output pulse is produced by said dividing counter, the setting of said forward and backward counter being responsive to the difference between the frequencies supplied to said frequency detector whereby said setting is an indication of the frequency of said pulsating voltage.

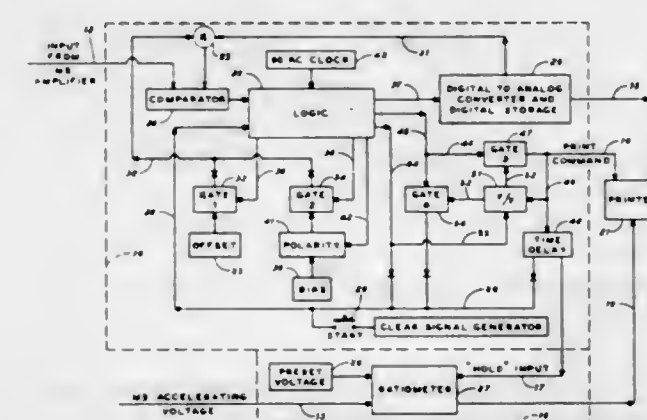
3,412,330

### APPARATUS FOR IDENTIFYING PEAK AMPLITUDES OF VARIABLE SIGNALS

Rudolf F. Klaver, 1440 Portland Ave., Albany, Calif. 94706

Continuation-in-part of application Ser. No. 256,064, Feb. 4, 1963. This application Jan. 9, 1967, Ser. No. 622,838

1 Claim. (Cl. 324-103)

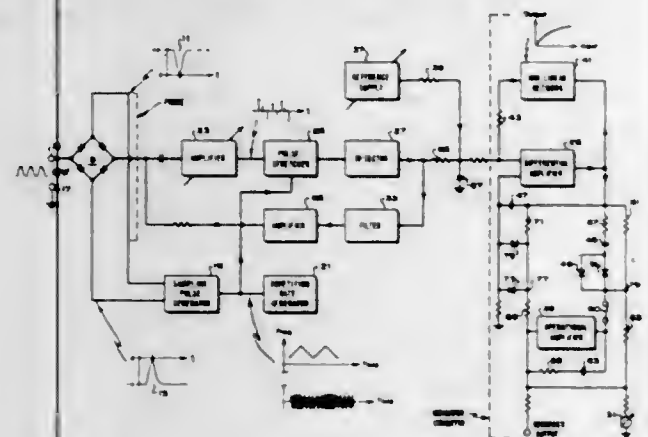


An apparatus for identifying the attainment of a peak along a signal having amplitude variations with time. The amplitude of the time varying signal is continuously monitored and a measure of its amplitude is stored in a measuring device. The instantaneous value of the signal is continuously compared to the stored signal plus and minus a fixed bias signal. When the input signal is more than the stored signal plus the bias, a new measure for the stored signal is produced representing the value of the input signal. When the stored signal plus the bias is more than the input signal and a subsequent measure of the input signal minus the bias is less than the stored signal, a peak in the input signal is identified. The identification of a peak causes the last stored quantity to be transmitted to a printer to be identified as a peak on the time varying signal.



### 3,412,331 RANDOM SAMPLING VOLTMETER

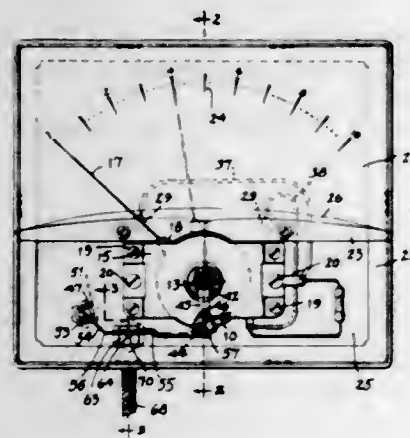
John T. Boatwright, Loveland, and Fred W. Wenninger, Garfield, Colo., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California  
Filed Apr. 29, 1965, Ser. No. 451,848  
2 Claims. (Cl. 324-120)



A voltmeter circuit samples an applied high frequency signal at dissimilar successive intervals and detects a selected parameter of the samples of random amplitudes to produce an indication of the corresponding parameter of the applied signal.

### 3,412,332 POINTER LOCK FOR ELECTRICAL INDICATING INSTRUMENTS

Elmer K. Parker, Portchester, N.Y., and Malcolm E. Schumann, Jr., Greenwich, Conn., assignors to Parker Instrument Corporation, Stamford, Conn.  
Filed Sept. 9, 1965, Ser. No. 486,179  
14 Claims. (Cl. 324-157)



1. A pointer lock for indicating instruments comprising, in combination:

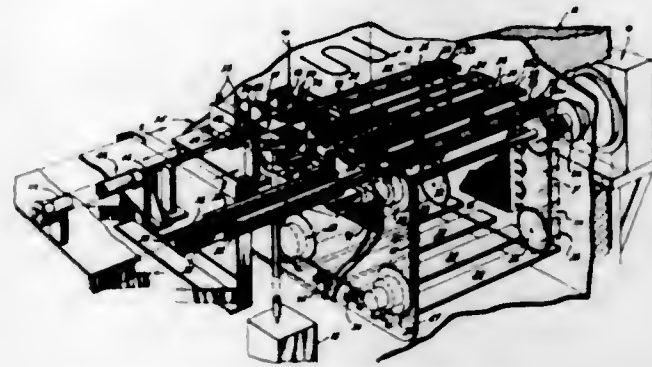
- (A) a casing,
- (B) a visually exposed scale carried by said casing and subtending a predetermined scale angle of arc about a pivoting axis passing through the casing,
- (C) a meter movement carried by said casing, and including
  - (1) a pivotally mounted rotor disk having an elongated radial pointer movable in indicating relation to said scale, and
  - (2) axial mounting means for mounting the rotor disk in the casing for substantially frictionless pivoting movement about said pivoting axis,
- (D) locking spring means including
  - (1) a first spring anchored at one end in said casing for flexing movement parallel to the plane of said disk and having its free end laterally opposed to the periphery of said disk, and
  - (2) a second spring secured to the disk side of said first spring extending perpendicularly to the plane of said disk for engagement with the pe-

riphery of said disk at an intermediate point of said second spring upon movement of said first spring toward said disk,

- (E) a fitting mounted in said casing having a passage opening to the interior and exterior of said casing with its axis disposed at one side of said first spring, and
- (F) a flexible cable release unit connectable to said fitting externally of said casing and including
  - (1) a pin at one end of said cable release unit adapted to have projecting and retracting movement in said passage and having a tip which upon projection of said pin engages at one side of said first spring to move it laterally against the inherent tension of said first spring from a normal to an actuated position, whereby in one of said positions said second spring is in locking engagement with the periphery of said disk and in the other of said positions said second spring is in separated non-locking position relatively to said periphery, and
  - (2) an actuating plunger at the other end of said cable release unit for imparting projecting and retracting movement to said pin.

### 3,412,333 APPARATUS FOR SEQUENTIALLY TESTING ELECTRICAL COMPONENTS UNDER CONTROLLED ENVIRONMENT CONDITIONS

Frank W. Frick, Lansdale, and Robert E. Kirschman, Sellersville, Pa., assignors to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware  
Filed Nov. 15, 1965, Ser. No. 507,776  
7 Claims. (Cl. 324-158)



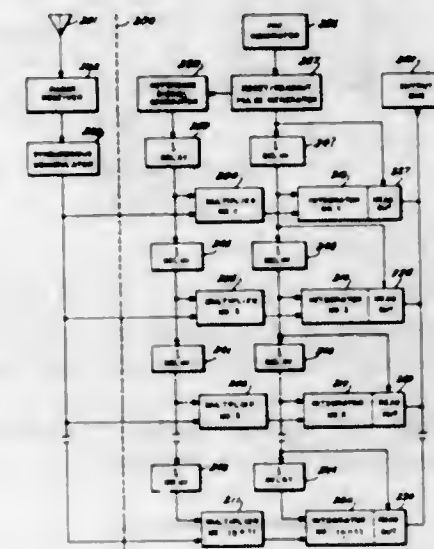
An apparatus for automatically testing integrated circuit devices, including housings having lead wires extending therefrom, comprises an environmental chamber for maintaining ambient atmospheric temperature conditions to which the tested devices are subjected. A plurality of devices are supported on a conveyor arranged to move through the chamber, in sequential step-by-step fashion. A loading station provides for introducing devices into the chamber and onto the conveyor, and a set of test probes is provided within the chamber, downstream of the loading station relative to the direction of movement of the conveyor. The test probes are reciprocable to engage lead wires of a device as it is presented by the conveyor for alignment with the test probes. Mechanism is provided for extracting each component as it is tested.

### 3,412,334 DIGITAL CORRELATOR

James L. Whitaker, La Mesa, Calif., assignor to the United States of America as represented by the Secretary of the Navy  
Filed May 6, 1964, Ser. No. 365,536  
4 Claims. (Cl. 325-325)

The present disclosure relates to a combination of apparatus for the correlation of signals to determine with a high degree of resolution the presence of a wanted signal

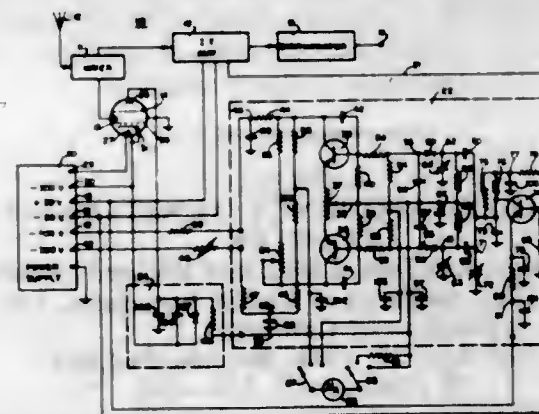
of known digital code character. The present disclosure employs a reference signal generator which repetitively and cyclically regenerates a digitally coded signal in the same predetermined form as a transmitted digitally coded signal, for example, which has returned from a target to provide the input signal to the system. The problem which the apparatus of the present invention solves is that of establishing the disposition in time and consequently a measurement of distance (which may be in terms of range) which is indicated by correlation of the input signal with a particular portion of the sequentially repetitive digitally coded reference signal. In the present disclosure it will be appreciated that the received signal may result from a transmitted radar signal, for instance, originally generated in its transmitted state by the same clock pulse or other synchronizing source as is the repeti-



tive digitally coded reference signal, the reset signal which controls the generation of the reference signal generator, and the readout pulse which controls the sampling or reading out of a plurality of integrators, each associated with a multiplier means which accepts both the input signal and the referenced signal to produce correlation or noncorrelation outputs of those received signals; there are subsequently integrated by respectively associated integrators and both the multipliers and the integrators are operative at sequential unit delays interposed upon their actuating signals. The increment of delay is substantially equal to one unit bit time period. The operation of the disclosed apparatus accordingly produces a maximum output from a particular integrator which receives a fully correlated output from its associated multiplier resulting from the correlation in time of the received input signal with the identically coded reference signal.

### 3,412,335 AUTOMATIC FREQUENCY CONTROL CIRCUIT

Richard E. Risely, Riverside, Calif., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois  
Filed Sept. 30, 1965, Ser. No. 491,517  
14 Claims. (Cl. 325-420)

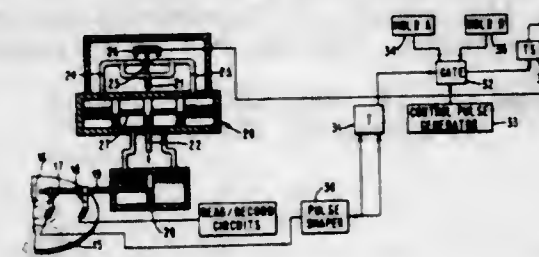


A stable transistorized AFC circuit for regulating the repeller voltage of a local oscillator klystron tube within

a DC high voltage range. The emitter electrodes of a complementary pair of transistors are both directly coupled to the repeller while one of the collector electrodes is connected to a first source of DC voltage higher than the DC range, and the other collector electrode is connected to a second source of DC voltage lower than the DC range such that the arithmetic average of the voltages of said first and second sources, which appears at the emitter electrode junction, is within the DC range. The base electrodes of the transistors are coupled respectively to two tuned circuits which are in turn coupled to the IF output of the receiver to complete the control loop. The tuned circuits are tuned respectively to frequencies above and below the desired IF frequency to thereby provide voltage stepup.

### 3,412,336 CIRCUIT FOR CONVERTING A TRAIN OF DURATION MODULATED PERIODICALLY RECURRING PULSES TO A TRAIN OF SIMILARLY MODULATED PERIODIC PULSES HAVING A DIFFERENT FREQUENCY OF RECURRENCE

Raymond P. Auyang, Ithaca, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York  
Original application June 13, 1961, Ser. No. 109,563, now Patent No. 3,175,205. Divided and this application Aug. 18, 1964, Ser. No. 390,384  
4 Claims. (Cl. 328-39)



1. A frequency converter comprising:
  - a cyclic bistable signal source having a predetermined frequency and a variable ratio between first and second stable states in one cycle of said signal;
  - a cyclic bistable control signal source having a frequency which is a sub-multiple of said cyclic bistable signal source and having first and second stable states of equal duration;
  - means responsive to the first stable state of said control signal source and the sub-multiple number of the first stable state of said cyclic bistable signal source for developing an analog signal proportional to the sum of the durations of said sub-multiple number of first stable states of said cyclic bistable signal source;
  - and means responsive to said analog signal and the second stable state of said control signal source for producing a bistable signal having first and second stable states of the same ratio of said cyclic bistable signal source at said sub-multiple frequency.

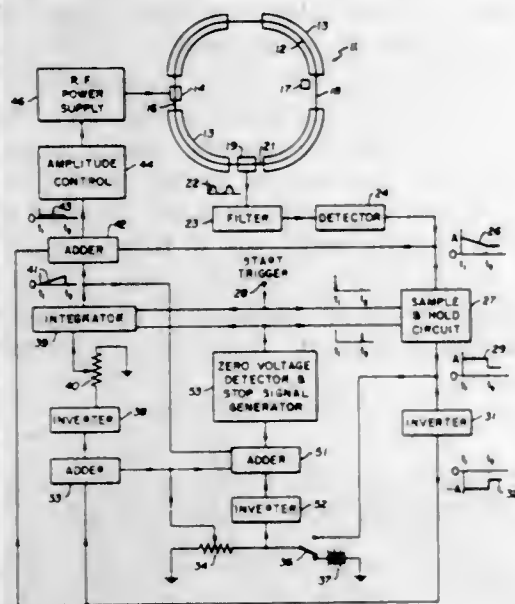
### 3,412,337 BEAM SPILL CONTROL FOR A SYNCHROTRON

Fred H. G. Lothrop, Lafayette, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission  
Filed Aug. 24, 1966, Ser. No. 574,819  
8 Claims. (Cl. 328-228)

An electronic circuit for use with synchrotrons for spilling a controllable quantity of the particle beam current at a controllable rate onto a target adjacent the beam orbit. The amplitude of the radio-frequency accelerating potential is reduced so that some of the particles lose phase



stability and orbit into a target. The quantity and rate of beam spill is stabilized by providing negative feedback

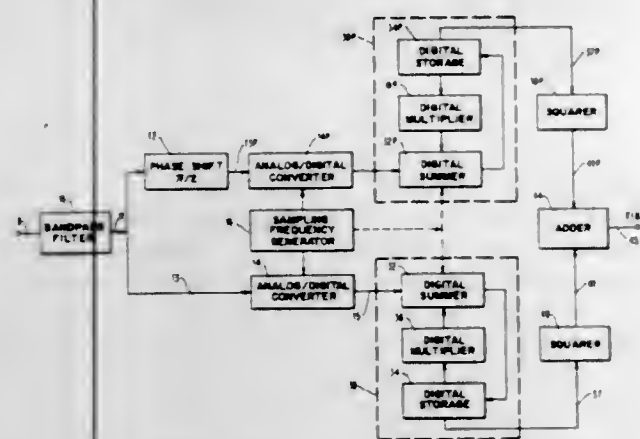


from a detector measuring the quantity of current present in the circulating particle beam.

### 3,412,338 FREQUENCY FILTER

Ralph Bernstein, Rockville, and Winslow R. Remley, Bethesda, Md., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

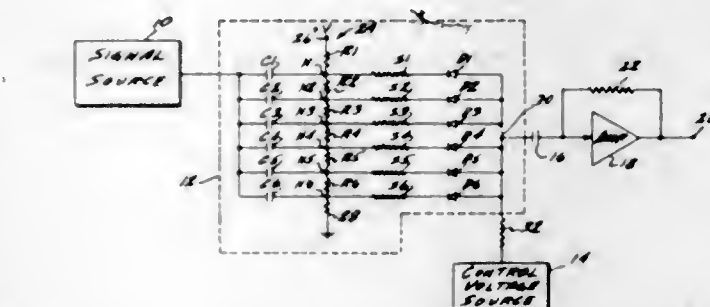
Filed Oct. 15, 1965, Ser. No. 496,413  
12 Claims. (Cl. 328-165)



which has a magnitude which is substantially independent of the angle of said component signal; said output signal thereby being indicative of the amplitude of that component signal in the input signal having a frequency  $1/T$ .

### 3,412,339 VARIABLE-GAIN AMPLIFIER

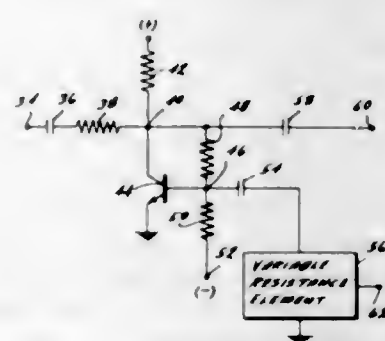
Conrad H. Koning, 4923 Marmol Drive,  
Woodland Hills, Calif. 91364  
Filed July 7, 1965, Ser. No. 470,143  
1 Claim. (Cl. 330-24)



A variable-gain circuit is disclosed utilizing a plurality of parallel paths each of which includes a semi-conductor. A network variously biases the semi-conductor to different levels of cut off, then each is driven by a control signal. The outputs from the parallel paths are summed to provide the desired output. One embodiment incorporates modulation.

### 3,412,340 VARIABLE ATTENUATION CIRCUIT

Andrew C. M. Chao, Monterey Park, Calif., assignor to The Bendix Corporation, a corporation of Delaware  
Filed Mar. 3, 1966, Ser. No. 531,626  
6 Claims. (Cl. 330-29)



A circuit is disclosed for variously alternating an input signal in accordance with a control signal. A substantially-linear amplifier (operational amplifier) is controlled to accept varying electrical currents, thereby attenuating an input signal, in accordance with a controlled variable-resistance element. The resistance-element is coupled to be controlled both by a control signal and the input signal and to thereby control the quantity of electrical current accepted by the substantially-linear amplifier.

### 3,412,341 VARIABLE-FREQUENCY TUNED-CAVITY COUPLER

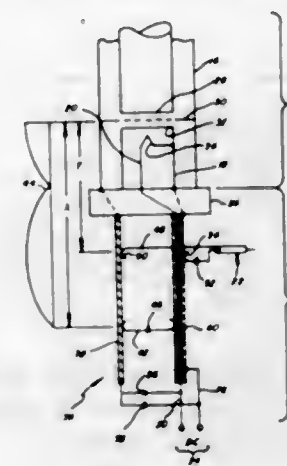
David J. Large, San Jose, Calif., and Richard H. Swartley, Stafford, Pa., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Apr. 22, 1966, Ser. No. 544,566  
15 Claims. (Cl. 330-56)

A variable-frequency tuned-cavity coupler for microwave tubes is disclosed in which a stripline is used as a major portion of the tuned cavity. The stripline is dis-

1. A circuit for filtering a preselected component signal of frequency  $1/T$  from an input signal comprising: sampling means for periodically sampling the input signal at a sampling frequency  $1/T$ ; said sampling means including, analog-to-digital converter means and, angle control means connected to said converter means so as to cause said converter means to derive periodic first samples from said input signal when said component signal is at a first angle and to derive periodic second samples from said input signal when said component signal is at a second angle; digital coherent integrating means serially connected to the sampling means for coherently integrating said first and second samples utilizing an integration storage time  $T$  so as to form integrated first and second samples, respectively; rectifying means connected to the coherent integrating means for rectifying said integrated first and second samples to form rectified first and second samples, respectively; and summing means connected to the rectifying means for summing said rectified first and second samples, an output signal being formed by the summing means

posed in an arcuate manner to enable tuning to be accomplished by rotary movement of shorting means along

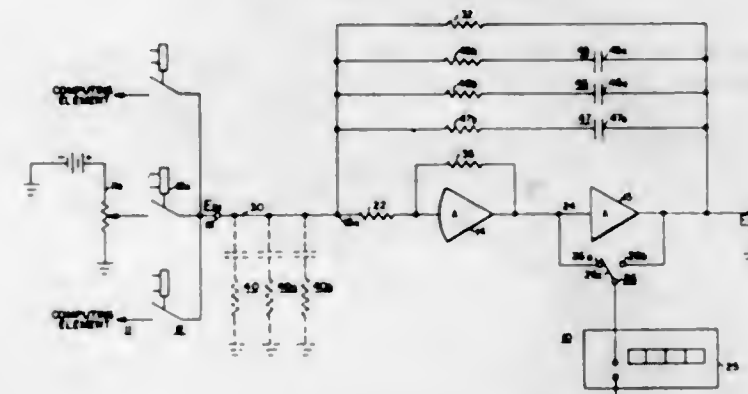


the arcuate stripline, thus producing a compact tunable resonant cavity structure.

### 3,412,342 AMPLIFIER SYSTEM FOR COMPENSATION OF UNDESIRABLE CAPACITANCE AND RESISTANCE EFFECTS

Alfred G. Tonnessen, Neptune, N.J., assignor to Electronic Associates Inc., Long Branch, N.J., a corporation of New Jersey

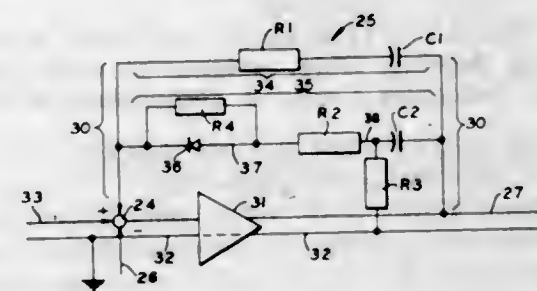
Filed May 16, 1966, Ser. No. 550,356  
10 Claims. (Cl. 330-76)



A.C. compensation of an amplifier for distributed wiring capacitance and leakage resistance is accomplished by utilizing a positive feedback network including a plurality of A.C. networks so valued that the alternating current required to charge the distributed capacitance through the leakage resistances comes from the A.C. networks rather than from other sources.

### 3,412,343 NETWORK STABILIZATION FOR FEEDBACK CONTROL AMPLIFIERS

Ansgar Hansen, Akron, Ohio, assignor to The Imperial Electric Company, Akron, Ohio, a corporation of Ohio  
Filed Mar. 31, 1966, Ser. No. 539,052  
6 Claims. (Cl. 330-103)

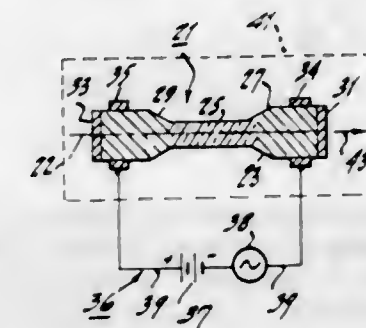


A feedback control system for stabilizing an amplifier network. The output voltage to a load from an input

power source is controlled by tapping off a proportion of the output voltage and feeding it back through a negative feedback network to a summation box for a control amplifier network. The control network is shunted by a non-linear branch network which provides operational stability while ensuring rapid response.

### 3,412,344 SEMICONDUCTOR PLASMA LASER

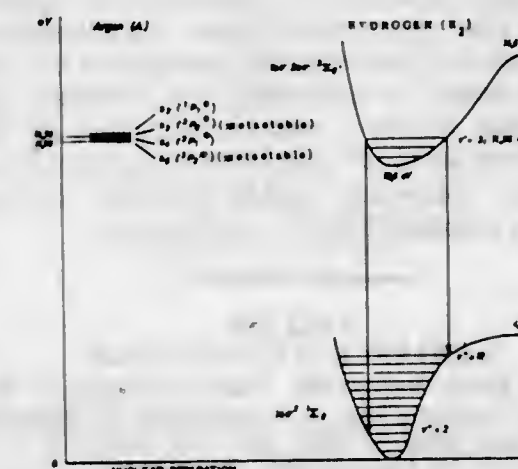
Jacques I. Pankove, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware  
Filed Oct. 30, 1963, Ser. No. 320,100  
8 Claims. (Cl. 331-94.5)



A laser comprises a body of semiconductor material having a first portion that exhibits impact ionization and radiative recombination of ionized particles produced by the impact ionization. The first portion comprises substantially intrinsic semiconductor material. The body also includes a second portion of semiconductor material with a higher conductivity and a larger optical energy bandgap than the first portion. The second portion functions as a part of the means for producing impact ionization, means for resonating the radiation, and means for transmitting the radiation out of the body.

### 3,412,345 NOBLE GAS-HYDROGEN LASER

Wolfgang K. Friedl, Hanau am Main, and Volker Schaefer, Bruchkoebel, near Hanau, Germany, assignors to Quarzlampengesellschaft m.b.H., Hanau am Main, Germany  
Filed Aug. 4, 1965, Ser. No. 477,261  
Claims priority, application Germany, Aug. 19, 1964, Q 796  
7 Claims. (Cl. 331-94.5)



Optical maser apparatus having as its optical medium a gas mixture including a noble gas and up to about one percent hydrogen, said mixture being maintained at pressures in the range of 1 to 100 torr.



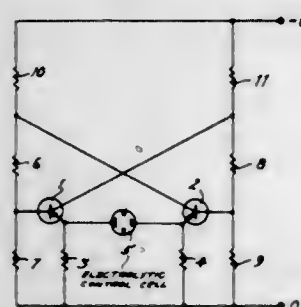
### 3,412,346 TIMING GENERATOR WITH ELECTROCHEMICAL CONTROL ELEMENT

Ernst C. Rieder, Frankfurt am Main, Germany, assignor to Varta Aktiengesellschaft, Hagen, Westphalia, Germany, a corporation of Germany

Filed Aug. 18, 1966, Ser. No. 573,377

Claims priority, application Germany, Aug. 28, 1965, V 29,210

7 Claims. (Cl. 331-113)



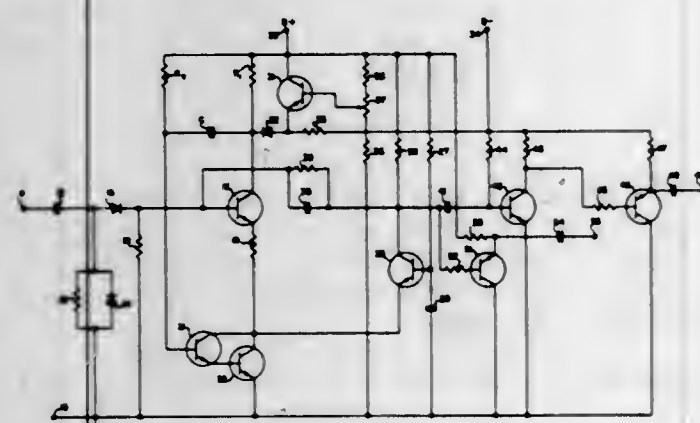
A device for generating signals at preselected time intervals to provide timing cycles ranging from a few minutes to several days which comprises a multivibrator circuit including an electrochemical control cell for determining the timing cycle.

### 3,412,347 TRANSISTORIZED PHASE MODULATOR SUITABLE FOR ANALOG DATA CONVERSION

Francis X. Downey, Amundale, and Allick H. Frank, Springfield, Va., assignors to the United States of America as represented by the Secretary of the Navy

Filed Feb. 2, 1966, Ser. No. 524,982

10 Claims. (Cl. 332-16)



A transistorized circuit for use as a phase shifter or an analog data converter. The circuit generally comprises a sawtooth signal generator synchronously triggered with the leading edge of an input signal, an adjustable delay control means for controlling the duration of the sawtooth signal, and means for converting the sawtooth signal to a square pulse having a pulse width equal to the time duration of the sawtooth signal. An output circuit coupled to the signal conversion means provides both positive and negative amplified information signals.

### 3,412,348 VARIABLE ATTENUATOR

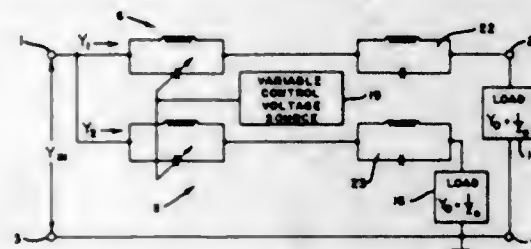
Richard W. Hull, Sunnyvale, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed May 3, 1965, Ser. No. 452,793

3 Claims. (Cl. 333-8)

A network having a constant input impedance  $Z_0$  for attenuating an input signal having a predetermined frequency. The network includes the series combination of a first tunable shunt resonant circuit, an inductor and a first load having an impedance  $Z_0$  connected between an input terminal and ground. The output of the network is

coupled from the first load. A by-pass circuit including a second tunable shunt resonant circuit, a capacitor and a second load having an impedance  $Z_0$  is also connected



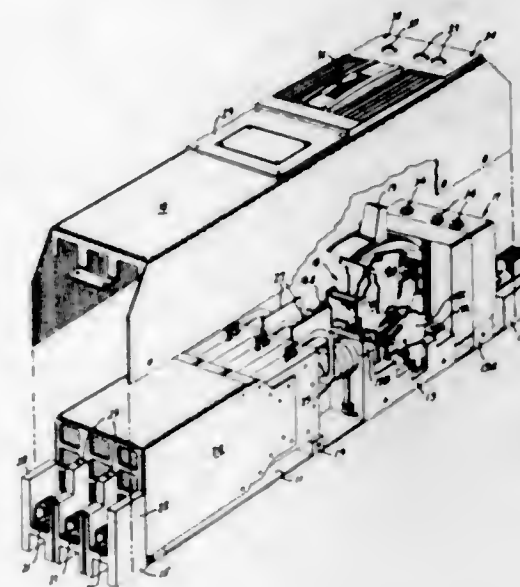
in series between the input terminal and ground. The attenuation of the network is changed by varying the resonant frequencies of the resonant circuits.

### 3,412,349 CURRENT-LIMITING ELECTRIC CIRCUIT BREAKER

Robert W. Laubenheimer, Farmington, Conn., assignor to General Electric Company, a corporation of New York

Filed Nov. 25, 1966, Ser. No. 597,119

4 Claims. (Cl. 335-9)



An electric circuit breaker including separable contacts and manually and automatically operable operating mechanism, the mechanism being connected to the contacts by means of an insulating member having oppositely directed threaded portions inter-engaging corresponding tubular portions of the mechanism and contact members respectively, to provide an adjustable mechanical connection between the mechanism and the contacts and also to electrically isolate the operating mechanism from the movable contacts. In another form, the insulating interconnection is non-adjustable, but also includes lost-motion means and compression spring means for which the insulating member acts as a stop, to provide contact pressure.

### 3,412,350 RATCHET RELAY WITH DUAL ACTION PAWLS

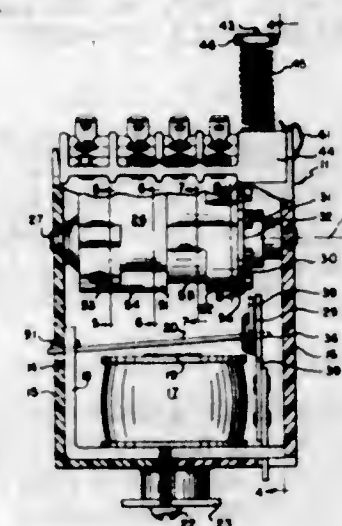
Alvin J. Carl, Sebring, Ohio, assignor to Consolidated Electronics Industries Corp., a corporation of Delaware

Filed Apr. 11, 1966, Ser. No. 541,653

18 Claims. (Cl. 335-123)

The disclosure shows a multiple contact electromagnetic relay wherein the armature moves an actuator plate in a rectilinear path. First and second pawls are pivoted on the actuator plate to cooperate alternatively with cylindrical pins on a ratchet wheel. During the attraction stroke of the armature the first pawl rotates the ratchet wheel

through a first arc and during the retraction stroke of the armature the second pawl rotates the ratchet wheel through a second arc. A plurality of cams are rotated with the



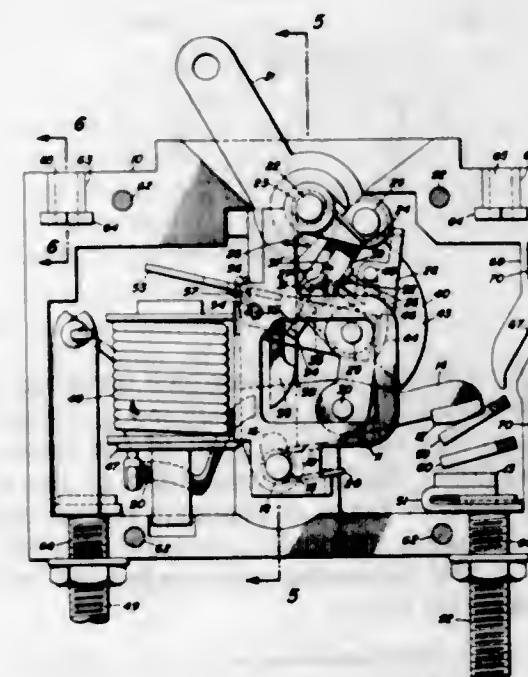
ratchet wheel and some contacts are actuated on the attraction stroke of the armature and others are actuated on the retraction stroke of the armature.

### 3,412,351 TOGGLE MECHANISM FOR A CIRCUIT BREAKER

George S. Harper, Cambridge, Md., assignor to Airpax Electronics Incorporated, Cambridge, Md., a corporation of Maryland

Continuation-in-part of application Ser. No. 377,993, June 25, 1964. This application Apr. 26, 1966, Ser. No. 545,434

3 Claims. (Cl. 335-175)



A toggle mechanism for circuit breakers including first and second pivotally mounted levers which are operatively connected through a pair of pivotal links. Means are provided on the links for locking them against pivotal movement with respect to each other. Further means are provided to unlock the locking means to permit relative pivotal movement to thereby effect the tripping of the mechanism.

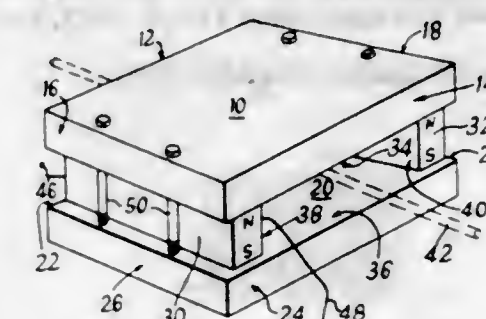
### 3,412,352 MAGNET ASSEMBLIES FOR PRODUCING HIGHLY HOMOGENEOUS MAGNETIC FIELDS

Edward Watson, Hampton, England, assignor to Newport Instruments Limited, Newport Pagnell, Buckinghamshire, England, a British company

Filed Apr. 19, 1965, Ser. No. 449,243

Claims priority, application Great Britain, Apr. 22, 1964, 16,741/64

5 Claims. (Cl. 335-298)



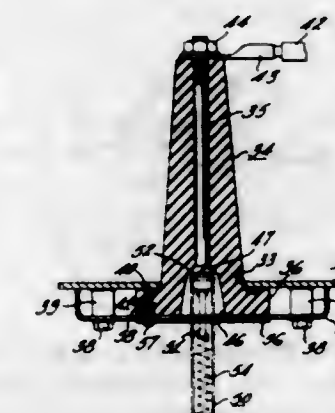
1. A magnet assembly comprising two pole pieces of magnetically soft material each having a continuous plane pole face, said pole pieces being arranged such that said pole faces are disposed in direct face-to-face relationship in spaced substantially parallel planes and having two axes of symmetry extending at right-angles to one another parallel to said planes containing the pole faces, and magnetic flux-providing means arranged between said pole faces and symmetrically with respect to said axes to define with said pole faces the boundaries of an air gap between said pole pieces, said flux-providing means being discontinuous at two oppositely disposed locations through which one of the said axes extends and being poled so as to render the opposed pole pieces of opposite polarity, and said pole pieces being of a thickness in a direction perpendicular to said planes such that the reluctance of the pole pieces is small compared with the reluctance of the magnetic path through said flux-providing means, whereby a magnetic field of high homogeneity is produced within said air gap in the directions of both said axes.

### 3,412,353 SHIELDED HIGH VOLTAGE ELECTRICAL APPARATUS PERMITTING POTENTIAL TEST

Richmond P. Johnston, Glenshaw, Pa., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed May 9, 1966, Ser. No. 548,621

13 Claims. (Cl. 336-105)



A ground level distribution transformer has a grounded metallic housing enclosing a core and coil assembly and provided with an aperture completely closed by an insulating member having a conductive electrode embedded therein opposite the aperture and connected to the transformer primary winding. The insulating member prevents accidental contact with the electrode and has an instrument receiving recess opposite the aperture in which an

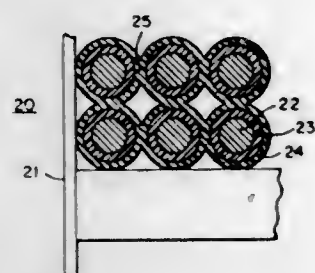


instrument can be inserted to detect if the electrode is generating an electrostatic field, which would indicate that the transformer is energized.

3,412,354

**ADHESIVE COATED ELECTRICAL CONDUCTORS**  
Frank A. Sattler, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Original application Feb. 18, 1963, Ser. No. 259,260.  
Divided and this application Feb. 8, 1967, Ser. No. 614,664

20 Claims. (Cl. 336—205)

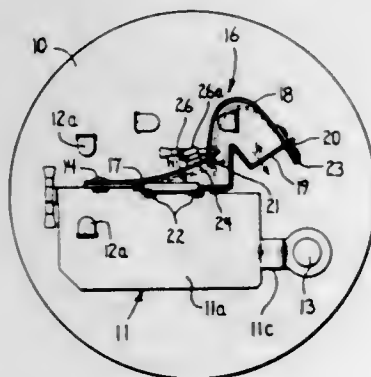


Insulated magnet wire and other electrical conductors are coated with amine-modified epoxy resin compositions in conventional wire enameling towers. The coatings are fusible and may be heated to fusion in order to bond the conductors into a unitary coil. The coatings may be treated with catalysts such as boron trifluoride, polyisocyanates and blocked polyisocyanates, before fusion, so that the coating is converted to an infusible solid state. The infusible bond has a better high temperature bond strength than the fusible bond. The amine-modified epoxy resin compositions may also be blended with polyvinyl acetal, aliphatic polyepoxide and phenol-modified coumarone-indene resins. The blends may also be applied in conventional towers and may be converted to an infusible thermoset state with catalysts.

3,412,355

**AUTOMOTIVE FLASHER DEVICE**  
Cleon F. Frey, Sebastian, Fla., assignor to Comel International Corporation, Bayamon, Puerto Rico, a corporation of Puerto Rico  
Continuation-in-part of application Ser. No. 523,752, Jan. 28, 1966. This application Sept. 8, 1966, Ser. No. 578,024

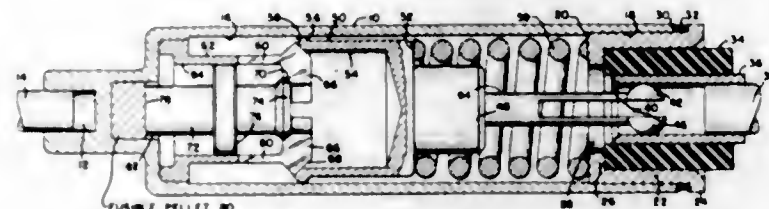
2 Claims. (Cl. 337—82)



A flasher utilizing a bimetal blade and a snap acting mechanism mounted on a chassis. The chassis in addition to providing a heat sink for the bimetal blade also serves as a source of heat for a compensating bimetal. The chassis also includes a tab member having a U-shaped loop intermediate its length. This U-shaped portion serves as a means for adjusting the timing cycle of the flasher by permitting the chassis to be shifted relative to a fixed contact and by permitting the length of the bimetal blade in contact with the heat sink to be varied.

### 3,412,356 THERMAL FUSE WITH TRIGGERING MECHANISM

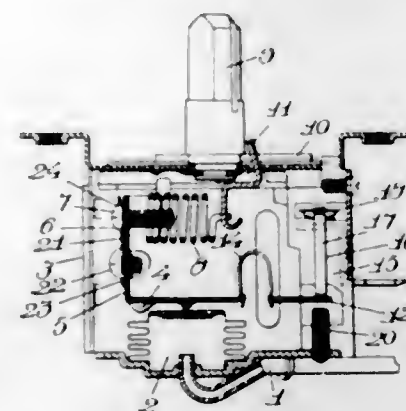
Arden D. Van Horssen, Minneapolis, Minn., assignor, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware  
Filed Mar. 21, 1967, Ser. No. 624,951  
5 Claims. (Cl. 337—150)



A plunger is urged against a fusible pellet by a plurality of resilient tines or spring fingers. When the pellet melts, the plunger then moves and the free ends of the tines flex inwardly out of obstructive engagement with a spring biased sleeve member. The sleeve member, the release of which has now been triggered, moves under the influence of its spring to open the contacts, one contact being attached directly to the sleeve member so that it moves in unison therewith.

3,412,357

**CONDITION RESPONSIVE SWITCH**  
Takeshi Odashima, Tokorozawa, Japan, assignor to Kabushiki-Kaisha, Saginomiya, Seisakusho, Tokyo, Japan  
Filed Jan. 17, 1968, Ser. No. 698,642  
Claims priority, application Japan, Jan. 24, 1967, 42/4,311  
1 Claim. (Cl. 337—300)



A condition responsive switch in which operating plates are made of bimetallic plates and exposed to the ambient atmosphere, so that the acting point of the switch may vary in proportional relation to variation of the atmospheric temperature. A range of operative temperatures of the switch is not only manually pre-adjustable but also automatically varied depending upon expansion or bending of said bimetallic plates.

3,412,358

**SELF-REGULATING HEATING ELEMENT**  
Friedrich Hummel, Innsbruck, Austria, and Richard Bauer, Heidelberg, Germany, assignors, by mesne assignments, to Gulton Industries, Inc., Metuchen, N.J., a corporation of New Jersey  
No Drawing. Continuation-in-part of application Ser. No. 349,498, Mar. 4, 1964. This application Sept. 9, 1966, Ser. No. 578,133

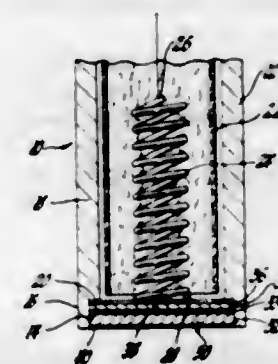
13 Claims. (Cl. 338—7)

An electrical resistance material is described which comprises a resistive substance, an insulating material

and a non-conductive plastic carrier; the insulating material has a specific electrical resistance and thermal coefficient of expansion, respectively greater than that of the resistive substance and the insulating material also has a specific electrical resistance greater than  $10^8$  ohm-cm. and at least  $10^8$  times that of the resistive substance. The electrical resistance material may be formed into foils, plates, films or other shaped articles to provide a space heater that is self-regulating, in that it does not have to be controlled by interrupting the current, but adjusts itself automatically to limit its temperature in individual areas thereof according to the heat load in such individual areas by automatically varying its local resistivity in such areas.

3,412,359

**THERMOPROBE ASSEMBLY**  
Raymond E. Schwyn, Flint, and John W. Riddel, Fenton, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Dec. 8, 1966, Ser. No. 600,243  
5 Claims. (Cl. 338—30)



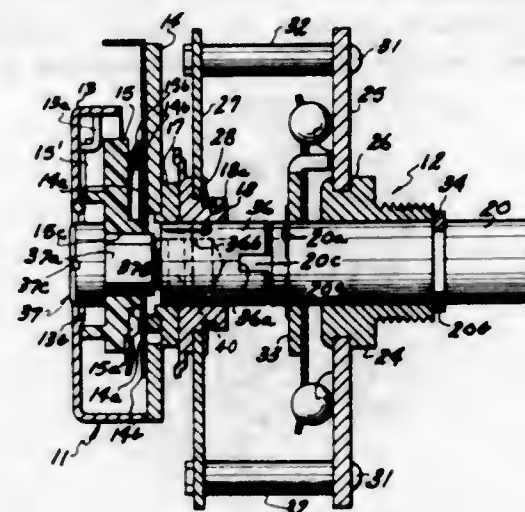
This invention relates to a thermoprobe assembly, and more particularly to a thermoprobe having a thermistor assembly therein. The thermoprobe assembly has a fast temperature response resulting from the construction of the temperature-sensitive end thereof. The bottom of the temperature-sensitive end of the thermoprobe assembly is a nickel disc which seals the end of outer tubular shell. Inside the thermoprobe assembly a film of thermistor material is bonded to the face of the nickel disc by means of an insulative, adherent layer of nickel oxide. The thermistor film is connected electrically to the outer shell by one contact and by a second contact to a thermogauge which indicates the temperature by measuring the resistance of the thermistor film between the two contacts. The use of a film of thermistor material results in the thermistor element having a fast temperature response that can be operated over a broad power level range. This construction also provides good thermal transfer characteristics between the nickel disc portion of the outer casing and the thermistor element.

3,412,360

**ANGULARLY ADJUSTABLE CONTROL**  
Michael Heath Colburn, Milwaukee, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware  
Filed June 23, 1965, Ser. No. 466,349  
10 Claims. (Cl. 338—162)

A rotary electrical control is described. The driven element of the control is mounted on a first shaft which is threaded to a second shaft with a pliable insert to increase the friction. The second shaft is connected to a control shaft with a coupling allowing relative axial displacement but insuring a firm rotational drive. The control shaft is connected to a detent indexing mechanism. Rota-

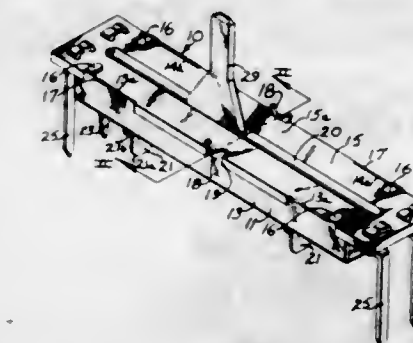
tion of the control shaft causes rotation of the driven element but the driven element may be rotated relative to



the control shaft through the threaded coupling to permit angular adjustment.

3,412,361

**VARIABLE RESISTANCE CONTROL**  
Robert E. Lovejoy, Goshen, and Carlton M. Osburn, Elkhart, Ind., and John Zdanys, Jr., Edwardsburg, Mich., assignors to CTS Corporation, Elkhart, Ind., a corporation of Indiana  
Filed Apr. 3, 1967, Ser. No. 628,128  
11 Claims. (Cl. 338—176)



A variable resistance control having a channel-shaped housing closed by a dielectric base supporting resistance and conductive elements. A rectilinear slider carrying a contactor provided with spring contacts wipably engages the resistance and conductive elements. Smooth movement of the slider is obtained by providing the bottom of the slider with a pair of spaced runners bearing against lands of the housing. Laterally extending shoes on the top of the slider space the slider from the resistance and conductive elements. The shoes preferably have laterally inclined surfaces to assure that the shoes do not engage the raw edges of an elongated slot provided in the base. The position of the slider is altered by an operating member connected to the slider and extending outwardly through the slot.

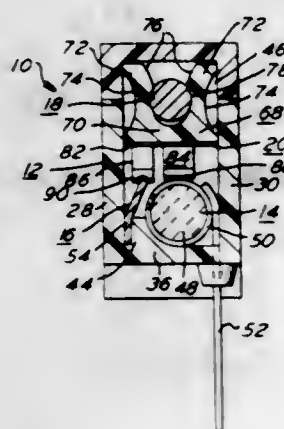
3,412,362

**RECTANGULAR TRIMMER POTENTIOMETER**  
John G. Woods, Philadelphia, Pa., and George W. Wood, Hammonton, N.J., assignors to IRC, Inc., Philadelphia, Pa.  
Filed Aug. 8, 1967, Ser. No. 659,055  
7 Claims. (Cl. 338—183)

A potentiometer comprising a rectangular housing having an enclosed, rectangular cavity therein. A resistance element extends longitudinally along the bottom of the cavity, and a collector member extends longitudinally along the bottom of the cavity in spaced, parallel relation to the resistance element. Terminals are secured to the ends of the resistance element and extend through the bot-



tom of the housing, and a terminal is secured to the collector and extends through the bottom of the housing. A threaded shaft is rotatably supported in the housing and extends longitudinally through the cavity above and parallel to the resistance element and collector member. The shaft extends beyond one end of the housing to permit

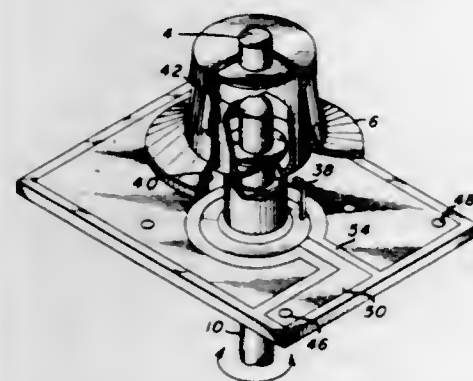


rotation of the shaft. A contact carrier is mounted on the shaft within the cavity for longitudinal movement along the shaft upon rotation of the shaft. A contact member is mounted on the contact carrier for movement therewith. The contact member has one arm slidably engaging the resistance element and a second arm slidably engaging the collector member.

3,412,363

**CONTROL KNOB INDICATOR APPARATUS**  
Charles William Hatton, Binghamton, N.Y., assignor to General Precision Systems Inc., a corporation of Delaware

Filed Jan. 2, 1964, Ser. No. 335,327  
3 Claims. (Cl. 338—196)



A variable resistor has an actuating control knob with a light indicating means for indicating the operating condition of the resistor. A printed circuit module is provided with a conductive area and a nonconductive area and alternatively, a second conductive area or resistive area. One wiper on the knob coacts with the conductive area and a second wiper coacts with the nonconductive area in the off position and the second conductive area or resistive area in the on position. In one case the indicator operates in an off and full intensity condition and in another case operates in an off with an increasing intensity condition as the second wiper advances along the resistive area.

3,412,364

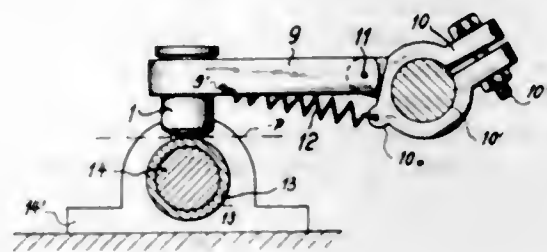
CONTACT DEVICE

Helmut Grawe, Hamburg-Stellingen, Germany, assignor to Hamburger Flugzeugbau G.m.b.H., a corporation of Germany

Filed Apr. 29, 1966, Ser. No. 546,328  
5 Claims. (Cl. 339—5)

A lubricated sliding contact in which a tabular liquid lubricant container is held by axial spring force radially

against a rotating surface and bears upon the latter with a noble-metal contact part having a passage dimensioned with respect to the viscosity of the liquid lubricant to



dispense the lubricant in a film only by adhesion to the moving surface and preventing flow of the lubricant from the container in the nonrotating condition of the surface.

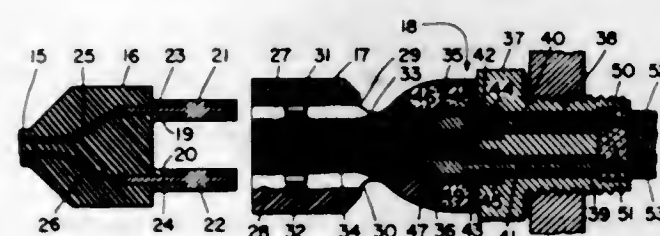
3,412,365

**FLUID-PROOF BULKHEAD PLUG AND SOCKET**  
Arthur L. Nelson, San Diego, Calif., assignor, by mesne assignments, to Electro-Oceanics, Inc., a corporation of California

Filed Dec. 28, 1965, Ser. No. 516,956

The portion of the term of the patent subsequent to Sept. 6, 1983, has been disclaimed and dedicated to the Public

2 Claims. (Cl. 339—60)



A bulkhead connector comprising a socket structure sealingly secured in a bulkhead with a portion of the socket positioned exterior of the bulkhead and provided with double ended openings for receiving a suitable plug. In this respect, the plug is in the form of an elongated cylindrical member which may be urged into one end of the socket thereby expelling water from the other end and resulting in electrical contact with mid-contacts disposed in the socket and on the exterior of the plug respectively. The arrangement is such that underwater connections can be effected without disturbing the bulkhead sealing structure of the socket and the contacts themselves are always maintained in a clean and dry condition.

3,412,366

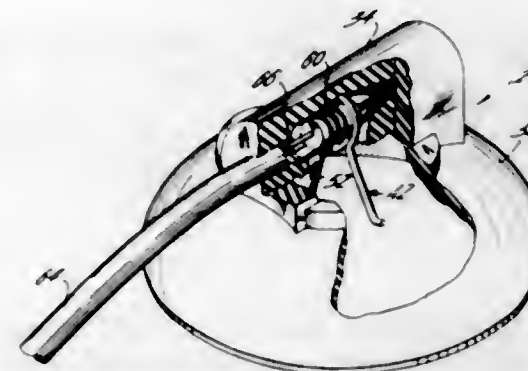
ANODE CONNECTOR FOR KINESCOPE

Robert B. Pittman, River Edge, N.J., assignor to Industrial Electronic Hardware Corp., New York, N.Y., a corporation of New York

Filed Apr. 10, 1967, Ser. No. 629,489  
13 Claims. (Cl. 339—60)

The usual anode connector has an anode lead which is electrically connected to a spring metal clip, and has a rubber cap somewhat like a suction cup to shield the clip and the ultor cap on the side of the kinescope. In the present improvement a metal ferrule having a reduced nose portion is preliminarily secured to the lead wire without the clip. The rubber cap has a lateral passage dimensioned to receive the ferrule with a stretch fit. The inside of the cap at the top is open to receive the eye of the clip, so that the ferrule may be pushed into

the passage and through the eye of the clip with good electrical contact therebetween, and without need to draw plate aperture whereby the connector housing can be releasably secured in the plate aperture, the connector hous-



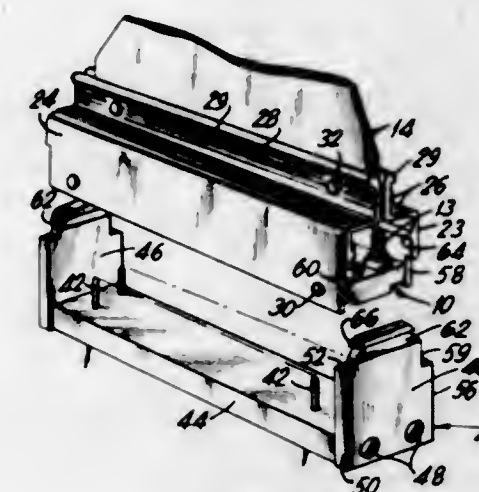
the full length of the insulated wire through the rubber cap.

3,412,367

CONNECTOR ASSEMBLY

John J. Churla, Raritan, N.J., assignor to Thomas & Betts Corporation, Elizabeth, N.J., a corporation of New Jersey

Filed Aug. 29, 1966, Ser. No. 575,688  
12 Claims. (Cl. 339—91)



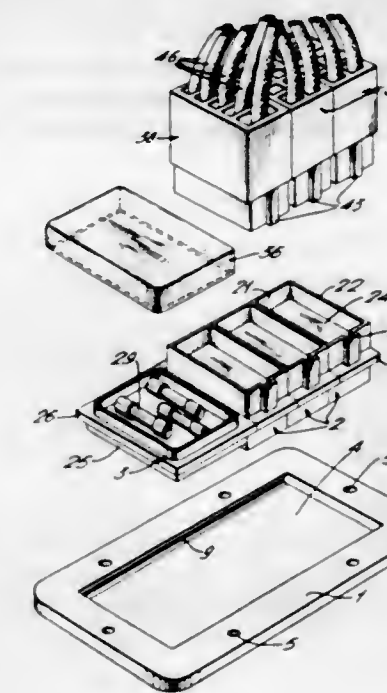
1. A connector assembly comprising connector means having a plurality of terminal pins with rearwardly extending terminal portions, flexible flat cable means having a plurality of conductors whose ends are electrically connected to said terminal portions of said pins and strain relief means sandwiching said connector means and said cable means, and being affixed both at said connector means and at said cable means to provide strain relief thereof.

3,412,368

**ELECTRICAL CONNECTOR HOUSING ASSEMBLY**  
John Asbridge, Stanmore, Middlesex, and Alan William Ronald Podmore, Sopwell, St. Albans, England, assignors to AMP Incorporated, Harrisburg, Pa.

Filed Nov. 8, 1966, Ser. No. 592,928  
Claims priority, application Great Britain, Dec. 17, 1965, 53,561/65  
7 Claims. (Cl. 339—126)

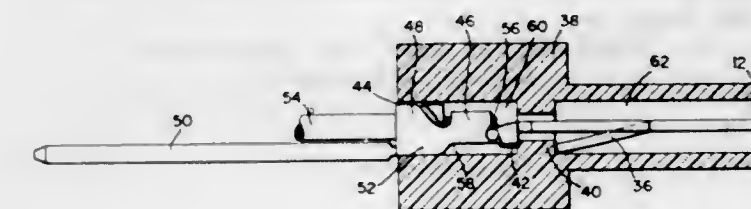
An electrical connector housing assembly according to the invention comprises an insulating plate for mounting over a bulkhead opening and having a rectangular aperture, a fuse unit and at least one rectangular connector housing having means on each of a first pair of opposite sides for releasably engaging cooperating means provided on the plate on each side of a pair of opposite sides of the



ing having passageways to receive connectors for connection to conductors on opposite sides of the connector housing.

3,412,369

**CONTACT WITH MULTIPLE TERMINATION**  
Benjamin Fox, Wyncote, Pa., assignor to Elco Corporation, Willow Grove, Pa., a corporation of Delaware  
Filed Mar. 23, 1966, Ser. No. 536,915  
19 Claims. (Cl. 339—217)



An electrical contact has a multiple termination tail section comprised of a deformable lead-grasping means, and an elongated tail of noncircular cross-section extending from said grasping means. A lead of an outside circuit can be electrically connected either to the grasping means, or to the elongated tail of the contact.

3,412,370

**AUTOMATIC RELEASE CONTROL APPARATUS**  
Roger Massal, Toulouse, France, assignor to French State, represented by the Minister of Armed Forces, Ministerial Delegation for Weapons, Technical Direction of Land Weapons, Manufacturing Works of Toulouse, Toulouse, France

Filed Jan. 3, 1967, Ser. No. 606,885  
Claims priority, application France, Jan. 4, 1966, 44,691

7 Claims. (Cl. 340—1)

Apparatus for automatically controlling any desired mechanism when the distance from the apparatus to a body having an acoustically reflecting surface reaches a predetermined value comprises a pickup device receiving sound signals reflected by the reflecting surface, an emitter of electrical signals electrically connected to the pickup device so as to transmit an electrical signal upon each reception of a sound signal by the pickup device, and electroacoustic transducer connected to the emitter and







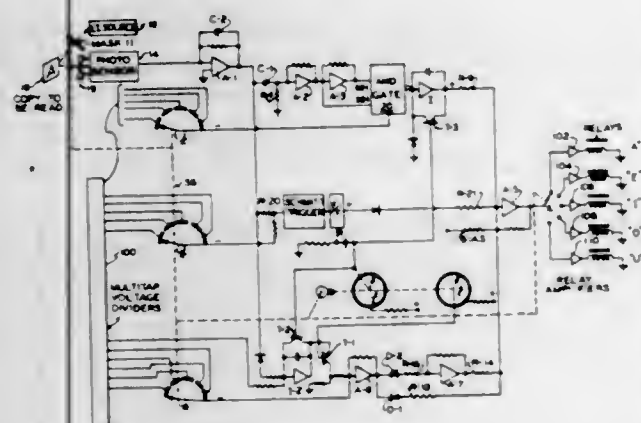
tively connected to the signal selecting means and responsive to signal energy transmitted therethrough for providing warning signals internally of said vehicle for a predetermined operational period and duration control means operatively connected to the operating means and signal selecting means operative in response to said transmission of the signal energy for restricting response of the emergency operating means to radiated signal energy persisting for a predetermined duration.

3,412,379

**SIGNAL COMBINING COMPARATOR**

Richard G. Stephens, Binghamton, N.Y., assignor to Character Recognition Corporation, Binghamton, N.Y., a corporation of Delaware

Filed Jan. 6, 1964, Ser. No. 335,875  
15 Claims. (Cl. 340-146.3)



1. Character recognition apparatus comprising: means for scanning any character of a font of characters with a light spot and in association with the scanning of said character, to scan a plurality of models of different characters of said font to generate from the association of each model to said character a plurality of non-match signals and a unique match signal for the association of said character with the matching one of said models, said unique signal having a plurality of measurable characteristics to distinguish it from each of the unique signals which result from a match of any other characters of said font with its model and from all non-match signals, said characteristics being relatively invariant with small amounts of misregistration of said character with said light spot, the departure of said signal from a reference value being one of said characteristics, the relative invariance of said signal being another of said characteristics, means for sensing said departure and for providing a first descriptor responsive to the amount of said departure, means for measuring the degree of invariance of said departure to produce a second descriptor, means for measuring a second relatively invariant characteristic of said unique signal to produce a third descriptor, means for combining two of said descriptors to provide a further descriptor; and character identifying output means responsive to said third descriptor for identifying said character.

3,412,380

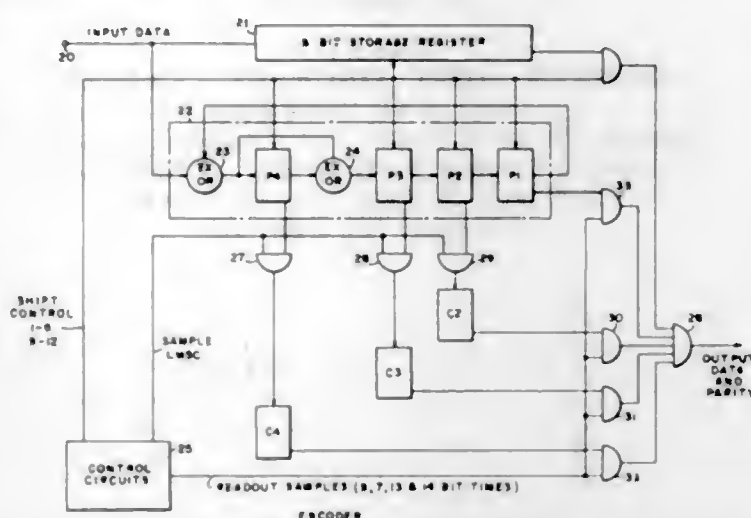
**TWO-CHARACTER, SINGLE ERROR-CORRECTING SYSTEM COMPATIBLE WITH TELEGRAPH TRANSMISSION**

Ralph M. Heller, Baltimore, James R. Bowen, Catonsville, and John L. Corley, Hyattsville, Md., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 4, 1964, Ser. No. 394,432  
5 Claims. (Cl. 340-146.1)

Apparatus and method for replacing the start-stop bits of a normal Teletype channel with coding bits such as parity check bits. Since the parity check bits are placed

where start and stop bits were originally positioned in the bit stream, there is no change in information or actual transmission rates. Simple error correcting codes are in-



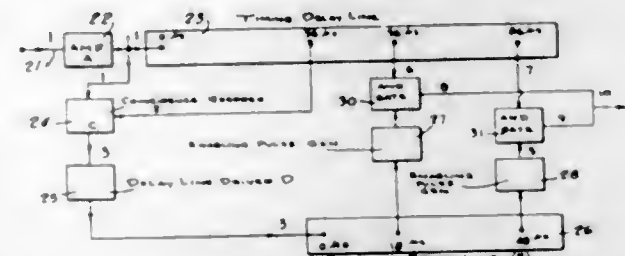
serted in a two character word to provide information to enable a correction to be made to an erroneous bit. The five bit-Teletype characters appear in the same form and bit locations as an uncoded transmission.

3,412,381

**JITTER-FREE DISTANCE MEASURING EQUIPMENT**

Charles J. Hirsch, Princeton, N.J., and Guellino A. Lucchi, San Fernando, Calif., assignors to the United States of America as represented by the Secretary of the Army

Filed Nov. 10, 1965, Ser. No. 507,260  
4 Claims. (Cl. 340-164)



1. A device for decoding an input pulse pair and for generating a reply pulse pair from single pulses of the input pulse pair comprising:

- a timing delay line for delaying the input pulse pair having an input and plural outputs at spaced predetermined time delay intervals;
- an enabling delay line having an input and plural outputs at spaced predetermined time delay intervals;
- detecting and pulse generating means for passing a single pulse to the enabling delay line input upon a coincidental relationship existing between the input pulse pair and the delay pulse pair, said detecting and pulse generating means responsive to the timing delay line input and a first one of said plural timing delay line outputs;
- pulse generating and gating means for producing the first one of a reply pulse pair upon a coincidental relationship existing between a first one of said plural enabling delay line outputs and a second one of said plural timing delay line outputs, said pulse generating and gating means responsive to a first one of said plural enabling delay line outputs and a second one of said plural timing delay line outputs;
- pulse generating and gating means for producing the second half of a reply pulse pair upon a coincidental relationship existing between a second one of said plural enabling delay line outputs and a third one of said plural timing delay line outputs, said pulse generating and gating means responsive to said

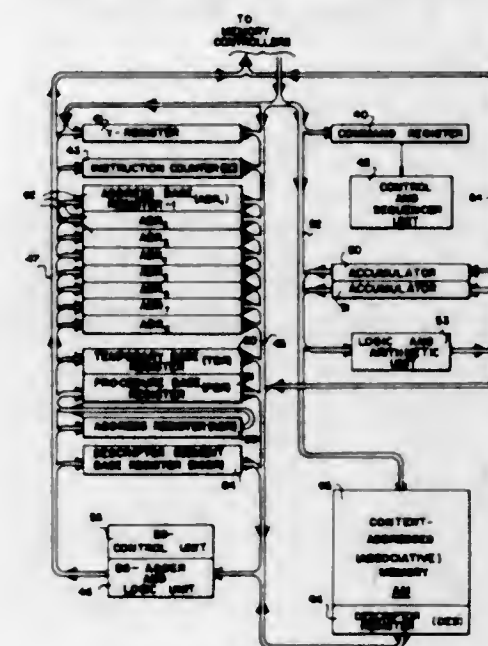
second one of said plural enabling delay line outputs and said third one of said plural timing delay line outputs.

3,412,382

**SHARED-ACCESS DATA PROCESSING SYSTEM**

John F. Couleur, Scottsdale, Ariz., and Edward L. Glaser, Arlington, Mass., assignors, by direct and mesne assignments, to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts

Filed Nov. 26, 1965, Ser. No. 509,824  
18 Claims. (Cl. 340-172.5)



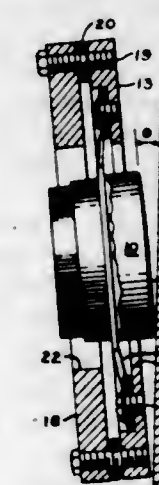
A time-shared data processing system effecting multi-programming by the employment of program segments, each segment utilizing relative addressing; wherein a plurality of registers store intermediate cell pointers for respective ones of the segments, each intermediate cell providing a reference address, and wherein an absolute address is provided for the relative address of a particular segment by retrieving the corresponding pointer from the register in which it is stored, utilizing the pointer to obtain the contents of the respective intermediate cell, and appending the relative address to the reference address contents of the intermediate cell.

3,412,383

**AIR BEARING MAGNETIC HEAD MOUNTING APPARATUS**

John C. Sims, Jr., Sudbury, Mass., assignor, by mesne assignments, to Mohawk Data Sciences Corporation, East Herkimer, N.Y., a corporation of New York

Filed July 19, 1965, Ser. No. 473,065  
5 Claims. (Cl. 340-174.1)



A magnetic read-write head is mounted in operational relationship to a rotating memory disk by a three legged

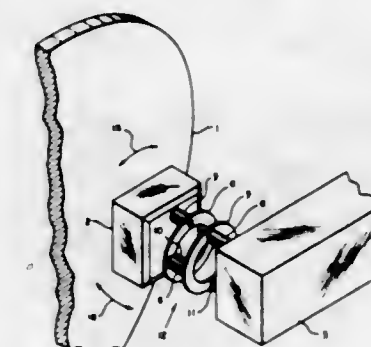
spider spring having an equal spring constant for all degrees of pivotal head flexure. In addition the head is suspended from a spring biased rocker arm which coacts with actuating mechanism to permit selective retraction of the head from its operative position. The three-point spider is provided with adjustment means for changing the angle at which the head meets the disk surface.

3,412,384

**MOUNTING FOR FLOATING MAGNETIC TRANSDUCER HEADS**

Robert E. Anderson, Saugerties, N.Y., assignor to Ferroxcube Corporation, a corporation of Delaware

Filed Aug. 27, 1965, Ser. No. 483,215  
3 Claims. (Cl. 340-174.1)



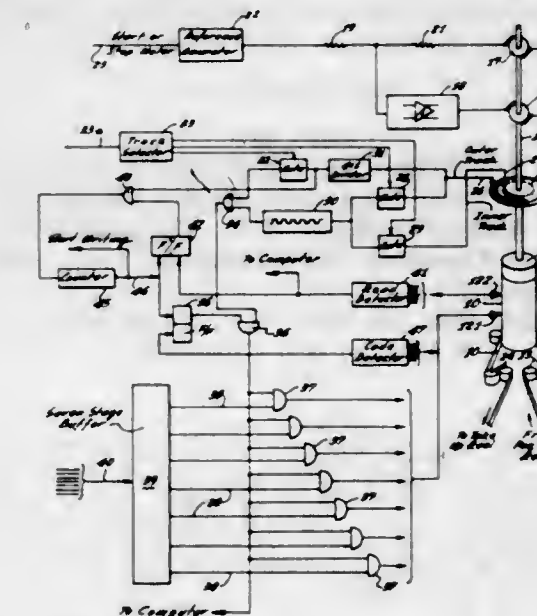
A gimbal support for a magnetic head is constructed with first and second flat circular springs, the first spring being mounted at a first point to the head and at a second point to the second spring, while the second spring is attached at a further point to a fixed mounting block.

3,412,385

**MAGNETIC TAPE TRANSDUCING CONTROL SYSTEM**

Ben C. Wang, Los Angeles, Paul Niquette, Palos Verdes Estates, and Martyn A. Lewis, Culver City, Calif., assignors to Scientific Data Systems, Inc., Santa Monica, Calif., a corporation of Delaware

Filed Nov. 12, 1964, Ser. No. 410,591  
10 Claims. (Cl. 340-174.1)



A digital, magnetic tape recorder is provided with a capstan clock to clock the recording of digital information independent from speed variations for constant bit densities on the tape. The clock pulses are counted for metering a gap in between recording of two records. The capstan is controlled by a motor having a high torque to inertia ratio and in accordance with an asymmetrical



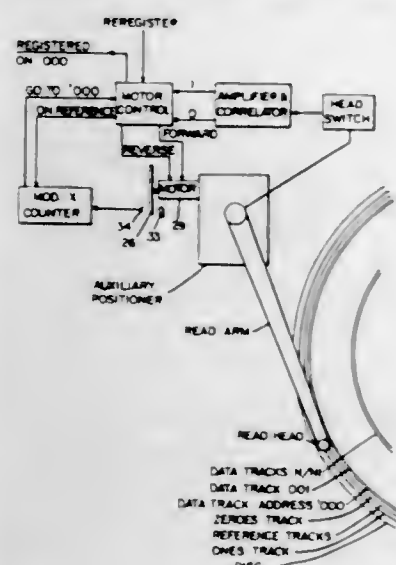
start-stop characteristic. The capstan clock, for example, can be a digital tachometer disk or a tachometer generator driving a VCO.

3,412,386

# **RANDOM ACCESS POSITIONING MEANS FOR A MAGNETIC DISC FILE**

John Handley, Coulsdon, England, and John C. Sims, Jr., Sudbury, Mass.; said Sims assignor, by mesne assignments, to Mohawk Data Sciences Corporation, East Herkimer, N.Y., a corporation of New York  
Original application Aug. 23, 1965, Ser. No. 481,736.  
Divided and this application Jan. 28, 1966, Ser. No. 523,586

Claims priority, application Great Britain, Sept. 1, 1964, 35,710/64  
13 Claims. (Cl. 340—174.1)



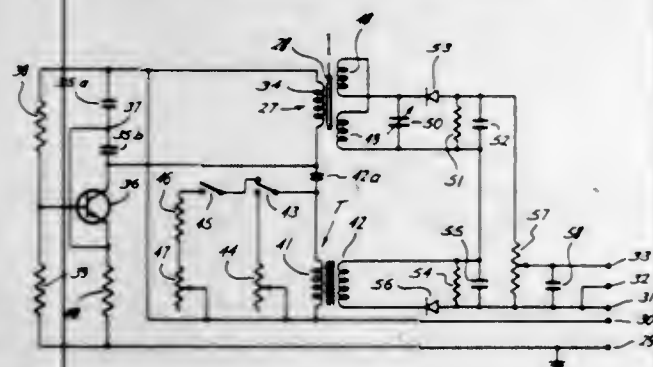
Data tracks on a magnetic disk are accessed by a read head which is adapted to be periodically realigned with the data tracks by auxiliary positioning means which, while the normal positioning means remain stationarily referenced to a predetermined data track, drive the head until it is precisely centered on a reference track located a predetermined distance from the predetermined data track. After the reference track has been accessed, circuit means automatically drive the head back through the predetermined distance to put it over the data track, whereupon the auxiliary positioning means are disabled and the normal positioning means are reactivated.

3,412,387

# **MOTION RESPONSIVE DIFFERENTIAL TRANSFORMER TRANSDUCER SYSTEM**

Huntly D. Millar, Houston, Tex., assignor to E. & M. Instrument Company, Inc., Houston, Tex., a corporation of Texas

Filed Feb. 18, 1965, Ser. No. 433,735  
9 Claims. (Cl. 340—199)



A transducer utilizing a differential transformer with a movable armature wherein the armature is displaced a sufficient distance to avoid entering its null or centered

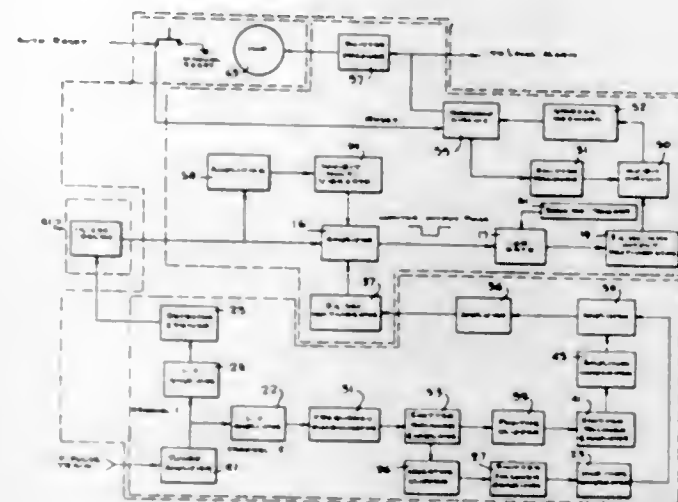
position, and includes a partitioned Bourdon tube which may be connected to the movable armature when a fluid pressure system is connected to the transducer.

3,412,388

# **FREQUENCY MONITOR**

George R. Barton, Duneden, and George W. Pate, Jr., Clearwater, Fla., assignors to the United States of America as represented by the Secretary of the Army and/or the Administrator of the Federal Aviation Agency

Filed July 8, 1965, Ser. No. 470,653  
3 Claims. (Cl. 340—248)



1. A system for monitoring the deviation from a center frequency comprising:

- a first channel for passing an input signal;
- a second channel in parallel with the first channel including means for blocking on-center frequency input energy and passing off-center frequency input energy;
- means for storing said first channel output signals at a storage level;
- means for inhibiting said first channel output with the off-center frequency energy from said second channel;
- a threshold circuit producing a threshold level and connected to said means for storing first channel output signals;
- an alarm connected to the output of said threshold circuit; and
- means for activating said alarm when said storage level falls below the threshold level.

3,412,389

# **COMPARATOR ARRANGEMENT**

Carroll M. Barrack, Pikesville, Md., and Wilbur A. Visser, Fort Washington, Pa., assignors to AAI Corporation, Cockeysville, Md., a corporation of Maryland  
Continuation of applications Ser. No. 213,713, July 31, 1962, and 490,776, Sept. 17, 1965. This application Dec. 8, 1966, Ser. No. 632,116

6 Claims. (Cl. 340—248)

1. Threshold ratio comparator apparatus for comparing and indicating the relationship between a pair of applied signals which differ in amplitude, comprising:

- a computer device having either positive or negative output as a function of the ratio of two signal inputs thereto being above or below a selected threshold ratio value;

said computer device comprising:

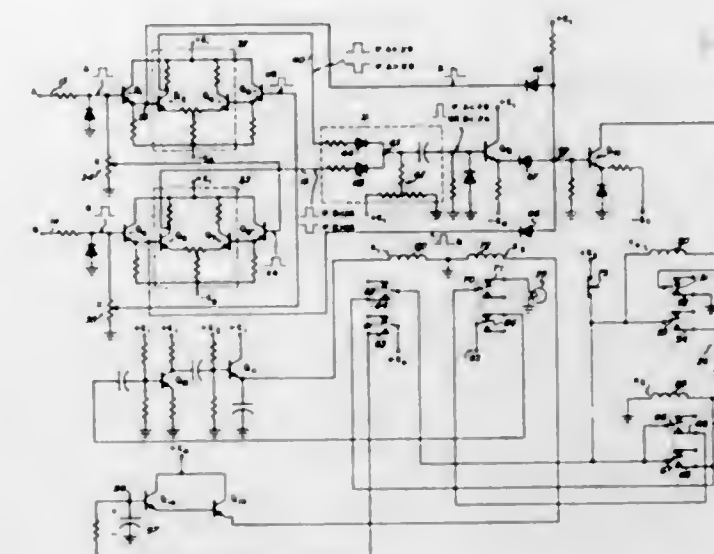
- first and second differencing devices each having first and second input leads and an output,
- first and second voltage dividers,

said first voltage divider being operatively connected between said first input lead of said first differencing device and said second input lead of said second differencing device,

said second voltage divider being operatively connected between said first input lead of said second differencing device and said second input lead of said first differencing device;

polarity-sensing means responsive to the output of said computer device and effective to produce a signal when an input thereto from said computer device has a selected polarity, said polarity-sensing means comprising:

an AND device having a plurality of input means and adapted to produce an output signal only when the signals applied to the input means have the same polarity,



said first inputs to said differencing devices being operatively connected to respective ones of said input means of said AND device,

an OR device adapted to produce a signal when an input thereto from said computer device has a selected polarity and having an output operatively connected to a separate one of said input means of said AND device and a plurality of input means,

said outputs from said differencing devices being operatively connected to respective ones of said input means of said OR device, and

indicator means responsive to signals from said polarity-sensing means.

3,412,390

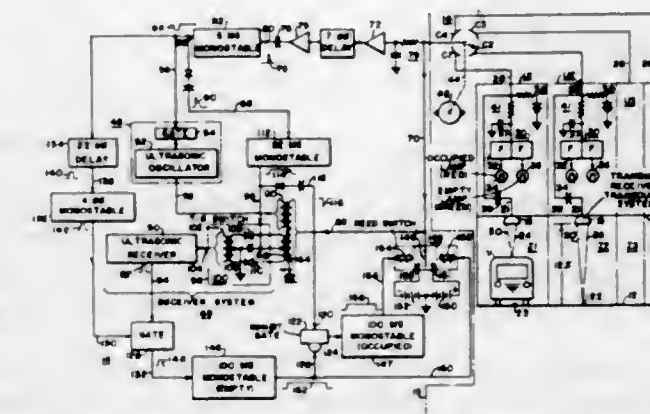
# **ECHO RANGING SYSTEM FOR MONITORING PLURALITY OF DETECTION ZONES TO DETERMINE PRESENCE OR ABSENCE OF OBJECTS**

Arthur Nelkin and Frederick G. Gell, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 14, 1965, Ser. No. 496,070  
8 Claims. (Cl. 340—280)

An echo ranging system is disclosed for monitoring a plurality of detection zones to determine the presence or absence of objects. Each detection zone is equipped with a transmit-receive ultrasonic transducer system directed toward a fixed reflecting surface with each of the detecting zones being monitored to determine the presence or absence in any zone of an object between the transducer system and the fixed reflecting surface. Central interrogation controlled apparatus is provided with an oscillator and a detector for detecting the electrical output status of the transducer system. This apparatus is periodically con-

nected by a commutator to each zone in sequence for a dwell time during which the oscillator energizes the transducer system to provide an ultrasonic output. The detector detects the electrical output status of the trans-



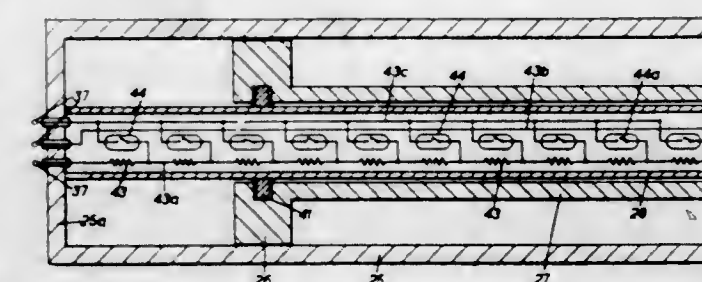
ducer system and in accordance therewith an "occupied" or an "empty" signal is produced and supplied to an indicator which indicates the presence or absence of an object in the detection zone under surveillance.

3,412,391

# **PRESSURE-FLUID-OPERATED DEVICES AND MEANS FOR INDICATING THE CONDITION THEREOF**

Richard Ward, Worsley, England, assignor to Gullick Limited, Wigan, Lancashire, England, a company of Great Britain

Filed Oct. 15, 1965, Ser. No. 496,264  
Claims priority, application Great Britain, Oct. 31, 1964, 44,499/64; Jan. 29, 1965, 3,990/65  
7 Claims. (Cl. 340—282)



A self-advancing mine roof support having a hydraulic ram member for advancing it and at least one hydraulically extensive prop member for securing it between floor and roof. The ram member or the prop member or both have means for indicating, at a remote station, their extent of extension and retraction.

3,412,392

# **POTENTIAL LEVEL INDICATING CIRCUIT**

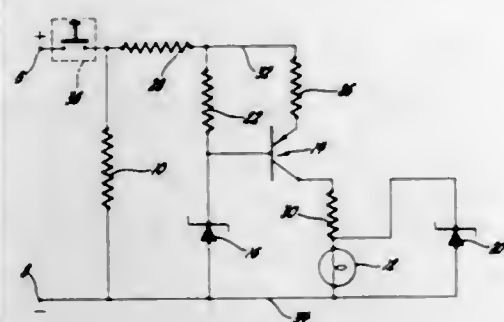
Richard L. Jenkins, Kenneth S. Vogt, and J. Dane Ride-nour, Kokomo, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Apr. 7, 1965, Ser. No. 446,306  
2 Claims. (Cl. 340—248)

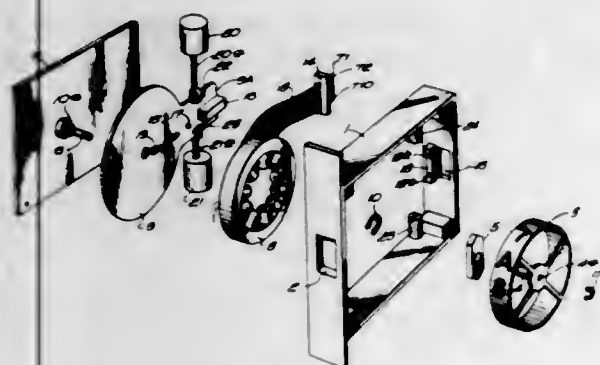
A potential level indicating circuit which provides for the protection of the indicating device against destruction with overpotential conditions. The current carrying electrodes of a transistor and an indicating device, such as an electric lamp, are connected in series across the input circuit terminals. The base electrode of the transistor is connected to a circuit responsive to a first pre-selected potential magnitude for producing emitter-base current flow therethrough to trigger the transistor con-



ductive thereby completing an energizing circuit for the indicating device. Connected in parallel with the indicating device only is a second circuit responsive to a second



**3,412,393**  
**ELECTROMAGNETIC INDICATOR WHEEL STRUCTURE HAVING VARIABLE POSITION STATOR**  
John A. Watkins, Cheshire, Conn., assignor, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware  
Filed Jan. 16, 1968, Ser. No. 698,215  
7 Claims. (Cl. 340-378)

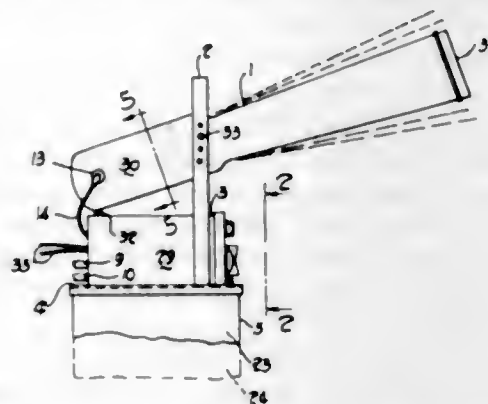


An indicator employs a rotor having a permanent magnet fixed to a drum on which symbols are marked. The symbols are arranged in two sets whose symbols alternate and any symbol can, by rotation of the drum, be presented in a window. The drum's position is governed by a stator which, when electrically energized, establishes a discretely oriented magnetic field with which the permanent magnet becomes aligned. The stator is pivotally mounted and an actuator turns the stator relative to the rotor whenever the indicator is commanded to display a symbol. A detent is arranged to hold the stator in either one of two fixed positions, the fixed position being determined by the last occurring command signals. Each set of symbols, to be displayable, requires the stator to be in a different one of the two fixed positions.

**3,412,394**  
**PHOTOCELL CONTROLLED PEST, BIRD, AND ANIMAL CHASER**  
Robert M. Lewis and Julius C. Strasbourger, Muncie, Ind.; Anne M. Strasbourger, administratrix of said Julius C. Strasbourger, deceased; said Lewis assignor to Anne M. Strasbourger, administratrix of Julius C. Strasbourger, deceased, Muncie, Ind.  
Filed Oct. 14, 1963, Ser. No. 316,020  
6 Claims. (Cl. 340-386)

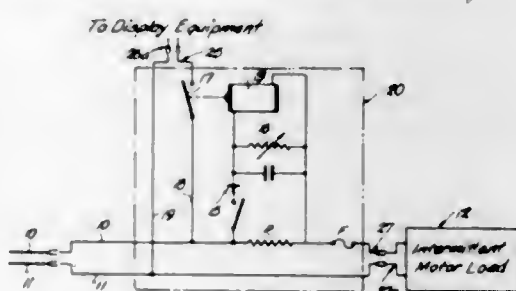
1. In a chaser of the class described, in combination, a chamber, first means to supply an explosive mixture thereto, second means to ignite said mixture, timing means to operate the first and second means at intervals,

and means to set timing means in operation including a photo-electric cell to initiate energization of the timing



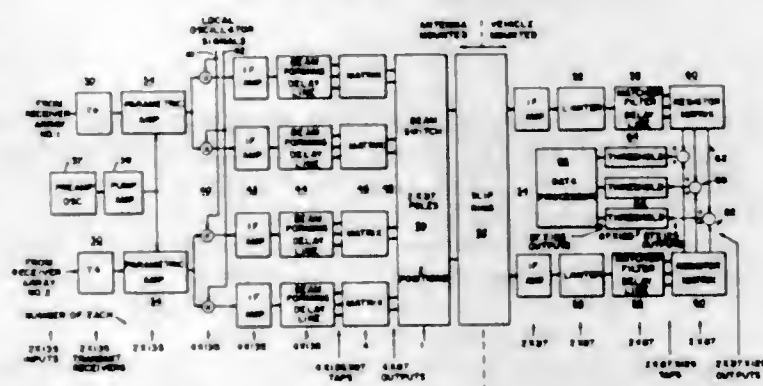
means when the light directed to the cell reaches a predetermined intensity.

**3,412,395**  
**CURRENT ACTUATED SWITCH FOR CASH REGISTER**  
Ralph E. Kiene, Jr., 3004 W. 71st, Prairie Village, Kans. 66208  
Filed Jan. 14, 1966, Ser. No. 520,557  
7 Claims. (Cl. 340-421)



This application relates to the operation of a display device connected to a cash register. The display device is connected to a supply source through relay contacts. The relay is operated in response to current being supplied to the motor of the cash register.

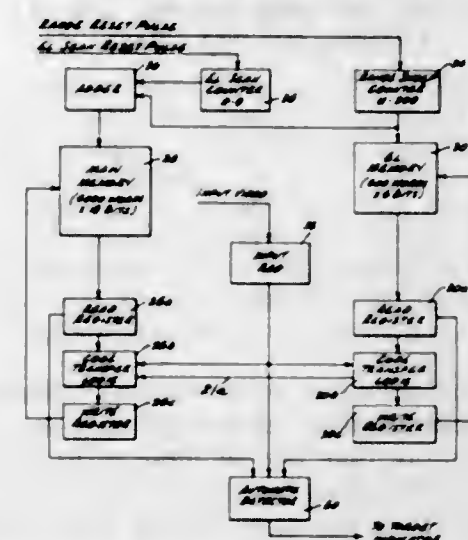
**3,412,396**  
**RECEIVER MECHANIZATION FOR APERTURE ADDED RADARS**  
David H. Mooney, Jr., Severna Park, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army  
Filed Oct. 31, 1966, Ser. No. 591,006  
9 Claims. (Cl. 343-5)



First and second mobile radar units each having a plurality of receiver channel chains each comprising a parametric amplifier connected to two mixers along with two different local oscillators so as to obtain two IF signals at the outputs of the mixers. The outputs of the mixers are fed through beam forming means and a matrix so as to provide signals on output wires of the radar system. A beam switch selects which set of receiver channel chains of back-to-back antennas is to be sent to filter delay lines,

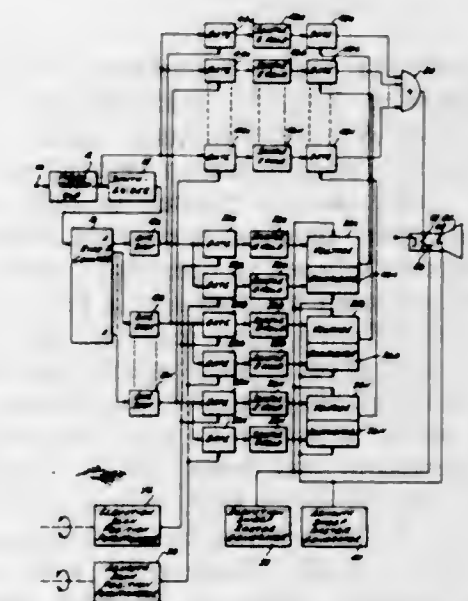
resistors, matrices, combining means, threshold means, and data processor to be processed.

**3,412,397**  
**VIDEO CORRELATOR AND AUTOMATIC DETECTOR FOR PENCIL BEAM RADAR**  
Norol T. Evans, San Pedro, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware  
Filed Feb. 1, 1967, Ser. No. 613,152  
11 Claims. (Cl. 343-5)



A video correlator, for use in a pencil beam radar receiving system. The correlator includes, a first memory storing coded video returns from range bins in a plurality of azimuth and elevation positions. A second memory which stores coded video returns from range bins in a plurality of elevations from the same azimuth position. The correlator also includes circuitry controlling the two memories to read out, in real time, the codes from range bins, associated with a range bin whose coded video returns are being received. The automatic detector utilizes the readout coded video returns, to automatically determine whether any of a plurality of code patterns is present, and to provide a target detection signal if any one of such patterns is present.

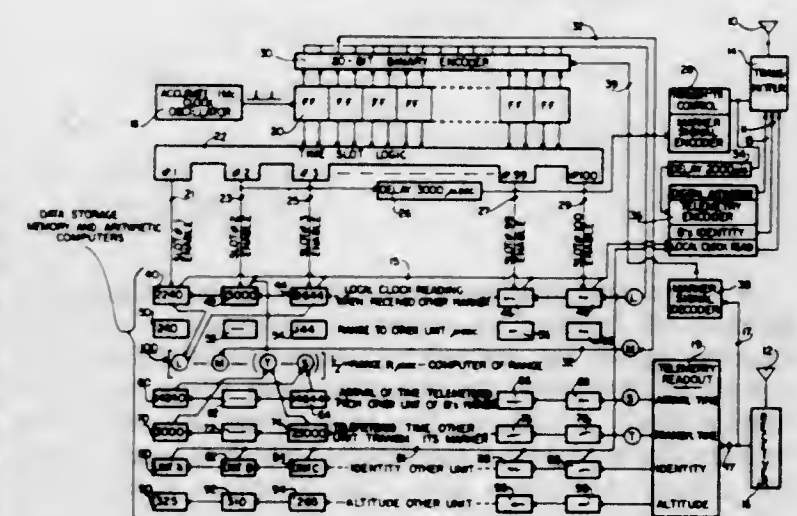
**3,412,398**  
**DISPLAY DEVICE WITH ELECTRONICALLY CONTROLLED PERSISTENCE**  
Donald E. Schrader, Canoga Park, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware  
Filed Aug. 14, 1967, Ser. No. 661,496  
8 Claims. (Cl. 343-5)



Positions of a sensing system scanning at a low information rate are represented by azimuth and elevation

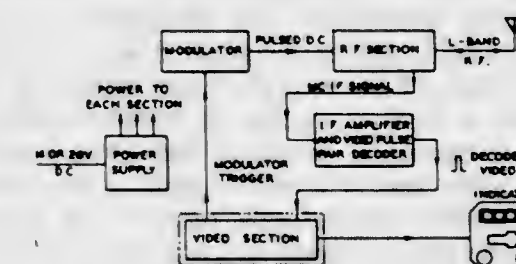
position voltage. A target generated by the system opens a gate and the target position is sampled and stored. This target, which is in the form of a voltage level, is stored and then compared to a raster rate sweep voltage. When the two voltages are coincident, a gate is opened allowing target return voltages to be gated to the grid of a cathode ray tube allowing the position of the target to be displayed at the raster rate. The target position is displayed as an intensified spot on the cathode ray tube screen and the amplitude of the target return controls the brightness of the spot. The position voltage is resampled each time the sensing system receives a target return so that the position of the target is continuously updated at the one or two second frame rate of the sensor system. The target is displayed at the raster rate and thus no flicker appears on the scope.

**3,412,399**  
**MOBILE UNIT RANGING SYSTEM**  
John P. Chisholm, Rte. 1, Koloa, Kauai, Hawaii 96756  
Filed Dec. 29, 1966, Ser. No. 605,854  
17 Claims. (Cl. 343-6.5)



A method and system for accurately determining range between plural units using pulse techniques and omnidirectional antennas, without requiring precise phase synchronization of time clocks in the various units, each unit transmitting its own marker signal at a unique moment in a recurring cycle, each marker signal being at the same time an interrogation of all other units and a reply to all other units, and each marker signal being followed by telemetered data addressed to specific other units for telling them how much delay occurred between the transmission of the present marker signal and the receipt of their specific marker signals.

**3,412,400**  
**METHOD AND APPARATUS FOR DIGITALLY MEASURING DISTANCE**  
John L. Aker, Olathe, Kans., assignor to King Radio Corporation, a corporation of Kansas  
Filed Aug. 24, 1966, Ser. No. 574,701  
31 Claims. (Cl. 343-7.3)



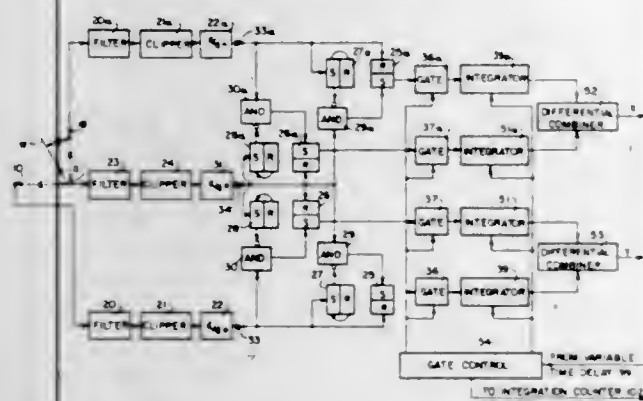
A digitally operated DME is adapted to transmit interrogation pulses and to receive replies from a ground



station transponder. The DME operates in either a search or a track mode by producing a Marker pulse representing an assumed time duration wherein a Return pulse would frequently occur for every interrogation pulse if the DME were at a distance that correlated to the respective pulse travel time duration. The time for production of the Marker pulse is digitally changeable by the use of two unidirectional counting registers until the ratio of reply pulses to interrogation pulses over a plurality of interrogations is at least a predetermined minimum.

3,412,401

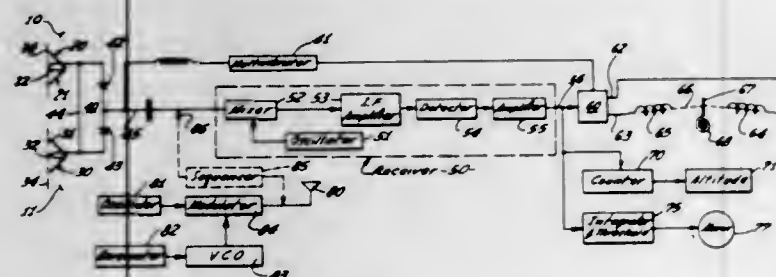
**RANGE AND BEARING MEASUREMENT SYSTEM**  
Ernest A. Keller, Wilmette, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois  
Filed Jan. 30, 1967, Ser. No. 612,570  
10 Claims. (Cl. 343-13)



A range and bearing measurement system using persistency of bearing as a range measurement criterion. Bearing signals are derived by integration of the received signals to determine the direction from which an information signal is coming. The sum of the squares of the bearing signals forms a merit signal which is used to time the arrival of a return echo. The difference between the values of successive merit signals above a threshold signal is used to determine the start of the integrating periods.

3,412,402

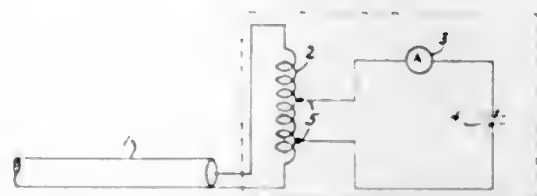
**WARNING SYSTEM FOR VEHICLES**  
John R. Beckwith, Pacific Palisades, Calif., assignor to Packard-Bell Electronics Corporation, Los Angeles, Calif., a corporation of California  
Filed Sept. 1, 1966, Ser. No. 576,655  
3 Claims. (Cl. 343-112)



A warning anti-collision system for aircraft is disclosed in which each aircraft is equipped with an omnidirectionally broadcasting transmitter. The transmitted signal has particular frequency and is modulated with information concerning altitude of the aircraft. Each aircraft is further equipped with a receiver system in which receiving antennas are symmetrically arranged and have asymmetrically located lobes and at a small angle to the boresight. The receiver circuit alternately receives the signals as picked up by the two antennas and provides an indication of the relative strength and of the altitude of the transmitter from which the signal is received. A particular warning signal is provided if the signal received exceeds

a predetermined limit. Additional equipment responds to similarity of the signals as received and provides comparison of altitude indications of the received signal and of the receiving aircraft to provide a special alarm in case there is a collision course.

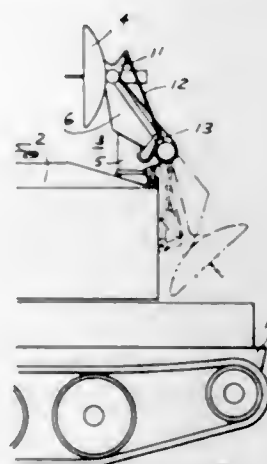
**3,412,403**  
**RADIATING TUNED INDUCTANCE COIL ANTENNA**  
Carl I. Peters, Jr., 307-A Fowler Ave., China Lake, Calif. 93555  
Filed Dec. 22, 1964, Ser. No. 420,373  
1 Claim. (Cl. 343-748)



This invention defines a novel antenna utilizing an inductor of a predetermined number of turns in which one or a group of more than one of these turns are shunted by a capacitor which may be variable and an R-F meter being in series with the capacitor in one embodiment thereof.

**3,412,404**  
**SCANNING DISH REFLECTOR HAVING A STOWED POSITION**

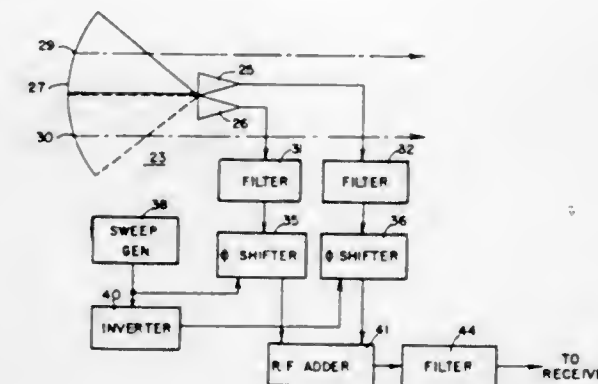
Erik Arne Bergling, Karlskoga, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a Swedish company  
Filed Feb. 24, 1966, Ser. No. 529,869  
Claims priority, application Sweden, Mar. 2, 1965, 2,704/65  
7 Claims. (Cl. 343-762)



1. A radar antenna system comprising a reflector, a collapsible supporting stand for said reflector including a lower reflector stand member mounted upon a supporting base member for rotation about a vertical axis and an upper reflector stand member pivoted to said lower reflector stand member about a horizontal folding axis so as to be swingable between an operating position above said lower reflector stand member and a folded position beside said lower reflector stand member, said reflector being pivoted in said upper reflector stand member about a horizontal elevation axis parallel to said folding axis, a rotation drive motor mounted in said supporting base member and coupled to said lower reflector stand member for rotation thereof about said vertical rotation axis, an elevation drive motor mounted in said supporting base member, a tubular, axially displaceable rod extending from said base member vertically upwards inside said lower reflector stand member coaxially to said vertical rotation axis so as to have its lower end in said base

member and its upper end in said lower reflector stand member, said elevation drive motor being coupled to said lower end of said tubular rod for axially displacing said rod, said upper end of said tubular rod being coupled to a first lever attached to a horizontal shaft mounted for rotation in said lower reflector stand member parallel to said folding axis, a second lever attached to said shaft being coupled to one end of a connecting rod, the opposite end of said connecting rod being connected to said reflector in a point located eccentrically with respect to said horizontal elevation axis.

**3,412,405**  
**SIDE LOBE RESPONSE REDUCING SYSTEM**  
Raymond E. Crotty, Oak Park, and Clinton G. Goss, Glenview, Ill., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois  
Filed Sept. 14, 1964, Ser. No. 396,127  
4 Claims. (Cl. 343-777)



Targets positioned on the main axis of a radar antenna are distinguished from targets off the main axis by continuously shifting the phase center of the antenna in a direction normal to the main axis of the antenna. By this means a Doppler shift is developed in signals propagated in directions other than along the main axis. By the use of filters the Doppler shifted frequencies are rejected so that signals propagated along the main axis are distinguished from signals propagated in other directions.



# DESIGNS

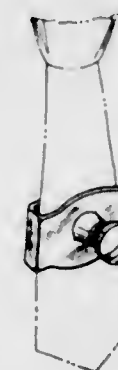
NOVEMBER 19, 1968

212,731  
SLIPPER

Winalee G. Mitchell, % Principle Business Enterprises, Inc., 205 Farnsworth Road, Waterville, Ohio 43566  
Filed Apr. 17, 1967, Ser. No. 6,732  
Term of patent 14 years  
(Cl. D2—268)



212,732  
CLASP FOR A NECKTIE OR THE LIKE  
John L. Buchanan, Royal Oak, Mich.  
(4912 Ogden Ave., Detroit, Mich. 48210)  
Filed Dec. 6, 1967, Ser. No. 9,654  
Term of patent 14 years  
(Cl. D2—428)



212,733  
APPLIQUE EMBLEM OR SIMILAR ARTICLE  
Richard E. Thompson, San Diego, Calif., assignor to The San Diego Hockey Club, San Diego, Calif., a corporation of California  
Filed Nov. 9, 1966, Ser. No. 4,663  
Term of patent 14 years  
(Cl. D3—9)



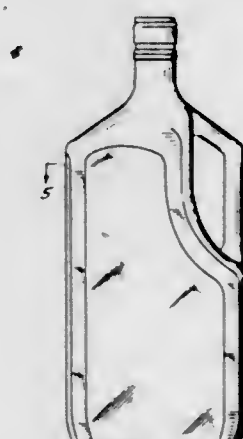
212,734  
JUG

John R. Osborn, New York, N.Y., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia  
Filed Sept. 7, 1967, Ser. No. 8,514  
Term of patent 14 years  
(Cl. D9—39)



212,735  
JUG

John R. Osborn, New York, N.Y., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia  
Filed Sept. 7, 1967, Ser. No. 8,516  
Term of patent 14 years  
(Cl. D9—39)

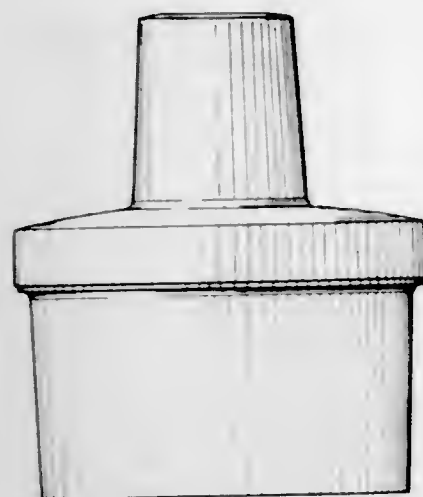




212,736

**CONTAINER FOR A REAGENT DISC DISPENSER**  
Norbert T. Kuypers, Warren, Mich., assignor to Difco Laboratories, Incorporated, Detroit, Mich., a corporation of Michigan

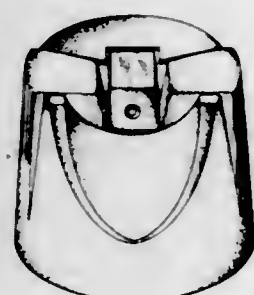
Filed Aug. 16, 1966, Ser. No. 3,487  
Term of patent 14 years  
(Cl. D9—218)



212,737

**DISPENSER TOP FOR A PRESSURIZED CAN**  
Alfred W. Wakeman, Durham, Conn., assignor to The Risdon Manufacturing Company, Naugatuck, Conn., a corporation of Connecticut

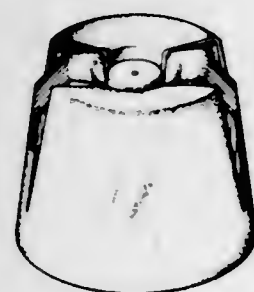
Filed Jan. 23, 1968, Ser. No. 10,282  
Term of patent 14 years  
(Cl. D9—258)



212,738

**DISPENSER TOP FOR A PRESSURIZED CAN**  
Alfred W. Wakeman, Durham, Conn., assignor to The Risdon Manufacturing Company, Naugatuck, Conn., a corporation of Connecticut

Filed Jan. 23, 1968, Ser. No. 10,283  
Term of patent 14 years  
(Cl. D9—258)



212,739

**PACKAGING FORM FOR A COLLAR OR THE LIKE**  
Myron S. Strasser, Jr., 512 Bradford St., Albany, N.Y. 12206, and Samuel A. Strasser, 124 Salisbury Road, Delmar, N.Y. 12054

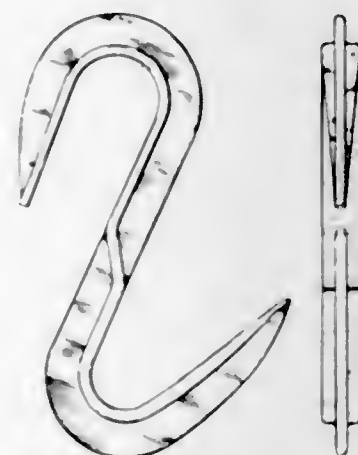
Filed Jan. 9, 1967, Ser. No. 5,342  
Term of patent 14 years  
(Cl. D9—294)



212,740

**MEAT HOOK**

Allan G. Serle, Union, N.J., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware  
Filed Nov. 8, 1967, Ser. No. 9,337  
Term of patent 14 years  
(Cl. D11—1)

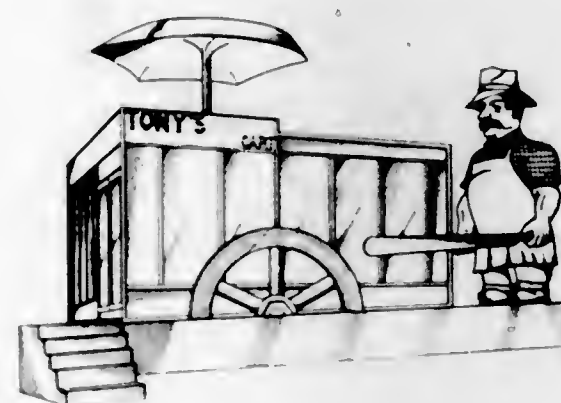


212,741

**DINER**

Vincent F. Giannotti, 6 Duval Court, Fairfield, N.J. 07470; Ralph Manno, 432 Ridge Road, Cedar Grove, N.J. 07009; and Giro R. Manno, 12 Manor Road, Livingston, N.J. 07039

Filed Mar. 1, 1967, Ser. No. 6,006  
Term of patent 14 years  
(Cl. D13—1)



212,742

**BUILDING**

Lawrence A. Long, Camdenton, Mo., assignor to Hodgdon Shooting Ranges, Inc., a corporation of Kansas  
Filed Sept. 18, 1967, Ser. No. 8,616

Term of patent 14 years  
(Cl. D13—1)

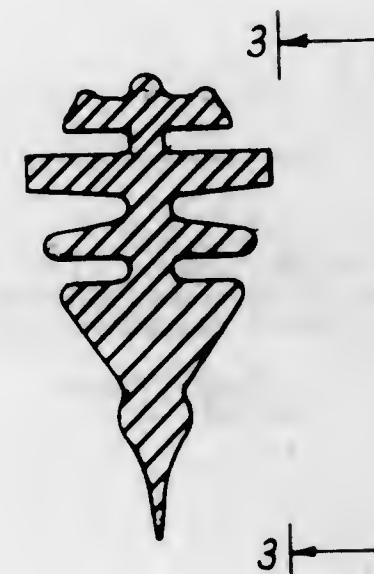


212,743

**WINDSHIELD WIPER ELEMENT**

Harry Roberts, 639 Bond Court, Merrick, N.Y. 11566  
Filed Jan. 29, 1968, Ser. No. 10,348

Term of patent 14 years  
(Cl. D14—6)



212,745

**DISPOSABLE ULTRASONIC PIPET WASHER-RINSE**

Sherman S. Fishman, P.O. Box 321, San Francisco, Calif. 94101  
Filed May 12, 1967, Ser. No. 7,093

Term of patent 3½ years  
(Cl. D16—2)



212,746

**ULTRASONIC PIPET WASHER-RINSE**

Sherman S. Fishman, P.O. Box 321, San Francisco, Calif. 94101  
Filed May 12, 1967, Ser. No. 7,096

Term of patent 3½ years  
(Cl. D16—2)

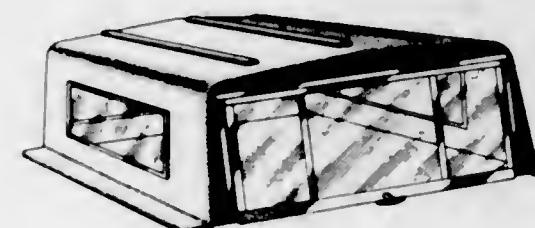


212,744

**COVER FOR A PICK-UP TRUCK BED**

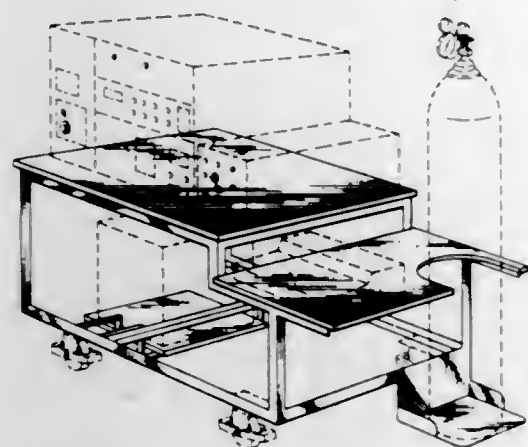
William T. Keurst, Miami, Fla. (% Scott Products Corp., 3399 Ponce de Leon Blvd., Coral Gables, Fla. 33134)

Filed Apr. 20, 1967, Ser. No. 6,767  
Term of patent 14 years  
(Cl. D14—27)





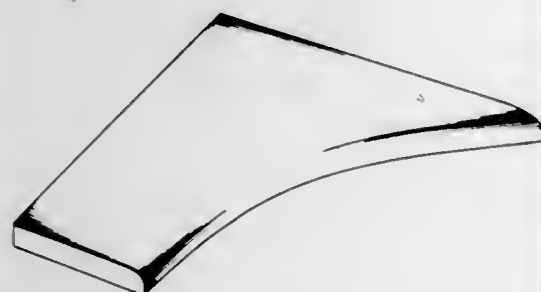
**212,747**  
**PORTABLE LABORATORY TABLE FOR ANALYTICAL INSTRUMENTS**  
 John P. Price, Asheville, N.C., assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware  
 Filed June 26, 1967, Ser. No. 7,587  
 Term of patent 14 years  
 (Cl. D16—2)



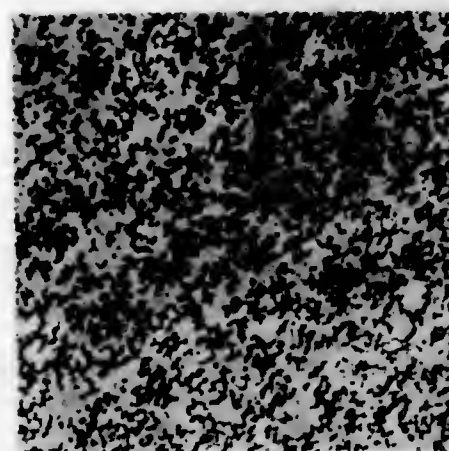
**212,748**  
**FIRE EXTINGUISHER OR SIMILAR ARTICLE**  
 Mark E. Balmes, Sr., Northbrook, Ill., assignor to General Fire Extinguisher Corporation, Northbrook, Ill., a corporation of Delaware  
 Filed Oct. 23, 1967, Ser. No. 9,115  
 Term of patent 14 years  
 (Cl. D16—2)



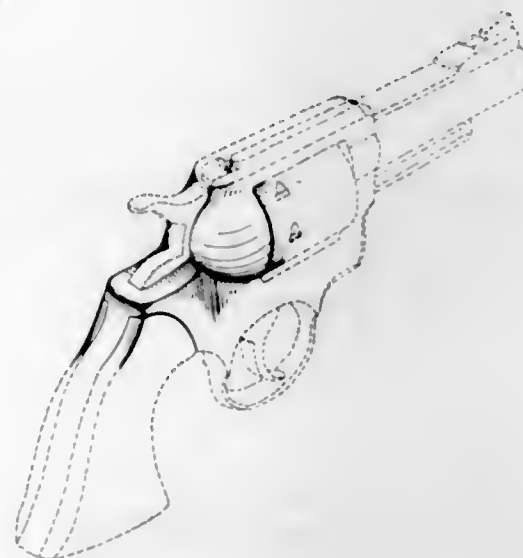
**212,749**  
**CERAMIC TRIM TILE**  
 Joseph Stephen Wheeler, Jr., San Diego, Calif. (814 S. Gilbuck, Anaheim, Calif. 92802)  
 Filed Feb. 17, 1967, Ser. No. 5,847  
 Term of patent 14 years  
 (Cl. D18—2)



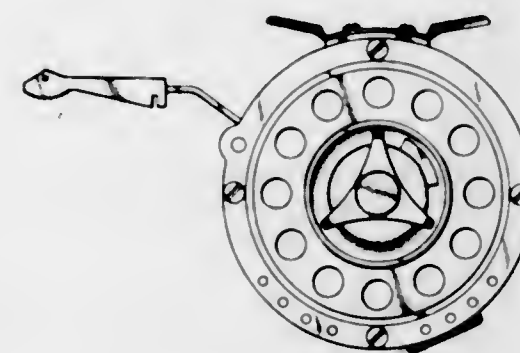
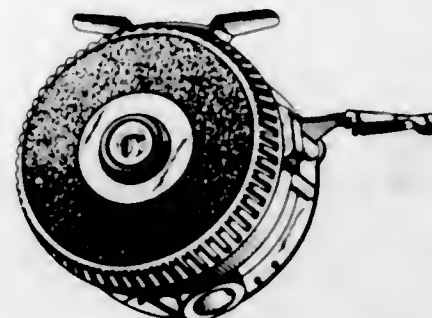
**212,750**  
**CEILING TILE OR SIMILAR ARTICLE**  
 Donald F. Claussen, Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania  
 Filed May 17, 1967, Ser. No. 7,169  
 Term of patent 14 years  
 (Cl. D18—2)



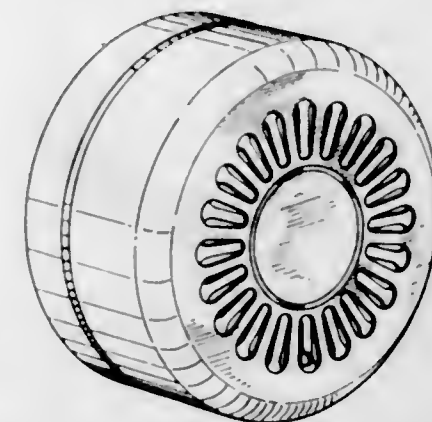
**212,751**  
**REVOLVER**  
 William B. Ruger, Southport, Conn. 06490  
 Continuation-in-part of design application Ser. No. 2,589, June 7, 1966. This application May 8, 1967, Ser. No. 8,197  
 Term of patent 7 years  
 (Cl. D22—1)



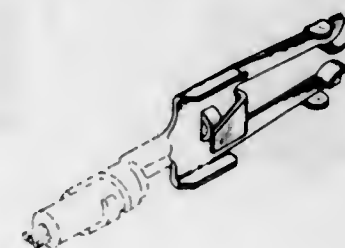
**212,752**  
**FLY CASTING FISHING REEL**  
 Maurice Jacquemin, Vieux Pont, Cluses, France, assignor to Ets. Carpano & Pons, Cluses, France, a French company  
 Filed Feb. 17, 1967, Ser. No. 5,858  
 Claims priority, application France Aug. 26, 1966  
 Term of patent 14 years  
 (Cl. D22—25)



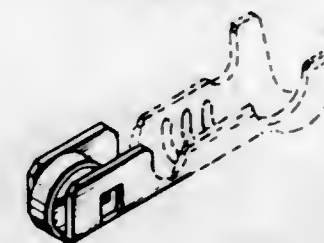
**212,753**  
**DEODORANT CONTAINER**  
 Samuel Tughan, Islington, Ontario, Canada, assignor to G. H. Wood Company Limited, Toronto, Ontario, Canada, a company  
 Filed June 29, 1967, Ser. No. 7,650  
 Claims priority, application Canada Apr. 26, 1967  
 Term of patent 14 years  
 (Cl. D23—150)



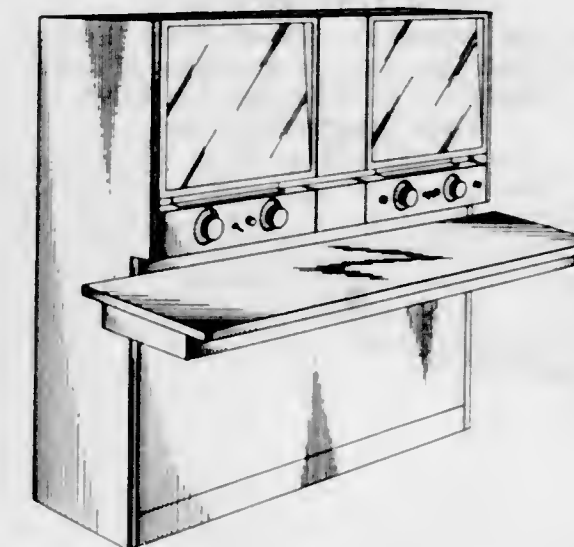
**212,754**  
**ELECTRICAL CONNECTOR**  
 Robert John Kinkaid, New Cumberland, Pa., assignor to AMP Incorporated, Harrisburg, Pa.  
 Filed July 14, 1967, Ser. No. 7,808  
 Term of patent 14 years  
 (Cl. D26—1)



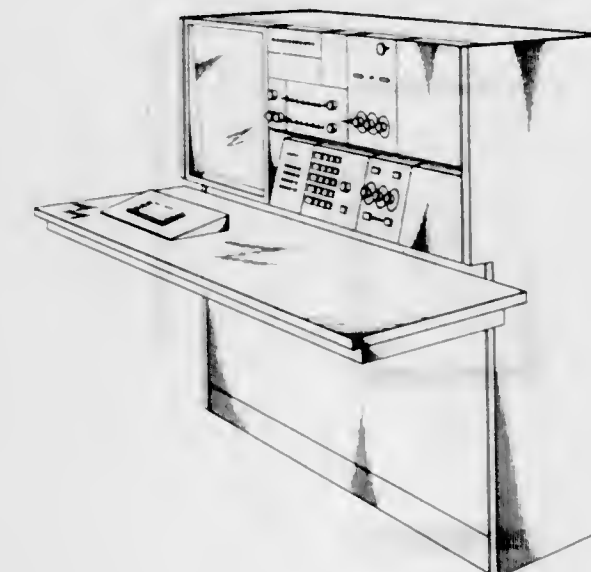
**212,755**  
**ELECTRICAL TERMINAL**  
 George Sylvester Reider, Jr., Highspire, Pa., assignor to AMP Incorporated, Harrisburg, Pa.  
 Filed Sept. 21, 1967, Ser. No. 8,683  
 Term of patent 14 years  
 (Cl. D26—1)



**212,756**  
**DATA PROCESSING CONSOLE OR SIMILAR ARTICLE**  
 Arnold M. Davis, Poughkeepsie, William S. Sheppley, Jr., Rhinebeck, and Joseph F. Talerico, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
 Filed Jan. 2, 1968, Ser. No. 10,008  
 Term of patent 14 years  
 (Cl. D26—5)



**212,757**  
**DATA PROCESSING CONSOLE OR SIMILAR ARTICLE**  
 Arnold M. Davis, Poughkeepsie, William S. Sheppley, Jr., Rhinebeck, and Joseph F. Talerico, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
 Filed Jan. 2, 1968, Ser. No. 10,009  
 Term of patent 14 years  
 (Cl. D26—5)



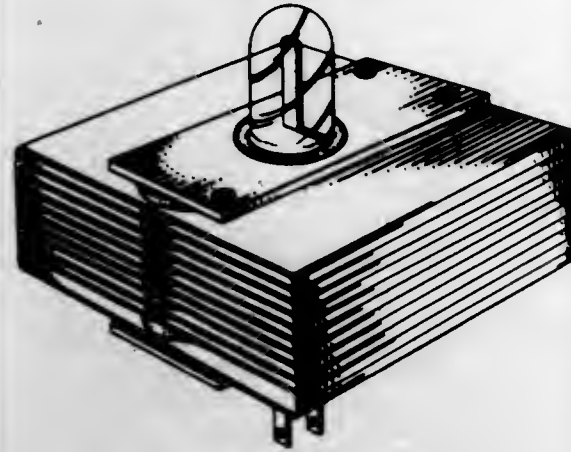


212,758

**MAGNETRON DEVICE**

Benjamin V. Valles, San Jose, Calif., assignor to Litton Precision Products, Inc., San Carlos, Calif., a corporation of Delaware

Filed Feb. 16, 1968, Ser. No. 10,610  
Term of patent 14 years  
(Cl. D26-8)

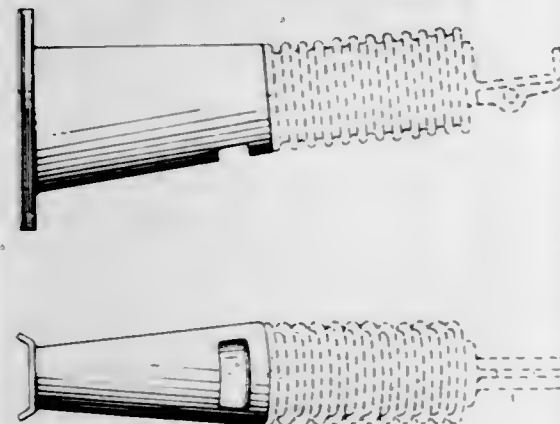


212,759

**HIGH VOLTAGE INSULATOR MOUNTING BRACKET**

Charles Don Snodgrass, Orinda, Calif., assignor to Kearney-National, Inc., a corporation of Delaware

Filed Dec. 15, 1967, Ser. No. 9,799  
Term of patent 14 years  
(Cl. D26-9)

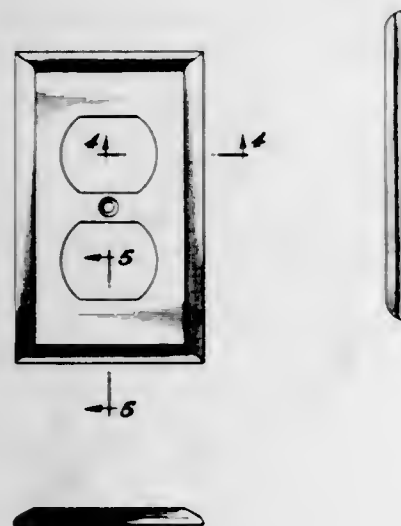


212,760

**ELECTRICAL WALL PLATE**

Edward G. Bordner, Los Angeles, Calif., assignor, by mesne assignments, to Sierra Electric, Inc., Gardena, Calif., a corporation of Wisconsin

Filed Sept. 5, 1967, Ser. No. 8,497  
Term of patent 14 years  
(Cl. D26-13)

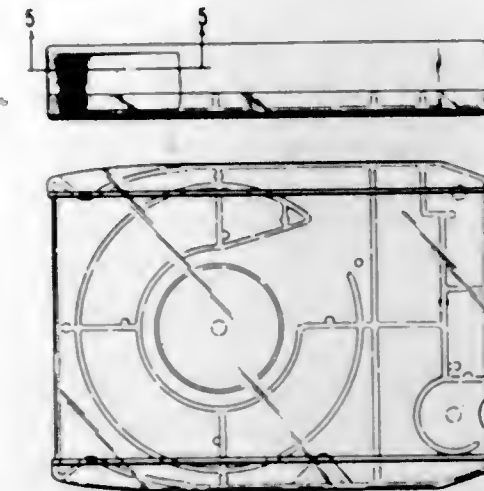


212,761

**MAGNETIC TAPE CARTRIDGE**

Anthony Gelardi, Cranston, R.I., and Gregory Mathus, Cambridge, Mass., assignors, to The Morningstar Corporation, Cambridge, Mass., a corporation of Massachusetts

Filed Nov. 15, 1967, Ser. No. 9,429  
Term of patent 14 years  
(Cl. D26-14)

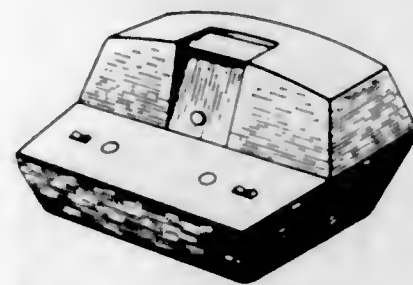


212,762

**TELEPHONE COUPLER**

Charles Jerabek, Bayshore, N.Y., assignor to Vernitron Corporation, Farmingdale, N.Y., a corporation of New York

Filed Nov. 24, 1967, Ser. No. 9,547  
Term of patent 14 years  
(Cl. D26-14)



212,763

**RECTIFIER UNIT FOR ELECTRIC SHAVERS**

Henricus Franciscus Theresia Schellens, Drachten, Netherlands, assignor to North American Phillips Co., Inc.

Filed May 31, 1966, Ser. No. 2,598  
Claims priority, application Switzerland Dec. 1, 1965  
Term of patent 14 years  
(Cl. D26-15)

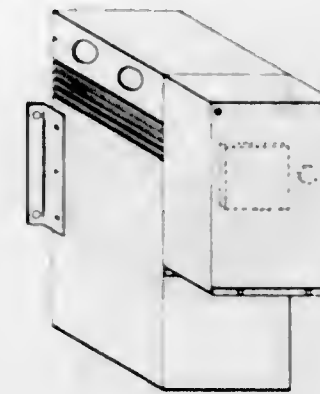


212,764

**BATTERY CHARGER AND ELIMINATOR**

Charles R. Moore, 2118 S. Franklin St., South Bend, Ind. 46613

Filed Aug. 30, 1967, Ser. No. 8,437  
Term of patent 14 years  
(Cl. D26-15)



212,765

**WRITING TABLE**

Ernst Moeckl, Stuttgart-Wangen, Germany, assignor to Firma Lubke KG., Rheda, Westphalia, Germany, a corporation of Germany

Filed Aug. 4, 1967, Ser. No. 8,133  
Term of patent 14 years  
(Cl. D33-14)



212,766

**AMUSEMENT RIDE CAR**

Robert H. Gurr, Newport Beach, Calif., assignor to Wed Enterprises, Inc., Glendale, Calif., a corporation of California

Filed Nov. 6, 1967, Ser. No. 9,283  
Term of patent 14 years  
(Cl. D34-5)

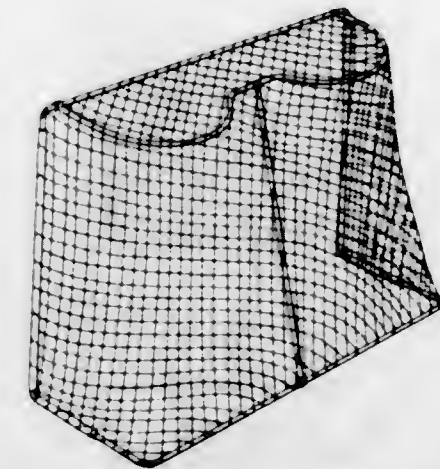


212,767

**HOCKEY GOAL**

Arnold Frischman, 43 Ridgedale Drive, Toronto, Ontario, Canada, and Mathew Doswell, Toronto, Ontario, Canada; said Doswell assignor to said Frischman

Filed Apr. 3, 1967, Ser. No. 6,501  
Claims priority, application Canada Feb. 3, 1967  
Term of patent 14 years  
(Cl. D34-5)

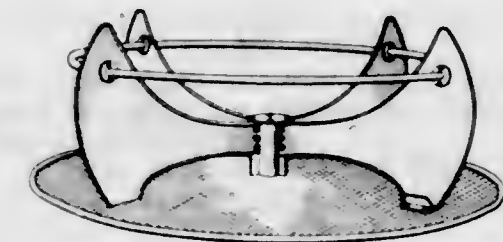


212,768

**RIDER MERRY-GO-ROUND OR SIMILAR ARTICLE**

Ronald W. Zick, Torrance, Calif., assignor to Jamison, Inc., Torrance, Calif., a corporation of California

Filed Dec. 18, 1967, Ser. No. 9,827  
Term of patent 14 years  
(Cl. D34-5)

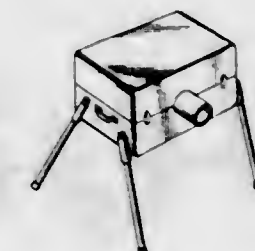


212,769

**PORTABLE BALL PITCHING MACHINE**

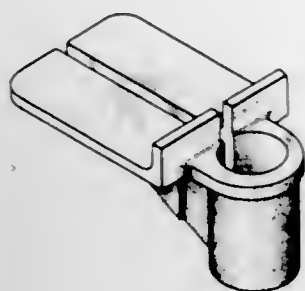
Carl E. Samuels, 18121 Napa St., Northridge, Calif. 91324

Filed Feb. 28, 1968, Ser. No. 10,768  
Term of patent 14 years  
(Cl. D34-5)

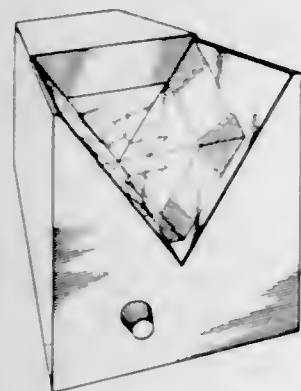




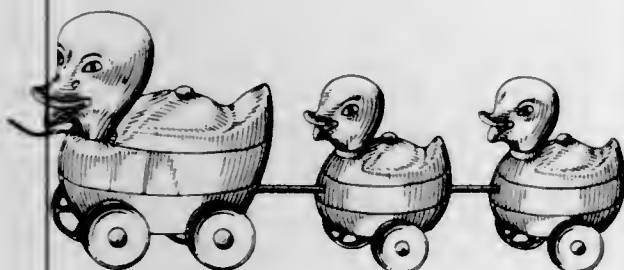
212,770  
**STILT FOOTREST**  
 Robert J. Egan, 123 W. Ward St.,  
 Urbana, Ohio 43078  
 Filed Oct. 30, 1967, Ser. No. 9,207  
 Term of patent 14 years  
 (Cl. D34-14)



212,771  
**KALEIDOSCOPE**  
 Joseph Gordon, 220 S. Carondelet St.,  
 Los Angeles, Calif. 90057  
 Filed Dec. 13, 1967, Ser. No. 9,766  
 Term of patent 3½ years  
 (Cl. D34-15)



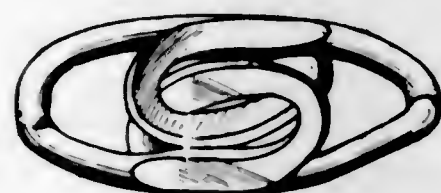
212,772  
**TOY TRAIN OF DUCKS**  
 Joseph Daniel Simon, 22 Midwood Cross,  
 East Hills, N.Y.  
 Filed Apr. 4, 1968, Ser. No. 11,298  
 Term of patent 7 years  
 (Cl. D34-15)



212,773  
**FACE FOR A TIMEPIECE**  
 George W. Booth, P.O. Box 452,  
 Greenville, R.I. 02828  
 Filed Sept. 11, 1967, Ser. No. 8,547  
 Term of patent 14 years  
 (Cl. D42-1)



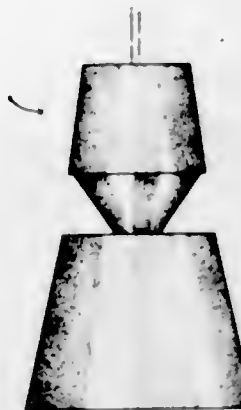
212,774  
**DECORATIVE CHAIN LINK**  
 Salvatore Minicucci, North Providence, R.I., assignor to  
 Prochain, Inc., a corporation of Rhode Island  
 Filed Apr. 11, 1967, Ser. No. 6,639  
 Term of patent 14 years  
 (Cl. D45-16)



212,775  
**LAMP**  
 Boris B. Levitt, New York, N.Y., assignor to W. Kay  
 Company, Inc., New York, N.Y., a corporation of  
 New York  
 Filed Feb. 5, 1968, Ser. No. 10,426  
 Term of patent 14 years  
 (Cl. D48-20)



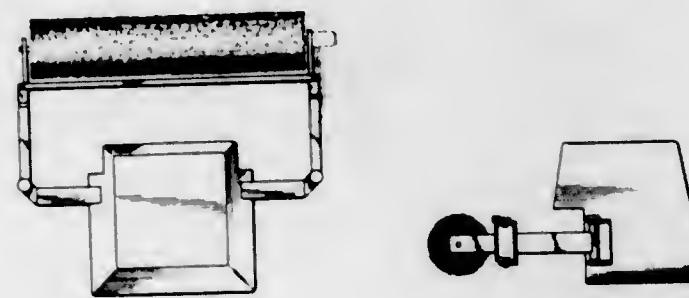
212,776  
**LIGHTING FIXTURE**  
 Robert J. Renaud, Topsfield, Mass., assignor to Sylvania  
 Electric Products Inc., a corporation of Delaware  
 Filed Apr. 30, 1968, Ser. No. 11,707  
 Term of patent 14 years  
 (Cl. D48-23)



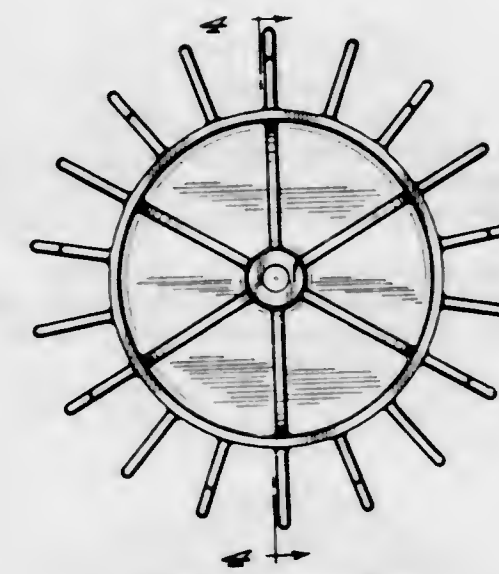
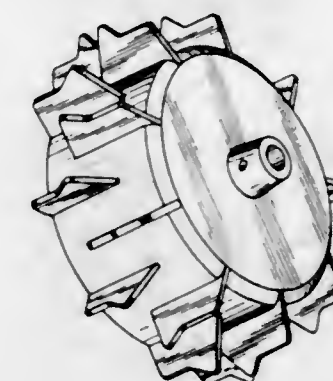
212,777  
**STEAM CLEANER**  
 Charles L. Anderson, P.O. Box 973,  
 Jackson, Wyo. 83001  
 Filed Mar. 18, 1968, Ser. No. 11,014  
 Term of patent 14 years  
 (Cl. D49-11)



212,778  
**VEHICLE WHEEL BRUSH MOUNT**  
 Earl Dallas Smith, 6202 E. Sage Drive, Scottsdale, Ariz.  
 85251, and John K. Bunch, 6731 N. 16th St., Phoenix,  
 Ariz. 85016  
 Filed Dec. 18, 1967, Ser. No. 9,821  
 Term of patent 14 years  
 (Cl. D49-12)



212,779  
**SILO UNLOADER DRIVE WHEEL**  
 Floyd E. Buschbom, Long Lake, Minn., assignor to  
 Van Dale Corporation, Long Lake, Minn., a corpo-  
 ration of Minnesota  
 Filed Nov. 15, 1967, Ser. No. 9,433  
 Term of patent 14 years  
 (Cl. D55-1)



212,780  
**VIBRATO TAILPIECE FOR STRINGED INSTRUMENTS**  
 Theodore M. McCarty and John Huls, Kalamazoo, Mich.,  
 assignors to Bigsby Accessories, Inc., Kalamazoo, Mich.,  
 a corporation of Michigan  
 Filed Aug. 10, 1967, Ser. No. 8,218  
 Term of patent 14 years  
 (Cl. D56-1)



212,781  
**PAIR OF EYE MAKE-UP SPECTACLES**  
 Toni Holloway, 435 S. Curson, M.B.,  
 Los Angeles, Calif. 90036  
 Filed Dec. 18, 1967, Ser. No. 9,844  
 Term of patent 7 years  
 (Cl. D57-1)



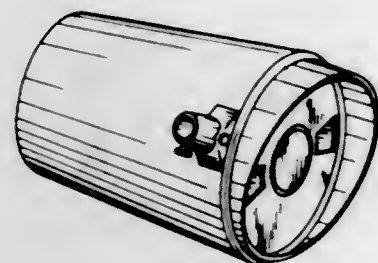


212,782

**GRAIN SIZE COMPARATOR FOR METAL-  
LURGICAL MICROSCOPES**

Daniel J. Pikosky, Hamden, Conn., assignor to General Scientific Equipment Co., Inc., Hamden, Conn., a corporation of Connecticut

Filed Sept. 15, 1967, Ser. No. 8,597  
Term of patent 14 years  
(Cl. D57—1)

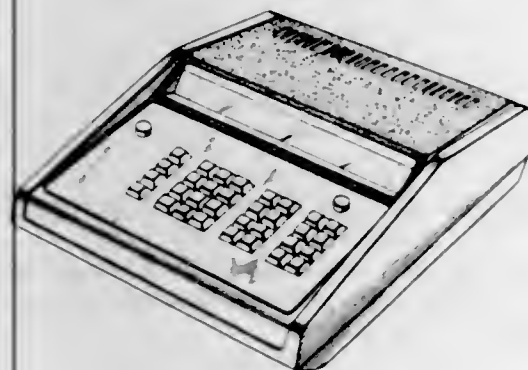


212,783

**CALCULATING MACHINE**

Yoshisaburo Yoshida, Sakai, Japan, assignor to Hayakawa Denki Kogyo Kabushiki Kaisha (also known as Hayakawa Electric Co., Ltd.), Osaka, Japan, a corporation of Japan

Filed July 20, 1967, Ser. No. 7,896  
Claims priority, application Japan Jan. 31, 1967  
Term of patent 14 years  
(Cl. D64—11)

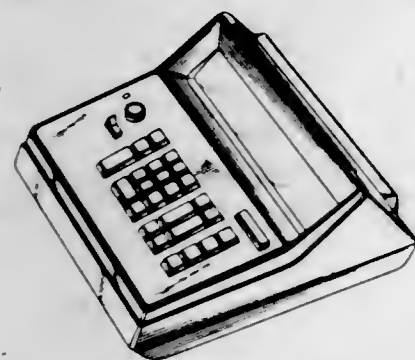


212,784

**CALCULATING MACHINE**

Yoshisaburo Yoshida, Sakai, Japan, assignor to Hayakawa Denki Kogyo Kabushiki Kaisha (also known as Hayakawa Electric Co., Ltd.), Osaka, Japan, a corporation of Japan

Filed Jan. 29, 1968, Ser. No. 10,344  
Claims priority, application Japan, Sept. 1, 1967  
Term of patent 14 years  
(Cl. D64—11)



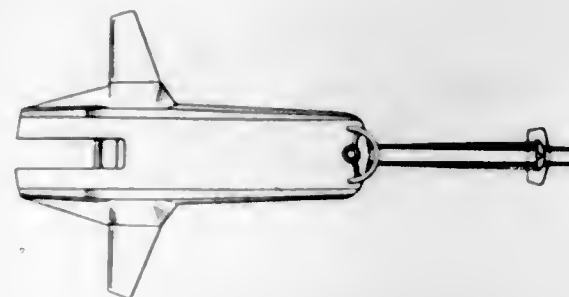
212,785

**HYDROFOIL**

Renato Castellani, Via Baletini 86,  
Verbania Intra, Novara, Italy

Continuation-in-part of design application Ser. No. 3,602, Aug. 26, 1966. This application Feb. 5, 1968,  
Ser. No. 10,452

Term of patent 14 years  
(Cl. D71—1)



212,786

**SAILING CRAFT**

Paul Scherer, Glenn Dale, Md., assignor to Hydrodynamic Development Corporation, Inc., Baltimore, Md., a corporation of Maryland

Substituted for abandoned design application Ser. No. 1,501, Mar. 7, 1966. This application Sept. 8, 1967,  
Ser. No. 9,021

Term of patent 14 years  
(Cl. D71—1)



212,787

**CROSSWALK SIGN**

Robert E. McCormick and Ronald B. Kuchenreuther, Bellevue, and John L. Miller, Kirkland, Wash., assignors to Van Tone Millworks, Inc., Seattle, Wash., a corporation of Washington

Filed Dec. 26, 1967, Ser. No. 9,924  
Term of patent 14 years  
(Cl. D72—1)



212,788

**CLIP FOR A WRITING INSTRUMENT OR THE LIKE**

Ludwig F. Perwas, Mountainview Ave.,  
Orangeburg, N.Y. 10962

Filed Dec. 18, 1967, Ser. No. 9,838  
Term of patent 14 years  
(Cl. D74—2)

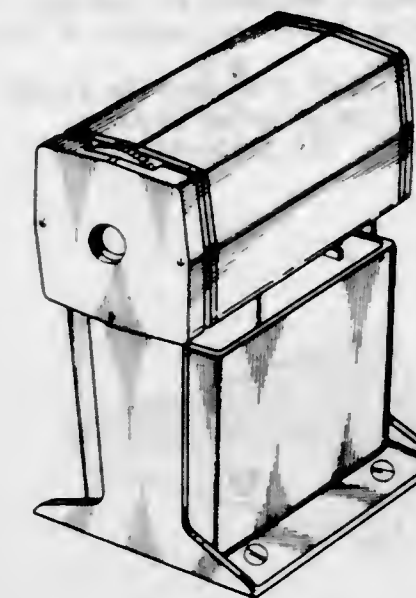


212,789

**PENCIL SHARPENER**

Richard M. Kipp, 161 Hunter's Lane,  
Devon, Pa. 19333

Filed Aug. 4, 1967, Ser. No. 8,124  
Term of patent 3½ years  
(Cl. D74—21)

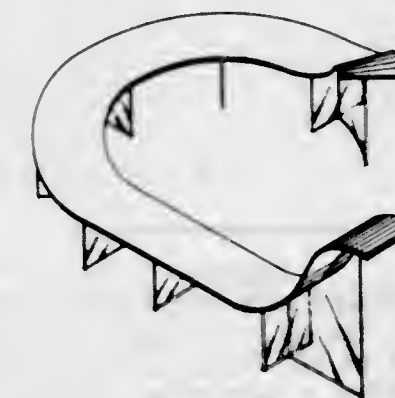


212,790

**COMBINED BENCH AND DISPLAY UNIT**

Richard Owen Abbott, 140 Newbury St.,  
Boston, Mass. 02116

Filed Dec. 14, 1966, Ser. No. 5,038  
Term of patent 14 years  
(Cl. D80—9)



212,791

**SURGICAL MULTI-PROCEDURE  
INSTRUMENT TABLE**

Germaine O'Donovan, 38 Rochelle St.,  
Staten Island, N.Y. 10304

Filed Aug. 11, 1967, Ser. No. 8,236  
Term of patent 14 years  
(Cl. D83—1)



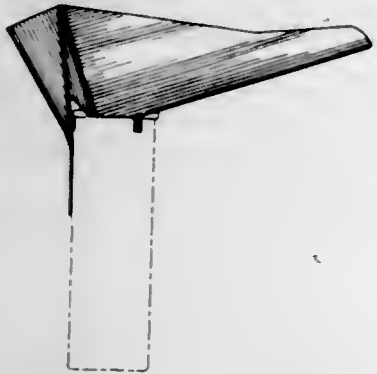
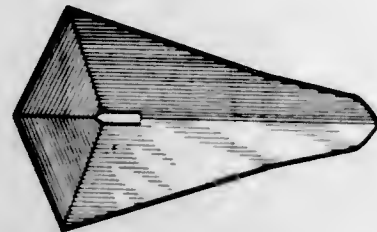


212,792

**URINE SPECIMEN COLLECTION FUNNEL**

Thomas N. Garland, Denver, Colo., assignor of thirty-seven and six-tenths percent to Carol Wendt; one percent each to Leon T. Howard, James R. Snedeker, Whitney B. Siebert, Robert F. Fiori, and Robert E. Wallace; five percent each to Darell W. Blair, and Norman D. Paschall; one percent to Pearl M. Blakeney; and nine percent to Edwin L. Spangler, Jr., and Max L. Wymore, doing business as Anderson, Spangler & Wymore, both of Denver, Colo.

Filed Jan. 19, 1968, Ser. No. 10,221  
Term of patent 14 years  
(Cl. D83—1)

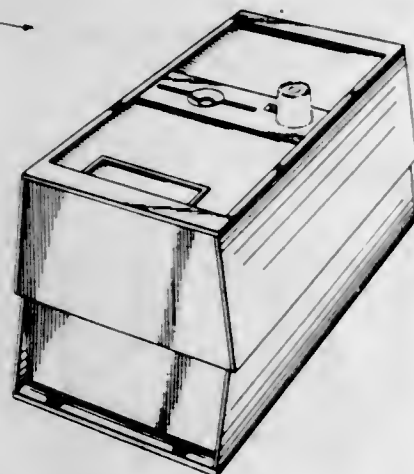


212,793

**TRANSPARENCY STORAGE UNIT**

Stephen B. Smith, Dayton, and Karl F. Rigg, Bellbrook, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Dec. 8, 1967, Ser. No. 9,709  
Term of patent 14 years  
(Cl. D87—1)

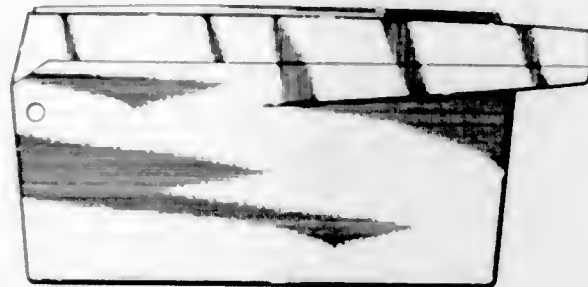


212,794

**TAPE CARTRIDGE CARRIER**

Richard D. Dilyard, Wooster, Ohio, assignor to Rubbermaid Incorporated, Wooster, Ohio, a corporation of Ohio

Filed Feb. 5, 1968, Ser. No. 10,429  
Term of patent 14 years  
(Cl. D87—1)

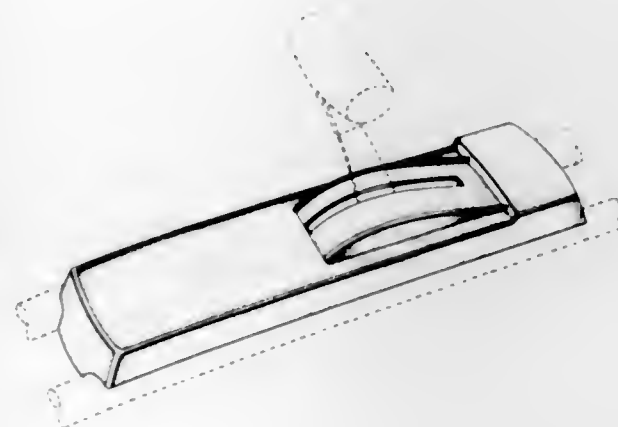


212,795

**CONSOLE FOR A BICYCLE**

Donald A. Wolf, Dayton, Ohio, assignor to The Huffman Manufacturing Company, Miamisburg, Ohio, a corporation of Ohio

Filed July 3, 1967, Ser. No. 7,688  
Term of patent 14 years  
(Cl. D90—1)

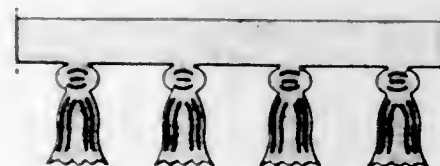


212,796

**RIBBON**

James R. Hecht, 473 Franklin D. Roosevelt Drive, New York, N.Y. 10002

Filed Mar. 20, 1967, Ser. No. 6,297  
Term of patent 14 years  
(Cl. D92—1)

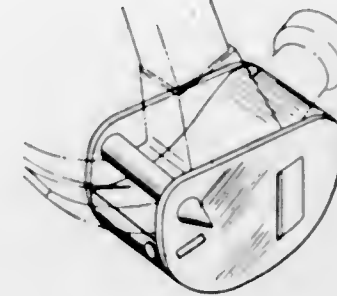


212,797

**COMBINED HAMMER ATTACHMENT AND FILE**

Mark Wayne, 15330 Thatcher, Detroit, Mich. 48235

Filed Aug. 10, 1967, Ser. No. 8,250  
Term of patent 14 years  
(Cl. D93—4)



212,798

**TELEPHONE FACILITY DISPLAY MARKER**

Henry Dreyfuss, South Pasadena, Calif., and Paul L. Wise, Indianapolis, Ind., assignors to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York

Filed July 3, 1967, Ser. No. 7,681  
Term of patent 14 years  
(Cl. D96—12)





# LIST OF DESIGN PATENTEEES

TO WHOM

PATENTS WERE ISSUED ON THE 19TH DAY OF NOVEMBER, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- AMP Inc.: *See*—  
Kinkaid, Robert J. 212,754.  
Relder, George S., Jr. 212,755.  
Abbott, Richard O. Combined bench and display unit. 212,790, 11-19-68, Cl. D80—9.  
American Enka Corp.: *See*—  
Price, John P. 212,747.  
Anderson, Charles L. Steam cleaner. 212,777, 11-19-68, Cl. D49—11.  
Anderson, Spangler & Wymore: *See*—  
Garland, Thomas N. 212,792.  
Armstrong Cork Co.: *See*—  
Clausen, Donald F. 212,750.  
Balmes, Mark E., Sr., to General Fire Extinguisher Corp. Fire extinguisher or similar article. 212,748, 11-19-68, Cl. D16—2.  
Bell Telephone Laboratories, Inc.: *See*—  
Dreyfuss, Henry, and Wise. 212,798.  
Blair, Darrell W.: *See*—  
Garland, Thomas N. 212,792.  
Blakeney, Pearl M.: *See*—  
Garland, Thomas N. 212,792.  
Booth, George W. Face for a timepiece. 212,773, 11-19-68, Cl. D42—1.  
Bordner, Edward G., to Sierra Electric, Inc. Electrical wall plate. 212,760, 11-19-68, Cl. D26—13.  
Buchanan, John L. Clasp for a necktie or the like. 212,732, 11-19-68, Cl. D12—428.  
Bunch, John K.: *See*—  
Smith, Earl D., and Bunch. 212,778.  
Buschbom, Floyd E., to Van Dale Corp. Silo unloader drive wheel. 212,779, 11-19-68, Cl. D55—1.  
Castellani, Renato. Hydrofoil. 212,785, 11-19-68, Cl. D71—1.  
Celanese Corp.: *See*—  
Serle, Allan G. 212,740.  
Clausen, Donald F., to Armstrong Cork Co. Ceiling tile or similar article. 212,750, 11-19-68, Cl. D18—2.  
Davis, Arnold M., W. S. Sheppley, Jr., and J. F. Talerico, to International Business Machines Corp. Data processing console or similar article. 212,756, 11-19-68, Cl. D24—5.  
Davis, Arnold M., W. S. Sheppley, Jr., and J. F. Talerico, to International Business Machines Corp. Data processing console or similar article. 212,757, 11-19-68, Cl. D26—5.  
Difco Laboratories, Inc.: *See*—  
Kuypers, Norbert T. 212,736.  
Dilyard, Richard D., to Rubbermaid Inc. Tape cartridge carrier. 212,794, 11-19-68, Cl. D87—1.  
Dowell, Mathew: *See*—  
Frischman, Arnold, and Dowell. 212,767.  
Dreyfuss, Henry, and P. L. Wise, to Bell Telephone Laboratories, Inc. Telephone facility display marker. 212,798, 11-19-68, Cl. D96—12.  
Ets, Carpano & Pons: *See*—  
Jacquemin, Maurice. 212,752.  
Egan, Robert J. Stilt footrest. 212,770, 11-19-68, Cl. D34—14.  
Flori, Robert F.: *See*—  
Garland, Thomas N. 212,792.  
Firma Lubke KG: *See*—  
Moeckl, Ernst. 212,765.  
Fishman, Sherman S. Disposable ultrasonic pipet washer-rinser. 212,745, 11-19-68, Cl. D16—2.  
Fishman, Sherman S. Ultrasonic pipet washer-rinser. 212,746, 11-19-68, Cl. D16—2.  
Frischman, Arnold, and M. Dowell; said Dowell, assor. to said Frischman. Hockey goal. 212,767, 11-19-68, Cl. D34—5.  
Garland, Thomas N., 37.6% to C. Wendt, 1% each to L. T. Howard, J. R. Snedeker, W. B. Siebert, R. F. Flori, R. E. Wallace, and 5% each to D. W. Blair, N. D. Paschall, and 1% to P. M. Blakeney, and 9% to E. L. Spangler, Jr., and M. L. Wymore, d.b.a. Anderson, Spangler & Wymore. Urine specimen collection funnel. 212,792, 11-19-68, Cl. D83—1.  
Gelardi, Anthony, and G. Mathus, to The Morningstar Corp. Magnetic tape cartridge. 212,761, 11-19-68, Cl. D26—14.  
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Giannotti, Vincent F., R. and G. R. Manno. Diner. 212,741, 11-19-68, Cl. D13—1.  
Gordon, Joseph. Kaleidoscope. 212,771, 11-19-68, Cl. D34—15.  
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Howard, Leon T.: *See*—  
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Davis, Arnold M., Sheppley, and Talerico. 212,757.  
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Keurst, William T. Cover for a pick-up truck bed. 212,744, 11-19-68, Cl. D14—27.  
Kinkaid, Robert J., to AMP Inc. Electrical connector. 212,754, 11-19-68, Cl. D26—1.  
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- Scherer, Paul, to Hydrodynamic Development Corp., Inc. Sailing craft. 212,786, 11-19-68, Cl. D71—1.
- Serie, Alan G., to Celanese Corp. Meat hook. 212,740, 11-19-68, Cl. D11—1.
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- Smith, Stephen B., and K. F. Rigg, to The National Cash Register Co. Transparency storage unit. 212,793, 11-19-68, Cl. D87—4.
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- Spangler, Edwin L., Jr.: See—  
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- Strasser, Myron S., Jr., and S. A. Packaging form for a collar or the like. 212,739, 11-19-68, Cl. D9—294.
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- Davis, Arnold M., Sheppley, and Talerico. 212,757.
- Thompson, Richard E., to The San Diego Hockey Club. Applique emblem or similar article. 212,733, 11-19-68, Cl. D3—9.
- Tughan, Samuel, to G. H. Wood Co. Ltd. Deodorant container. 212,753, 11-19-68, Cl. D23—150.
- Valles, Benjamin V., to Litton Precision Products, Inc. Magnetron device. 212,758, 11-19-68, Cl. D26—8.
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- Wakeman, Alfred W., to The Risdon Mfg. Co. Dispenser top for a pressurized can. 212,738, 11-19-68, Cl. D9—258.
- Wallace, Robert E.: See—  
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- Wayne, Mark. Combined hammer attachment and file. 212,797, 11-19-68, Cl. D93—4.
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- Yoshida, Yoshisaburo, to Hayakawa Denki Kogyo Kabushiki Kaisha (a/k/a Hayakawa Electric Co., Ltd.). Calculating machine. 212,783, 11-19-68, Cl. D64—11.
- Yoshida, Yoshisaburo, to Hayakawa Denki Kogyo Kabushiki Kaisha (a/k/a Hayakawa Electric Co., Ltd.). Calculating machine. 212,784, 11-19-68, Cl. D64—11.
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- Abson, James W., and E. I. Clark, to Simon-Carves Ltd. Sewage treatment. 3,412,017, 11-19-68, Cl. 210—7.
- Ace, Ronald, and J. N. Ricci. Puzzles. 3,411,787, 11-19-68, Cl. 273—159.
- Ackerman, Hans, to J. R. Gelgy, A.G. Chromium containing mixed reactive azo dyestuffs. 3,412,081, 11-19-68, Cl. 260—145.
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- Akins, Herbert G., to International Harvester Co. Recirculating fluid in hydraulic systems having moving transmission components in the hydraulic reservoir. 3,411,293, 11-19-68, Cl. 60—52.
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- Albright, Charles B., to Sperry Rand Corp. Sheet separator. 3,411,770, 11-19-68, Cl. 271—26.
- Albright, Charles B., to Sperry Rand Corp. Sheet handling system employing an all fluid transport technique. 3,411,829, 11-19-68, Cl. 302—29.
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- Carmon, Richard L., to Michigan-Dynamics, Inc. Automatic fluid bypass sensing, actuating, and indicating system. 3,411,272, 11-19-68, Cl. 55-274.
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- Carr, Jesse M., Jr.: See—
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- Carrier Corp.: See—
- Brown, Ted W., and Shaw. 3,411,313.
- Honnold, Fred V., Jr. 3,411,572.
- Metot, Melvin O., and Gregor. 3,411,702.
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- O'Hara, Arthur C., Dreibelbis, and Homeyer. 3,411,711.
- Cart-Trac, Inc.: See—
- Kelley, Jerry O. 3,411,730.
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- Carver, Geraldine B.: See—
- Carver, Donald C. 3,411,817.
- Casby, James U., to United Aircraft Corp. Bio-electrical sensor. 3,411,495, 11-19-68, Cl. 128-2.1.
- Casebolt, Ralph T. Frameless glass enclosure structure. 3,411,255, 11-19-68, Cl. 52-397.
- Catalysts and Chemicals, Inc.: See—
- Clark, Robert G. 3,412,169.
- Caterpillar Tractor Co.: See—
- Johnson, Howard L. 3,411,521.
- Cawley, Charles R., to Pre-Mar Industries. Process for producing sealing material. 3,411,181, 11-19-68, Cl. 18-13.
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- Rice, Leonard M., and Clements. 3,412,069.
- Celeron Mfg. Co.: See—
- Greenberg, Burton, and Murgas. 3,411,734.
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- Oldakowski, Stefan, and Borkiewicz. 3,411,606.
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- Monzie, Pierre. 3,412,018.
- Certain-Teed Products Corp.: See—
- Swandler, Kenneth D. 3,411,417.

- Character Recognition Corp.: See—
- Stephens, Richard G. 3,412,379.
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- Chanal, Roger, to Bennes Marrel. Swash plate hydraulic pumps having axially disposed pistons. 3,411,453, 11-19-68, Cl. 103-173.
- Chao, Andrew C. M., to The Bendix Corp. Variable attenuation circuit. 3,412,340, 11-19-68, Cl. 330-29.
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- Chapline, Jules S.: See—
- Welsh, Herbert F. 3,412,307.
- Chervenak, Michael C.: See—
- Alpert, Seymour B., Wolk, and Chervenak. 3,412,010.
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- Unterberger, Robert R., Walstrom, and Metz. 3,412,321.
- Unterberger, Robert R. 3,412,322.
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- Childs, Elbert B., to Mobil Oil Corp. Positive crankcase ventilation tester. 3,411,357, 11-19-68, Cl. 73-209.
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- Sturtevant, Mark J. 3,411,245.
- Thompson, Chester H., and Schollenberger. 3,411,319.
- Churia, John J., to Thomas & Betts Corp. Connector assembly. 3,412,367, 11-19-68, Cl. 339-91.
- Chute, Richard, to Eaton Yale & Towne, Inc. Vehicle safety assembly. 3,411,808, 11-19-68, Cl. 280-150.
- Ciba Ltd.: See—
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- Ramanathan, Visvanathan. 3,412,088.
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- Cincinnati Printing and Drying Systems: See—
- Daley, Eugene J. 3,411,217.
- Cloft, Vincent: See—
- Alexander, Samuel S., and Cloft. 3,412,006.
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- Cities Service Oil Co.: See—
- Mattix, Emory D., and Tharp. 3,412,014.
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- Clark, Melford D. Word game device. 3,411,221, 11-19-68, Cl. 35-9.
- Clark, Nicholas R., to Midland-Yorkshire Tar Distillers Ltd. Chlorination of alkyl pyridines. 3,412,095, 11-19-68, Cl. 260-290.
- Clark, Richard J., and H. J. Wirtz, to Racine Hydraulics & Machinery, Inc. Remotely controllable valves. 3,411,531, 11-19-68, Cl. 137-491.
- Clark, Robert G., to Catalysts and Chemicals, Inc. Selective hydrogenation of acetylene. 3,412,169, 11-19-68, Cl. 260-677.
- Clements, John B.: See—
- Rice, Leonard M., and Clements. 3,412,069.
- Clifton, William H., to Little Giant Corp. Pump. 3,411,450, 11-19-68, Cl. 103-87.
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- Curl, Gerald A. 3,412,276.
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- Colburn, Michael H., to Globe-Union Inc. Angularly adjustable control. 3,412,360, 11-19-68, Cl. 338-162.
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- Gaines, Albert L. 3,411,655.
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- Arragon, Philippe P., Gentil, and Seguin. 3,412,250.
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- Lindberg, Paul E. Jr. 3,411,897.
- Conch International Methane Ltd.: See—
- Nackson, Robert G. 3,411,656.
- Nashchen, Maurice. 3,411,302.
- Condec Corp.: See—
- Satter, Harvey W. 3,412,258.
- Connally, Carl, Jr., to Mobil Oil Corp. Thermal recovery method for heavy hydrocarbons employing a heated permeable channel and forward in situ combustion in subterranean formations. 3,411,575, 11-19-68, Cl. 166-2.
- Considine, William J., and G. H. Reifenberg, to M & T Chemicals, Inc. Cyanoalkylenetol sulfides and the preparation thereof. 3,412,120, 11-19-68, Cl. 260-429.7.
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- Consolidated Electronics Industries Corp.: See—
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- Consolidated Paper (Bahamas) Ltd.: See—
- Jones, Howard W. H., and Helleur. 3,411,720.
- Continental Motors Corp.: See—
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- Continental Oil Co.: See—
- Butler, Wilbur T. 3,411,586.
- Napier, Donald R. 3,412,127.
- Smith, John H., Spangler, and Klovsky. 3,412,009.
- Continental Packaging Corp.: See—
- Macchi, Eugene E. 3,411,693.
- Controls Co. of America: See—
- Wallace, Elmer E., and Helser. 3,411,713.
- Cook, John W., to Westinghouse Electric Corp. Temperature control apparatus and method for operating a reduction rolling mill. 3,411,332, 11-19-68, Cl. 72-9.
- Cook, Roy W., to Duchess Corp. Boat loader and carrier. 3,411,644, 11-19-68, Cl. 214-450.
- Cooper, Jacob, to Foster Wheeler Corp. Temperature matching beader. 3,411,486, 11-19-68, Cl. 122-476.
- Cooper, Julius, to Ideal Toy Corp. Toy container with randomly unmatchable lid. 3,411,786, 11-19-68, Cl. 273-138.
- Coppola, John A., to American Cyanamid Co. 11-(4-methyl-1-piperazinyl)dibenz(h,f)[1,4]oxazepines or thiazepines for controlling fertility. 3,412,193, 11-19-68, Cl. 424-250.
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- Corbett, Frank E., to United States of America, Army. Device for processing X-ray film. 3,411,423, 11-19-68, Cl. 95-89.
- Cordner, James E., to Matrix Science Corp. Welding system. 3,412,230, 11-19-68, Cl. 219-95.
- Corley, Hoyt M., to W. H. Miner, Inc. Product of glucoheptonic acid or its alkali metal salts and alkali metal hexametaphosphate. 3,412,180, 11-19-68, Cl. 260-920.
- Corley, John L.: See—
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- Cornelius Co., The: See—
- Cornelius, Richard T., and Holcomb. 3,411,270.
- Cornelius, Richard T., and D. E. Holcomb, to The Cornelius Co. Method and means for dispensing coffee beverage. 3,411,270, 11-19-68, Cl. 55-42.
- Cornish, Eldon C., to Radio Corp. of America. High speed digital transfer circuits for bistable elements including negative resistance devices. 3,412,265, 11-19-68, Cl. 307-247.
- Cornwall, James E., to Broadbent, Thomas & Sons Ltd. Stacking devices. 3,411,773, 11-19-68, Cl. 271-73.
- Corry, Jon C., to Southeastern Tool & Die Co. Combined fascia and roof panel hold down means. 3,411,251, 11-19-68, Cl. 52-94.
- Corsi, Gianfranco: See—
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- Corth, Richard, to Westinghouse Electric Corp. Method for producing tantalum carbide and tantalum-alloy carbide filaments. 3,411,959, 11-19-68, Cl. 148-13.1.
- Corts, Gerardus J. B., to N.V. Koninklijke Pharmaceutische Fabrieken. Indole derivatives. 3,412,097, 11-19-68, Cl. 260-293.
- Coryell, George M.: See—
- Whitmore, Kay R., and Coryell. 3,411,907.
- Cottle, Delmer L.: See—
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- Couleur, John F., and E. L. Glaser, to Massachusetts Institute of Technology. Shared-access data processing system. 3,412,382, 11-19-68, Cl. 340-172.5.
- Couquet, Pierre, to Debron Carpets Ltd. Method of making a pile fabric. 3,411,966, 11-19-68, Cl. 156-72.
- Crane, Paul J., to The Magnavox Co. Cyclically regulated power supply. 3,412,314, 11-19-68, Cl. 321-16.
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- Crawford, Richard H.: See—
- Fogelberg, Clement V., Crawford, and Oberbeck. 3,412,187.
- Crawford, Irvin H., and W. J. Venor, Eastman Kodak Co. Photographic elements containing a hardened gelatin layer. 3,411,910, 11-19-68, Cl. 96-85.
- Crawford, Raymond V., A. G. Roberts, and P. A. Toseland, to J. Bibby & Sons Ltd. Water-soluble alkyl resins. 3,412,056, 11-19-68, Cl. 260-22.
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- Crittenden, Eugene C., Jr., to TRW Inc. Hypersonic transducer. 3,412,269, 11-19-68, Cl. 310-8.1.
- Cronin, David V., to Dynamics Research Corp. Optical encoder using common light source with beam splitter means. 3,412,256, 11-19-68, Cl. 250-231.
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Cushing, Vincent J. Electromagnetic volumetric flowmeter. 3,411,455, 11-19-68, Cl. 73-194.

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H. Fox, Control seal and fracturing member. 3,411,260, 11-19-68, Cl. 52-573.

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Di Pilla, Anthony A., to Robertshaw Controls Co. Plural push-button assembly with safety clip interlock means. 3,412,221, 11-19-68, Cl. 200-5.

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## CLASSIFICATION OF PATENTS

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15	3,412,209	95	3,412,230	6	3,412,247	332.2	3,412,104	291-1	3,411,779	11	3,412,312
15	3,412,210	201	3,412,231	106	3,412,248	340.5	3,412,105	292-1	3,411,780	12	3,412,313
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194-97	3,411,613	238	3,411,673	490	3,412,130	369.1	3,412,130	317-1	3,411,805	56	3,412,342
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3,411,251	3,411,430	3,411,841	3,412,397	3,411,884	3,411,377
3,411,596	3,411,447	3,411,842	3,412,398	3,411,889	3,411,426
3,411,893	3,411,460	3,411,848	3,412,402	3,411,891	3,411,433
3,411,933	3,411,474	3,411,855	3,412,403	3,411,991	3,411,438
3,411,962	3,411,475	3,411,856	3,412,400	3,411,996	3,411,441
3,412,137	3,411,482	3,411,879	3,411,602	3,412,020	3,411,461
3,412,230	3,411,490	3,411,900	3,411,742	3,412,058	3,411,477
3,412,231	3,411,494	3,411,906	3,412,187	3,412,067	3,411,479
2 : 3,411,303	3,411,499	3,411,920	3,412,233	3,412,175	3,411,511
3,411,241	3,411,503	3,411,944	3,412,231	3,412,176	3,411,521
3,411,607	3,411,505	3,411,948	9 : 3,411,194	3,412,181	3,411,526
3,411,646	3,411,524	3,411,952	3,411,232	3,412,195	3,411,537
3,412,266	3,411,532	3,411,958	3,411,242	3,411,356	3,411,551
3,412,382	3,411,552	3,411,993	3,411,246	3,411,844	3,411,583
6 : 3,411,156	3,411,556	3,412,007	3,411,200	3,411,169	3,411,620
3,411,159	3,411,561	3,412,008	3,411,358	3,411,413	3,411,631
3,411,162	3,411,574	3,412,012	3,411,365	3,411,442	3,411,633
3,411,163	3,411,582	3,412,044	3,411,383	3,411,504	3,411,647
3,411,170	3,411,585	3,412,045	3,411,391	3,411,634	3,411,676
3,411,173	3,411,588	3,412,060	3,411,396	3,411,747	3,411,680
3,411,193	3,411,593	3,412,087	3,411,448	3,411,981	3,411,699
3,411,195	3,411,595	3,412,101	3,411,465	3,412,247	3,411,730
3,411,230	3,411,598	3,412,138	3,411,495	3,412,355	3,411,731
3,411,235	3,411,612	3,412,140	3,411,510	3,412,388	3,411,734
3,411,238	3,411,617	3,412,151	3,411,555	3,411,316	3,411,743
3,411,239	3,411,618	3,412,165	3,411,628	3,411,745	3,411,745
3,411,255	3,411,625	3,412,199	3,411,655	3,411,762	3,411,762
3,411,260	3,411,663	3,412,205	3,411,661	3,411,766	3,411,766
3,411,266	3,411,667	3,412,217	3,411,692	3,411,802	3,411,766
3,411,273	3,411,670	3,412,263	3,411,772	3,412,399	3,411,805
3,411,277	3,411,674	3,412,269	3,411,812	17 : 3,411,171	3,411,809
3,411,278	3,411,677	3,412,276	3,411,812	3,411,176	3,411,836
3,411,292	3,411,679	3,412,279	3,411,839	3,411,191	3,411,886
3,411,331	3,411,685	3,412,300	3,411,951	3,411,205	3,411,919
3,411,334	3,411,713	3,412,310	3,411,957	3,411,210	3,411,926
3,411,338	3,411,736	3,412,314	3,411,965	3,411,212	3,411,950
3,411,348	3,411,737	3,412,320	3,411,985	3,411,222	3,411,968
3,411,349	3,411,738	3,412,321	3,411,995	3,411,223	3,411,977
3,411,361	3,411,741	3,412,322	3,412,003	3,411,228	3,412,023
3,411,366	3,411,748	3,412,323	3,412,055	3,411,248	3,412,026
3,411,381	3,411,776	3,412,330	3,412,071	3,411,265	3,412,094
3,411,385	3,411,777	3,412,334	3,412,071	3,411,267	3,412,145
3,411,398	3,411,779	3,412,335	3,412,218	3,411,275	3,412,155
3,411,402	3,411,782	3,412,337	3,412,245	3,411,279	3,412,163
3,411,404	3,411,796	3,412,339	3,412,258	3,411,288	3,412,258
3,411,405	3,411,801	3,412,340	3,412,278	3,411,293	3,412,278
3,411,406	3,411,804	3,412,341	3,412,291	3,411,296	3,412,291
			3,412,297		3,412,297

## GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

xxxvii

17 :	3,412,238	26 :	3,411,245	34 :	3,411,446	36 :	3,411,659	39 :	3,411,470	42 :	3,411,616
	3,412,248		3,411,256		3,411,452		3,411,665		3,411,478		3,411,722
	3,412,268		3,411,257		3,411,457		3,411,682		3,411,523		3,411,749
	3,412,272		3,411,262		3,411,486		3,411,683		3,411,534		3,411,751
	3,412,294		3,411,272		3,411,488		3,411,702		3,411,543		3,411,764
	3,412,325		3,411,276		3,411,502		3,411,707		3,411,544		3,411,770
	3,412,401		3,411,295		3,411,509		3,411,711		3,411,545		3,411,829
	3,412,405		3,411,372		3,411,540		3,411,712		3,411,546		3,411,850
18 :	3,411,226		3,411,386		3,411,560		3,411,717		3,411,563		3,411,852
	3,411,280		3,411,412		3,411,624		3,411,733		3,411,569		3,411,859
	3,411,312		3,411,414		3,411,675		3,411,755		3,411,609		3,411,868
	3,411,339		3,411,424		3,411,693		3,411,765		3,411,645		3,411,890
	3,411,379		3,411,428		3,411,695		3,411,771		3,411,649		3,411,934
	3,411,392		3,411,437		3,411,728		3,411,785		3,411,651		3,411,938
	3,411,434		3,411,459		3,411,783		3,411,786		3,411,662		3,411,980
	3,411,464		3,411,469		3,411,787		3,411,790		3,411,687		3,412,019
	3,411,671		3,411,517		3,411,811		3,411,799		3,411,705		3,412,036
	3,411,696		3,411,535		3,411,818		3,411,839		3,411,725		3,412,038
	3,411,706		3,411,554		3,411,846		3,411,872		3,411,744		3,412,050
	3,411,716		3,411,599		3,411,870		3,411,888		3,411,763		3,412,069
	3,411,727		3,411,601		3,411,874		3,411,903		3,411,784		3,412,111
	3,411,794		3,411,603		3,411,895		3,411,904		3,411,795		3,412,112
	3,411,898		3,411,611		3,411,936		3,411,905		3,411,815		3,412,131
	3,411,955		3,411,636		3,411,937		3,411,907		3,411,817		3,412,166
	3,411,963		3,411,640		3,411,940		3,411,908		3,411,918		3,412,168
	3,411,964		3,411,657		3,411,945		3,411,909		3,411,923		3,412,214
	3,411,975		3,411,673		3,411,954		3,411,910		3,411,949		3,412,215
	3,412,219		3,411,739		3,411,959		3,411,911		3,411,970		3,412,221
	3,412,257		3,411,756		3,411,983		3,411,912		3,411,971		3,412,232
	3,412,273		3,411,774		3,411,984		3,411,913		3,411,972		3,412,235
	3,412,308		3,411,781		3,411,992		3,411,915		3,411,973		3,412,236
	3,412,361		3,411,792		3,412,010		3,411,916		3,411,994		3,412,274
	3,412,392		3,411,807		3,412,027		3,411,917		3,412,000		3,412,281
19 :	3,412,394		3,411,808		3,412,029		3,411,921		3,412,004		3,412,283
	3,411,232		3,411,816		3,412,053		3,411,932		3,412,034		3,412,302
20 :	3,411,395		3,411,820		3,412,061		3,411,947		3,412,035		3,412,307
	3,411,417		3,411,821		3,412,064		3,411,960		3,412,049		3,412,312
	3,411,623		3,411,823		3,412,068		3,412,013		3,412,065		3,412,353
	3,411,641		3,411,824		3,412,072		3,412,016		3,412,079		3,412,354
	3,412,395		3,411,830		3,412,080		3,412,028		3,412,104		3,412,362
21 :	3,412,400		3,411,831		3,412,083		3,412,032		3,412,135		3,412,369
	3,411,866		3,411,845		3,412,099		3,412,037		3,412,136		3,412,390
	3,412,169		3,411,869		3,412,103		3,412,043		3,412,152		3,412,415
22 :	3,412,292		3,411,887		3,412,107		3,412,046		3,412,154	43 :	3,412,216
	3,411,225		3,411,897		3,412,110		3,412,051		3,412,158	44 :	3,411,287
	3,411,252		3,411,930		3,412,120		3,412,052		3,412,164		3,411,653
	3,411,321		3,411,943		3,412,121		3,412,118		3,412,177	45 :	3,411,187
	3,411,473		3,411,956		3,412,122		3,412,128		3,412,225		3,411,352
	3,411,476		3,411,961		3,412,123		3,412,129		3,412,227		3,411,550
	3,411,581		3,412,021		3,412,134		3,412,142		3,412,249		3,411,788
	3,411,837		3,412,059		3,412,147		3,412,146		3,412,271		3,412,270
	3,411,863		3,412,076		3,412,167		3,412,150		3,412,298	46 :	3,411,780
	3,411,871		3,412,091		3,412,173		3,412,159		3,412,316	47 :	3,411,160
	3,411,967		3,412,092		3,412,174		3,412,179		3,412,317		3,411,497
	3,412,014		3,412,106		3,412,201		3,412,193		3,412,343		3,411,533
24 :	3,412,172		3,412,109		3,412,211		3,412,197		3,412,350		3,411,669
	3,411,157		3,412,119		3,412,237		3,412,203	40 :	3,411,201		3,411,710
	3,411,200		3,412,126		3,412,239		3,412,224		3,411,384		3,411,735
	3,411,218		3,412,144		3,412,242		3,412,240		3,411,450		3,411,798
	3,411,324		3,412,183		3,412,251		3,412,244		3,411,454		3,411,941
	3,411,354		3,412,222		3,412,264		3,412,261		3,411,597		3,411,942
	3,411,355		3,412,246		3,412,265		3,412,280		3,411,605		3,412,100
	3,411,394		3,412,267		3,412,275		3,412,285		3,411,746		3,412,189
	3,411,516		3,412,289		3,412,277		3,412,295		3,411,753		3,412,308
	3,411,520	27 :	3,411,175		3,412,284		3,412,296		3,411,757	48 :	3,411,298
	3,411,594		3,411,268		3,412,286		3,412,299		3,411,791		3,411,306
	3,411,621		3,411,270		3,412,313		3,412,304		3,411,803		3,411,307
	3,411,894		3,411,317		3,412,342		3,412,305		3,411,814		3,411,308
	3,411,922		3,411,507		3,412,344		3,412,324		3,411,928		3,411,318
	3,412,113		3,411,590		3,412,367		3,412,332		3,412,001		3,411,341
	3,412,311		3,411,650		3,412,381		3,412,336		3,412,009		3,411,344
	3,412,338		3,411,680	35 :	3,411,362		3,412,363		3,412,011		3,411,350
	3,412,351		3,411,689	36 :	3,411,161		3,412,372		3,412,127		3,411,403
	3,412,380		3,411,729		3,411,164		3,412,375		3,412,157		3,411,420
	3,412,389		3,411,797		3,411,182		3,412,379		3,412,188		3,411,483
25 :	3,412,396		3,411,849		3,411,186		3,412,384		3,412,213		3,411,512
	3,411,286		3,411,969		3,411,198		3,411,185		3,412,223		3,411,530
	3,411,360		3,411,976		3,411,202	37 :	3,411,189		3,412,326		3,411,575
	3,411,364		3,412,039		3,411,203		3,411,375	41 :	3,411,432		3,411,576
	3,411,440		3,412,115		3,411,213		3,411,626		3,412,282		3,411,577
	3,411,513		3,412,143		3,411,259		3,411,726	42 :	3,411,181		3,411,578
	3,411,527		3,412,255		3,411,299		3,411,789		3,411,183		3,411,579
	3,411,539		3,412,259		3,411,301		3,412,073		3,411,192		3,411,580
	3,411,542		3,412,293		3,411,313		3,412,229		3,411,204		3,411,584
	3,411,571		3,412,356		3,411,327		3,412,328		3,411,206		3,411,586
	3,411,573	29 :	3,411,184		3,411,329	38 :	3,411,627		3,411,236		3,411,591
	3,411,686		3,411,369		3,411,332	39 :	3,411,174		3,411,269		3,411,604
	3,411,688		3,411,389		3,411,336		3,411,207		3,411,282		3,411,635
	3,411,690		3,411,613		3,411,351		3,411,217		3,411,315		3,411,701
	3,411,709		3,411,703		3,411,357		3,411,219		3,411,335		3,411,775
	3,411,723		3,411,806		3,411,390		3,411,221		3,411,345		3,411,810
	3,411,840		3,411,819		3,411,411		3,411,254		3,411,359		3,411,843
	3,411,902		3,411,853		3,411,423		3,411,258		3,411,373		3,411,929
	3,411,946		3,411,927		3,411,443		3,411,285		3,411,399		3,412,002
	3,411,978		3,412,063		3,411,462		3,411,304		3,411,436		3,412,084
	3,411,997	31 :	3,411,231		3,411,468		3,411,310		3,411,449		3,412,025
	3,412,006		3,411,754		3,411,481		3,411,311		3,411,480		3,412,074
	3,412,185	33 :	3,412,196		3,411,498		3,411,319		3,411,501		3,412,078
	3,412,220	34 :	3,411,179		3,411,500		3,411,320		3,411,518		3,412,170
	3,412,256		3,411,199		3,411,508		3,411,353		3,411,522		3,412,171
	3,412,318		3,411,214		3,411,572		3,411,363		3,411,529		3,412,178
26 :	3,412,383		3,411,237		3,411,610		3,411,370		3,411,564		3,412,226
	3,411,158		3,411,247		3,411,629		3,411,415		3,411,567		3,412,241
	3,411,168		3,411,305		3,411,642		3,411,416		3,411,570		3,412,243
	3,411,209		3,411,333		3,411,643		3,411,435		3,411,614		3,412,273
	3,411,211		3,411,388		3,411,648		3,411,456		3,411,615		3,412,373



## GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

48	3,412,376	51 : 3,411,343	51 : 3,412,148	54 : 3,411,867	55 : 3,411,536	55 : 3,411,925
	3,412,378	3,411,401	3,412,347	3,412,047	3,411,589	3,411,931
	3,412,387	3,411,419	3,412,371	3,412,054	3,411,632	3,411,953
49	3,411,249	3,411,514	3,412,377	3,412,125	3,411,658	3,411,986
	3,411,644	3,411,515	53 : 3,411,165	55 : 3,411,172	3,411,704	3,412,288
	3,411,678	3,411,691	3,411,387	3,411,289	3,411,740	3,412,289
50	3,411,979	3,411,698	3,411,987	3,411,314	3,411,760	3,412,301
51	3,411,264	3,411,778	3,412,190	3,411,374	3,411,800	3,412,360
	3,411,330	3,411,999	3,412,366	3,411,531	3,411,825	3,411,166
	3,411,337	3,412,022	54 : 3,411,541			

## Design Patents

4	212,778	6 : 212,769	17 : 212,748	29 : 212,742	36 : 212,772	39 : 212,795
6	212,733	212,771	18 : 212,764	34 : 212,740	212,775	42 : 212,750
	212,745	212,781	24 : 212,786	212,741	212,788	212,754
	212,746	212,798	25 : 212,776	36 : 212,734	212,791	212,755
	212,749	8 : 212,792	212,790	212,735	212,796	212,789
	212,758	9 : 212,737	26 : 212,732	212,739	37 : 212,747	44 : 212,761
	212,759	212,738	212,736	212,743	39 : 212,731	212,773
	212,760	212,751	212,780	212,756	212,770	212,774
	212,766	212,782	212,797	212,757	212,793	53 : 212,787
	212,768	12 : 212,744	27 : 212,779	212,762	212,794	56 : 212,777

# U.S. DEPARTMENT OF COMMERCE

## OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

November 19, 1968

Volume 856

Number 3

## TRADEMARKS

### NOTICES

## Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

**Reg. No. 378,389** (WHO'S WHO IN AMERICA), Marquis-Who's Who, Inc., Publications in the nature of a directory published approximately once every two years; **Reg. No. 508,802** (WHO'S WHO IN COMMERCE AND INDUSTRY), The A. N. Marquis Company, Publication in the nature of a directory published from time to time; **Reg. No. 606,101** (WHO'S WHO IN THE EAST), Marquis-Who's Who, Inc., same; **Reg. No. 606,099** (WHO'S WHO IN THE MIDWEST), same; **Reg. No. 606,100** (WHO'S WHO IN THE WEST), same; **Reg. No. 606,098** (WHO'S WHO IN THE SOUTH AND SOUTHWEST), same; **Reg. No. 729,754** (WHO'S WHO OF AMERICAN WOMEN), same, filed July 29, 1968, D.C., S.D. Fla. (Miami), Doc. 68-891-C-CF, *Marquis-Who's Who, Inc. and International Who's Who, Inc. v. Who's Who International, Inc.*

**Reg. No. 398,874** (PROGRESSO AND DESIGN), Uddo & Taormina Corporation, Canned vegetables; **Reg. No. 620,471**, same, Canned vegetables, canned fruits, canned olives, canned pork and beans, canned spaghetti, canned fish, canned egg plant appetizer, canned tomato paste, and canned citrus fruit juices and tomato juice; **Reg. No. 706,478** (PROGRESSO), same, Canned and bottled edible olive oil and olives, macaroni, canned ravioli, spaghetti, tomato paste, canned vege-

tables, pizza sauce, clam sauce, tomato sauce, spaghetti sauce, canned fish, canned fruits, canned soups, cheese, coffee, dried beans, vinegar, spices, olive appetizer consisting of olives, celery, capers, oregano, vinegar, oil and spices; egg plant appetizer consisting of egg plant, tomato sauce, celery, olives, capers, onions, oils, vinegar, sugar, and spices, filed Aug. 7, 1968, D.C. Conn. (New Haven), Doc. 12698, *Uddo & Taormina Corporation v. Raffaele Sandolo, also known as Ralph Sandolo, doing business as Progresso International Restaurant, Progresso Italian Restaurant and Progresso Italian Restaurant, Inc.*

**Reg. No. 508,802.** (See Reg. No. 378,389.)**Reg. No. 620,471.** (See Reg. No. 398,874.)

**Reg. No. 628,293** (AMERICAN HERITAGE AND DESIGN), American Heritage Publishing Co., Inc., Periodical; **Reg. No. 668,984** (AMERICAN HERITAGE), same, Grooved phonograph records; **Reg. No. 682,929**, same, Books and periodicals; **Reg. No. 696,460**, same, Films; **Reg. No. 712,163** (AMERICAN HERITAGE JUNIOR LIBRARY AND DESIGN), same, Books and periodical publications; **Reg. No. 713,185** (AMERICAN HERITAGE), same, Tape recordings; **Reg. No. 806,323**, same, Board games and card toys, filed Aug. 13, 1968, D.C., S.D.N.Y., Doc. 68-C-3260, *American Heritage Publishing Co., Inc. v. World Art Group, Inc. et al.*

**Reg. No. 668,984.** (See Reg. No. 628,293.)

## CONDITION OF TRADEMARK APPLICATIONS AS OF SEPTEMBER 30, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]..... 15,450  
 Date of oldest new application..... November 17, 1967  
 Date of oldest amended application (filing date)..... January 5, 1965

C. M. WENDT, Director, Trademark Examining Operation		Oldest Application	
TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION		New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B.....		2- 9-68	5- 3-68
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200.....		12- 1-67	10-18-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36.....		11-17-67	10-20-65
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 15, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107.....		11-27-67	1-5 -65
Renewals (All Classes).....		8-19-68	
Sec. 12(c) Publications (All Classes).....		8-26-68	

Applications filed during the month of September 1968—2,238

Registrations Issued ..... 405—No. 860,351 to No. 860,755  
 Renewals Issued ..... 100

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price \$12.00 per annum, foreign mailing \$4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.



Reg. No. 621,929. (See Reg. No. 628,293.)  
 Reg. No. 626,006. (See Reg. No. 378,389.)  
 Reg. No. 626,006. (See Reg. No. 378,389.)  
 Reg. No. 626,100. (See Reg. No. 378,389.)  
 Reg. No. 626,101. (See Reg. No. 378,389.)  
 Reg. No. 626,400. (See Reg. No. 628,293.)  
 Reg. No. 700,478. (See Reg. No. 396,874.)  
 Reg. No. 712,163. (See Reg. No. 628,293.)  
 Reg. No. 713,185. (See Reg. No. 628,293.)

Reg. No. 723,700 (UNION CARBIDE AND DESIGN), Union Carbide Corporation, Gas regulators, filed July 22, 1966, D.C., S.D. Fla. (Miami), Doc. 66-881-C-ECC, *Union Carbide Corporation v. Uniworld Products, Inc., David S. Pearl and Ephraim Werner*. Consent judgment, defendants, Uniworld Products, Inc. and David S. Pearl perpetually enjoined; action dismissed as to said Ephraim Werner without prejudice, June 14, 1968.

Reg. No. 727,007 (VENDO), The Vendo Company, Vending machines and apparatus, dispensing machines and apparatus, parts of such machines, attachments and accessories for such machines, and installations of groups of such machines, filed Aug. 9, 1968, D.C., S.D. Fla. (Miami), Doc. 68-949-C-WM, *The Vendo Company v. Vendo International Limited and John Robert Rhodes, Sr.*

Reg. No. 729,754. (See Reg. No. 378,389.)

Reg. No. 700,129 (DUCHESS AND DESIGN), Cellopak Co., Inc., doing business as Butler-Wilson Specialty Bag Co., Garbage, kitchen and lunch bags made of paper, filed Feb. 16, 1967, D.C., S.D. Fla. (Miami), Doc. 67-154-C-J.E., *Cellopak Co., Inc., doing business as Butler-Wilson Specialty Bag Co. v. Sydney Paper Co.* Order of dismissal with prejudice, June 7, 1968.

Reg. No. 797,303. (See Reg. No. 103,242.)

Reg. No. 829,728 (SPRINRITE), Pedigo Pork Rind Company, Inc., Fish bait and fish lures, filed June 3, 1968, D.C., W.D. Mo. (Springfield), Doc. 2417, *Pedigo Pork Rind Co., Inc. v. Blakemore Bag Co.* Final judgment, defendant permanently enjoined, Aug. 6, 1968.

Reg. No. 847,199 (WEIGHT WATCHERS), Weight Watchers International, Inc., Indicating membership in the applicant association; Reg. No. 847,200 (WW AND DESIGN), same, Indicating membership in applicant, filed June 24, 1968, D.C., S.D. Ohio (Cincinnati), Doc. 6798, *Weight Watchers International, Inc. v. Weight Watchers, Inc.* Judgment, plaintiff is owner of Reg. No. 847,199 for the trademark "Weight Watchers" and Reg. No. 847,200, for WW within a circular design, the two registrations are valid and exclusive property of the plaintiff. Defendant has infringed and permanently enjoined, Aug. 13, 1968.

Reg. No. 847,200. (See Reg. No. 847,199.)

## MARKS PUBLISHED FOR OPPOSITION

### SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 246,421. Uniroyal, Inc., New York, N.Y., by change of name from United States Rubber Company, New York, N.Y. Filed May 24, 1966. Hydraulic Power Systems, Threading Taps, Strap Vices, and Wrenches (Int. Cls. 7 and 8). First use 1923.

### FISK

Owner of Reg. Nos. 128,063, 807,449, and others.

#### Class 6—Chemicals and Chemical Compositions

For Auto Brake Fluid (Int. Cl. 1).  
 First use March 1966.

#### Class 21—Electrical Apparatus, Machines, and Supplies

For Auto Radios (Int. Cl. 9).  
 First use Mar. 11, 1966.

SN 248,277. Hunt Manufacturing Co., Philadelphia, Pa. Filed June 17, 1966.



#### Class 11—Inks and Inking Materials

For Water Soluble and Oil Printing Inks (Int. Cl. 2).

#### Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Hand-Held Linoleum Cutters for Print-Making (Int. Cl. 8).  
 First use Oct. 20, 1965.

SN 258,717. Parker-Hannifin Corporation, Cleveland, Ohio. Filed Nov. 15, 1966.

### PARKER

Owner of Reg. Nos. 723,938, 731,371, and 768,773.

#### Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Valved Quick Couplers and Fuel Spray Nozzles (Int. Cl. 6).

#### Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Fluid Pressure Operated Motors, Pumps for Hydraulic Power Systems, Hydraulic Accumulators, Hydraulic Presses, Riveting Machines, Tube Bending Machines, Hand Operated Tube Benders, Tube Cutters, Tube Flaring Tools, Tube Reamers, Hose Coupling Assembly Machines, Hose Cut-Off Machines, Tube Burring Tools, Ferrule Presetting Machines, Tube Swagers, Lubricating Devices for Industrial Machines, Compressors, Mufflers, Air Presses, Shock Absorbers for Hy-

SN 262,040. Klein, Schanzlin & Becker Aktiengesellschaft, Frankenthal/Pfalz, Germany. Filed Jan. 6, 1967.



Owner of German Reg. No. 513,115, dated Sept. 29, 1938.

#### Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Faucets, Slide Valves and Flap Valves, Steam Traps, and Fluid Pipe Couplings (Int. Cls. 6, 7, and 11).

#### Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Pumps—Namely, Rotary Pumps, Reciprocating Pumps, and Reciprocating and Rotary-Piston Type Compressors (Int. Cl. 7).

SN 272,612. Kenra, Incorporated, Indianapolis, Ind. Filed May 29, 1967.

### Charmé

#### Class 51—Cosmetics and Toilet Preparations

For Hair Conditioner, Hair Rinse Concentrate, Hair Spray, and Permanent Wave Lotion and Neutralizer (Int. Cl. 3).

#### Class 52—Detergents and Soaps

For Hair Shampoo (Int. Cl. 3).  
 First use Jan. 1, 1961.

SN 277,404. Colgate-Palmolive Company, New York, N.Y. Filed Aug. 3, 1967.

### MOMENT OF TRUTH

Owner of Reg. No. 816,276.

#### Class 51—Cosmetics and Toilet Preparations

For Cologne, Personal Deodorant, and Talcum Powder (Int. Cls. 3 and 5).



**Class 52—Detergents and Soaps**

For Toilet and Bath Soap (Int. Cl. 3).  
First use Nov. 16, 1966.

SN 278,593. Kikkoman Shoyu Co., Ltd., Noda, Chiba Prefecture, Japan. Filed Aug. 18, 1967.

**KIKKOMAN**

The mark is comprised of Japanese words "Kikko," meaning "hexagon" and "Man" being the equivalent of the English term "ten thousand." Owner of U.S. Reg. Nos. 650,224, 681,289, and others.

**Class 47—Wines**

For Fruit Wines (Int. Cl. 33).

**Class 48—Malt Beverages and Liquors**

For Sake (Int. Cl. 32).  
First use September 1966; in commerce October 1966.

SN 278,599. Kikkoman Shoyu Co., Ltd., Noda, Chiba Prefecture, Japan. Filed Aug. 18, 1967.



The characters shown in the drawing are usually spoken of as "Kikko-Man" by the Japanese; "Kikko" meaning "hexagon" and "Man" being the equivalent of the English term "ten thousand." Owner of U.S. Reg. Nos. 650,224, 681,289, and others.

**Class 47—Wines**

For Fruit Wines (Int. Cl. 33).

**Class 48—Malt Beverages and Liquors**

For Sake (Int. Cl. 32).  
First use September 1966; in commerce October 1966.

SN 278,600. Kikkoman Shoyu Co., Ltd., Noda, Chiba Prefecture, Japan. Filed Aug. 18, 1967.

**MANJO**

"Manjo" is coined from the Japanese word "Man" meaning "ten thousand" and "Jo" meaning "top" or "first."

**Class 47—Wines**

For Fruit Wines (Int. Cl. 33).

**Class 48—Malt Beverages and Liquors**

For Sake (Int. Cl. 32).  
First use August 1951; in commerce February 1967.

SN 278,602. Kikkoman Shoyu Co., Ltd., Noda, Chiba Prefecture, Japan. Filed Aug. 18, 1967.



The characters shown form the word "Manjo." "Manjo" is coined from the Japanese word "Man" meaning "ten thousand" and "Jo" meaning "top" or "first."

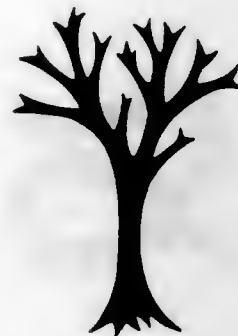
**Class 47—Wines**

For Fruit Wines (Int. Cl. 33).

**Class 48—Malt Beverages and Liquors**

For Sake (Int. Cl. 32).  
First use 1814; in commerce February 1967.

SN 280,314. Howard Goldman Interiors, Inc., Dallas, Tex. Filed Sept. 14, 1967.

**Class 32—Furniture and Upholstery**

For Sofas, Chairs, and Tables (Int. Cl. 20).

**Class 50—Merchandise Not Otherwise Classified**

For Sculptured Objects and Figurines (Int. Cl. 20).  
First use Oct. 15, 1961.

SN 283,963. Paramount Packaging Corporation, Chalfont, Pa. Filed Nov. 2, 1967.



The mark comprises a stylized letter "P."

**Class 2—Receptacles**

For Bags (Int. Cl. 20).

**Class 37—Paper and Stationery**

For Packaging Stock (Int. Cl. 16).  
First use September 1960.

SN 284,175. Dominique France, Inc., New York, N.Y. Filed Nov. 6, 1967. SN 292,651. Sage Fabricating, Inc., d.b.a. Sage Engineering and Valve Company, Houston, Tex. Filed Mar. 7, 1968.

**DOMINIQUE FRANCE**

The term "France" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 564,640 and 569,911.

**Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks**

For Empty Toilet Kits, Wallets, and Luggage (Int. Cl. 18).

**Class 28—Jewelry and Precious-Metal Ware**

For Jewelry (Int. Cl. 14).

**Class 41—Canes, Parasols, and Umbrellas**

For Umbrellas (Int. Cl. 18).

**Class 51—Cosmetics and Toilet Preparations**

For Cologne (Int. Cl. 3).

**Class 52—Detergents and Soaps**

For Cleansing Toilet Soap (Int. Cl. 3).  
First use 1949.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Valves (Int. Cl. 6).

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Pumps for Use in the Chemical, Oil Field, and Aerospace Industries (Int. Cl. 7).  
First use Feb. 8, 1968.

**SECTION 2**

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.103.  
A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

**Class 1—Raw or Partly Prepared Materials**

SN 280,943. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany. Filed Sept. 22, 1967.

**LEGUVAL**

Owner of German Reg. No. 512,670, dated Aug. 2, 1938.  
For Polyester Resins for Use in the Manufacture of Moldings, Coatings, and Binding Material (Int. Cl. 1).

SN 283,255. Magnolia Plastics, Inc., Chamblee, Ga. Filed Oct. 24, 1967.

**MAGNA-WOOD**

Owner of Reg. No. 797,920.  
For Mix-In-Place Plastics, Specifically, a Compound and Curing Agent Sold as a Two-Part Unit (Int. Cl. 1).  
First use Sept. 11, 1967.

SN 286,057. Phillips Petroleum Company, Bartlesville, Okla. Filed Dec. 4, 1967.



The drawing is lined for the color red.  
For Synthetic Fiber (Int. Cl. 22).  
First use Aug. 25, 1967.

SN 287,834. Saf-T-Bed Corporation, Fort Lauderdale, Fla. Filed Dec. 29, 1967.



For Animal Bedding (Int. Cl. 31).  
First use Dec. 15, 1967.

SN 287,848. West Coast Quilting Co., Los Angeles, Calif. Filed Dec. 29, 1967.

**THERMA-PUFF**

For Resinated Polyester Fiber Filler (Int. Cl. 22).  
First use Dec. 7, 1967.

**Class 2—Receptacles**

SN 282,641. Gerald S. Vinarcik, Seven Hills, Ohio. Filed Oct. 16, 1967.

**REEFMASTER**

For Aquariums (Int. Cl. 6).  
First use Jan. 1, 1967.

SN 299,599. Union Carbide Corporation, New York, N.Y. Filed June 3, 1968.

**UCAR**

For Metal Tanks (Int. Cl. 6).  
First use on or about Dec. 4, 1967.

SN 300,674. Arch-Bilt Container Corporation, Maspeth, N.Y. Filed June 18, 1968.

**TT-PAC**

For Shipping Cartons (Int. Cl. 16).  
First use Apr. 18, 1968.



**Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks**

SN 297,194. Doney Toleware, Morgantown, W. Va. Filed Apr. 22, 1968.

**BUCKETBOOK**

For Pocketbook Made From a Workman's Lunch Kit (Int. Cl. 18).  
First use July 17, 1967.

**Class 4 — Abrasives and Polishing Materials**

SN 296,025. S. S. Kresge Company, Detroit, Mich. Filed Apr. 19, 1968.



For Abrasive Coated Sheets and Belts (Int. Cl. 3).  
First use in or before December 1967.

**Class 6 — Chemicals and Chemical Compositions**

SN 284,627. Del Chemical Corporation, Menomonee Falls, Wis. Filed Nov. 13, 1967.

**DEL-DEFEND**

For Spray Chemical Solution Which Is Temporarily Highly Irritating to the Eyes and Nose of an Assailant (Int. Cl. 1).  
First use Sept. 22, 1967.

SN 293,952. Jack H. Sickel, d.b.a. Briten White Company, Los Angeles, Calif. Filed Mar. 22, 1968.

**BRITE-N WHITE**

Owner of Reg. No. 746,400.  
For Dry Household Bleach (Int. Cl. 3).  
First use Mar. 31, 1961.

SN 294,839. Herron Bros. & Meyer Inc., New York, N.Y. Filed Apr. 3, 1968.

**ANTISOL**

For Wax for Use in Rubber To Improve Its Resistance to Atmospheric Cracking (Int. Cl. 4).  
First use June 1944.

SN 295,540. Marleann Products Company, Inc., Baltimore, Md. Filed Apr. 12, 1968.

**"MT. FRESHMOR"**

For Air Fresheners (Int. Cl. 5).  
First use Mar. 29, 1968.

SN 295,541. Marleann Products Company, Inc., Baltimore, Md. Filed Apr. 12, 1968.

**"FRESHMOR"**

For Air Fresheners (Int. Cl. 5).  
First use Mar. 29, 1968.

SN 295,571. Tycal Corporation, Hartford, Conn. Filed Apr. 12, 1968.

**TYCAL**

For Decontaminating Agents (Int. Cl. 1).  
First use Mar. 25, 1968.

SN 295,654. C. A. Leggett, St. Louis, Mo. Filed Apr. 15, 1968.

**SUDZ-GO**

For Composition To Disperse or Kill Suds From Soaps and/or Detergents (Int. Cl. 1).  
First use at least as early as Mar. 8, 1968.

SN 295,754. Merck & Co., Inc., Rahway, N.J. Filed Apr. 16, 1968.

**STERIGARD**

For Disinfectant and Deodorant for Household and Sick-room Use (Int. Cl. 5).  
First use Apr. 2, 1968.

SN 295,821. Geigy Chemical Corporation, Ardsley, N.Y. Filed Apr. 17, 1968.

**BELADOR**

For Chemical Ingredient Used in the Manufacture of Herbicides (Int. Cl. 1).  
First use Mar. 26, 1968.

SN 295,822. Geigy Chemical Corporation, Ardsley, N.Y. Filed Apr. 17, 1968.

**IRGALEV**

Owner of Reg. Nos. 165,426, 428,761, and others.  
For Levelling and Retarding Assistant for Textile Dyeing (Int. Cl. 2).  
First use Mar. 27, 1968.

SN 302,266. Alberto-Culver Company, Melrose Park, Ill. Filed July 9, 1968.

**MOON GLOW**

For Dust-Absorbing Composition for Application to Dust Mops and Dust Cloths as an Aid in Cleaning (Int. Cl. 4).  
First use Apr. 16, 1968.

SN 302,889. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed July 17, 1968.

**RISTON**

For Developing Solvent for Photopolymer Resist (Int. Cl. 1).  
First use May 24, 1968.

SN 303,863. GAF Corporation, New York, N.Y. Filed July 30, 1968.

**HELINDON**

For Dyes and Dyestuffs (Int. Cl. 2).  
First use July 1968.

**Class 8 — Smokers' Articles, Not Including Tobacco Products**

SN 283,148. Peterson's Ltd., Inc., New York, N.Y. Filed Oct. 23, 1967.

**DANISH QUAIN**

For Men's Smoking Pipes (Int. Cl. 34).  
First use August 1967.

**Class 9 — Explosives, Firearms, Equipments, and Projectiles**

SN 304,188. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Aug. 2, 1968.

**TOVAN**

For Water Gel Blasting Agent (Int. Cl. 13).  
First use Mar. 8, 1968.

**Class 12 — Construction Materials**

SN 263,157. The Associated Portland Cement Manufacturers, Limited, London, England. Filed Jan. 24, 1967.

**FERROCRETE**

Owner of British Reg. No. 268,321, dated Dec. 1, 1964; and U.S. Reg. No. 204,967.  
For Rapid Hardening Portland Cement.

SN 266,743. Dallas Ceramic Company, Dallas, Tex. Filed Mar. 15, 1967.



The drawing is lined for the colors red and blue. The mark includes a fanciful showing of the letters "DC." Owner of Reg. Nos. 502,630, 806,590, and others.  
For Ceramic Tile for Construction Purposes (Int. Cl. 19).  
First use Mar. 1, 1965.

SN 268,182. Dresser Industries, Inc., Dallas, Tex., assignee of Harbison-Walker Refractories Company, Pittsburgh, Pa. Filed Apr. 3, 1967.

**MAGNAMIX 363**

For Unconsolidated Refractory Mixes (Int. Cl. 19).  
First use on or about Feb. 6, 1967.

SN 271,328. Allied Compositions Co., Inc., Maspeth, N.Y. Filed May 12, 1967.

**NU-C-MENT**

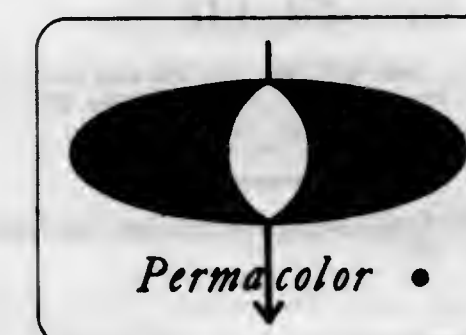
For Resin Emulsion Binder To Be Mixed With Cement To Produce a Thin Floor Finish (Int. Cl. 19).  
First use June 17, 1958.

SN 278,858. Certain-Teed Products Corporation, Ardmore, Pa. Filed June 14, 1967.



Applicant disclaims exclusive right to the word "Woodwork" apart from the mark as shown, without however, disclaiming any common law rights that applicant may have. Owner of Reg. Nos. 234,410, 795,028, and others.  
For Millwork, Particularly, Window Units (Int. Cl. 19).  
First use Feb. 11, 1966.

SN 278,107. International Aluminum Corporation, Monterey Park, Calif. Filed Aug. 11, 1967.



The lining shown on the drawing does not represent color. For Aluminum Window Frames and Door Frames (Int. Cl. 6).  
First use June 1, 1966.

SN 278,808. Kyowa Gas Chemical Industry Co., Ltd., Chuo-ku, Tokyo, Japan, assignee of Marubeni-Iida (America), Inc., Los Angeles, Calif. Filed Aug. 22, 1967.

**PARAPAIR**

For Methyl Methacrylate Sheets for Use as Panels in Interior Building Construction, Sign Boards, Lighting Fixtures, and Displays (Int. Cl. 19).  
First use Aug. 4, 1967; in commerce Aug. 4, 1967.

SN 281,565. William H. Engle, Old Bethpage, N.Y. Filed Oct. 2, 1967.

**STRATODOME**

For Tubular Building Geometric Metal Frame Enclosures for Temporary and Permanent Use (Int. Cl. 6).  
First use Oct. 8, 1966.

SN 287,441. Matsushita Lumber Co., Ltd., Sapporo-shi, Hokkaido, Japan. Filed Dec. 22, 1967.

**Mac Ply**

For Prefinished Plywood (Int. Cl. 19).  
First use September 1966; in commerce April 1967.



SN 293,830. International Industries, Inc., Baltimore, Md. Filed Mar. 21, 1968.



The phrase "Serving the World" is disclaimed apart from the mark as shown.

For Portable, Prefabricated Modular Building Units Suitable for Dwellings, Business Offices, Schoolrooms, and the Like (Int. Cl. 19).  
First use February 1961.

SN 294,546. Union Carbide Corporation, New York, N.Y. Filed Mar. 29, 1968.

### UCAR

Owner of Reg. Nos. 696,264, 844,130, and others.  
For Graphite Pipe Slide Support Sets (Int. Cl. 19).  
First use on or about Oct. 27, 1967.

SN 295,626. Dis-Pens-Rite Plastics, Inc., Bay Shore, N.Y. Filed Apr. 15, 1968.

*dis-pens-rite*

For Resins and Sealers for Repairing Ships and Cars, and for Plastic Caulking and Repairing Compositions for Dents and Surface Imperfections on Metal, Wood, Plastic, and Composition Surfaces (Int. Cl. 17).  
First use Mar. 25, 1968.

### Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 273,767. Robert A. Gilmour, d.b.a. Gilmour Manufacturing Co., Somerset, Pa. Filed June 13, 1967.

### GILMOUR

Owner of Reg. Nos. 833,188 and 833,285.  
For Hose Nozzles and Connecting Hose Assemblies (Int. Cl. 6).  
First use Nov. 2, 1964.

SN 291,573. American Cyanamid Company, Wayne, N.J. Filed Feb. 21, 1968.

### PILOT

For Shower Cabinets (Int. Cl. 11).  
First use November 1966.

SN 292,683. The Engineered Products Company, Flint, Mich. Filed Mar. 7, 1968.

### E-Z GLIDE

Owner of Reg. No. 592,312.  
For Tracks and Shoes for Sliding Doors (Int. Cl. 6).  
First use Nov. 27, 1950.

SN 293,098. Amerock Corporation, Rockford, Ill. Filed Mar. 13, 1968.



For Cabinet Door and Drawer Pulls and Knobs, Cabinet Door Hinges, Cabinet Door Catches, and Drawer Slides (Int. Cl. 6).  
First use July 1963.

SN 293,100. Amerock Corporation, Rockford, Ill. Filed Mar. 13, 1968.

### SERENATA

For Pulls, Knobs, Keys, and Backplates (Int. Cl. 6).  
First use Jan. 16, 1968.

SN 293,171. The Pollak Steel Company, Cincinnati, Ohio. Filed Mar. 13, 1968.

### BEND-AWAY

For Metal Sign Posts (Int. Cl. 6).  
First use Jan. 18, 1968.

### Class 14—Metals and Metal Castings and Forgings

SN 291,252. Dynac Corporation, St. Joseph, Mich. Filed Feb. 16, 1968.

### DYNAC

For Die Castings (Int. Cl. 6).  
First use Jan. 30, 1968.

SN 295,980. Texas Instruments Incorporated, Dallas, Tex. Filed Apr. 18, 1968.



For Clad Metal Plate for Use in Printing (Int. Cl. 6).  
First use May 15, 1956.

### Class 15—Oils and Greases

SN 293,731. Marathon Oil Company, Findlay, Ohio. Filed Mar. 20, 1968.

### MARAGREASE

For Oil and Grease Lubricants (Int. Cl. 4).  
First use Feb. 6, 1968.

SN 294,080. Relton Corporation, Arcadia, Calif. Filed Mar. 25, 1968.

### A-9

For Cutting Fluid for Aluminum (Int. Cl. 4).  
First use about July 1, 1963.

SN 295,119. Consumers Petroleum Company, Incorporated, Indianapolis, Ind. Filed Apr. 8, 1968.

### INDY

For Motor Oil (Int. Cl. 4).  
First use June 22, 1966.

### Class 16—Protective and Decorative Coatings

SN 270,765. The Dexter Corporation, Windsor Locks, Conn. Filed May 5, 1967.

### MICOBOND

For Protective and Decorative Coatings Which May Be Either Pigmented or Unpigmented—Namely, Enamels, Paints, Lacquers, Varnishes, and Primers (Int. Cl. 2).  
First use Sept. 5, 1961.

### Class 18—Medicines and Pharmaceutical Preparations

SN 284,289. American Cyanamid Company, Wayne, N.J. Filed Nov. 7, 1967.

### PARVO

Owner of Reg. No. 436,231.  
For Folic Acid To Be Used in Feed Supplements (Int. Cl. 5).  
First use Nov. 21, 1946.

SN 287,409. Abbott Laboratories, North Chicago, Ill. Filed Dec. 22, 1967.

### FERO-FOLIC-500

Owner of Reg. No. 796,301.  
For Hematinic and Vitamin Preparation (Int. Cl. 5).  
First use Oct. 31, 1967.

### Class 19—Vehicles

SN 270,968. Benjamin Stansbury, d.b.a. Product Specialists, Santa Monica, Calif. Filed May 8, 1967.



The drawing is lined for the color blue, but no particular color is claimed as a feature of the mark.  
For Boats and Component Parts Thereof—Namely, Oars, Sails, Masts, Booms, Leeboards, and Rudders (Int. Cls. 12 and 22).  
First use Feb. 20, 1967.

SN 275,162. North and Judd Manufacturing Company, New Britain, Conn. Filed June 30, 1967.



For Marine Windows, Boat Drains, and Marine Ventilators (Int. Cl. 12).  
First use on or before Apr. 5, 1955.

SN 285,307. Frank B. Coe and Irschel E. McGinnis (joint owners), Gardena, Calif. Filed Nov. 21, 1967.

### Co-CART

For Hunter's Game Carrier, Comprising a Ball Bearing Wheel Adapted for Use With Cut Saplings Which Serve as Handles and Cross Pieces of the Carrier (Int. Cl. 12).  
First use June 15, 1967.

SN 294,629. Hydroglas Industries, Inc., Detroit, Mich. Filed Apr. 1, 1968.



For Miniature Motorboats (Int. Cl. 12).  
First use Jan. 30, 1968.

SN 294,630. Hydroglas Industries, Inc., Detroit, Mich. Filed Apr. 1, 1968.



For Miniature Motorboats (Int. Cl. 12).  
First use Jan. 30, 1968.

### Class 20—Linoleum and Oiled Cloth

SN 292,119. New London Mills, Inc., New London, Conn. Filed Feb. 28, 1968.

### LONDONAIRE

For Vinyl Floor Covering (Int. Cl. 27).  
First use on or about Sept. 8, 1967.

### Class 21—Electrical Apparatus, Machines, and Supplies

SN 257,072. The Okonite Company, Passaic, N.J. Filed Oct. 24, 1966.

### LOXARMOR

For Interlocked Armored Cable (Int. Cl. 9).  
First use November 1954.

SN 276,554. Haydon Switch & Instrument, Inc., Waterbury, Conn. Filed July 21, 1967.

### BIG INCH

For Electric Motors (Int. Cl. 7).  
First use Mar. 30, 1967.

SN 276,771. United States Purchasing Exchange, North Hollywood, Calif. Filed July 25, 1967.

### FOOD MASTER

For Food Blenders, Electric Can Openers, for Domestic Use (Int. Cl. 7).  
First use May 5, 1966.

SN 276,839. Frank E. Ireland, d.b.a. Associated Components, Inc., Miami, Fla. Filed July 26, 1967.

### TUNE-TENNA

For High Frequency Antennas (Int. Cl. 9).  
First use Feb. 10, 1964.



SN 277,724. Superior Continental Corporation, Hickory, N.C., by change of name from Superior Cable Corporation, Hickory, N.C. Filed Aug. 7, 1967.

## CENTRALIZER

For Composite Group of Individual Multi-Channel Electronic Distribution Units, Each Unit Adapted To Increase the Number of Talking Channels on a Telephonic Physical Cable Pair (Int. Cl. 9).  
First use April 1967.

SN 283,267. Mulberry Metal Products, Inc., Union, N.J. Filed Oct. 24, 1967.

## PRESTIGE

For Electrical Switch Plates and Outlet Plates (Int. Cl. 9).  
First use December 1965.

SN 283,407. AMP Incorporated, Harrisburg, Pa. Filed Oct. 26, 1967.

## TERMI-PLATE

No claim is made to the word "Plate" apart from the mark as shown.  
For Printed Circuit Board Electrical Connectors (Int. Cl. 9).  
First use Jan. 14, 1966.

SN 283,815. Ormat Turbines (1965) Ltd., Yavne, Israel. Filed Oct. 31, 1967.

## Hi RD

For Generators, Turbo-Generators, and Power Generating Units for the Generation of Electrical Power (Int. Cl. 7).  
First use 1960; in commerce June 16, 1967.

SN 285,382. Aqua-Mist Incorporated, Winston-Salem, N.C. Filed Nov. 22, 1967.

## CLINIC-AIRE

For Electronic Air Purifiers (Int. Cl. 11).  
First use Aug. 15, 1967.

SN 287,057. Avnet, Inc., New York, N.Y., assignee of Carol Wire & Cable Corp., Pawtucket, R.I. Filed Dec. 18, 1967.

## SUPER-FLEX

For Electrical Cable—Namely, Coaxial Cable (Int. Cl. 9).  
First use in or about April 1961.  
Subj. to Intf. with SN 200,473.

SN 292,305. S.p.A., F.I.L.E., Fabbrica Italiana Lampadine Elettriche, Lecco, Italy. Filed Mar. 1, 1968.

## LEUCI

Owner of Italian Reg. No. 189,777, dated Nov. 26, 1945.  
For Electric Light Bulbs and Tubes (Int. Cl. 9).

SN 292,385. Jefferson Electric Company, Bellwood, Ill. Filed Mar. 4, 1968.

## TRI-FORMER

For Ignition Transformers for Oil Burners (Int. Cl. 9).  
First use Feb. 7, 1968.

SN 296,932. Television Manufacturers of America Co., Wheeling, Ill. Filed Apr. 30, 1968.

*Cardinal*

For Television Receiving Sets, Stereophonic Hi-Fidelity Sets, and Combinations Thereof (Int. Cl. 9).  
First use Jan. 24, 1968.

SN 303,739. Cyprus Mines Corporation, d.b.a. Rome Cable Division, Los Angeles, Calif. Filed July 29, 1968.

## UNIFOAM

For Insulated Electrical Cable (Int. Cl. 9).  
First use Oct. 23, 1964.

## Class 22—Games, Toys, and Sporting Goods

SN 274,408. Thomas Carvel, Yonkers, N.Y. Filed June 21, 1967.

## ALL-AMERICAN SPORTS CITY

For Golf Balls (Int. Cl. 28).  
First use Apr. 19, 1967.

SN 280,296. Battle Creek Equipment Co., Battle Creek, Mich. Filed Sept. 14, 1967.

## JYMBAR

Owner of Reg. No. 747,556.  
For Chinning Bars; as Well as Kits Containing a Chinning Bar Having a Pair of Rings With Supporting Webbing, and a Swing Unit for Use in Combination With Same (Int. Cl. 28).  
First use Apr. 29, 1960.

SN 283,471. Toys by Boys, Inc., Albuquerque, N. Mex. Filed Oct. 26, 1967.

*DISAPER®*

For Toys and Their Packages Comprising a Toy Liquid Shooting Gun and a Disappearing Red Liquid Filler Therefor (Int. Cl. 28).  
First use April 1967.

SN 283,796. Hassenfeld Bros. Inc., Pawtucket, R.I. Filed Oct. 31, 1967.

*funny freckles*

Applicant disclaims the word "Freckles" separate and apart from the mark as shown, without prejudice to any common law rights that applicant may have therein.  
For Toy Set Comprising Transfer Indicia (Int. Cl. 28).  
First use on or about Sept. 21, 1967.

SN 287,154. De Luxe Topper Corporation, Elisabeth, N.J. Filed Dec. 18, 1967.

## BABY TRUE

No claim of exclusive right is made to "Baby" for a doll apart from the mark as shown.  
For Doll (Int. Cl. 28).  
First use Nov. 17, 1967.

SN 288,492. Butler Bass Inc., Youngstown, Ohio. Filed Jan. 10, 1968.



For Equipment Sold as a Unit for Playing an Indoor-Outdoor Miniature Golf Game (Int. Cl. 28).  
First use on or about Apr. 10, 1967.

SN 289,425. Robert Stennett Roach, Springfield, Ill. Filed Jan. 23, 1968.

## HOLE HOG

For Golf Ball (Int. Cl. 28).  
First use July 28, 1967.

SN 292,052. Mattel, Inc., Hawthorne, Calif. Filed Feb. 28, 1968.

## UNEK FREEK

For Toy Figures, Monster and Skeleton, and the Apparatus for Making the Same (Int. Cl. 28).  
First use Jan. 18, 1968.

SN 292,851. Mattel, Inc., Hawthorne, Calif. Filed Mar. 11, 1968.

## YAKITTY YAK

For Toy Plush Animal Having a Red Reproducing Means (Int. Cl. 28).  
First use Jan. 18, 1968.

SN 295,422. Cragstan Industries, Inc., New York, N.Y. Filed Apr. 11, 1968.



For Toys—Namely, Automobiles, Airplanes, and Other Vehicles, Banks, Xylophones, Target Games, Walkie-Talkies, Sewing Machines, Dolls, Purses, Trains, Guns, Stuffed Animals, Microscopes, Telescopes, Ring Toss Games, Film Projectors, Inflated Toys, Swimming Pools, Tricycles; Battery-Operated, Wind-Up, Friction-Drive and Pull Toys (Int. Cl. 28).  
First use October 1967.

SN 296,221. United Silver & Cutlery Company, Los Angeles, Calif. Filed Apr. 22, 1968.

## P-O-P

For Telescopic Golf Putters and Stands Therefor (Int. Cl. 28).  
First use Jan. 17, 1968.

SN 301,298. Amerace Corporation, New York, N.Y. Filed June 25, 1968.

## AMERACE

For Bowling Balls (Int. Cl. 28).  
First use at least as early as December 1965.

SN 301,878. Heisberg's Diamond Shops, Inc., Kansas City, Mo. Filed July 3, 1968.



Owner of Reg. No. 852,718.  
For Golf Balls and Playing Cards (Int. Cls. 16 and 28).  
First use Apr. 16, 1968, on golf balls.

SN 303,577. Mattel, Inc., Hawthorne, Calif. Filed July 25, 1968.

## BABETTE

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).  
First use June 19, 1968.

SN 303,647. Mattel, Inc., Hawthorne, Calif. Filed July 26, 1968.

## WALKABOUT

For Walker for a Walking Doll (Int. Cl. 28).  
First use June 27, 1968.

## Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 263,751. John R. Cribbs, d.b.a. Engineering Associates, Lo Jolla, Calif. Filed Feb. 1, 1967.

*VARICAM*

The drawing is lined for yellow but the color is not an essential feature of the mark.  
For Camshaft Timing Gear (Int. Cl. 12).  
First use Jan. 28, 1966.



SN 269,191. Lee-Norse Company, Charleroi, Pa. Filed Apr. 14, 1967.



For Mining Machine (Int. Cl. 7).  
First use at least as early as 1958.

SN 269,492. Albritton Engineering Corp., Bryan, Tex. Filed Apr. 19, 1967.

## HYDRAMOTE

For Hydraulic Remote Control Units and Parts Therefor for Cranes, Backhoes, and Similar Equipment (Int. Cl. 7).  
First use on or before Feb. 16, 1967.

SN 269,811. Vickers-Zimmer Aktiengesellschaft Planung und Bau Von Industrieanlagen, Frankfurt am Main, Germany. Filed Apr. 21, 1967.



Owner of German Reg. No. 797,954, dated Dec. 3, 1964.  
For Machines and Implements for the Production of Synthetic Fibers—Namely, Tumbler and Hurdle Driers, Spinning Heads and Spinning Pumps, Stretching and Drawing Devices, Deflection Rolls, Preparation or Blooming Rollers, and Spooling Machines; Steam-Jet Pumps; Suction Pumps; Water Handling Systems and Components for Moistening, Irrigation, and Drainage; Filling Machines; Mixing, Agitating and Emulsifying Machines for Manufacture of Synthetic Fibers; Pneumatic and Belt Conveying Devices; Rotary Pumps; Auger Drive Apparatus Employing a Heating Element; Machines and Devices for the Processing of Plastic Material—Namely, Extruders, Calenders and Coating Machines (Int. Cls. 7 and 11).

SN 271,004. Zenith Radio Corporation, Chicago, Ill. Filed May 8, 1967.

## ZENITH

Owner of Reg. Nos. 663,397, 828,809, and others.  
For Wrenches, Fuse Pullers, and Pulleys (Int. Cls. 7 and 8).  
First use at least as early as 1942.

SN 272,380. Harris-Intertype Corporation, Cleveland, Ohio. Filed May 25, 1967.

## SIGNA STITCH

Applicant disclaims the word "Stitch" apart from the mark as shown.  
For Booklet Stitching Machines (Int. Cl. 7).  
First use Dec. 28, 1961.

SN 276,783. Pressluftwerkzeug und Maschinenbau Premag. GmbH, Geisenheim (Rhine), Germany. Filed June 7, 1967.

## MULTISTEP-PREMATI

Owner of German Reg. No. 822,356, dated July 28, 1966.  
For Tools, and Machines for Tools, Especially Those Working Under Pneumatic Pressure—Namely, Machines for Fastening and Loosening Screw Connections (Int. Cl. 7).

SN 279,547. General Consolidated, Ltd., Lodi, N.J. Filed Sept. 1, 1967.

## Omega

For Sewing Machines and Typewriters (Int. Cls. 7 and 16).  
First use on or about Aug. 18, 1967.

SN 282,439. Clinton Supply Co., Chicago, Ill. Filed Oct. 13, 1967.

## PLATE-O-MATIC

For Automatic Punched Tape Programmed Hoists (Int. Cl. 7).  
First use July 13, 1962.

SN 283,188. Superior Moulding Co., Troy, Ala. Filed Oct. 25, 1967.

## SOUTHERN CHEF

For Wooden Cutting Boards for Kitchen Use (Int. Cl. 21).  
First use July 20, 1967.

SN 283,227. Clark Equipment Company, Buchanan, Mich., by merger from Clark Equipment Company, Buchanan, Mich. Filed Oct. 24, 1967.



Owner of Reg. Nos. 507,796, 737,108, 833,944, and others.  
For Logging Machines (Int. Cl. 7).  
First use at least as early as Nov. 12, 1965.

SN 283,228. Clark Equipment Company, Buchanan, Mich., by merger from Clark Equipment Company, Buchanan, Mich. Filed Oct. 24, 1967.



Owner of Reg. Nos. 507,796, 737,108, 833,944, and others.  
For Logging Machines (Int. Cl. 7).  
First use at least as early as Nov. 12, 1965.

SN 283,924. Perfection American, Inc., Harvey, Ill. Filed Nov. 1, 1967.

## PERFECTALOY

For Automotive and Industrial Gears, Bearings, and Bushings (Int. Cls. 7 and 12).  
First use Oct. 19, 1967.

SN 284,771. Whirley Industries, Inc., Warren, Pa. Filed Nov. 13, 1967.



For Automatic, Coin-Operated Car Wash Installations and Parts Thereof, Pressure Washers for Automotive Vehicles and Other Commercial Uses, High Pressure Pumps and Steam Cleaning Machines for Cleaning Metal Parts (Int. Cl. 9).  
First use on or about Oct. 3, 1966.

SN 285,839. McNeil Corporation, Akron, Ohio. Filed Nov. 29, 1967.

## CLEVELAND TRAMRAIL

The word "Tramrail" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 315,577, 683,626, and others.  
For Over-Head Cranes, Overhead Conveyor Type Material Handling Systems, and Parts Thereof (Int. Cl. 7).  
First use during September 1932.

SN 285,860. Shelby American, Inc., Los Angeles, Calif. Filed Nov. 29, 1967.



For Automobile Parts and Accessories—Namely, Oil Pans, Fuel/Air Induction Units, and Intake Manifolds (Int. Cl. 12).  
First use Jan. 6, 1966.

SN 286,393. Washington Forge, Incorporated, Englishtown, N.J. Filed Dec. 6, 1967.



## GARRAGE HOUSE

For Kitchen Knives, Steak Knives, and Carving Sets (Int. Cl. 8).  
First use Sept. 15, 1967.

SN 293,288. MacLean-Fogg Lock Nut Company, Mundelein, Ill. Filed Mar. 14, 1968.



Owner of Reg. Nos. 504,579, 694,127, and 712,740.  
For Winches and Load Binders (Int. Cl. 7).  
First use May 11, 1967.

SN 293,318. Stone Container Corporation, Chicago, Ill. Filed Mar. 14, 1968.

## TRANS-SEAL

For Skin Packaging Machine (Int. Cl. 7).  
First use Nov. 30, 1967.

## Class 26—Measuring and Scientific Appliances

SN 270,123. The Garrett Corporation, Los Angeles, Calif. Filed Apr. 27, 1967.



For Coincidence Mass Spectrometers; On-Board Performance Monitoring and Recording Systems for Aircraft, Including Data Entry Panels, Submultiplexers and Signal Conditioners in Signal Preconditioner Units, Multiplexer and Analog-To-Digital Converters in Signal Data Translators, and Magnetic Tape Recorders; Instrumentation Tape Recorders and Tape Replay Transports; Nuclear and Nucleonic Quantity Gauges and Gauging Systems; Atmospheric Analysis Systems; Biomedical Data Acquisition Systems and Tape Recorders; Static and Dynamic Air Pressure Transducers; Engine Pressure Ratio Transducers and Indicating Systems; Engine Analyzer Systems and Exhaust Gas Temperature Indicators; Propulsion Area Pressure Ratio Transducers; Air Distance Measuring Transducers; Aircraft Integrated Data Systems Including Data Acquisition and Processing Components Comprising Sensors, Transducers and Computers for Acquiring, Processing and Recording Data From Aircraft Engines and Major Aircraft Systems; Central Air Data Systems and Instruments for Aircraft—Namely, Air Data Computers, Altitude Transducers, Mach Transducers, Barometric Altitude Transducers and Controllers, Differential Pressure Transducers, Pressure Ratio Transducers, Airstream Direction Transducers, Static Pressure Compensators, True Air Speed Computing Systems, Angle of Attack Indicators, Angle of Yaw Indicators, Mach Indicators, Altimeters, Air Speed Indicators, True Air Speed Indicators, Servoed Indicators and Elevation Computers; Automatic Control Main Valve Units for Regulating the Air Pressure in Compartments of Aircraft, and Component Parts—Namely, Isobaric Changers, Cabin Altitude Selectors, Rate of Change Selectors, Differential Changers, Differential Timers, Jack Positioned Valves, Valves Operable as Auxiliary to Main Unit, Pressure Ratio Control Valves, Differential Pressure Control Valves, Differential Rate of Change Control Valves; Measuring Venturis; Humidity Indicators; Thermostatic Governors; Thermostatic Temperature Control Valves; Pneumatic, Floating Control and Oil Diaphragm Thermostats; Variable Air Flow, Differential Pressure, and Flow Measuring Controls; Pressure Breathing Demand Regulators; Oil Temperature Regulators; Test Instruments in the Nature of Test Stands and Test Equipment and Analyzers for Testing and Analyzing Performance of Mechanical, Hydraulic, Pneumatic, Electrical and Electronic Systems Under Simulated Operational Conditions, for Example, Pneumatic Signal Generators and Temperature Control Test Sets; Electronic Temperature Control Systems and Components for Regulating Temperature of Aircraft Compartments; Aircraft Windshield Temperature Controls; Control Systems and Components for Controlling and Regulating the Environmental Pressure and Temperature in Space Suits and Space Craft; Control Systems and Components for Controlling and Regulating the Flow of Cryogenic Fluids From a Container Source to a Point of Use; and Process Control Computers (Int. Cl. 9).  
First use Dec. 5, 1955.

SN 271,339. Camera Corporation of America, Hicksville, N.Y. Filed May 12, 1967.

## SPECTRAPAN

For Unexposed Sensitized Photographic Film (Int. Cl. 1).  
First use Mar. 9, 1967.



SN 274,407. Carrier Corporation, Syracuse, N.Y. Filed June 21, 1967.

**Monitor-Pak**

For Electro-Mechanical Unit for Continuously Monitoring and Indicating Vibration and Axial Position of Rotors of High Speed Machinery (Int. Cl. 9).  
First use Feb. 9, 1967.

SN 274,587. Carrier Corporation, Syracuse, N.Y. Filed June 23, 1967.

**Monitor-Pak**

For Electro-Mechanical Unit for Continuously Monitoring and Indicating Vibration and Axial Position of Rotors of High Speed Machinery (Int. Cl. 9).  
First use Feb. 9, 1967.

SN 279,342. Carrier Corporation, Syracuse, N.Y. Filed Aug. 29, 1967.

**MOTORMASTER**

For Solid State Head Pressure Control Unit Comprising an Electronic Circuit and a Sensor Assembly for Controlling the Temperature and Fan Speed in Refrigeration Machines and the Like (Int. Cl. 9).  
First use July 5, 1967.

SN 284,655. Greiner Scientific Corp., New York, N.Y. Filed Nov. 13, 1967.

**VARI-PET**

For Syringe Type Graduated Dispensing Device With Variable Means for Presetting the Volume of Liquid To Be Dispensed (Int. Cl. 9).  
First use at least as early as Nov. 9, 1966.

SN 292,463. American Instrument Company, Inc., Silver Spring, Md. Filed Mar. 5, 1968.

**UNISCAN**

For Scanners for Electrophoresis Studies (Int. Cl. 9).  
First use Sept. 1, 1966.

SN 305,106. Yarway Corporation, Blue Bell, Pa. Filed Aug. 14, 1968.

**CYCLO/PHRAM**

For Metering, Proportioning and Controlled Volume Pumps (Int. Cl. 9).  
First use July 31, 1968.

## Class 27 — Horological Instruments

SN 290,275. Gebrüder Junghans G.m.b.H., Schramberg, Württemberg. Filed Feb. 5, 1968.

**JUNGHANS ASTRO-CHRON**

Owner of U.S. Reg. Nos. 77,347, 83,623, and 694,541.  
For Watches and Clocks (Int. Cl. 14).  
First use Dec. 8, 1966; in commerce Nov. 10, 1967.

SN 295,573. United States Sales Corp., North Hollywood, Calif. Filed Apr. 12, 1968.

**DATATREX**

For Wristwatches (Int. Cl. 14).  
First use Mar. 15, 1968.

SN 296,098. Benrus Watch Company, Inc., Ridgedfield, Conn. Filed Apr. 22, 1968.

**MINI LASS**

For Watches (Int. Cl. 14).  
First use Apr. 5, 1968.

## Class 28 — Jewelry and Precious-Metal Ware

SN 294,631. International Purchasing Agents, Inc., East Orange, N.J. Filed Apr. 1, 1968.

**OSTRELLA**

For Pearls, Necklaces, and Earrings (Int. Cl. 14).  
First use Mar. 5, 1968.

SN 296,215. Textron Inc., Providence, R.I. Filed Apr. 22, 1968.

**TWISTER**

Owner of Reg. Nos. 691,261, 747,268, and 764,652.  
For Bracelets Including Watch Bracelets (Int. Cl. 14).  
First use Apr. 10, 1968.

## Class 31 — Filters and Refrigerators

SN 264,946. The Marley Company, Kansas City, Mo. Filed Feb. 17, 1967.

**DriTower**

Applicant disclaims the word "Tower" apart from the mark as shown. Owner of Reg. Nos. 532,914, 785,889, and others.  
For Liquid Cooling Towers and Parts Thereof (Int. Cl. 11).  
First use Jan. 25, 1967.

SN 268,039. Emerson Electric Co., St. Louis, Mo. Filed Mar. 31, 1967.

**ELECTRO-AIR**

The exclusive use of the words "Electro-Air" apart from the mark as shown is disclaimed.  
For Portable Room Air Cleaners—Namely, Air Cleaners Combining Electrostatic Precipitators and Activated Charcoal Filters (Int. Cl. 11).  
First use February 1954.

SN 276,742. Elgin Softener, Inc., Elgin, Ill. Filed July 25, 1967.

**HYPERFLOW**

For Commercial and Industrial Water Softener Units and Water Softener Regenerating Units, Components and Parts Thereof (Int. Cl. 11).  
First use Dec. 29, 1966.

## Class 32 — Furniture and Upholstery

SN 280,620. John E. Zeller, d.b.a. Bonanza Products, Portland, Oreg. Filed Dec. 12, 1966.

**PORTA-RACK**

For Portable Racks for Holding Multiple Rolls of Sheet Material (Int. Cl. 20).  
First use Feb. 25, 1966.

SN 292,352. Congoleum-Nairn Inc., Kearny, N.J. Filed Mar. 4, 1968.

**STONELY COURT**

For Tables (Int. Cl. 20).  
First use Jan. 16, 1968.

SN 293,365. Eastern Products Corporation, Baltimore, Md. Filed Mar. 15, 1968.

**MINI-BLIND**

For Venetian Blinds (Int. Cl. 20).  
First use Feb. 14, 1968.

SN 293,409. Sperry Rand Corporation, New York, N.Y. Filed Mar. 15, 1968.

**TRAY-SAFE**

For Insulated Filing Cabinets Scientifically Constructed To Protect Contents Against Fire (Int. Cl. 20).  
First use Jan. 2, 1964.

SN 293,856. H. J. Scheirich Company, Louisville, Ky. Filed Mar. 21, 1968.

**AUTUMN GLOW**

For Kitchen Cabinets (Int. Cl. 20).  
First use Dec. 22, 1967.

SN 293,857. H. J. Scheirich Company, Louisville, Ky. Filed Mar. 21, 1968.

**HERMITAGE**

For Kitchen Cabinets (Int. Cl. 20).  
First use Dec. 22, 1967.

## Class 33 — Glassware

SN 295,744. Kristallglasfabrik Spiegelau G.m.b.H., Spiegelau (Bayer. Wald), Germany. Filed Apr. 16, 1968.

**S**

Owner of German Reg. No. 797,939, dated Dec. 3, 1964.  
For Articles Made of Crystal Glass—Namely, Wine Glasses, Champagne Glasses and Liqueur Glasses, Beakers, Tumblers, Goblets, Punch Sets, Bowls, Dishes, Jugs, Bottles, and Decanters (Int. Cl. 21).

## Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 268,740. International Telephone and Telegraph Corporation (Delaware corporation), Wilmington, Del., by merger and change of name from International Telephone and Telegraph Corporation (Maryland corporation), New York, N.Y. Filed Apr. 10, 1967.

**UNITEM**

For Submerged Water Heaters (Int. Cl. 11).  
First use 1945.

SN 268,838. Fuel Firing Limited, Reading, England. Filed Feb. 16, 1967.

**CONSTELLATION**

Owner of British Reg. No. 834,360, dated May 9, 1962.  
For Heavy Duty Oil Burners for Industrial Use (Int. Cl. 11).

SN 276,196. Vesuvius Crucible Company, Swissvale, Pittsburgh, Pa. Filed July 17, 1967.



The mark consists of an artist's conception of an erupting volcano. No claim being made to a particular color for the lava. The drawing is lined for the color red. Owner of Reg. Nos. 128,558 and 552,669.

For Refractory Equipment Used in Handling Molten Metal—Namely, Crucibles, Ladle Stopper Heads, Stopper Rod Sleeves, Nozzles, Refractory Tubes, Saggers, Immersion Bells and Plungers (Int. Cls. 9 and 11).  
First use May 4, 1967.

SN 277,142. Bullfinch (Gas Equipment) Limited, Tyseley, Birmingham, England. Filed July 31, 1967.

**BULLFINCH**

Owner of British Reg. No. 789,416, dated Apr. 10, 1959.  
For Gas Burning Apparatus—Namely, Convector Heaters; Portable Heating, Cooking and Lighting Appliances for Workmen and Campers; Blow Torches; Hot House Heaters; Traffic Lights; Railway Line Heaters; and Parts of the Foregoing (Int. Cl. 11).

SN 278,268. AMP Incorporated, Harrisburg, Pa. Filed Aug. 15, 1967.

**AMPILLUME**

Owner of Reg. Nos. 405,714, 812,073, and others.  
For Terminated Fibre Optic Light Guide Assemblies for Use With Non-Electric and Electric Light Sources (Int. Cl. 11).  
First use June 29, 1967.

SN 287,459. Raypak Company, Inc., South El Monte, Calif. Filed Dec. 22, 1967.

**AIR X TANK**

The words "Air" and "Tank" are disclaimed apart from the mark as a whole.  
For Hot Water Tanks for Use With Central Heating Boilers and the Like (Int. Cl. 11).  
First use 1958.



**Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires**

SN 294,571. J. C. Penney Company, New York, N.Y. Filed Apr. 25, 1968.

**PINTO**

For Tires (Int. Cl. 12).  
First use February 1968.

SN 296,891. Thompson Aircraft Tire Corporation, South San Francisco, Calif. Filed Apr. 29, 1968.

**MARK 70 JET-TRED**

For Pneumatic Aircraft Tires of Both the Tube and Tubeless Type (Int. Cl. 12).  
First use Mar. 1, 1968.

SN 296,892. Thompson Aircraft Tire Corporation, South San Francisco, Calif. Filed Apr. 29, 1968.

**JET-TRED**

For Pneumatic Aircraft Tires of Both the Tube and Tubeless Type (Int. Cl. 12).  
First use Mar. 5, 1967.

**Class 36 — Musical Instruments and Supplies**

SN 280,819. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Sept. 20, 1967.



For Tape Recorders and Their Accessories—Namely, Recording Tape Cassettes, Microphones, Earphones, Carrying Straps, Carrying Cases, Accessory Cases, Batteries, Battery Packs, and Connecting and Power Cords, Sold as a Unit (Int. Cl. 9).

First use Nov. 23, 1966; in commerce Nov. 23, 1966.

SN 284,096. Mind Inc., Greenwich, Conn. Filed Nov. 3, 1967.

**MINDMASTER**

For Tape Recorders Used as Teaching Machines (Int. Cl. 9).  
First use June 1967.

SN 293,212. Atlas Transistor Corporation, New York, N.Y. Filed Apr. 9, 1968.



For Tape Recorders and Phonographs (Int. Cl. 9).  
First use Oct. 4, 1967.  
Subj. to Intf. with SN 297,412.

SN 299,731. Dance Records, Inc., New York, N.Y. Filed June 5, 1968.



Applicant disclaims the representation of a phonograph record apart from the mark as shown.  
For Phonograph Record Albums (Int. Cl. 9).  
First use March 1968.

**Class 37 — Paper and Stationery**

SN 277,807. Tachikawa Research Institute, Higashiyama-ku, Kyoto, Japan. Filed Aug. 8, 1967.

**POLYBONIC**

For Non-Woven Cellulosic Tissue Used as Teabag, Wrapping and Filter Paper and the Like (Int. Cl. 16).  
First use Aug. 11, 1966; in commerce Aug. 11, 1966.

SN 280,413. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed Sept. 15, 1967.



Owner of Reg. Nos. 509,124, 744,454, and others.  
For Reproducing Materials, Especially Tracing Vellum, Tracing Cloth and Matte Surfaced and Translucent Sheet Material for Tracing; Transparent Sheet Material Used for Preparing Translucent Originals for Transparencies; Translucent Typing, Writing, Printing, Bond Paper; Mounts for Photographic Pictures, Slides and Transparencies; Photographic Albums (Int. Cl. 16).

SN 280,857. Continental Oil Company, Ponca City, Okla. Filed Sept. 21, 1967.

**CON-O-NOTE**

For Memo Form Containing Several Sheets With Interleaved Carbons (Int. Cl. 16).  
First use Sept. 11, 1967.

SN 282,295. Nationwide Papers Incorporated, Knightsbridge, Hamilton, Ohio. Filed Oct. 11, 1967.



For Paper and Paper Products—Namely, Stationery, Printing Paper, Industrial Papers, Such as Paper Mailing Envelopes; Bond Paper and Offset Paper; and Gummed Tape Paper (Int. Cl. 16).  
First use Oct. 15, 1929.

SN 284,988. The Brown-Bridge Mills, Inc., Troy, Ohio. Filed Nov. 16, 1967.

**PANCAKE**

Owner of Reg. Nos. 688,706 and 678,113.  
For Gummed and Coated Paper Sold in Reams and Rolls for Further Processing (Int. Cl. 16).  
First use Mar. 28, 1966; at least as early as 1934 in a different form.

SN 289,853. Zellstofffabrik Waldhof, Mannheim, Germany. Filed Jan. 29, 1968.



Owner of German Reg. No. 608,164, dated June 15, 1951.  
For Paper and Paper Products—Namely, Wrapping Paper, Glassine Paper, Grease Proof Paper, Packing Paper, Lining Paper, Coated Paper, Laminated Paper, Bag Paper, Crepe Paper, Writing Paper, Toilet Paper, Paper Tissue, and Sanitary Paper (Int. Cl. 16).

SN 294,728. Elm Industry Company, Limited, Katsushika-ku, Tokyo, Japan. Filed Apr. 2, 1968.

**ELM**

For Telephone Indexes (Int. Cl. 16).  
First use August 1966; in commerce October 1966.

**Class 38 — Prints and Publications**

SN 243,279. American Personnel and Guidance Association, Washington, D.C. Filed Dec. 16, 1965.

**JOURNAL OF COLLEGE STUDENT PERSONNEL**

For Magazine (Int. Cl. 16).  
First use October 1959.

SN 243,280. American Personnel and Guidance Association, Washington, D.C. Filed Dec. 16, 1965.

**REHABILITATION COUNSELING BULLETIN**

For Magazine (Int. Cl. 16).  
First use March 1958.

SN 243,281. American Personnel and Guidance Association, Washington, D.C. Filed Dec. 22, 1965.

**COUNSELOR EDUCATION AND SUPERVISION**

For Magazine (Int. Cl. 16).  
First use March 1961.

SN 243,282. American Personnel and Guidance Association, Washington, D.C. Filed Dec. 22, 1965.

**THE VOCATIONAL GUIDANCE QUARTERLY**

For Magazine (Int. Cl. 16).  
First use September 1952.

SN 243,283. American Personnel and Guidance Association, Washington, D.C. Filed Dec. 22, 1965.

**THE SCHOOL COUNSELOR**

For Magazine (Int. Cl. 16).  
First use Aug. 1, 1953.

SN 272,399. Pandex Corp., New York, N.Y. Filed May 25, 1967.



For Index to Technical Periodicals Published in the Form of Microfilm at Regular Intervals (Int. Cl. 16).  
First use Mar. 10, 1967.

SN 283,104. Conwed Corporation, St. Paul, Minn. Filed Oct. 23, 1967.

**CONWED CONTACT**

Owner of Reg. Nos. 820,946, 824,381, and others.  
For Company Magazine of General Interest to Customers, Employees, Stockholders, and Others, and Issued From Time to Time (Int. Cl. 16).  
First use about Dec. 29, 1966.

SN 286,022. Metropolitan Greetings, Inc., Everett, Mass. Filed Dec. 1, 1967.

**CHRISTMAS FESTIVAL**

For Christmas Cards and Albums Within Which Christmas Cards Are Mounted for Display (Int. Cl. 16).  
First use on or about Apr. 1, 1965.

SN 291,493. Century Publishing Ltd., Fargo, N. Dak. Filed Feb. 20, 1968.

**AGRIWEEK**

For Weekly Bulletin (Int. Cl. 16).  
First use Oct. 21, 1967.

SN 294,445. Allstate Insurance Company, Northbrook, Ill. Filed Mar. 29, 1968.

**GOOD HANDS**

For Magazine Published Periodically for Distribution to Employees of Applicant (Int. Cl. 16).  
First use Mar. 13, 1968.

SN 295,577. Warner Woven Label Company, Inc., Paterson, N.J. Filed Apr. 12, 1968.

**WARNER ARTEX**

Owner of Reg. No. 740,661.  
For Woven Labels (Int. Cl. 16).  
First use May 1964.



SN 304,651. The Hearst Corporation, New York, N.Y. Filed Aug. 8, 1968.



For Series of Books (Int. Cl. 16).  
First use June 25, 1968.

SN 304,658. Weight Watchers International, Inc., Great Neck, N.Y. Filed Aug. 8, 1968.

## WEIGHT WATCHERS

Owner of Reg. Nos. 715,515, 847,199, and others.  
For Magazine (Int. Cl. 16).  
First use Jan. 20, 1968.

SN 305,184. Field Enterprises, Inc., Chicago, Ill. Filed Aug. 15, 1968.

## TIME OUT!

For Cartoons (Int. Cl. 16).  
First use Mar. 1, 1966.

SN 305,513. Ashland Oil & Refining Company, Ashland, Ky. Filed Aug. 20, 1968.

## CARBON BLACK CORRELATOR

For Printed Cards Directed to the Grades and Sources of Carbon Black Produced by Certain Manufacturers (Int. Cl. 18).  
First use Aug. 15, 1963.

SN 305,519. Richard Manning, d.b.a. Richard Manning Associates, New Canaan, Conn. Filed Aug. 20, 1968.

## THE YACHTSMAN'S WIFE

For Magazine Published Quarterly (Int. Cl. 16).  
First use May 7, 1967.

## Class 39—Clothing

SN 294,890. Maldenform, Inc., New York, N.Y. Filed Apr. 4, 1968.

## THE SIMPLI-FIT SLIP

No claim is made to the exclusive right to the word "Slip" apart from the mark as shown.  
For Slips (Int. Cl. 25).  
First use Feb. 15, 1968.

SN 295,517. Dutchesse Underwear Corporation, New York, N.Y. Filed Apr. 12, 1968.

## AIRONETTE

For Ladies' Wearing Apparel—Namely, Mesh Panties (Int. Cl. 25).  
First use on or about Nov. 1, 1935.

SN 296,877. Slumbertogs, Inc., New York, N.Y. Filed Apr. 29, 1968.

## JULI JR. OF SLUMBERTOGS

Owner of Reg. Nos. 772,384, 808,881, and others.  
For Children's Robes, Nightgowns and Pajamas (Int. Cl. 25).  
First use Jan. 2, 1961.

SN 296,908. Wynn, Inc., Knoxville, Tenn. Filed Apr. 29, 1968.



For Clothing—Namely, Blazers and Sport Coats (Int. Cl. 25).  
First use on or about Apr. 9, 1968.

SN 298,818. Federated Department Stores, Inc., Columbus, Ohio. Filed May 22, 1968.

## GOLD @ CIRCLE

For Clothing—Namely, Men's Neckwear, Underwear, Hosiery, Gloves, Belts, Shirts, Pants, and Swimwear, Women's Underwear, Sweaters, Skirts, Slacks and Hosiery and Children's Underwear, Hosiery, Shirts and Coveralls (Int. Cl. 25).  
First use Dec. 19, 1967.

SN 303,582. True Form Foundations, Inc., Darby, Pa. Filed July 25, 1968.

## PRETTY GIRL

Owner of Reg. No. 551,120.  
For Women's and Misses' Girdles, Panty Girdles, Lingerie and Hosiery (Int. Cl. 25).  
First use July 31, 1950.

## Class 40—Fancy Goods, Furnishings, and Notions

SN 281,368. Fashion Tress, Inc., Miami Beach, Fla. Filed Sept. 28, 1967.

## CAP D'ANTIBES

For Ladies' Wigs and Hairpieces (Int. Cl. 26).  
First use on or about Sept. 1, 1967.

SN 289,391. Fabri-Fix, Inc., Overland, Mo. Filed Jan. 23, 1968.



For Fabric Patching Kit Comprising Heat Sensitive Patch Backing Material and Cutting Die and Block (Int. Cl. 26).  
First use Sept. 1, 1967.

SN 290,945. Bishop Industries Inc., Union, N.J. Filed Feb. 13, 1968.

## FABULOUS FAKES

Applicant asserts no exclusive right to the word "Fakes" apart from the mark as shown. Owner of Reg. No. 837,225.  
For Hair Pieces (Int. Cl. 26).  
First use Dec. 15, 1967.

SN 301,302. Amerace Corporation, New York, N.Y. Filed June 25, 1968.

## AMERACE

For Combs (Int. Cl. 21).  
First use at least as early as December 1965.

## Class 41—Canes, Parasols, and Umbrellas

SN 295,726. Ernst Ehrman, New York, N.Y. Filed Apr. 16, 1968.



For Beach, Garden and Patio Umbrellas (Int. Cl. 18).  
First use Mar. 19, 1968.

## Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 248,749. James Thompson & Co., Inc., New York, N.Y. Filed June 22, 1966.

## SHALIMAR

For Burlap Fabric (Int. Cl. 24).  
First use July 1965.

SN 263,121. Societe Besnier Flotex, Paris, France. Filed Jan. 23, 1967.

## TAPIS FLOTEX

Priority claimed under Sec. 44(d) on French Reg. No. 718,681, dated Sept. 21, 1966. Applicant disclaims the word "Tapis."  
For Textile Carpets, Rugs, and Runners, Including Pile-Type Ones With a Plastic Backing (Int. Cl. 27).

SN 283,827. Tachikawa Research Institute, Higashiyama-ku, Kyoto, Japan. Filed Oct. 31, 1967.

## POLYBONIC

For Non-Woven Fabric Used for Garments and Household Use (Int. Cl. 24).  
First use Sept. 17, 1965; in commerce Sept. 17, 1965.

SN 293,932. Kosset Carpets Limited, Brookfoot, Brighouse, England. Filed Mar. 22, 1968.

## KOSSET

Owner of British Reg. No. 908,247, dated Apr. 18, 1967.  
For Carpets, Carpeting, Tapestries and Wall Hangings (Int. Cl. 27).  
First use in or about August 1956 on carpets; in commerce in or about September 1962.

SN 295,226. W. R. Grace & Co., Duncan, S.C. Filed Apr. 9, 1968.

## BONEGUARD

For Cotton Cloth Material Coated With Wax Used as a Protective Covering for Meat Products (Int. Cl. 24).  
First use Apr. 30, 1957.

SN 295,533. Kentile Floors Inc., Brooklyn, N.Y. Filed Apr. 12, 1968.

## HIGHTSTOWN

For Rugs, Carpets and Carpeting (Int. Cl. 27).  
First use 1910.

SN 297,031. Cannon Mills Company, Kannapolis, N.C. Filed May 1, 1968.

## GREAT AMERICAN FLOWERS

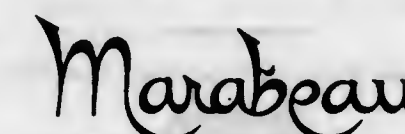
For Towels and Wash Cloths (Int. Cl. 24).  
First use Apr. 17, 1968.

SN 297,065. Hy-Sil Manufacturing Company, Revere, Mass. Filed May 1, 1968.



For Vacuum Metallized Polyester Film Laminated to a Non-Woven Fabric for Use in Disposable Items Such as Wearing Apparel, Table Covers and the Like (Int. Cl. 24).  
First use Mar. 18, 1968; on or about July 15, 1967, as to "Diapo Lam."

SN 297,182. Fieldcrest Mills, Inc., Eden, N.C. Filed May 2, 1968.



For Textile Rugs and Carpeting (Int. Cl. 27).  
First use Jan. 23, 1968.

SN 297,209. Osite Corporation, Chicago, Ill. Filed May 2, 1968.

## FUTURISTIC

For Carpeting (Int. Cl. 27).  
First use Aug. 31, 1967.



SN 297,272. Celanese Corporation, New York, N.Y. Filed May 3, 1968.

## CELABOND

For Laminated Acetate Fabrics (Int. Cl. 24).  
First use Oct. 15, 1967.

SN 297,323. Universal Carpets, Inc., Ellijay, Ga. Filed May 3, 1968.

## VINYLOC

For Carpeting With Vinyl Backing (Int. Cl. 27).  
First use Mar. 26, 1968.

SN 297,396. Fieldcrest Mills, Inc., Eden, N.C. Filed May 6, 1968.

## MATINEAU

For Textile Rugs and Carpeting (Int. Cl. 27).  
First use Feb. 26, 1968.

SN 297,413. Inwood Knitting Mills, Inc., New York, N.Y. Filed May 6, 1968.

## ALLUROLON

For Knit Fabrics for Use in Making Shirts, Blouses, Dresses, Skirts, Shorts, Pants, for Men, Women, and Children (Int. Cl. 24).  
First use Sept. 6, 1967.

SN 297,417. The Jaunty Fabric Corporation, New York, N.Y. Filed May 6, 1968.

## Lawnaire

For Broadwoven Fabric of Cotton and Polyester Fibres (Int. Cl. 24).  
First use Dec. 6, 1967.

SN 297,583. Miyuki Keori Kabushiki Kaisha (Miyuki Woollen Textile Co., Ltd.), Nishi-ku, Nagoya, Aichi Prefecture, Japan. Filed May 7, 1968.

## FANCYTEX

Owner of Japanese Reg. No. 566,798, dated Feb. 15, 1961.  
For Woollen Textile Piece Goods (Int. Cl. 24).

SN 304,652. Lever Brothers Company, New York, N.Y. Filed Aug. 8, 1968.

## FLOWER POWER

For Towels and Wash Cloths (Int. Cl. 24).  
First use July 26, 1968.

SN 304,653. Lever Brothers Company, New York, N.Y. Filed Aug. 8, 1968.

## FASHION BRIGHT

For Towels and Wash Cloths (Int. Cl. 24).  
First use Aug. 1, 1968.

## Class 43 — Thread and Yarn

SN 294,608. Filatures Prouvost Masurel & Cie, La Lainière de Roubaix, Roubaix (Nord), France. Filed Apr. 1, 1968.

## FESTONS

Owner of French Reg. No. 6,500, dated Sept. 25, 1961 (Tourcoing); Natl. Inst. No. 172,381.  
For Threads (Int. Cl. 23).

SN 296,948. Danville Industries, Inc., Danville, Va. Filed Apr. 30, 1968.

## NICIE

For Sewing Thread (Int. Cl. 23).  
First use May 17, 1967.

## Class 44 — Dental, Medical, and Surgical Appliances

SN 296,076. Donita L. Mitchell, d.b.a. The Medico Nurser Enterprise, Omaha, Nebr. Filed Apr. 22, 1968.

## MEDI-CO

For Infant Bottles (Int. Cl. 10).  
First use June 10, 1967.

SN 297,936. American Hospital Supply Corporation, Evanston, Ill. Filed May 13, 1968.

## V. MUELLER

"V. Mueller" is the name of the founder of the V. Mueller & Company, a division of the applicant, who is deceased.

For Surgical Instruments—Namely, Forceps; Needle Holders; Scissors; Eye Surgery Instruments; Stapes Surgery Instruments; Microsurgery Instruments; Cardiovascular Surgery Instruments; Neurosurgical Instruments; and Retractors (Int. Cl. 10).  
First use in or before 1896.

SN 303,232. Riegel Textile Corporation, New York, N.Y. Filed July 22, 1968.

## SWIRLDOWN

For Cellulosic Fibrous Materials Sold as a Component for Sanitary Napkins (Int. Cl. 5).  
First use June 28, 1968.

## Class 45 — Soft Drinks and Carbonated Waters

SN 284,484. J. F. Lazier Manufacturing Co., St. Louis, Mo. Filed Nov. 9, 1967.

## ICE-PALACE

For Flavoring Concentrates, Flavoring Syrups and Pre-Mixes Used in Making Finished Soft Drinks (Int. Cl. 32).  
First use Sept. 18, 1967.

SN 291,215. World Trade, Inc., Lorain, Ohio. Filed Feb. 15, 1968. SN 259,793. American Whipped Products, Inc., Glendale, N.Y. Filed Dec. 1, 1966.



The word "Sarsaparilla" is disclaimed.  
For Sarsaparilla (Int. Cl. 32).  
First use Oct. 18, 1967.

SN 304,875. S. Twitchell Company, Camden, N.J. Filed Aug. 12, 1968.



For Soft Drinks and Soft Drink Bases (Int. Cl. 32).  
First use Apr. 24, 1967.

## Class 46 — Foods and Ingredients of Foods

SN 246,114. U.S. Health Club, Inc., Yonkers, N.Y. Filed May 19, 1966.

## ZIPCODE

For Nutritional Mix in the Form of a Powder Adapted To Be Added to Drinks (Int. Cl. 5).  
First use Apr. 29, 1966.

SN 246,692. Industrias de Chocolate Lacta S/A, Sao Paulo, Brazil. Filed May 28, 1966.

# Pelé

Owner of Brazilian Reg. No. 230,668, dated Feb. 17, 1960.  
For Dried Fruits, Preserved Fruits, Sweet Meats, Fruit Jellies and Liquids and Candies—Namely, Bon Bons, Caramels, Chocolates, Sugared and Crystallized Dried Fruits, Pralines, Fruit Drops, Sugar Lumps and Cookies, Crackers (Int. Cls. 29 and 30).

SN 258,730. Terry Products, Inc., d.b.a. Globe's Best Products, Elizabeth, N.J. Filed Nov. 15, 1966.



## Friendly Milkman

For Candy (Int. Cl. 30).  
First use September 1965.  
Subj. to Intf. with SN 302,123.



For Sour Dressing and Dips, Comprising Water, Vegetable Fat, Non-Fat Milk Solids (or Substitute Therefor), Emulsifiers, Lactic Acid, Citric Acid, Vegetable Gums and Artificial Flavors (Int. Cl. 29).  
First use June 1, 1965.

SN 273,077. Judson Candies, Inc., San Antonio, Tex., assignee of Judson Inc., San Antonio, Tex. Filed June 5, 1967.



The word "Candies" is disclaimed apart from the mark as shown.  
For Candy (Int. Cl. 30).  
First use Mar. 17, 1967.

SN 274,119. The Borden Company, New York, N.Y. Filed June 16, 1967.

## STAR

Owner of Reg. Nos. 36,058, 68,998, and 111,067.  
For Swiss Cheese (Int. Cl. 29).  
First use Mar. 23, 1967.  
Subj. to Intf. with SN 270,725.

SN 278,395. Marine Colloids, Inc., Springfield, N.J. Filed Aug. 16, 1967.

# Gelloid

For Carrageenan in Particulate Form Extracted From Marine Plants and Used as a Thickening, Stabilizing or Suspending Agent in Foods (Int. Cl. 30).  
First use Aug. 7, 1967.

SN 284,821. Hershey Foods Corporation, Hershey, Pa., by change of name from Hershey Chocolate Corporation, Hershey, Pa. Filed Nov. 14, 1967.



The words "Milk Chocolate" and "Kisses" are disclaimed separate and apart from the mark as shown. Owner of Reg. No. 165,247.  
For Milk Chocolate Kisses (Int. Cl. 30).  
First use July 1, 1907.



SN 286,227. Antony Worham Limited, London, England. Filed Dec. 4, 1967.



The person shown in the drawing can be identified as "Henry VIII." Owner of British Reg. No. 770,018, dated Oct. 11, 1957.

For Canned Meats, Canned Fish, Edible Oils and Edible Fats (Int. Cl. 29).

SN 286,230. Antony Worham Limited, London, England. Filed Dec. 4, 1967.



The person represented can be identified as Elizabeth I. Owner of British Reg. No. 731,442, dated June 22, 1954.

For Canned Meats, Canned Fish, Canned Fruits, Canned Vegetables and Edible Oils, and Edible Fats From Animal Origin (Int. Cl. 29).

SN 289,273. Cap't Nick's Kitchens, Inc., Fort Lauderdale, Fla. Filed Jan. 22, 1968.

### CAP'T NICK'S

The mark "Cap't Nick's" does not refer to any particular living individual.

For Canned Conch Chowder (Int. Cl. 29).

First use Jan. 2, 1968.

SN 289,481. Clovis Citrus Company, Clovis, Calif. Filed Jan. 24, 1968.

### CLOVIS GOLD

The word "Clovis" is disclaimed apart from the mark as shown.

For Fresh Citrus Fruits (Int. Cl. 31).

First use Oct. 25, 1967.

SN 290,095. Godbold, Inc., Marfa, Tex. Filed Feb. 1, 1968.

### GODBOLD'S

For Cattle Feed in the Form of Blocks (Int. Cl. 31).

First use Nov. 24, 1961.

SN 290,711. H. C. Brill Company, Inc., Cedar Grove, N.J. Filed Feb. 9, 1968.

### TIME OUT

For Products Used in the Making of Bakery Products—Namely, Fermentation Base Used in Making Breads, Rolls, Donuts, Sweet Doughs, and All Yeast Leavened Products (Int. Cl. 30).

First use Jan. 31, 1968.

SN 293,700. Duffy-Mott Company, Inc., New York, N.Y. Filed Mar. 20, 1968.

### FLYING SAUCES

The word "Sauces" is disclaimed apart from the mark as shown.

For Mixed Fruit Sauces Comprising Mixtures of Apple Sauce With Other Fruit Sauces (Int. Cl. 30).

First use Mar. 4, 1968.

SN 294,077. Betty T. Pinckney, d.b.a. De Sales Industries, Savannah, Ga. Filed Mar. 25, 1968.

*Sprinkle  
Sweet*

For Mixed Sugar and Spices (Int. Cl. 30).

First use at least as early as Jan. 31, 1968.

Subj. to Intf. with SN 298,149.

SN 296,163. Hunt-Wesson Foods, Inc., Fullerton, Calif. Filed Apr. 22, 1968.

### GRAD

For Hydrogenated Vegetable Oil (Int. Cl. 29).

First use Oct. 18, 1967.

SN 296,164. Hunt-Wesson Foods, Inc., Fullerton, Calif. Filed Apr. 22, 1968.

### SOL

For Hydrogenated Vegetable Oil (Int. Cl. 29).

First use Oct. 18, 1967.

SN 296,166. Hunt-Wesson Foods, Inc., Fullerton, Calif. Filed Apr. 22, 1968.

### WESPOUR

For Hydrogenated Vegetable Oil (Int. Cl. 29).

First use Oct. 18, 1967.

SN 296,418. General Foods Corporation, White Plains, N.Y. Filed Apr. 24, 1968.

### COVINGTON KENNELS

For Dog Food (Int. Cl. 31).

First use Mar. 21, 1968.

SN 296,947. Custom Pet Food Packers, Inc., Princess Anne, Md. Filed Apr. 30, 1968.

### CLOVER

For Cat Food (Int. Cl. 31).

First use June 30, 1967.

SN 296,998. Williams Food Products Inc., Newark, N.J. Filed Apr. 30, 1968.

### POMPEII

For Frozen Pizza (Int. Cl. 30).

First use 1960.

SN 299,252. The C. F. Sauer Company, Richmond, Va. Filed May 28, 1968.



Owner of Reg. Nos. 25,222, 748,126, and others.

For Barbecue Sauce (Int. Cl. 30).

First use on or about Feb. 17, 1968; in or about February 1939 as to the pictorial design.

SN 299,320. Beech-Nut, Inc., New York, N.Y. Filed May 29, 1968.

### BUSTELO

Owner of Reg. Nos. 343,743, 789,833, and others.

For Coffee (Int. Cl. 30).

First use Sept. 11, 1936.

SN 299,828. S. W. Burr & Son, Incorporated, Albuquerque, N. Mex. Filed June 6, 1968.

### ZIA

For Foods for Dogs and Cats (Int. Cl. 31).

First use at least as early as Sept. 30, 1964.

SN 300,090. Lynden Frosted Foods, Inc., Lynden, Wash. Filed June 10, 1968.

### HARVEST PRIDE

For Fresh Frozen Vegetables—Namely, Peas, Corn, and Mixed Peas and Carrots (Int. Cl. 29).

First use Apr. 8, 1968.

SN 302,123. Prince Macaroni Manufacturing Company, Lowell, Mass. Filed July 5, 1968.

### YOUR "FRIENDLY MILKMAN"

For Cookies (Int. Cl. 30).

First use Mar. 1, 1966.

Subj. to Intf. with SN 258,780.

SN 303,469. The Coca-Cola Company, Atlanta, Ga. Filed July 24, 1968.



Owner of Reg. No. 734,619.

For Frozen Fruit Juice Concentrate for Pink Lemonade; for Black Cherry; for Grape; for Raspberry-Lemon and for Pineapple-Raspberry (Int. Cl. 32).

First use June 1961.

SN 305,095. Castle & Cooke, Inc., d.b.a. Dole Company, Honolulu, Hawaii. Filed Aug. 14, 1968.

### Dole-Dex

Owner of Reg. Nos. 508,689, 849,917, and others.

For Dried Pineapple Juice With Dried Corn Syrup (Int. Cl. 32).

First use May 15, 1968.

SN 305,100. Safeway Stores, Incorporated, Oakland, Calif. Filed Aug. 14, 1968.



Owner of Reg. Nos. 685,246, 771,051, and others.

For Corn Flakes and Artificial Food Sweetener (Int. Cls. 1 and 30).

First use Dec. 1, 1967.

### Class 48—Malt Beverages and Liquors

SN 303,967. Rheingold Breweries, Inc., Brooklyn, N.Y. Filed July 31, 1968.

### KNICK

Owner of Reg. Nos. 55,161, 715,586, and others.

For Beer (Int. Cl. 32).

First use July 10, 1968.

### Class 49—Distilled Alcoholic Liquors

SN 287,620. Siner, Inc., d.b.a. Burka's, Washington, D.C. Filed Dec. 27, 1967.

**KENTUCKY  
GOLD**

Without relinquishing any common law rights, exclusive right to use the word "Kentucky" is disclaimed apart from the mark as shown.

For Whiskey (Int. Cl. 33).

First use Oct. 15, 1956.

Subj. to Intf. with SN 219,021.

### Class 50—Merchandise Not Otherwise Classified

SN 296,143. General Crafts Corporation, Baltimore, Md. Filed Apr. 22, 1968.

### SCROLL ART

Owner of Reg. No. 730,201.

For Kits Containing Materials and Instructions for Painting Decorative Wall Panels (Int. Cl. 16).

First use Apr. 14, 1960.



**Class 51—Cosmetics and Toilet Preparations**

SN 190,809. Mary S. Kelly, d.b.a. Golden Key Cosmetics, Eldorado, Ill. Filed Apr. 10, 1964.



For Facial Cleansers, Fresheners, Moisturizers and Masks, Exfoliating Preparations; Bath Oil; Liquid Powder Base; Rouge; Lipstick; Eye Liner; Eyebrow Pencils; Mascara With Comb; Roll-On Eye Shadow (Int. Cl. 3).  
First use Sept. 1, 1961.

SN 179,008. Societe Nouvelle de Diffusion de Parfumerie, Paris, France. Filed Aug. 24, 1967.

**LADY DE CASTILLO**

Priority claimed under Sec. 44(d) on French Reg. No. 721,435, dated Mar. 2, 1967.

For Perfumes, Toilet Waters, Cologne Waters, Lotions for Body and Face, Beauty Creams for Face and Hands, and Make-Up (Int. Cl. 3).

SN 283,319. Chattem Drug & Chemical Company, Chattanooga, Tenn. Filed Oct. 25, 1967.

**EXTRA POINTS**

For Skin Bleaching Cream for Men (Int. Cl. 3).  
First use July 21, 1967.

SN 286,096. Clairol Incorporated, New York, N.Y. Filed Dec. 1, 1967.

**FIGHTER**

Owner of Reg. No. 848,353.  
For Hair Tinting, Dyeing and Coloring Preparation (Int. Cl. 3).  
First use July 18, 1966.

SN 288,404. Loesch Laboratory Consultants, Inc., Houston, Tex. Filed Jan. 5, 1968.

**KLEER-PLEX**

For Antiseptic Skin Cleanser (Int. Cl. 3).  
First use on or about June 1, 1958.

SN 290,360. Mem Company, Inc., Northvale, N.J. Filed Feb. 7, 1968.

**American Leather**

No exclusive rights are claimed in the word "Leather" apart from the mark as shown.

For Toilet Preparations—Namely, Personal Deodorant Sticks (Int. Cl. 5).

First use Oct. 13, 1964.

Subj. to Intf. with SN 281,382.

SN 292,073. John H. Breck, Inc., Wayne, N.J. Filed Feb. 28, 1968.

**HAIR MAGIC**

Owner of Reg. No. 717,300.  
For Hair Conditioner (Int. Cl. 3).  
First use Feb. 14, 1968.

SN 292,074. John H. Breck, Inc., Wayne, N.J. Filed Feb. 28, 1968.

**TENDER GLOW**

Owner of Reg. No. 687,691.  
For Hair Conditioner (Int. Cl. 3).  
First use Feb. 9, 1968.

SN 296,653. Helene Curtis Industries, Inc., Chicago, Ill. Filed Apr. 26, 1968.

**TOUCH**

For Liquid Make-Up (Int. Cl. 3).  
First use on or about Mar. 13, 1968.

SN 298,691. Bristol-Myers Company, New York, N.Y. Filed May 21, 1968.

**MOISTURA**

For Cosmetic-Bath Oil (Int. Cl. 3).  
First use Apr. 1, 1968.  
Subj. to Intf. with SN 304,843.

SN 302,892. The Gillette Company, d.b.a. The TONI Company, Boston, Mass. Filed July 17, 1968.

**THE KNACK**

Owner of Reg. No. 841,613.  
For Hair Setting Gel (Int. Cl. 3).  
First use June 24, 1968.

SN 303,743. The Gillette Company, Boston, Mass. Filed July 29, 1968.

**POWER PLAY**

For Hairspray (Int. Cl. 3).  
First use July 18, 1968.

SN 303,746. The Gillette Company, Boston, Mass. Filed July 29, 1968.

**DUNE**

For Deodorant for Personal Use (Int. Cl. 5).  
First use July 18, 1968.

SN 303,871. Pan American Suntan Oil Corp., New York, N.Y. Filed July 30, 1968.



For Suntan Lotion (Int. Cl. 3).  
First use May 16, 1968.

SN 808,878. Pan American Suntan Oil Corp., New York, N.Y. Filed July 30, 1968.

SN 804,848. Colgate-Palmolive Company, New York, N.Y. Filed Aug. 8, 1968.



The French words "Ile de Soleil" are translated "Island of sun."

For Suntan Lotion (Int. Cl. 3).  
First use May 16, 1968.

SN 304,183. Chesebrough-Pond's Inc., New York, N.Y. Filed Aug. 2, 1968.

**BIG GEYSER**

For Hand Lotion, Face Cream and Bath Oil (Int. Cl. 3).  
First use July 11, 1968.

SN 304,184. Chesebrough-Pond's Inc., New York, N.Y. Filed Aug. 2, 1968.

**INTENSIVE CARE**

For Hand Lotion, Face Cream and Bath Oil (Int. Cl. 3).  
First use July 11, 1968.

SN 304,185. Chesebrough-Pond's Inc., New York, N.Y. Filed Aug. 2, 1968.

**THIRST AID**

For Hand Lotion, Face Cream and Bath Oil (Int. Cl. 3).  
First use July 11, 1968.

SN 304,275. Marian Bialac, Inc., New York, N.Y. Filed Aug. 6, 1968.

**MARIAN BIALAC**

"Marian Bialac" identifies a living individual whose consent is of record.

For Skin Lotion and Cream, Night Cream, Facial Mask, Cosmetic Cleansing Preparations, Bath Oil, Toilet Water, Hand Cream, Personal Deodorant and Antiperspirant, Lipstick, Rouge, Foundation Make-Up, Face Powder and Pads Impregnated With Facial Cleansers (Int. Cls. 3 and 5).  
First use May 1935 on skin lotion.

SN 304,276. Marian Bialac, Inc., New York, N.Y. Filed Aug. 6, 1968.

*Marian Bialac*

"Marian Bialac" identifies a living individual whose consent is of record.

For Skin Lotion and Cream, Night Cream, Facial Mask, Cosmetic Cleansing Preparations, Bath Oil, Toilet Water, Hand Cream, Personal Deodorant and Antiperspirant, Lipstick, Rouge, Foundation Make-Up, Face Powder and Pads Impregnated With Facial Cleansers (Int. Cls. 3 and 5).  
First use May 1935 on skin lotion.

**BARRIER**

Owner of Reg. Nos. 596,908, 843,426, and others.  
For Hair Dressing (Int. Cl. 3).  
First use May 15, 1968.

**Class 52—Detergents and Soaps**

SN 266,779. Paramount Chemical Corporation, Montebello, Calif. Filed Mar. 15, 1967.

**PERFORM**

Applicant claims use for the area limited to retail outlets and to household users.

For Detergent in Lotion Form for Domestic Washing of Dishes and Fine Fabrics (Int. Cl. 3).

First use Oct. 31, 1964.

Subj. to Concurrent Use Proceeding with Reg. No. 813,156.

SN 273,325. The State Chemical Manufacturing Company, Cleveland, Ohio. Filed June 7, 1967.



No claim is made to the words "Pre-Measured Detergent Concentrate."

For Liquid Concentrated Detergent for General and Heavy Duty Cleaning (Int. Cl. 3).

First use Nov. 14, 1966.

Subj. to Intf. with SN 271,548.

SN 280,696. Constantine W. Colburn, d.b.a. Con Surfboards, Santa Monica, Calif. Filed Sept. 19, 1967.

**CONTROL**

For Surfboard Wax Remover and Non-Slip Coating Remover (Int. Cl. 3).

First use Mar. 25, 1967.

SN 293,715. General Foods Corporation, White Plains, N.Y. Filed Mar. 20, 1968.

**LYRIC**

For Laundry Detergent (Int. Cl. 3).  
First use Mar. 1, 1968.



SN 293,716. General Foods Corporation, White Plains, N.Y. Filed Mar. 20, 1968.

**SKIF**

For Laundry Detergent (Int. Cl. 3).  
First use Mar. 1, 1968.

SN 294,364. Anderson Products Company, Inc., Greensboro, N.C. Filed Mar. 28, 1968.

**NANNA'S GOLDMINE**

For All-Purpose Cleaner Concentrate (Int. Cl. 3).  
First use Feb. 2, 1968.

**SERVICE MARKS****Class 100 — Miscellaneous**

SN 293,439. B.T.S. Franchising Systems, Inc., Westport, Conn. Filed Nov. 29, 1965.



For Restaurant Services (Int. Cl. 42).  
First use Aug. 10, 1965.

SN 272,737. Moody's Investors Service, Inc., New York, N.Y. Filed May 31, 1967.



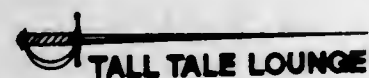
For Investment Advisory and Investment Counseling Services, Including Stock Surveys, Bond Surveys and Reports Concerning Common Stocks Disseminated to the Public (Int. Cl. 42).  
First use in or before 1964.

SN 285,851. Puritan Leasing Company, Santa Barbara, Calif. Filed Nov. 29, 1967.



For Arranging for the Acquisition and Lease of Goods and Buildings to the Order and/or Specifications of Others (Int. Cl. 42).  
First use on or about Aug. 1, 1967.

SN 290,458. American Motor Inns, Incorporated, Roanoke, Va. Filed Feb. 7, 1968.



For Restaurant and Cocktail Lounge Services (Int. Cl. 42).  
First use May 1, 1968.

SN 294,081. Sandy's Franchise, Inc., Kewanee, Ill. Filed Mar. 25, 1968.

**COME AS YOU ARE . . . HUNGRY**

For Restaurant Services (Int. Cl. 42).  
First use Jan. 13, 1968.

SN 294,082. Sandy's Franchise, Inc., Kewanee, Ill. Filed Mar. 25, 1968.

**HOME OF THE PLAID BERET**

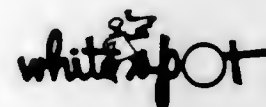
For Restaurant Services (Int. Cl. 42).  
First use Jan. 13, 1968.

SN 299,825. Babson's Reports Incorporated, Wellesley Hills, Mass. Filed June 6, 1968.

**TELEGROWTH**

For Investment Advisory Service Providing Advice by Telegram (Int. Cl. 42).  
First use Apr. 4, 1968.

SN 300,182. White Spots, Inc., Denver, Colo. Filed June 11, 1968.



For Restaurant Services (Int. Cl. 42).  
First use on or about Oct. 10, 1946.

SN 304,560. Restaurant Associates Industries, Inc., New York, N.Y. Filed Aug. 7, 1968.



Owner of Reg. No. 844,741.  
For Restaurant Services and Hotel and Motel Services (Int. Cl. 42).  
First use May 20, 1968.

SN 305,076. Simple Simon Interstate, Inc., Lebanon, Tenn. Filed Aug. 13, 1968.



For Restaurant Services (Int. Cl. 42).  
First use July 1, 1968.

**Class 101 — Advertising and Business**

SN 236,620. Nan Miller & Associates, Inc., Chicago, Ill. Filed Jan. 17, 1966.

**NAN MILLER**

For Promoting the Sale of Goods and Services of Others by Arranging for the Awarding of Prizes at Conventions, Trade and Professional Organizational Meetings, Fairs, and Exhibitions; Public Relations Services—Namely, Providing Employees With Gifts in Recognition of Their Years of Service, Birthdays, and Promotions (Int. Cl. 35).  
First use Jan. 2, 1963.

SN 264,616. Trans-Power, Inc., Fort Wayne, Ind. Filed Feb. 13, 1967.

**TRANS-POWER**

For Industrial Power Equipment Distributorship Services (Int. Cl. 35).  
First use Jan. 8, 1967.

SN 266,994. Atomic Industrial Forum, Inc., New York, N.Y. Filed Mar. 17, 1967.

**ATOMFAIR**

Owner of Reg. Nos. 711,266 and 732,173.  
For Organizing and Managing Annual Trade Fairs, or Exhibitions, Relating to the Atomic Industry (Int. Cl. 35).  
First use Sept. 24, 1956.

SN 267,117. Associated Buy Liquors Rite Merchants Inc., Baldwin, N.Y. Filed Mar. 20, 1967.

**BUY-RITE**

For Retail Liquor Store Services (Int. Cl. 35).  
First use Dec. 15, 1964.

SN 271,478. J & H International Corporation, Chicago, Ill. Filed May 15, 1967.

**MYSTERY CASH BINGO**

The word "Bingo" is disclaimed apart from the mark as shown.  
For Sales Promotion for Retail Establishments Through the Organization and the Conducting of Promotional Games (Int. Cl. 35).  
First use June 7, 1966.

SN 271,479. J & H International Corporation, Chicago, Ill. Filed May 15, 1967.

**LUCKY BINGO**

The word "Bingo" is disclaimed apart from the mark as shown.  
For Sales Promotion for Retail Establishments Through the Organization and the Conducting of Promotional Games (Int. Cl. 35).  
First use Feb. 23, 1966.

SN 271,482. J & H International Corporation, Chicago, Ill. Filed May 15, 1967.

**DOUBLE SWEEPSTAKES BINGO**

The word "Bingo" is disclaimed apart from the mark as shown.  
For Sales Promotion for Retail Establishments Through the Organization and the Conducting of Promotional Games (Int. Cl. 35).  
First use Nov. 1, 1965.

SN 271,801. J & H International Corporation, Chicago, Ill. Filed May 15, 1967.

**DOUBLE MONEY BINGO**

The word "Bingo" is disclaimed apart from the mark as shown.  
For Sales Promotion for Retail Establishments Through the Organization and the Conducting of Promotional Games (Int. Cl. 35).  
First use Mar. 16, 1967.

SN 278,726. National Association for the Specialty Food Trade, Inc., New York, N.Y. Filed Aug. 21, 1967.



No claim is made to the wording "Try Something New" apart from the mark as shown.  
For Promotional Services Directed to Specialty Food Retailers for Promoting the Sale of Specialty Foods, Gourmet Foods and Special High Quality Foods of Its Member and Non-Member Food Importers and Distributors (Int. Cl. 35).  
First use Aug. 17, 1966.

SN 281,160. Docktor Pet Centers, Inc., d.b.a. Docktor Pet Centers Inc., and Docktor's, Philadelphia, Pa. Filed Sept. 26, 1967.

**DOCKTOR**

For Retail Pet Store Services as Well as the Rendering of Advice and Consultation Services in the Establishment and Management of Retail Pet Stores in All Phases of Business (Int. Cl. 35).  
First use sometime in 1927.

SN 294,934. HMH Publishing Co., Inc., Chicago, Ill. Filed Apr. 4, 1968.



For Model Agency Service Including Supplying of Live Models for Various Business Purposes (Int. Cl. 35).  
First use on or about July 13, 1964.

SN 297,242. Castle & Cooke, Inc., d.b.a. Plan, Honolulu, Hawaii. Filed May 3, 1968.



For Contract Management and Management Consulting Services in Agriculture, Fisheries, Shipping, Urban Planning, Land Development, and Management of Construction Projects (Int. Cl. 35).  
First use Jan. 1, 1968.



**Class 102 — Insurance and Financial**

SN 287,163. First Wisconsin Bankshares Corporation, Milwaukee, Wis. Filed Dec. 18, 1967.

**FIRST WISCONSIN**

For General Banking Services Including Credit Card Services (Int. Cl. 36).  
First use June 30, 1919.

**Class 103 — Construction and Repair**

SN 282,287. Magic Rain, Inc., Omaha, Nebr. Filed Oct. 11, 1967.



The term "Sprinkler Systems" and the representation of a sprinkler are disclaimed apart from the mark as shown.  
For Constructing and Repairing Underground Sprinkler and Irrigation Systems (Int. Cl. 37).  
First use at least as early as Mar. 1, 1967.

**Class 105 — Transportation and Storage**

SN 300,161. Western Air Lines, Inc., Los Angeles, Calif. Filed June 11, 1968.

**WESTERN AIRLINES  
INTERNATIONAL**

No claim is made to the word "International" apart from the mark as shown. Owner of Reg. No. 705,078.  
For Transportation of Passengers by Air (Int. Cl. 39).  
First use Apr. 23, 1967.

**COLLECTIVE MEMBERSHIP MARKS****Class 200**

SN 270,358. Cuna International, Inc., Madison, Wis. Filed May 1, 1967.



For Indicating Membership in Applicant.  
First use in or about April 1966.

**Class 107 — Education and Entertainment**

SN 261,728. Joseph H. and Lillie A. Gonzalez (joint owners), Saginaw, Mich. Filed Dec. 30, 1966.

**? (QUESTION MARK)  
& THE MYSTERIANS**

For Entertainment Services Rendered by a Vocal and Instrumental Group (Int. Cl. 41).  
First use July 1, 1963.

SN 282,298. Robert Graham Prince, Detroit, Mich. Filed Oct. 11, 1967.

**SHOW-OFFS**

For Entertainment Services—Namely, Vocal and Instrumental Renditions of a Combo (Int. Cl. 41).  
First use Oct. 17, 1964.

SN 283,514. Film Center, Montclair, N.J. Filed Oct. 27, 1967.

**ARGOSY FILM SERVICE**

No claim is made to the wording "Film Service" apart from the mark as shown without waiving any common law rights therein.  
For Motion Picture Rental Service (Int. Cl. 41).  
First use July 18, 1967.

SN 286,497. Bankers Management & Services, Inc., Dallas, Tex. Filed Dec. 8, 1967.

**THE U.S. MALES**

For Entertainment Services—Namely, Musical Entertainment Services Rendered by a Vocal and Instrumental Group (Int. Cl. 41).  
First use Nov. 14, 1967.

**TRADEMARK REGISTRATIONS ISSUED****PRINCIPAL REGISTER****Class 1 — Raw or Partly Prepared Materials**

860,351. LASR. Dayco Corporation. MULTIPLE CLASS (Classes 1 and 35). SN 272,659. Pub. 9-3-68. Filed 5-31-67.  
860,352. SHELL-PRODUCER. Limestone Products Corporation of America. SN 282,471. Pub. 9-3-68. Filed 10-13-67.  
860,353. WEBSUN. Chevron Chemical Company. SN 286,094. Pub. 9-3-68. Filed 12-4-67.  
860,354. CASCOMEL. The Borden Company. SN 286,999. Pub. 9-3-68. Filed 12-15-67.  
860,355. CALIBRITE. Pluess-Stauffer (North American) Inc. SN 287,042. Pub. 9-3-68. Filed 12-15-67.  
860,356. KANEBO BELESA. Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd. SN 296,543. Pub. 9-3-68. Filed 4-25-68.  
860,357. STRYCE. E. I. du Pont de Nemours and Company. SN 298,896. Pub. 9-3-68. Filed 5-23-68.  
860,358. QIANA. E. I. du Pont de Nemours and Company. SN 298,899. Pub. 9-3-68. Filed 5-23-68.

**Class 2 — Receptacles**

860,359. BIO QUIP. BioQuip Products Co., by assignment and change of name from Richard P. Fall, d.b.a. Bio Metal Associates. MULTIPLE CLASS (Classes 2 and 32). SN 223,297. Pub. 4-25-67. Filed 7-14-65.  
860,360. KC. Kollmor Chemicals. SN 278,601. Pub. 9-3-68. Filed 8-18-67.  
860,361. UNI-JAK. Southern Graphic Industries. SN 283,727. Pub. 9-3-68. Filed 10-30-67.  
860,362. SERVETTE. Eastern Seaboard Plastics, Inc. SN 283,883. Pub. 9-3-68. Filed 11-1-67.  
860,363. M (DESIGN). Marcal Paper Mills, Inc. SN 284,488. Pub. 9-3-68. Filed 11-9-67.  
860,364. LILYFOME. Lily-Tulip Cup Corporation. SN 289,703. Pub. 9-3-68. Filed 1-26-68.  
860,365. LILYFOME. Lily-Tulip Cup Corporation. SN 289,705. Pub. 9-3-68. Filed 1-26-68.  
860,366. DESIGN OF LETTER A. American Can Company. SN 291,694. Pub. 9-3-68. Filed 2-23-68.  
860,367. CONSO-COLOR. Consolidated Packaging Corporation. SN 294,814. Pub. 9-3-68. Filed 4-3-68.  
860,368. CIRCLE AND ARROW DESIGN. Hedwin Corporation. SN 295,230. Pub. 9-3-68. Filed 4-9-68.  
860,369. AQUA-PEL. Eastern Corrugated Container Corporation. SN 298,213. Pub. 9-3-68. Filed 5-15-68.  
860,370. MOHAWK BUSYBAGS. Mohawk Plastics, Inc. SN 298,291. Pub. 9-3-68. Filed 5-16-68.

**Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks**

860,371. MINI-SPACEMAKER. St. Thomas, Incorporated. SN 280,893. Pub. 9-3-68. Filed 9-21-67.

**Class 4 — Abrasives and Polishing Materials**

860,372. GEMINI. Lever Brothers Company. MULTIPLE CLASS (Classes 4 and 52). SN 243,936. Pub. 8-23-66. Filed 4-21-66.

860,373. SUPERFIX. Diametal AG. SN 280,772. Pub. 9-3-68. Filed 9-20-67.  
860,374. GLEE. Simoniz Company. SN 299,535. Pub. 9-3-68. Filed 6-3-68.

**Class 6 — Chemicals and Chemical Compositions**

860,375. PRE-SAN. Mallinckrodt Chemical Works. SN 197,598. Pub. 3-16-65. Filed 7-10-64.  
860,376. SRS. Tee-Pak, Inc. SN 273,330. Pub. 9-3-68. Filed 6-7-67.  
860,377. WATER-IN AND DESIGN. Water-In. SN 278,328. Pub. 9-3-68. Filed 8-15-67.  
860,378. ELSANOL. Elean Limited. SN 285,217. Pub. 9-3-68. Filed 11-20-67.  
860,379. DICO. The Diversey Corporation. SN 286,914. Pub. 9-3-68. Filed 12-14-67.  
860,380. PG GRANULES. Diamond Shamrock Corporation. SN 292,844. Pub. 9-3-68. Filed 3-11-68.

**Class 7 — Cordage**

860,381. EMERALD. Milton L. Mintzer. SN 282,598. Pub. 9-3-68. Filed 10-16-67.

**Class 8 — Smokers' Articles, Not Including Tobacco Products**

860,382. SLOW DOWN AND DESIGN. H. A. Haynes. SN 284,661. Pub. 9-3-68. Filed 11-13-67.  
860,383. GOLDEN GLOVE. General Cigar Co., Inc. SN 297,185. Pub. 9-3-68. Filed 5-2-68.

**Class 9 — Explosives, Firearms, Equipments, and Projectiles**

860,384. INTERARMS. International Armament Corporation. SN 278,698. Pub. 9-3-68. Filed 8-21-67.  
860,385. THE NITE THEATRE. Zebra Distributing Co., Inc. SN 287,056. Pub. 9-3-68. Filed 12-15-67.

**Class 10 — Fertilizers**

860,386. ARC. Lindauer & Co. SN 289,812. Pub. 9-3-68. Filed 1-29-68.  
860,387. MIRACLE BARK. Miramul, Incorporated. SN 291,993. Pub. 9-3-68. Filed 2-27-68.

**Class 11 — Inks and Inking Materials**

860,388. DRI-KOTE. Wilkoff Color Corporation. SN 277,746. Pub. 9-3-68. Filed 8-7-67.



**Class 12—Construction Materials**

- 860,389. CRESDEK. Hambro Forest Products, Inc. SN 267,423. Pub. 9-3-68. Filed 3-23-67.
- 860,390. NU-WIN-DO AND DESIGN. Interlake Window Industries, Inc. SN 277,918. Pub. 6-18-68. Filed 8-9-67.
- 860,391. CHANNEL MASTER. Powerlock Floors, Inc. SN 284,499. Pub. 9-3-68. Filed 11-9-67.
- 860,392. PACZYME. The Larutan Corporation. SN 293,152. Pub. 8-13-68. Filed 3-13-68.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

- 860,393. AIRHARDWARE AND DESIGN. Airhardware, Inc. SN 273,014. Pub. 9-3-68. Filed 6-5-67.
- 860,394. TUFFY AND DESIGN. Beneke Corporation. SN 276,302. Pub. 9-3-68. Filed 7-19-67.
- 860,395. HYDRA-HOLDER. Schlage Lock Company, d.b.a. LCN Closers Division. SN 277,464. Pub. 9-3-68. Filed 6-3-67.
- 860,396. NIFTEE. Schlage Lock Company, d.b.a. LCN Closers Division. SN 277,465. Pub. 9-3-68. Filed 8-3-67.
- 860,397. CHROM-EVER. Chrom-Ever Corporation. SN 277,985. Pub. 9-3-68. Filed 8-10-67.
- 860,398. ECO PAK. Quality Products, Inc. SN 281,162. Pub. 9-3-68. Filed 9-29-67.
- 860,399. GOULD CREATES JEWELRY FOR WINDOWS. The Gould-Mersereau Co., Inc. SN 282,457. Pub. 9-3-68. Filed 10-13-67.
- 860,400. ENGLISH CLASSIC. National Lock Co. SN 285,144. Pub. 9-3-68. Filed 11-17-67.
- 860,401. FDF. The Gorman-Rupp Company. SN 285,920. Pub. 9-3-68. Filed 11-30-67.
- 860,402. MERRIMAC. Stephen A. Young Corporation. SN 285,963. Pub. 9-3-68. Filed 11-30-67.
- 860,403. MONITOR. Stephen A. Young Corporation. SN 285,964. Pub. 9-3-68. Filed 11-30-67.
- 860,404. O-CLAMP. Oetiker, Inc. SN 286,027. Pub. 9-3-68. Filed 12-1-67.
- 860,405. MONO-CLAMP. Oetiker, Inc. SN 286,029. Pub. 9-3-68. Filed 12-1-67.
- 860,406. O-GRIPS. Oetiker, Inc. SN 286,030. Pub. 9-3-68. Filed 12-1-67.
- 860,407. TENNESSEE. Crane Co. SN 286,327. Pub. 9-3-68. Filed 12-6-67.
- 860,408. KIN-LINE. Kin-Line, Inc. SN 286,432. Pub. 9-3-68. Filed 12-7-67.
- 860,409. LOAD-LOK. National Lock Co., Inc. SN 286,710. Pub. 9-3-68. Filed 12-11-67.
- 860,410. E-LIP-LOK. Republic Steel Corporation. SN 286,843. Pub. 9-3-68. Filed 12-13-67.
- 860,411. TREND AND DESIGN. Trend Products Co. SN 286,856. Pub. 9-3-68. Filed 12-13-67.
- 860,412. TREND. Trend Products Co. SN 286,857. Pub. 9-3-68. Filed 12-13-67.
- 860,413. SHELLAV. Lippert Tile, Inc. SN 295,828. Pub. 9-3-68. Filed 4-17-68.
- 860,414. FLIP LOC. TA Mfg. Corp. SN 297,512. Pub. 9-3-68. Filed 5-9-68.
- 860,415. SALLY. TA Mfg. Corp. SN 297,513. Pub. 9-3-68. Filed 5-9-68.
- 860,416. PILGRIM NUT. Clifford E. Holtt, d.b.a. Marine Products & Engineering Company. SN 299,184. Pub. 9-3-68. Filed 5-28-68.

**Class 14—Metals and Metal Castings and Forgings**

- 860,417. SPECTRUM 21 AND DESIGN. Alcan Aluminum Corporation. SN 275,422. Pub. 9-3-68. Filed 7-6-67.

**Class 16—Protective and Decorative Coatings**

- 860,418. XP400 RUST RESIST. United States Rust Control Corporation. SN 257,211. Pub. 9-3-68. Filed 10-25-66.
- 860,419. XP300 MET-L PRO-TEC. United States Rust Control Corporation. SN 257,215. Pub. 9-3-68. Filed 10-25-66.
- 860,420. TFW PUREX AND DESIGN. Purex Corporation, Ltd., d.b.a. T. F. Washburn Company. SN 273,000. Pub. 9-3-68. Filed 6-5-67.

**Class 18—Medicines and Pharmaceutical Preparations**

- 860,421. IODASEPT. Guardian Chemical Corporation. SN 218,422. Pub. 8-9-66. Filed 5-10-65.
- 860,422. X-WAX. X-Wax Corporation, assignee of Aqualana Corporation of America. SN 225,557. Pub. 1-10-67. Filed 8-17-65.
- 860,423. LIBRITABS. Hoffmann-La Roche Inc. SN 256,837. Pub. 9-3-68. Filed 10-20-66.
- 860,424. FLUONID. Marion Laboratories, Inc. SN 284,212. Pub. 9-3-68. Filed 11-6-67.
- 860,425. OPTICIN. Bristol-Myers Company. SN 297,960. Pub. 9-3-68. Filed 5-13-68.
- 860,426. GRAMAPEN. Bristol-Myers Company. SN 297,965. Pub. 9-3-68. Filed 5-13-68.

**Class 19—Vehicles**

- 860,427. STYLA. Hillcrest Engineering Limited, assignee of Styla Accessories Limited. MULTIPLE CLASS (Classes 19 and 21). SN 240,483. Pub. 9-3-68. Filed 3-8-66.
- 860,428. FRIGIKING AND DESIGN. Cummins Engine Company, Inc. SN 267,233. Pub. 9-3-68. Filed 3-21-67.
- 860,429. MISCELLANEOUS DESIGN. The Crest Manufacturing Co. SN 275,102. Pub. 9-3-68. Filed 5-22-67.
- 860,430. THE NORTHWESTERN AND DESIGN. Rainway Manufacturing Company. SN 285,577. Pub. 9-3-68. Filed 11-24-67.

**Class 20—Linoleum and Oiled Cloth**

- 860,431. VYNOLAY. Dunlop Semtex Limited. SN 285,316. Pub. 9-3-68. Filed 11-21-67.

**Class 21—Electrical Apparatus, Machines, and Supplies**

- 860,427. (See Class 19 for this trademark.)
- 860,432. ALTEC. LTV Ling Altec, Inc. SN 250,283. Pub. 9-3-68. Filed 7-14-66.
- 860,433. UNIDEX. Oak Electro/Netics Corp. SN 252,205. Pub. 9-3-68. Filed 8-11-66.
- 860,434. COLOR-CEPTOR. Winegard Company. SN 253,389. Pub. 9-3-68. Filed 8-29-66.

- 860,435. MC MARTIN. McMartin Industries, Inc. MULTIPLE CLASS (Classes 21 and 26). SN 259,455. Pub. 9-3-68. Filed 11-25-66.
- 860,436. SPEECH DIRECTOR. Argos Products Company, Inc. SN 268,688. Pub. 9-3-68. Filed 4-10-67.
- 860,437. ALINCO AND DESIGN. Textron Electronics, Inc. MULTIPLE CLASS (Classes 21 and 26). SN 270,097. Pub. 9-3-68. Filed 4-27-67.
- 860,438. ZIP-GLASS. Plas-Steel Products, Inc. SN 271,284. Pub. 9-3-68. Filed 5-11-67.
- 860,439. PROTECTON. Security Systems, Incorporated. SN 271,535. Pub. 9-3-68. Filed 5-15-67.
- 860,440. POWEREEL. Industrial Electric Reels, Inc. SN 271,621. Pub. 9-3-68. Filed 5-16-67.
- 860,441. PULLMAN. Purex Corporation, Ltd., d.b.a. Pullman Vacuum Cleaner Corporation. SN 274,293. Pub. 9-3-68. Filed 6-20-67.
- 860,442. TENCON AND DESIGN. Tennessee Continental Corporation. SN 274,902. Pub. 9-3-68. Filed 6-27-67.
- 860,443. MISCELLANEOUS DESIGN. Marquette Corporation. MULTIPLE CLASS (Classes 21, 23, 26, and 34). SN 279,017. Pub. 9-3-68. Filed 8-25-67.
- 860,444. PRISMATITE. Holophane Company, Inc. SN 279,559. Pub. 9-3-68. Filed 9-1-67.
- 860,445. CON-WIPE. Colonial Electric & Specialty Co., Inc. SN 279,628. Pub. 9-3-68. Filed 9-5-67.
- 860,446. POWER MOLD. Haveg Industries, Inc. SN 279,821. Pub. 9-3-68. Filed 9-7-67.
- 860,447. ULTRA VISTA. Jerrold Electronics Corporation. SN 280,422. Pub. 9-3-68. Filed 9-15-67.
- 860,448. CURTIS MATHES. Curtis Mathes Sales Company. MULTIPLE CLASS (Classes 21 and 36). SN 282,549. Pub. 9-3-68. Filed 10-16-67.
- 860,449. CM AND DESIGN. Curtis Mathes Sales Company. MULTIPLE CLASS (Classes 21 and 36). SN 282,550. Pub. 9-3-68. Filed 10-16-67.
- 860,450. DO-T. TRW, Inc. SN 287,406. Pub. 9-3-68. Filed 12-22-67.
- 860,451. TINYMAG. Torwico Electronics, Inc. SN 287,597. Pub. 9-3-68. Filed 12-26-67.
- 860,452. TINYMAX. Torwico Electronics, Inc. SN 287,599. Pub. 9-3-68. Filed 12-26-67.
- 860,453. RED DOG. Red Dog Inc. SN 288,643. Pub. 9-3-68. Filed 1-11-68.
- 860,454. CLB. General Electric Company. SN 290,277. Pub. 9-3-68. Filed 2-5-68.
- 860,455. TRI-BREAK. General Electric Company. SN 290,278. Pub. 9-3-68. Filed 2-5-68.
- 860,456. W AND DESIGN. The Weatherhead Company. SN 292,519. Pub. 9-3-68. Filed 3-5-68.
- 860,457. PROTECT-A-TAP. Vikoa, Incorporated. SN 296,492. Pub. 9-3-68. Filed 4-25-68.
- 860,458. AMETEK AND DESIGN. Ametek, Inc. SN 297,127. Pub. 9-3-68. Filed 5-2-68.
- 860,459. AD'A-MATION. Santa Claus Industries, Inc., d.b.a. Creative Specialty Manufacturers. SN 297,635. Pub. 9-3-68. Filed 5-8-68.
- 860,460. EDCO. Standard Oil Company. SN 297,741. Pub. 9-3-68. Filed 5-9-68.

**Class 22—Games, Toys, and Sporting Goods**

- 860,461. CRAZY MAZE. Lakeside Industries, Inc. SN 257,967. Pub. 9-3-68. Filed 11-4-66.
- 860,462. BATTLESHIP. Milton Bradley Company. SN 273,164. Pub. 9-3-68. Filed 6-6-67.
- 860,463. DORADO. Southern Tackle Distributors, Inc. SN 273,534. Pub. 9-3-68. Filed 6-9-67.
- 860,464. ASTROSLIDE. Hollywood Recreation Research, Inc. SN 275,665. Pub. 9-3-68. Filed 7-10-67.
- 860,465. DOODLING BALLS AND DESIGN. Doodling Balls AG. SN 277,029. Pub. 9-3-68. Filed 7-28-67.

- 860,466. DOLPHIN. Ray Feaster & Associates (Arm), d.b.a. Dolphin. SN 282,450. Pub. 9-3-68. Filed 10-13-67.
- 860,467. HI-FUN. Duncan Tong, d.b.a. Reliance Trading Corporation. SN 284,407. Pub. 9-3-68. Filed 11-8-67.
- 860,468. 4 POINT 1. The Carlton Tyre Saving Company Limited. SN 287,798. Pub. 9-3-68. Filed 12-29-67.
- 860,469. 4 POINT 3. The Carlton Tyre Saving Company Limited. SN 287,799. Pub. 9-3-68. Filed 12-29-67.
- 860,470. 3 POINT 7. The Carlton Tyre Saving Company Limited. SN 287,800. Pub. 9-3-68. Filed 12-29-67.
- 860,471. AIR ZAPPER. Wham-O Mfg. Co. SN 293,447. Pub. 9-3-68. Filed 3-18-68.
- 860,472. ITTY-AUTOS. Wham-O Mfg. Co. SN 294,787. Pub. 9-3-68. Filed 4-3-68.
- 860,473. BLUE LAKE. Berkley & Company, Inc. SN 296,612. Pub. 9-3-68. Filed 4-26-68.

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

- 860,443. (See Class 21 for this trademark.)
- 860,474. ROYAL ELECTRESS. Litton Business Systems, Inc., by assignment, merger and change of name from Royal McBee Corporation. SN 202,105. Pub. 9-3-68. Filed 9-17-64.
- 860,475. BAGAT BROS. Bagat Bros. SN 254,912. Pub. 9-3-68. Filed 9-22-66.
- 860,476. "MAG." Schwinn Bicycle Company. SN 266,463. Pub. 9-3-68. Filed 3-10-67.
- 860,477. SHOK-BLOC. Efdyn Corporation. SN 268,478. Pub. 9-3-68. Filed 4-6-67.
- 860,478. SUPRCAP. Wilton Corporation. SN 270,996. Pub. 9-3-68. Filed 5-8-67.
- 860,479. NAVAHO. The International Silver Company. SN 271,626. Pub. 9-3-68. Filed 5-16-67.
- 860,480. MICRO-CARD. Southern Suction & Equipment Corp. SN 273,997. Pub. 9-3-68. Filed 6-15-67.
- 860,481. SANCO AND DESIGN. Sanco Corporation. SN 274,097. Pub. 9-3-68. Filed 6-16-67.
- 860,482. TEMPO-TRONIC. Milo Harding Company. SN 274,335. Pub. 9-3-68. Filed 6-20-67.
- 860,483. SABATIER. Societe Maxime Girard. SN 275,808. Pub. 9-3-68. Filed 7-3-67.
- 860,484. LOAD-N-FOLD. Daybrook-Ottawa Corporation. SN 276,543. Pub. 9-3-68. Filed 7-21-67.
- 860,485. PANAVISE. Colbert Die Casting Company. SN 279,170. Pub. 9-3-68. Filed 8-28-67.
- 860,486. MEKANIKS PAK. The Maltby Company. SN 279,661. Pub. 9-3-68. Filed 9-5-67.
- 860,487. COLUMBIA AND DESIGN. Columbia Enterprises, Inc. SN 280,209. Pub. 9-3-68. Filed 9-13-67.
- 860,488. UNISEAMER. Astem-Hill Mfg. Company. SN 280,294. Pub. 9-3-68. Filed 9-14-67.
- 860,489. SCHRIBER. Harris-Intertype Corporation, by merger from The Schriber Company. SN 280,466. Pub. 9-3-68. Filed 9-15-67.
- 860,490. PELICAN. Elgin Sweeper Company. SN 281,877. Pub. 9-3-68. Filed 10-5-67.
- 860,491. JAEGER AND DESIGN. The Jaeger Machine Company. SN 282,091. Pub. 9-3-68. Filed 10-9-67.
- 860,492. PEER QUALITY TOOL AND DESIGN. Serva Tool Corporation. SN 283,582. Pub. 9-3-68. Filed 10-27-67.
- 860,493. SPIN-O-MATIC AND DESIGN. Fedtro, Inc. SN 283,791. Pub. 9-3-68. Filed 10-31-67.
- 860,494. TRUKVEYOR. FMC Corporation. SN 288,011. Pub. 9-3-68. Filed 1-3-68.
- 860,495. ORNAT. Ornpress AG. SN 288,027. Pub. 9-3-68. Filed 1-3-68.
- 860,496. FEEDARATOR. Newaygo Engineering Company. SN 288,447. Pub. 9-3-68. Filed 1-9-68.
- 860,497. SWAGELOK. Crawford Fitting Company. SN 288,796. Pub. 9-3-68. Filed 1-15-68.



- 860,448. CUSHIONETTE. Deschner Corporation. SN 288,799. Pub. 9-3-68. Filed 1-15-68.  
 860,449. DUCTMASTER. Engel Equipment, Inc. SN 289,178. Pub. 9-3-68. Filed 1-19-68.  
 860,500. UNI-FLEX. Pines Engineering Co., Inc., assignee of H & H Engineering Company. SN 290,799. Pub. 5-7-68. Filed 2-12-68.  
 860,501. HUE-MASTER. Rodney Hunt Company. SN 292,962. Pub. 9-3-68. Filed 3-11-68.  
 860,502. LAKE-CLEAR-A-TOR. Clear-A-Tor Corporation. SN 296,739. Pub. 9-3-68. Filed 4-29-68.  
 860,503. CARINO. The International Silver Company. SN 293,774. Pub. 9-3-68. Filed 5-22-68.  
 860,504. STAR (DESIGN). Locke Manufacturing Companies, Inc. SN 298,903. Pub. 9-3-68. Filed 5-21-68.

### Class 24 — Laundry Appliances and Machines

- 860,505. TOUCHUP. Lear Siegler, Inc., assignee, by mesne assignment, of Seymour Industries, Inc. SN 267,984. Pub. 9-3-68. Filed 3-30-67.  
 860,506. AMETEK AND DESIGN. Ametek, Inc. SN 297,129. Pub. 9-3-68. Filed 5-2-68.

### Class 26 — Measuring and Scientific Appliances

- 860,485. (See Class 21 for this trademark.)  
 860,487. (See Class 21 for this trademark.)  
 860,443. (See Class 21 for this trademark.)  
 860,507. DENSIMETER. Ramcor Incorporated. SN 257,890. Pub. 9-3-68. Filed 11-3-66.  
 860,508. DESIGN SIMULATING LETTER A. Associated Testing Laboratories, Inc. SN 265,597. Pub. 9-3-68. Filed 2-28-67.  
 860,509. AUTO-MOD. Control Data Corporation, assignee of Automatic Control Company. SN 273,938. Pub. 9-3-68. Filed 6-15-67.  
 860,510. THE MARKSMAN. Crossbow, Inc. SN 276,822. Pub. 9-3-68. Filed 7-26-67.  
 860,511. SOLUTION MINDER. Oakite Products, Inc. SN 277,927. Pub. 9-3-68. Filed 8-9-67.  
 860,512. BRISTOLINE. Bristolline Inc. SN 278,280. Pub. 9-3-68. Filed 8-15-67.  
 860,513. MINI-THIN. Conforma Laboratories, Inc. SN 279,276. Pub. 9-3-68. Filed 8-29-67.  
 860,514. GCA AND DESIGN. GCA Corporation. SN 281,696. Pub. 9-3-68. Filed 10-3-67.  
 860,515. ACCU-CHEK. Accu-Rite Granite Surface Plate Co. SN 282,421. Pub. 9-3-68. Filed 10-13-67.  
 860,516. ACCU-RITE. Accu-Rite Granite Surface Plate Co. SN 282,422. Pub. 9-3-68. Filed 10-13-67.  
 860,517. MIRANDA. Allied Impex Corporation. SN 285,180. Pub. 9-3-68. Filed 11-20-67.  
 860,518. NUMERIREAD. Giddings & Lewis, Inc. SN 285,414. Pub. 9-3-68. Filed 11-22-67.  
 860,519. XACTOHM. Claud S. Gordon Company. SN 286,128. Pub. 9-3-68. Filed 12-4-67.  
 860,520. OP-TITES. The Budrich Company. SN 287,517. Pub. 9-3-68. Filed 12-26-67.  
 860,521. SUNBEAM. Sunbeam Corporation. SN 288,241. Pub. 9-3-68. Filed 1-5-68.  
 860,522. SUNBEAM. Sunbeam Corporation. SN 288,242. Pub. 9-3-68. Filed 1-5-68.  
 860,523. ORION. The Eastern Company. SN 288,498. Pub. 9-3-68. Filed 1-10-68.  
 860,524. CORRELICON. Goodyear Aerospace Corporation. SN 288,950. Pub. 9-3-68. Filed 1-16-68.

- 860,525. AMETEK AND DESIGN. Ametek, Inc. SN 297,130. Pub. 9-3-68. Filed 5-2-68.  
 860,526. BIG SWINGER. Polaroid Corporation. SN 298,676. Pub. 9-3-68. Filed 5-21-68.

### Class 27 — Horological Instruments

- 860,527. SEA-DWELLER. Montres Rolex S.A. SN 289,907. Pub. 9-3-68. Filed 1-30-68.  
 860,528. SPACE-DWELLER. Montres Rolex S.A. SN 289,908. Pub. 9-3-68. Filed 1-30-68.  
 860,529. WHITE WHALE. Montre de Sport Geneve S.A. SN 290,310. Pub. 9-3-68. Filed 2-5-68.  
 860,530. BLUE WHALE. Montre de Sport Geneve S.A. SN 290,311. Pub. 9-3-68. Filed 2-5-68.  
 860,531. SEA LAB. Bulova Watch Company, Inc. SN 291,962. Pub. 9-3-68. Filed 2-27-68.

### Class 28 — Jewelry and Precious-Metal Ware

- 860,532. LADY NERA. The Spencer Co. SN 274,896. Pub. 9-3-68. Filed 6-27-67.  
 860,533. THE QUINTESSA COLLECTION. Union Carbide Corporation. SN 279,122. Pub. 9-3-68. Filed 8-25-67.  
 860,534. LINDOR. Anson Incorporated. SN 281,860. Pub. 9-3-68. Filed 10-5-67.  
 860,535. HP (DESIGN). Henry Petzal. SN 284,100. Pub. 9-3-68. Filed 11-3-67.  
 860,536. TURNIT. Peter Lindeman, Inc. SN 289,813. Pub. 9-3-68. Filed 1-29-68.  
 860,537. LAUREATE. Towle Manufacturing Company. SN 290,201. Pub. 9-3-68. Filed 2-2-68.  
 860,538. S AND DESIGN. International Cultured Pearl Co., Inc., d.b.a. International Jewelry Creations. SN 291,400. Pub. 9-3-68. Filed 2-19-68.  
 860,539. SUIT-LINKS. Fred C. Krasner and Helen Krasner (joint owners), d.b.a. Helli Company. SN 291,878. Pub. 9-3-68. Filed 2-26-68.

### Class 29 — Brooms, Brushes, and Dusters

- 860,540. MINI-BRUSH. Yardley of London, Inc. SN 272,881. Pub. 9-3-68. Filed 6-1-67.

### Class 30 — Crockery, Earthenware, and Porcelain

- 860,541. LEFTON. Geo. Zoltan Lefton Co. SN 266,163. Pub. 9-3-68. Filed 3-7-67.

### Class 31 — Filters and Refrigerators

- 860,542. RP TRIM-TO-SIZE EZ KLEEN AND DESIGN. Research Products Corporation. SN 267,848. Pub. 9-3-68. Filed 3-29-67.  
 860,543. CELLAR KOOL. Henry J. Hall. SN 280,947. Pub. 9-3-68. Filed 9-22-67.  
 860,544. AMETEK AND DESIGN. Ametek, Inc. SN 297,132. Pub. 9-3-68. Filed 5-2-68.  
 860,545. EDCO. Standard Oil Company. SN 297,742. Pub. 9-3-68. Filed 5-9-68.

### Class 32 — Furniture and Upholstery

- 860,359. (See Class 2 for this trademark.)  
 860,546. III. American Hospital Supply Corporation, assignee of Institutional Industries, Inc. SN 269,315. Pub. 9-3-68. Filed 4-17-67.  
 860,547. INTRINSICS. Freeman & Gossage, Inc. SN 273,883. Pub. 9-3-68. Filed 6-14-67.  
 860,548. WILHELM BOFINGER AND DESIGN. Wilhelm Bofinger. SN 274,799. Pub. 9-3-68. Filed 6-26-67.  
 860,549. JET FLOW. Brunawick Corporation. SN 275,829. Pub. 9-3-68. Filed 7-12-67.  
 860,550. STITCHCRAFT AND DESIGN. Stitchcraft Corporation. SN 277,388. Pub. 9-3-68. Filed 8-2-67.  
 860,551. CENTRON. The Valtronic Corporation. SN 282,497. Pub. 9-3-68. Filed 10-13-67.  
 860,552. VIBRO-MASSAGE. National Furniture Manufacturing Co., Inc. SN 285,451. Pub. 9-3-68. Filed 11-22-67.  
 860,553. ROFCO AND DESIGN. Roger Office Furniture Co., Inc. SN 285,581. Pub. 9-3-68. Filed 11-24-67.  
 860,554. MULTILASTIC. Lear Siegler, Inc. SN 285,743. Pub. 9-3-68. Filed 11-28-67.  
 860,555. X-ALUM. Kasparians, Inc. SN 286,350. Pub. 9-3-68. Filed 12-6-67.

### Class 34 — Heating, Lighting, and Ventilating Apparatus

- 860,443. (See Class 21 for this trademark.)  
 860,556. FLUOSTATIC. Fluostatic Limited. SN 131,204. Pub. 4-30-63. Filed 11-2-61.  
 860,557. ENDECO. Enterprise Development Corporation. SN 210,545. Pub. 9-3-68. Filed 1-25-65.  
 860,558. CONTAM-A-TROL AND DESIGN. CRS Industries, Inc. SN 271,126. Pub. 9-3-68. Filed 5-10-67.  
 860,559. PORTA LIGHT. Bernzomatic Corporation. SN 274,488. Pub. 9-3-68. Filed 6-22-67.  
 860,560. PORTA CHEF. Bernzomatic Corporation. SN 274,584. Pub. 9-3-68. Filed 6-23-67.  
 860,561. MINIFLUX. Eutectic Welding Alloys Corporation. SN 277,037. Pub. 9-3-68. Filed 7-28-67.  
 860,562. THERMO-SHIELD. Aero-Flow Dynamics, Inc. SN 280,139. Pub. 9-3-68. Filed 9-12-67.  
 860,563. WELLER. Weller Electric Corporation. SN 282,154. Pub. 9-3-68. Filed 10-9-67.  
 860,564. BRANCH FIRE. Stralt & Richards, Inc. SN 283,171. Pub. 9-3-68. Filed 10-23-67.  
 860,565. CHARCOMATIC. Glenwood Range Company, assignee of The Sunray Stove Company. SN 286,563. Pub. 9-3-68. Filed 12-8-67.  
 860,566. VERSATRONIC. General Electric Company. SN 287,645. Pub. 9-3-68. Filed 12-27-67.  
 860,567. ION-ITION. Controls Company of America. SN 288,284. Pub. 9-3-68. Filed 1-8-68.  
 860,568. R AND DESIGN. Robinson Ventilating Company. SN 288,448. Pub. 9-3-68. Filed 1-9-68.  
 860,569. LITTLE DIPPER. Air Reduction Company, Incorporated. SN 288,485. Pub. 9-3-68. Filed 1-10-68.  
 860,570. UNI-CENTRAL. American Standard Inc. SN 289,467. Pub. 9-3-68. Filed 1-24-68.  
 860,571. AMETEK AND DESIGN. Ametek, Inc. SN 297,131. Pub. 9-3-68. Filed 5-2-68.

### Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

- 860,351. (See Class 1 for this trademark.)

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- 860,572. GEN-LINE. Aristovoulos George Petzetakis. SN 265,783. Pub. 9-3-68. Filed 3-2-67.  
 860,573. TUFFLEX. The Gates Rubber Company. SN 284,189. Pub. 9-3-68. Filed 11-6-67.  
 860,574. VELBOND. Federal-Mogul Corporation. SN 292,775. Pub. 9-3-68. Filed 3-8-68.

### Class 36 — Musical Instruments and Supplies

- 860,448. (See Class 21 for this trademark.)  
 860,449. (See Class 21 for this trademark.)  
 860,575. POCK-A-DISC. Americom Corporation. SN 269,049. Pub. 9-3-68. Filed 4-13-67.  
 860,576. PORTODISC. Americom Corporation. SN 269,050. Pub. 9-3-68. Filed 4-13-67.  
 860,577. SOUL CITY. Liberty Records, Inc. SN 271,489. Pub. 8-27-68. Filed 5-15-67.  
 860,578. D'MERLE NEW YORK AND DESIGN. D'Merle Guitars, Inc. SN 283,110. Pub. 9-3-68. Filed 10-23-67.  
 860,579. LESLIE. Columbia Broadcasting System, Inc. SN 284,618. Pub. 9-3-68. Filed 11-13-67.  
 860,580. ADJUSTOMATIC. Jackson-Guldan, Inc. SN 291,403. Pub. 9-3-68. Filed 2-19-68.  
 860,581. PANTON AND DESIGN. National Gramophone Works Corporation. SN 292,118. Pub. 9-3-68. Filed 2-28-68.

### Class 37 — Paper and Stationery

- 860,582. CURPOLONE "200." Curwood, Inc. SN 276,738. Pub. 9-3-68. Filed 7-25-67.  
 860,583. ACCODATA. Gary Industries, Inc., d.b.a. Acco Products. SN 280,043. Pub. 9-3-68. Filed 9-11-67.  
 860,584. QUIK-SET. The Quik-Set Co. SN 290,882. Pub. 9-3-68. Filed 2-12-68.

### Class 38 — Prints and Publications

- 860,585. SHOPPER'S TELEGRAM. R. H. Macy & Co., Inc., d.b.a. Bamberger's New Jersey. SN 209,519. Pub. 8-31-65. Filed 1-7-65.  
 860,586. K AND DESIGN. Eugene Dietzgen Co. SN 253,638. Pub. 9-3-68. Filed 9-1-66.  
 860,587. OBOLSKY. Ivan Obolsky, Inc. SN 254,789. Pub. 9-3-68. Filed 9-20-66.  
 860,588. SURE-CASE. Business Incentives, Inc. SN 257,929. Pub. 9-3-68. Filed 11-4-66.  
 860,589. JACKDAW. Jackdaw Publications Limited. SN 264,419. Pub. 9-3-68. Filed 2-10-67.  
 860,590. MINI-MASTER AND DESIGN. Jack E. Meier, d.b.a. Lantern Lane Gallery. SN 267,435. Pub. 9-3-68. Filed 3-23-67.  
 860,591. CHICAGO CONSTRUCTION NEWS. McGraw-Hill, Inc. SN 275,679. Pub. 9-3-68. Filed 7-10-67.  
 860,592. THE RED HEADLINER. Phillips Drill Company. SN 276,684. Pub. 9-3-68. Filed 7-24-67.  
 860,593. MEN AND DESIGN. Chilton Company. SN 277,263. Pub. 9-3-68. Filed 8-1-67.  
 860,594. MOTION PICTURE EXHIBITOR. Jay Emanuel Publications, Inc., by assignment and change of name from Jay Emanuel Publications, Inc. SN 277,671. Pub. 9-3-68. Filed 8-7-67.  
 860,595. KRAZY DAZIES. Andeck Industries Inc. SN 294,907. Pub. 9-3-68. Filed 4-4-68.



**Class 39 — Clothing**

- 860,594. **ONDINE**. Kent Rubber Corporation. MULTIPLE CLASS (Classes 39 and 44). SN 269,139. Pub. 9-3-68. Filed 4-14-67.
- 860,597. **WELCO WELT AND DESIGN**. Welco Enterprises, Inc., by change of name from Welco Research Industries, Inc. SN 271,301. Pub. 9-3-68. Filed 5-11-67.
- 860,598. **DUX AND DESIGN**. Shoe Corporation of America. SN 271,391. Pub. 9-3-68. Filed 5-12-67.
- 860,599. **LUV AND DESIGN**. Harold Koenig. SN 271,945. Pub. 9-3-68. Filed 5-19-67.
- 860,600. **MISTER LOOK**. Associated Lerner Shops of America, Inc. SN 273,359. Pub. 7-9-68. Filed 6-8-67.
- 860,601. **LUIGI OF NAPLES**. Serbin, Inc. SN 277,073. Pub. 9-3-68. Filed 7-28-67.
- 860,602. **WEATHER COAT GUILD LTD.** The Excel Company. SN 283,241. Pub. 9-3-68. Filed 10-24-67.
- 860,603. **DAYTONA**. Daytona Sports Co. SN 284,455. Pub. 9-3-68. Filed 11-9-67.
- 860,604. **MAGIC WANDERS**. J. W. Bray Company, Inc. SN 287,882. Pub. 9-3-68. Filed 1-2-68.
- 860,605. **NEATNIK**. Sears, Roebuck and Co. SN 290,335. Pub. 9-3-68. Filed 2-5-68.
- 860,606. **SCHOONERS AND DESIGN**. Blue Bell, Inc. SN 291,310. Pub. 9-3-68. Filed 2-19-68.

**Class 40 — Fancy Goods, Furnishings, and Notions**

- 860,607. **NU-LOOK**. The Nu-Look Fashion Inc. SN 275,972. Pub. 9-3-68. Filed 6-29-67.
- 860,608. **FASHION-MODE**. Pentapco, Inc., d.b.a. Penn Products Co. SN 279,493. Pub. 9-3-68. Filed 8-31-67.
- 860,609. **STOP AND GO AND DESIGN**. Charlotte McElwain. SN 283,918. Pub. 9-3-68. Filed 11-1-67.
- 860,610. **ZENITH**. Master Trading Corporation. SN 291,413. Pub. 9-3-68. Filed 2-19-68.

**Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

- 860,611. **MIRALUX**. West Point-Pepperell, Inc. SN 245,886. Pub. 8-30-66. Filed 5-18-66.
- 860,612. **FORSTMANN WOOLENS**. J. P. Stevens & Co., Inc. SN 275,083. Pub. 9-3-68. Filed 6-29-67.
- 860,613. **TRIPLEX**. Triplex Fabrics Corp. SN 280,380. Pub. 4-9-68. Filed 9-15-67.
- 860,614. **ADMOREAU**. Fieldcrest Mills, Inc. SN 291,055. Pub. 9-3-68. Filed 2-14-68.
- 860,615. **BEAUTE**. Fieldcrest Mills, Inc. SN 291,056. Pub. 9-3-68. Filed 2-14-68.
- 860,616. **PLUMEAU**. Fieldcrest Mills, Inc. SN 291,057. Pub. 9-3-68. Filed 2-14-68.

**Class 43 — Thread and Yarn**

- 860,617. **STRYCE**. E. I. du Pont de Nemours and Company. SN 298,897. Pub. 9-3-68. Filed 5-23-68.
- 860,618. **QIANA**. E. I. du Pont de Nemours and Company. SN 298,898. Pub. 9-3-68. Filed 5-23-68.

**Class 44 — Dental, Medical, and Surgical Appliances**

- 860,596. (See Class 39 for this trademark.)
- 860,619. **MEDI-BOOT**. Veterinary Supply Depot Incorporated. SN 267,695. Pub. 9-3-68. Filed 3-27-67.
- 860,620. **EQUI-BOOT**. American Marketing Institute, Inc. SN 271,112. Pub. 9-3-68. Filed 5-10-67.
- 860,621. **FLUORICON**. General Electric Company. SN 273,391. Pub. 9-3-68. Filed 6-8-67.
- 860,622. **UMBILICLAMP**. Hospital Marketing Services Co., Inc. SN 279,294. Pub. 9-3-68. Filed 8-29-67.
- 860,623. **SPIROMAT**. Dragerwerk, Heilm. & Bernh. Drager. SN 283,432. Pub. 9-3-68. Filed 10-26-67.
- 860,624. **F AND DESIGN**. Fidelity Electronics, Ltd. SN 284,186. Pub. 9-3-68. Filed 11-6-67.
- 860,625. **THERMO-PAK**. Burnett Instrument Co., Inc. SN 284,444. Pub. 9-3-68. Filed 11-9-67.
- 860,626. **MEDI-GARD**. Medical Plastics Corporation of America. SN 289,557. Pub. 9-3-68. Filed 1-25-68.

**Class 45 — Soft Drinks and Carbonated Waters**

- 860,627. **WELCHBERRY**. The Welch Grape Juice Company, Inc. SN 284,854. Pub. 9-3-68. Filed 11-14-67.

**Class 46 — Foods and Ingredients of Foods**

- 860,628. **SNO-WHITE POPCORN**. TV Time Foods, Inc. SN 234,779. Pub. 11-29-66. Filed 12-16-65.
- 860,629. **HICKORY FARMS OF OHIO**. Richard K. Ransom, d.b.a. Hickory Farms of Ohio. SN 240,478. Pub. 12-19-67. Filed 3-8-66.
- 860,630. **TENDERLOCK**. Jewel Companies, Inc., by change of name from Jewel Tea Co., Inc. SN 241,254. Pub. 9-3-68. Filed 3-17-66.
- 860,631. **IBERA**. Gabriel Mario Pech (h). SN 255,612. Pub. 9-3-68. Filed 10-3-66.
- 860,632. **MRS. RINCK'S**. Lucille Rinck Mercurio. SN 258,395. Pub. 9-3-68. Filed 11-10-66.
- 860,633. **RACE TRACK**. Schluderberg-Kurdle Company, Inc. SN 267,770. Pub. 9-3-68. Filed 3-28-67.
- 860,634. **POPS CORN CRIB AND DESIGN**. Harold S. Hughes, d.b.a. Pops Corn Crib. SN 269,076. Pub. 9-3-68. Filed 4-13-67.
- 860,635. **ESSEX CLUB**. Essex Foods, Inc., d.b.a. Essex Club Foods, Inc. SN 271,929. Pub. 9-3-68. Filed 5-19-67.
- 860,636. **MINI-FRIES**. Lakeside, Inc. SN 276,323. Pub. 9-3-68. Filed 7-19-67.
- 860,637. **FUZZYBURGER**. Edward S. Corey, d.b.a. Fuzzy's Hobo Cafe and Drive-In. SN 279,538. Pub. 9-3-68. Filed 9-1-67.
- 860,638. **ABCOLAC**. Lauritzen and Company, Inc. SN 282,107. Pub. 9-3-68. Filed 10-9-67.
- 860,639. **KWIK MAKE**. Crown Foods, Inc. SN 282,280. Pub. 9-3-68. Filed 10-11-67.
- 860,640. **PICK ME UP**. H & H Poultry Company, Inc. SN 282,577. Pub. 9-3-68. Filed 10-16-67.
- 860,641. **RED BALL BRAND AND DESIGN**. Consolidated Companies, Incorporated. SN 283,102. Pub. 9-3-68. Filed 10-23-67.
- 860,642. **NATURAL WHOLE GRAIN GOODNESS**. Roman Meal Company. SN 284,108. Pub. 9-3-68. Filed 11-3-67.
- 860,643. **BEAR DESIGN**. Den Kongelige Gronlandske Handel (The Royal Greenland Trade Department). SN 286,105. Pub. 9-3-68. Filed 12-4-67.

- 860,644. **MJ BRAND AND DESIGN**. Mar-Jac, Inc. SN 286,541. Pub. 9-3-68. Filed 12-8-67.
- 860,645. **PECAN ROYALS**. Fine Products Company, Inc., d.b.a. Hollingsworth Unusual Candles. SN 286,759. Pub. 9-3-68. Filed 12-12-67.
- 860,646. **HERB'S DOUBLE-H HH AND DESIGN**. Herbert Halperin Distributing Corp. SN 288,696. Pub. 9-3-68. Filed 1-12-68.
- 860,647. **FMF**. Mead Johnson & Company. SN 288,749. Pub. 9-3-68. Filed 1-15-68.
- 860,648. **S AND WORLD (DESIGN)**. Seaboard Allied Milling Corporation. SN 288,869. Pub. 9-3-68. Filed 1-15-68.
- 860,649. **SHIMMER**. Louis Sherry, Inc. SN 288,871. Pub. 7-2-68. Filed 1-15-68.
- 860,650. **HORN PONES**. Kellogg Company. SN 289,156. Pub. 9-3-68. Filed 1-19-68.
- 860,651. **POP-A-CAKES**. Kellogg Company. SN 289,157. Pub. 9-3-68. Filed 1-19-68.
- 860,652. **TROOPER**. Beatrice Foods Co. SN 289,768. Pub. 9-3-68. Filed 1-29-68.
- 860,653. **U.S. JETS**. Consolidated Foods Corporation, d.b.a. Joe Lowe Company. SN 291,590. Pub. 9-3-68. Filed 2-21-68.
- 860,654. **CULINOX**. Morton International, Inc. SN 293,202. Pub. 9-3-68. Filed 3-14-68.
- 860,655. **BAR-B-KEWS**. General Mills, Inc. SN 293,614. Pub. 9-3-68. Filed 3-19-68.
- 860,656. **QUEEN ANNA**. Caravan Seafoods, Inc. SN 293,977. Pub. 9-3-68. Filed 3-25-68.
- 860,657. **BEEF KWIK-STB-18**. Cargill, Incorporated. SN 293,978. Pub. 9-3-68. Filed 3-25-68.
- 860,658. **PROSPECT FARMS**. Prospect Farms, Inc. SN 295,369. Pub. 9-3-68. Filed 4-10-68.
- 860,659. **TURTLETES**. Sterno Industries, Inc. SN 295,565. Pub. 9-3-68. Filed 4-12-68.
- 860,660. **BAMBY**. Bamby Bakers, Inc. SN 295,607. Pub. 9-3-68. Filed 4-15-68.
- 860,661. **GOBLET (DESIGN)**. Mead Johnson & Company. SN 297,629. Pub. 9-3-68. Filed 5-8-68.
- 860,662. **F FAIRMONT JOLLI AND DESIGN**. Fairmont Foods Company. SN 297,828. Pub. 9-3-68. Filed 5-10-68.

**Class 47 — Wines**

- 860,663. **ZIG-ZAG**. Zig-Zag Limited. SN 283,050. Pub. 9-3-68. Filed 10-20-67.

**Class 49 — Distilled Alcoholic Liquors**

- 860,664. **JOSE CORTEZ**. Charles Jacquelin et Cie., Inc. SN 285,523. Pub. 9-3-68. Filed 11-24-67.
- 860,665. **LORD NELSON**. Seager Evans & Co., Limited. SN 285,583. Pub. 9-3-68. Filed 11-24-67.

**Class 50 — Merchandise Not Otherwise Classified**

- 860,666. **WOODSWORLD AND DESIGN**. Frederick Sparling and Dawn Sparling (joint owners), d.b.a. Woodsworld. SN 265,564. Pub. 9-3-68. Filed 2-27-67.
- 860,667. **ELLWOOD RUSTICWARE**. Ellenville Wood Novelty Co., Inc. SN 281,564. Pub. 9-3-68. Filed 10-2-67.
- 860,668. **NOTE POSTER**. Ketcham & McDougall, Inc. SN 284,313. Pub. 9-3-68. Filed 11-7-67.
- 860,669. **MISCELLANEOUS DESIGN**. General Steel Industries, Inc., d.b.a. Flex-O-Lite Division. SN 285,017. Pub. 9-3-68. Filed 11-16-67.

- 860,670. **RING THING**. Reynolds Metals Company. SN 290,649. Pub. 9-3-68. Filed 2-8-68.

**Class 51 — Cosmetics and Toilet Preparations**

- 860,671. **LUSTER SHEEN**. Colgate-Palmolive Company, assignee by mesne assignment, of Beauty-Rama Corporation. SN 114,916. Pub. 1-19-65. Filed 3-6-61.
- 860,672. **COTY ORIGINALS**. Chas. Pfizer & Co., Inc. SN 265,916. Pub. 9-3-68. Filed 3-3-67.
- 860,673. **CONFLICT**. Del Laboratories, Inc. SN 267,508. Pub. 9-3-68. Filed 3-24-67.
- 860,674. **THREE PROMISES**. Clairol Incorporated. SN 270,755. Pub. 9-3-68. Filed 5-5-67.
- 860,675. **SECRET WAND**. Secret Wand, Inc. SN 271,646. Pub. 9-3-68. Filed 5-16-67.
- 860,676. **A SPRAY OF NATE**. Lanvin-Charles of the Ritz, Inc., assignee of Jean Nate, Inc. SN 275,014. Pub. 9-3-68. Filed 6-29-67.
- 860,677. **ORIGINALS DE COTY**. Chas. Pfizer & Co., Inc. SN 278,237. Pub. 9-3-68. Filed 8-14-67.
- 860,678. **HONEY RICH**. Avon Products, Inc. SN 281,671. Pub. 9-3-68. Filed 10-3-67.
- 860,679. **CREMELUCENT**. Avon Products, Inc. SN 281,674. Pub. 9-3-68. Filed 10-3-67.
- 860,680. **MEND 'N CURL**. Sybil Ives Incorporated. SN 281,725. Pub. 9-3-68. Filed 10-3-67.
- 860,681. **KHADINE**. Yardley of London, Inc. SN 285,165. Pub. 9-3-68. Filed 11-17-67.
- 860,682. **WILD LOVE**. Marie Pigalle Inc. SN 285,241. Pub. 9-3-68. Filed 11-20-67.
- 860,683. **SLICKER**. Yardley of London, Inc. SN 285,610. Pub. 9-3-68. Filed 11-24-67.
- 860,684. **BOLD MOVE**. Johnson & Johnson. SN 296,073. Pub. 9-3-68. Filed 4-22-68.

**Class 52 — Detergents and Soaps**

- 860,372. (See Class 4 for this trademark.)
- 860,685. **LANCE**. Colgate-Palmolive Company. SN 298,505. Pub. 9-3-68. Filed 5-20-68.

**Service Marks****Class 100 — Miscellaneous**

- 860,686. **THE IMPRESSION THAT LASTS**. Prestole Everlock Inc., by change of name from The Bishop and Babcock Corporation. SN 250,346. Pub. 9-3-68. Filed 7-15-66.
- 860,687. **COUNTRY BOY**. Country Kitchen Incorporated of Middletown, Ohio. SN 267,817. Pub. 9-3-68. Filed 3-29-67.
- 860,688. **RUSH**. Allen-Babcock Computing, Inc. SN 280,001. Pub. 9-3-68. Filed 9-11-67.
- 860,689. **PHEASANT RUN**. Pheasant Run, Inc. SN 281,219. Pub. 9-3-68. Filed 9-26-67.
- 860,690. **VOISIN AND DESIGN**. Restaurant Voisin, Inc. SN 283,458. Pub. 9-3-68. Filed 10-26-67.
- 860,691. **BEHIND THE WORDS**. John O. Morris. SN 284,337. Pub. 9-3-68. Filed 11-8-67.
- 860,692. **STEER (DESIGN)**. Heap Big Beef, Inc. SN 292,377. Pub. 9-3-68. Filed 3-1-68.
- 860,693. **JIMBLE'S AND DESIGN**. Mister Softee, Inc. SN 298,290. Pub. 9-3-68. Filed 5-16-68.



**Class 101—Advertising and Business**

- 860,694. UAB AND DESIGN. United Auto Brokers, Inc. SN 256,324. Pub. 9-3-68. Filed 10-12-66.
- 860,695. GREET OUR BABIES AND DESIGN. Greet Our Babies, Inc. SN 257,384. Pub. 9-3-68. Filed 10-27-66.
- 860,696. JOHNNY ON THE SPOT. Johnny on the Spot Temporary Help Inc. SN 266,425. Pub. 9-3-68. Filed 3-10-67.
- 860,697. ABLE. Nathan I. Lieberman. SN 271,266. Pub. 9-3-68. Filed 5-11-67.
- 860,698. COPY VAN. Copy Van, Inc., assignee of Copy Van Company. SN 272,590. Pub. 9-3-68. Filed 5-29-67.
- 860,699. COPY VAN AND DESIGN. Copy Van, Inc., assignee of Copy Van Company. SN 272,591. Pub. 9-3-68. Filed 5-29-67.
- 860,700. CPC CREATIVE PROGRAMS CORP AND DESIGN. Creative Programs Corp. SN 273,377. Pub. 9-3-68. Filed 6-8-67.
- 860,701. PISI. Profit Index Systems, Inc. SN 274,235. Pub. 9-3-68. Filed 6-19-67.
- 860,702. DART. Advertising Publications, Inc. SN 277,871. Pub. 9-3-68. Filed 8-9-67.
- 860,703. RESET. Baird & Warner, Inc. SN 277,878. Pub. 9-3-68. Filed 8-9-67.
- 860,704. THE REMARKABLE BOOK SHOP AND DESIGN. Remark Corporation. SN 279,092. Pub. 9-3-68. Filed 8-25-67.
- 860,705. OPERATION "ACRES OF DIAMONDS." Magram Corporation. SN 281,803. Pub. 9-3-68. Filed 10-4-67.

**Class 102—Insurance and Financial**

- 860,706. THE MASON PLAN. Lion G. Mason & Company. SN 194,732. Pub. 9-3-68. Filed 6-2-64.
- 860,707. PROTECTION ALL WAYS AND DESIGN. The North Central Company. SN 264,848. Pub. 9-3-68. Filed 2-16-67.
- 860,708. GEMINI. Wellington Management Company. SN 264,835. Pub. 9-3-68. Filed 4-10-67.
- 860,709. GEMINI FUND AND DESIGN. Wellington Management Company. SN 268,836. Pub. 9-3-68. Filed 4-10-67.
- 860,710. HEART DESIGN. Cooperative Blood Replacement Plan. SN 271,450. Pub. 9-3-68. Filed 5-15-67.
- 860,711. MISCELLANEOUS DESIGN. Woodmen of the World Life Insurance Society and/or Omaha Woodmen Life Insurance Society. SN 272,658. Pub. 9-3-68. Filed 5-29-67.
- 860,712. ARM AND DESIGN. American Mutual Liability Insurance Company. SN 273,222. Pub. 9-3-68. Filed 5-8-67.
- 860,713. LAMBORN. Lamborn & Company, Inc. SN 274,757. Pub. 9-3-68. Filed 6-26-67.
- 860,714. SHOPPERS CHARGE SERVICE AND DESIGN. Economy Finance Corporation. SN 275,750. Pub. 9-3-68. Filed 7-11-67.
- 860,715. THE MAN FROM NATIONWIDE IS ON YOUR SIDE. Nationwide Mutual Insurance Company. SN 277,693. Pub. 9-3-68. Filed 8-7-67.

**Class 103—Construction and Repair**

- 860,716. YOUR PRESTIGE CLEANER. Glam-O-Rama, Incorporated. SN 266,031. Pub. 9-3-68. Filed 3-6-67.
- 860,717. GT DESIGN. Giltech Corporation. SN 277,359. Pub. 9-3-68. Filed 8-2-67.
- 860,718. NWE AND DESIGN. Northwestern Engineering Co. SN 281,997. Pub. 9-3-68. Filed 10-6-67.

- 860,719. MISCELLANEOUS DESIGN. Automated Building Components, Inc. SN 284,571. Pub. 9-3-68. Filed 11-13-67.
- 860,720. DESIGN OF A ROAD RUNNER. Milburn Brothers, Inc. SN 286,700. Pub. 9-3-68. Filed 12-11-67.
- 860,721. MULTI-CHEK. Petroleum Pipe Inspectors, Inc. SN 288,850. Pub. 9-3-68. Filed 1-15-68.

**Class 104—Communication**

- 860,722. TUNEABLE. The Journal Company. SN 269,320. Pub. 9-3-68. Filed 4-17-67.
- 860,723. PONY EXPRESS RIDER (DESIGN). Baker Industries, Inc. SN 284,153. Pub. 9-3-68. Filed 11-6-67.
- 860,724. CIRCULAR DESIGN WITH HORN. American Broadcasting Companies, Inc. SN 298,988. Pub. 9-3-68. Filed 5-24-68.
- 860,725. CIRCULAR CRESCENT (DESIGN). American Broadcasting Companies, Inc. SN 298,989. Pub. 9-3-68. Filed 5-24-68.
- 860,726. PINWHEEL WITH CENTRE STAR (DESIGN). American Broadcasting Companies, Inc. SN 298,990. Pub. 9-3-68. Filed 5-24-68.

**Class 105—Transportation and Storage**

- 860,727. WESTERN CARNIVAL. AITS, Inc., by mesne assignment and change of name from Summitours of New England, Inc. SN 246,207. Pub. 4-4-67. Filed 5-20-66.
- 860,728. MAGGIORE AND DESIGN. Autoservizi Maggiore S.p.A. SN 257,328. Pub. 9-3-68. Filed 10-13-66.
- 860,729. NATIONAL GOLD SEAL TOURS AND DESIGN. NYTC Corp. SN 268,360. Pub. 9-3-68. Filed 4-5-67.
- 860,730. MAX-I-MILE AND DESIGN. Voyageplan, Inc. SN 284,256. Pub. 9-3-68. Filed 11-6-67.
- 860,731. UP UP AND AWAY. Trans World Airlines, Inc. SN 285,594. Pub. 9-3-68. Filed 11-24-67.

**Class 106—Material Treatment**

- 860,732. NITUFF. Nimet Industries, Inc. SN 244,726. Pub. 2-6-68. Filed 5-2-66.
- 860,733. UCAR. Union Carbide Corporation. SN 277,944. Pub. 9-3-68. Filed 8-9-67.

**Class 107—Education and Entertainment**

- 860,734. THE AMERICAN CENTER FOR THEOLOGICAL STUDIES, INC. The American Center for Theological Studies, Inc. SN 239,559. Pub. 9-3-68. Filed 3-1-66.
- 860,735. "CURRICULUM ARCHITECTS" AND DESIGN. Vocational Horizons, Inc. SN 256,615. Pub. 9-3-68. Filed 10-17-66.
- 860,736. SPRINGFIELD COLLEGE 1885 SPIRIT MIND BODY AND DESIGN. Springfield College. SN 273,560. Pub. 9-3-68. Filed 7-7-67.
- 860,737. PILGRIM 20 ETC. AND DESIGN. Kansas Southern Baptist Foundation. SN 279,837. Pub. 9-3-68. Filed 9-7-67.
- 860,738. MARINELAND. Marine Studios, Incorporated. SN 285,499. Pub. 9-3-68. Filed 11-24-67.
- 860,739. LION COUNTRY SAFARI. Lion Country Safari, Inc. SN 290,368. Pub. 9-3-68. Filed 2-6-68.

**SUPPLEMENTAL REGISTER**

These registrations are not subject to opposition.

**SECTION 1**

(Combined Certificates)

- 860,740. The Drackett Company, Cincinnati, Ohio. SN 278,346. Filed P.R. 8-16-67; Am. S.R. 9-5-68.

**GLITTER 'N SHINE****Class 4—Abrasives and Polishing Materials**

For Floor Wax (Int. Cl. 3).

**Class 52—Detergents and Soaps**

For Household Spray Cleaner (Int. Cl. 3).

First use Apr. 17, 1967.

**SECTION 2****Class 4—Abrasives and Polishing Materials Class 26—Measuring and Scientific Appliances**

- 860,740. See Section 1 (Combined Certificate).

**Class 12—Construction Materials**

- 860,741. National Gypsum Company, Buffalo, N.Y. SN 276,678. Filed P.R. 7-24-67; Am. S.R. 8-19-68.

**HYDRO-STOP**

For Crack Sealer for Basement Walls (Int. Cl. 17).  
First use Nov. 19, 1964.

**Class 15—Oils and Greases**

- 860,742. Oils, Incorporated, Chicago, Ill. SN 285,750. Filed P.R. 11-28-67; Am. S.R. 8-26-68.

**OILKOTE**

For Industrial Oils and Greases (Int. Cl. 4).  
First use June 1967.

**Class 20—Linoleum and Oiled Cloth**

- 860,743. Ever-Tex, Inc., Cranston, R.I. SN 282,896. Filed 10-19-67.

**EVER-WEAR**

For Vinyl Floor Covering (Int. Cl. 27).  
First use Oct. 16, 1962.

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

- 860,744. William F. Kelly, New Orleans, La. SN 278,111. Filed P.R. 8-11-67; Am. S.R. 8-28-68.

**KELLY SYSTEM**

No claim is made to the word "System" apart from the mark as shown.  
For Hydraulic Jack (Int. Cl. 7).  
First use Mar. 25, 1965.

- 860,745. NTT Enterprises, Inc., Hollywood, Calif. SN 281,480. Filed P.R. 9-29-67; Am. S.R. 7-25-68.

**TYLER**

For Camera Mounts and Housings for the Support and Operation of Cameras or the Like (Int. Cl. 9).  
First use July 13, 1966.

- 860,746. Univis Inc., Fort Lauderdale, Fla. SN 289,848. Filed P.R. 1-29-68; Am. S.R. 9-11-68.

**REFERENCED BLANK**

For Ophthalmic Lenses (Int. Cl. 9).  
First use Dec. 5, 1966.

**Class 28—Jewelry and Precious-Metal Ware**

- 860,747. Oneida Ltd., Oneida, N.Y. SN 266,679. Filed P.R. 3-14-67; Am. S.R. 9-4-68.

**BROMLEY**

For Sterling Silver Flatware (Int. Cl. 8).  
First use Mar. 2, 1967.

**Class 32—Furniture and Upholstery**

- 860,748. Samsonite Corporation, Denver, Colo. SN 274,243. Filed P.R. 6-19-67; Am. S.R. 8-1-68.

**OVER-LOKS**

For Chairs Having a Locking Feature Which Facilitates Their Stacking For Storage Purposes (Int. Cl. 20).  
First use Apr. 4, 1967.



**Class 37—Paper and Stationery**

860,749. Leon J. Wirth, d.b.a. Wirth Co., Inc., Oakland, Calif. SN 268,353. Filed P.R. 4-4-67; Am. S.R. 8-6-68.



**RE-TYPE**

For Correction Paper for Correcting Typing Errors (Int. Cl. 16).  
First use Feb. 28, 1967.

**Class 38—Prints and Publications**

860,750. Douglas Communications, Inc., New York, N.Y. SN 277,153. Filed P.R. 7-31-67; Am. S.R. 8-29-68.

**COMMUNICATIONS  
DESIGNER'S DIGEST**

For Periodical—Namely, a Newsletter (Int. Cl. 16).  
First use July 12, 1967.

860,751. Chilton Company, Philadelphia, Pa. SN 285,721. Filed P.R. 11-28-67; Am. S.R. 9-13-68.

**AUTOMOTIVE MARKETING**

For Section of a Trade Magazine (Int. Cl. 16).  
First use Aug. 14, 1967.

**TRADEMARK REGISTRATIONS RENEWED**

- |   |  |
|---|--|
| 70,024. OSTER. Cl. 23 (Int. Cl. 7). 7-21-08.  | 245,754. THE ENGINEERING INDEX SERVICE. Cl. 38 (Int. Cl. 16). 8-21-28.             |
| 70,802. LIBRARY. Cl. 5 (Int. Cl. 16). 10-6-08.  | 246,002. "ULTRADIE." Cl. 14 (Int. Cl. 6). 8-28-28.                                 |
| 71,739. "EXPRESS" AND REPRESENTATION OF RAILROAD TRAIN. Cl. 46 (Int. Cl. 29). 12-15-08.           | 246,590. PENOLYN. Cl. 5 (Int. Cl. 1). 9-11-28.                                     |
| 71,741. GLACIER BRAND. Cl. 46 (Int. Cl. 29). 12-15-08.  | 246,874. ESSOPHALT. Cl. 12 (Int. Cl. 19). 9-18-28.                                 |
| 71,940. PFLUEGER. Cl. 22 (Int. Cl. 28). 12-22-08.   | 246,886. IVO. Cl. 51 (Int. Cls. 3 and 5). 9-18-28.                                 |
| 72,059. LILY BRAND AND REPRESENTATION OF LILY. Cl. 46 (Int. Cl. 29). 12-29-08.                    | 246,942. PINO-CEN. Cl. 6 (Int. Cl. 5). 9-18-28.                                    |
| 72,174. SCHOMACKER. Cl. 36 (Int. Cl. 15). 1-5-09.   | 247,094. CERES. Cl. 46 (Int. Cl. 29). 9-18-28.                                     |
| 141,294. MARION. Cl. 21 (Int. Cl. 7). 4-12-21.  | 247,181. SOLARC. Cl. 44 (Int. Cl. 10). 9-25-28.                                    |
| 241,053. "E" IMPOSED ON CROWN AND ANCHOR (DESIGN). Cl. 23 (Int. Cls. 6 and 8). 4-17-28.           | 247,216. CRYSTOGEM. Cl. 28 (Int. Cl. 14). 9-25-28.                                 |
| 242,521. "THE ORIGINAL EVINRUDE SPORTWIN" AND RECTANGULAR OUTLINE. Cl. 23 (Int. Cl. 12). 5-29-28. | 247,579. PHOENIX. Cl. 7 (Int. Cl. 22). 10-2-28.                                    |
| 242,663. "L'AIMANT (MAGNET)" AND REPRESENTATION OF A MAGNET. Cl. 51 (Int. Cl. 3). 5-29-28.        | 247,841. RAMSES. Cl. 44 (Int. Cl. 10). 10-9-28.                                    |
| 243,476. "THE ORIGINAL EVINRUDE FASTWIN" AND RECTANGULAR OUTLINE. Cl. 23 (Int. Cl. 7). 6-26-28.   | 247,998. DRESDEN HAM. Cl. 46 (Int. Cl. 29). 10-9-28.                               |
| 244,386. ADDOMETER. Cl. 26 (Int. Cl. 9). 7-17-28.   | 248,513. HOO-DYE. Cl. 19 (Int. Cl. 12). 10-23-28.                                  |
|   | 248,738. "GREAT LAKES" ETC. AND DESIGN. Cl. 23 (Int. Cls. 7, 9, and 12). 10-30-28. |
|   | 250,088. LITTLE ORPHAN ANNIE. Cl. 38 (Int. Cl. 16). 11-27-28.                      |
|   | 250,426. PRIMOL. Cl. 18 (Int. Cl. 5). 12-11-28.                                    |
|   | 251,463. B & L. Cl. 26 (Int. Cl. 9). 1-8-29.                                       |
|   | 251,579. ZILLOY. Cl. 14 (Int. Cl. 6). 1-8-29.                                      |
|   | 437,003. STATION WAGON ETC. AND DESIGN. Cl. 39 (Int. Cl. 25). 3-2-48.              |

**Class 44—Dental, Medical, and Surgical Appliances**

860,752. Athol Plastics Corp., New York, N.Y. SN 293,682. Filed 3-20-68.

**NON-SPILL**

For Medicine Serving Spoons (Int. Cl. 10).  
First use prior to 1940.

**Class 46—Foods and Ingredients of Foods**

860,753. Candygram, Inc., Beverly Hills, Calif. SN 265,155. Filed P.R. 2-21-67; Am. S.R. 9-4-68.

**THE WORLD'S SWEETEST  
GIFT BY WIRE**

For Candy (Int. Cl. 30).  
First use Jan. 10, 1964.

**Class 51—Cosmetics and Toilet Preparations**

860,754. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 275,061. Filed P.R. 6-29-67; Am. S.R. 9-5-68.

**WICKED WITCH**

For Nail Enamel (Int. Cl. 3).  
First use June 9, 1967.

860,755. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 275,062. Filed P.R. 6-29-67; Am. S.R. 9-5-68.

**SUNNY BISQUE**

For Nail Enamel (Int. Cl. 3).  
First use June 9, 1967.

**Class 52—Detergents and Soaps**

860,740. See Section 1 (Combined Certificate).

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| 439,282. FLAVORITE SUGAR CURE. Cl. 46 (Int. Cl. 1). 6-15-48.   | 504,321. ACME AND DESIGN. Cl. 21 (Int. Cl. 9). 11-30-48.                                     |
| 440,689. STIRONITE. Cl. 23 (Int. Cl. 7). 9-21-48.              | 504,322. ACME ELECTRIC ACME IN DIAMOND. Cl. 21 (Int. Cl. 9). 11-30-48.                       |
| 440,741. KARBATE. Cl. 13 (Int. Cl. 19). 9-21-48.               | 504,333. LA MODE. Cl. 40 (Int. Cl. 26). 11-30-48.  |
| 440,951. INDOCENE. Cl. 16 (Int. Cl. 1). 10-12-48.              | 504,334. LE CHIC. Cl. 40 (Int. Cl. 26). 11-30-48.  |
| 441,014. HENEX. Cl. 27 (Int. Cl. 14). 10-19-48.                | 504,405. ARDENA PAT-A-CREME. Cl. 51 (Int. Cl. 3). 11-30-48.                                  |
| 441,856. THE AUTOPIANO. Cl. 36 (Int. Cl. 15). 1-18-49.         | 504,412. NAIL BRILLIANCE. Cl. 51 (Int. Cl. 3). 11-30-48.                                     |
| 441,964. NATCO. Cl. 46 (Int. Cl. 30). 2-1-49.                  | 504,535. PERFECTION. Cl. 48 (Int. Cl. 32). 12-7-48.  |
| 442,130. HOLLEY. Cl. 46 (Int. Cl. 32). 2-1-49.                 | 504,600. SPINDURA. Cl. 15 (Int. Cl. 4). 12-7-48.   |
| 500,966. POLE STAR AND DESIGN. Cl. 46 (Int. Cl. 29). 7-13-48.  | 504,746. PLASTIGAGE. Cl. 26 (Int. Cl. 9). 12-14-48.  |
| 500,975. SULTANA. Cl. 46 (Int. Cl. 29). 7-13-48.               | 504,769. BEEBE. Cl. 46 (Int. Cl. 31). 12-14-48.  |
| 500,976. SULTANA. Cl. 46 (Int. Cls. 29, 30, and 31). 7-13-48.  | 504,775. VOLTROL. Cl. 21 (Int. Cl. 9). 12-14-48.   |
| 500,981. IONA. Cl. 46 (Int. Cls. 29 and 30). 7-13-48.          | 504,858. HARDWARE MUTUALS. Cl. 102 (Int. Cl. 36). 12-14-48.                                  |
| 501,005. ALFA. Cl. 6 (Int. Cl. 1). 7-13-48.                    | 504,919. GOLDEN HILL. Cl. 46 (Int. Cls. 29, 31, and 32). 12-21-48.                           |
| 501,951. 19-19DL. Cl. 14 (Int. Cl. 6). 8-31-48.                | 504,956. EVER READY. Cl. 37 (Int. Cl. 16). 12-21-48.   |
| 502,056. RUBGLAS. Cl. 21 (Int. Cl. 9). 9-14-48.                | 504,970. SNAKETAPE. Cl. 5 (Int. Cl. 17). 12-21-48.   |
| 502,098. BELVEDERE. Cl. 21 (Int. Cl. 9). 9-14-48.              | 504,995. STELCON. Cl. 12 (Int. Cls. 6 and 19). 12-21-48.                                     |
| 502,099. RESECTOCIDE. Cl. 18 (Int. Cl. 5). 9-14-48.            | 505,291. HI-TEST. Cl. 14 (Int. Cl. 6). 12-28-48.   |
| 502,117. CHAIRSIDE. Cl. 21 (Int. Cl. 9). 9-14-48.              | 505,468. RICHMOND. Cl. 35 (Int. Cl. 12). 1-4-49.   |
| 502,121. ILLINOIS. Cl. 21 (Int. Cl. 9). 9-14-48.               | 505,509. SOUTHERN RAILWAY—SERVES THE SOUTH SR AND DESIGN. Cl. 105 (Int. Cl. 39). 1-4-49.     |
| 502,171. SAVOY. Cl. 21 (Int. Cl. 9). 9-14-48.                  | 505,559. KOYLON. Cl. 32 (Int. Cl. 20). 1-11-49.  |
| 502,189. NATIONAL. Cl. 6 (Int. Cl. 1). 9-14-48.                | 505,572. ZEPHYR STENODEX. Cl. 37 (Int. Cl. 16). 1-11-49.                                     |
| 502,211. COMMER. Cl. 19 (Int. Cl. 12). 9-14-48.                | 505,741. SLUG. Cl. 52 (Int. Cl. 3). 1-18-49.   |
| 502,331. VISTA. Cl. 28 (Int. Cl. 8). 9-21-48.                  | 506,178. PETIPURL. Cl. 40 (Int. Cl. 26). 2-1-49.   |
| 502,362. STONCO. Cl. 21 (Int. Cl. 9). 9-21-48.                 | 506,513. BLUE BELL. Cl. 16 (Int. Cl. 2). 2-8-49.   |
| 502,546. PC AND DESIGN. Cl. 35 (Int. Cl. 7). 9-28-48.          | 506,885. SMUCKER'S. Cl. 46 (Int. Cl. 29). 2-22-49.   |
| 502,555. GX. Cl. 35 (Int. Cl. 7). 9-28-48.                     | 507,065. STEELMASTER. Cl. 35 (Int. Cl. 12). 2-22-49.   |
| 502,788. TRADER VIC'S. Cl. 46 (Int. Cls. 29 and 30). 10-12-48. | 507,129. SAN JUAN. Cl. 39 (Int. Cl. 25). 3-1-49.   |
| 502,920. BUCO. Cl. 39 (Int. Cl. 25). 10-12-48.                 | 507,132. DAY'S COLLEGE CORDS. Cl. 39 (Int. Cl. 25). 3-1-49.                                  |
| 502,992. AMBERLAC. Cl. 1 (Int. Cl. 1). 10-19-48.               | 507,163. HARLEY-DAVIDSON. Cl. 39 (Int. Cl. 25). 3-1-49.                                      |
| 503,209. HORIZON. Cl. 28 (Int. Cls. 8 and 14). 10-19-48.       | 507,376. BROCKTON DAILY EVENING ENTERPRISE AND BROCKTON TIMES. Cl. 38 (Int. Cl. 16). 3-8-49. |
| 503,744. ECCO. Cl. 50 (Int. Cl. 22). 11-9-48.                  | 507,423. DERBAC COMB AND DESIGN. Cl. 40 (Int. Cl. 21). 3-8-49.                               |
| 503,880. ECCO. Cl. 19 (Int. Cls. 12 and 22). 11-16-48.         |  |
| 503,892. EASTERLING. Cl. 28 (Int. Cls. 8 and 14). 11-16-48.    |  |
| 503,916. GIBSON. Cl. 21 (Int. Cl. 11). 11-16-48.               |  |
| 504,056. BRONCALLOY. Cl. 44 (Int. Cl. 10). 11-23-48.           |  |
| 504,146. RED EMBER. Cl. 1 (Int. Cl. 4). 11-23-48.              |  |
| 504,303. ACELINER. Cl. 37 (Int. Cls. 6, 8, and 16). 11-30-48.  |  |

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| <b>Section 7(d)</b>  | 738,512. WIANCKO AND DESIGN. Cl. 21.      |
| 781,527. MWM AND DESIGN. Cl. 103. 12-8-64.                         | 738,514. AMPLET. Cl. 21.                  |
| 835,281. MID-WEST METALLIC AND DESIGN. Cls. 100 and 103). 9-12-67. | 738,516. IONAIRE. Cl. 21.                 |
| <b>Section 8</b>   | 738,519. ELNA. Cl. 21.                    |
| 216,628. DESITIN. Cl. 18. 8-17-26.                                 | 738,524. ILLUSTR. Cl. 21.                 |
| 299,599. THOMAS ETC. AND OVAL DESIGN. Cl. 23. 12-13-32.            | 738,527. TELESPAN. Cl. 21.                |
| 398,883. UNI. Cl. 11. 12-1-42.                                     | 738,529. VALCO. Cl. 21.                   |
| 718,338. STONETTE. Cl. 50. 7-11-61.                                | 738,531. ANGLETRON. Cl. 21.               |
| 727,460. CARDAIR. Cl. 23. 2-13-62.                                 | 738,533. CARIBE C-SKI AND DESIGN. Cl. 21. |
| 729,526. SILVER MOUNTAIN. Cl. 46. 4-3-62.                          | 738,535. RAINBOW. Cl. 22.                 |
| The following registrations issued Oct. 2, 1962                    | 738,536. ELY AND DESIGN. Cl. 22.          |
| 738,433. PHOTO LAWN. Cl. 1.  | 738,540. TENNISOLO. Cl. 22.               |
| 738,436. HUBBARD HALL AND TRIANGLE DESIGN. Cl. 1.                  | 738,544. LP AND DESIGN. Cl. 22.           |
| 738,457. CHEMRITE. Cl. 11.   | 738,546. TEE-PEE AND DESIGN. Cl. 22.      |
| 738,464. SILOPARK. Cl. 12.   | 738,547. APACHE. Cl. 22.                  |
| 738,465. SILOPARK AND DESIGN. Cl. 12.                              | 738,548. METAL-MAID. Cl. 23.              |
| 738,468. FLEX-VENEER. Cl. 12.                                      | 738,552. CHATHAM AND DESIGN. Cl. 23.      |
| 738,474. TESSELTILE. Cl. 12.                                       | 738,554. PORT-A-DREDGE. Cl. 23.           |
| 738,478. MAUNASITE. Cl. 12.  | 738,558. MOTEC. Cl. 23.                   |
| 738,479. LIFESEAL. Cl. 12.   | 738,561. GARDEN BAZZOOKA. Cl. 23.         |
| 738,480. CAPITOL PIPE WORLD-WIDE AND DESIGN. Cl. 13.               | 738,565. KINGMATIC AND DESIGN. Cl. 23.    |
| 738,483. QUIK-CHEK. Cl. 13.  | 738,567. CARETAKER. Cl. 23.               |
| 738,487. "C-4." Cl. 13.  | 738,573. ELNA. Cl. 24.                    |
| 738,494. JIG-A-LOO. Cl. 15.  | 738,577. T. Cl. 26.                       |
| 738,498. ORSILON. Cl. 16.  | 738,578. WA AND DOT DESIGN. Cl. 26.       |
| 738,501. BUSH AND DESIGN. Cl. 18.                                  | 738,579. HYGROMATIC. Cl. 26.              |
| 738,504. DROKONE. Cl. 18.  | 738,582. PHILATEK. Cl. 26.                |
| 738,506. R-E-T-A-R-D-O AND DESIGN. Cl. 18.                         | 738,587. TELESTRIA. Cl. 26.               |
| 738,508. PROCTANAL. Cl. 18.  | 738,589. TRU AND DESIGN. Cl. 26.          |
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|  | 738,597. TEACHALL. Cl. 26.                |
|  | 738,600. THUMPER. Cl. 26.                 |
|  | 738,601. AGE COP. Cl. 26.                 |
|  | 738,602. AMBIMATOR. Cl. 26.               |
|  | 738,604. AGE STAT. Cl. 26.                |



738,606. DISCOMETER. Cl. 26.  
 738,607. NEWALL AND DESIGN. Cl. 26.  
 738,608. SUPRAGRAPH. Cl. 26.  
 738,611. ELECTROTOP. Cl. 26.  
 738,614. AMERESCO. Cl. 26.  
 738,615. HUCKSTER. Cl. 26.  
 738,616. TELESHOW. Cl. 26.  
 738,618. DOT-A-LINE. Cl. 26.  
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 738,623. MINERAL-LOK. Cl. 31.  
 738,623. EAGLE. Cl. 32.  
 738,646. EASILITE GRAINED. Cl. 33.  
 738,652. HANDI-PAK. Cl. 34.  
 738,656. WIND O WARM. Cl. 34.  
 738,658. REVERSE-O-MATIC. Cl. 36.  
 738,659. LANG-LAB. Cl. 36.  
 738,660. BECE BC AND DESIGN. Cl. 36.  
 738,664. PLUS 2 OLDIES AND DESIGN. Cl. 36.  
 738,670. MULTI-PRONG. Cl. 37.  
 738,671. KIPLINGER BOOK CLUB AND K DESIGN. Cl. 38.  
 738,675. RUBYIAT. Cl. 39.  
 738,679. SA'BETT OF CALIFORNIA. Cl. 39.  
 738,681. BEEFERS. Cl. 39.  
 738,683. TOKA. Cl. 39.  
 738,685. PATRICIA DENNIS. Cl. 39.  
 738,686. KNIT VILLE. Cl. 39.  
 738,687. PARI ROSA AND DESIGN. Cl. 39.  
 738,693. FARATONE. Cl. 39.  
 738,694. FARATHINS. Cl. 39.  
 738,697. KAPER-LON. Cl. 39.  
 738,699. POLAROID. Cl. 39.  
 738,700. THE MAN. Cl. 39.  
 738,705. MR. CEE. Cl. 39.  
 738,706. CANDY AMES. Cl. 39.  
 738,708. SEERKENT. Cl. 39.  
 738,709. KENTROPIC. Cl. 39.  
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 738,714. ASTROCHINO. Cl. 42.  
 738,715. INNER-WINNER. Cl. 42.  
 738,722. "EPOX-E-DON." Cl. 44.  
 738,727. FALCON AND DESIGN. Cl. 44.

738,731. THE VASCULATOR. Cl. 44.  
 738,732. DENTRU. Cl. 44.  
 738,734. ORA-PIC. Cl. 44.  
 738,741. CONFEDERATE. Cl. 45.  
 738,743. DEXTRA. Cl. 46.  
 738,744. MISS CHIC AND DESIGN. Cl. 46.  
 738,745. D-D-D 3 D'S. Cl. 46.  
 738,747. G & M PATTI PORTION PAK AND DESIGN. Cl. 46.  
 738,749. PERSIAN PRINCESS. Cl. 46.  
 738,753. HI-V. Cl. 46.  
 738,758. LIGHTNING MAID. Cl. 46.  
 738,760. RICE'S AND DESIGN. Cl. 46.  
 738,776. PHILADELPHIA TREAT. Cl. 46.  
 738,777. PHILADELPHIA TREAT AND DESIGN. Cl. 46.  
 738,780. ACME ASCO AND DESIGN. Cl. 46.  
 738,787. PSI AND DESIGN. Cl. 50.  
 738,788. PATRICK'S MYSTERY FLOWER. Cl. 50.  
 738,792. 1001. Cl. 52.  
 738,799. K (DESIGN). Cl. 100.  
 738,801. HOLMES CAMERA DETECTION SERVICE AND DESIGN. Cl. 100.  
 738,803. OK KART PARKS, INC. AND DESIGN. Cl. 100.  
 738,804. "CITY-SIDE." Cl. 100.  
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 738,811. Q. Cl. 101.  
 738,817. PESTLE AND WHEAT (DESIGN). Cl. 102.  
 738,818. C.E.M.R. CO. Cl. 103.  
 738,822. SOFIA AND DESIGN. Cl. 105.  
 738,824. BLITZ BALL. Cl. 107.  
 738,829. RE-CLOS-IT. Cl. 2.  
 738,830. KWIK-STOK. Cl. 2.  
 738,832. QUICK-LOK. Cl. 12.  
 738,834. OUMANSKY OF GENEVA. Cl. 39.  
 738,835. PELLEGRINI. Cl. 39.  
 738,838. BRUSH ME ON ETC. AND DESIGN. Cl. 46.  
 738,840. INSTANT MADE. Cl. 46.  
 738,843. BREWED ONLY IN MILWAUKEE . . . NATURALLY. Cl. 48.  
 738,848. SURE LINE. Cl. 51.  
 738,849. POLARIS. Cl. 51.

## TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

250,465. LEVI'S. Cl. 39. 12-4-28. Levi Strauss & Company. Levi Strauss & Co., San Francisco, Calif. Amended: In the statement, column 1, line 8, "overalls" is deleted and jeans is inserted, and the drawing is amended to appear:

**Levi's**

275,737. LUBRIZOL. Cl. 15. 9-30-30. The Lubri-Graph Corporation. The Lubrizol Corporation, Wickliffe, Ohio. Amended to appear:

**LUBRIZOL**

590,998. DEEP MAGIC. Cl. 51. 6-8-54. The Gillette Company, doing business under the name and style The Toni Company, Boston, Mass. Amended: In the statement, column 2, lines 3 through 6 are deleted and First use Sept. 19, 1952; in commerce Sept. 19, 1952 is inserted, and the drawing is amended to appear:

**DEEP MAGIC**

734,569. ISI. Cl. 38. 7-17-62. Institute for Scientific Information, Inc., Philadelphia, Pa. Corrected: In the statement, column 1, line 1, after "Information", Inc. should be inserted.

738,786. GENISTRON. Cl. 21. 9-25-62. Genistron, Incorporated. Genisco Technology Corporation, Compton, Calif. Amended: In the statement, column 1, line 1, after "Incorporated", now by change of name Genisco Technology Corporation is inserted.

745,424. FLEURS D'ELLE. Cl. 51. 2-12-63. Nettle Rosenstain, Inc., New York, N.Y. Corrected: In the statement,

column 1, line 1, "Perfumes" should be deleted and, Inc. should be inserted.

760,381. DAILY SCIENTIST. Cl. 38. 11-19-63. Institute for Scientific Information, Inc., Philadelphia, Pa. Corrected: In the statement, column 1, line 1, after "Information", Inc. should be inserted.

806,105. ASCA. Cl. 100. 3-22-66. Institute for Scientific Information, Inc., Philadelphia, Pa. Corrected: In the statement, column 1, line 1, after "Information", Inc. should be inserted.

811,503. ISI. Cl. 101. 7-19-66. Institute for Scientific Information, Philadelphia, Pa. Corrected: In the statement, column 1, line 1, after "Information", Inc. should be inserted.

841,901. NA. Cl. 13. 1-9-68. Nichols Wire & Aluminum Co., Davenport, Iowa. Corrected: In the statement, column 1, line 1, "Missouri" should be deleted and Delaware should be inserted.

852,104. UNI/GLAZE. Cl. 2. 7-9-68. Universal Packaging Corporation, Bow, N.H. Corrected: In the statement, column 1, line 1, "Massachusetts" should be deleted and Delaware should be inserted.

852,105. UNI/GLOSS. Cl. 2. 7-9-68. Universal Packaging Corporation, Bow, N.H. Corrected: In the statement, column 1, line 1, "Massachusetts" should be deleted and Delaware should be inserted.

852,299. PRINCE GARDNER. Cl. 27. 7-9-68. Swank, Inc., by merger from Prince Gardner Company, Inc., Attleboro, Mass. Corrected: In the statement, column 7, line 1, "New York" should be deleted and Delaware should be inserted.

854,962. ULTRACIDE. Cl. 6. 8-20-68. Gelgy Chemical Corporation, Ardsley, N.Y. Corrected: In the statement, column 2, line 4, "1968" should be deleted and 1967 should be inserted.

## INDEX OF REGISTRANTS

NOVEMBER 19, 1968

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

AIT'S, Inc., Chestnut Hill, from Summitours of New England, Inc., Boston, Mass. 860,727, pub. 4-4-67. Cl. 105.  
 Acco Products: See—  
 Gary Industries, Inc.  
 Accu-Rite Granite Surface Plate Co., Hawthorne, Calif. 860,515-16, pub. 9-3-68. Cl. 26.  
 Ace Fastener Corp., Chicago, Ill., to Swingline Inc., Long Island City, N.Y. 504,303, ren. 11-19-68. Cl. 37.  
 Acme Electric Corp., Cuba, N.Y. 504,321-2, ren. 11-19-68. Cl. 21.  
 Acme Electric Corp., Cuba, N.Y. 504,775, ren. 11-19-68. Cl. 21.  
 Acme Markets, Inc., from American Stores Co., Philadelphia, Pa. 738,780, can. Cl. 46.  
 Advertising Publications, Inc., Chicago, Ill. 860,702, pub. 9-3-68. Cl. 101.  
 Aero-Flow Dynamics, Inc., Linden, N.J. 860,562, pub. 9-3-68. Cl. 34.  
 Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 738,601-2, can. Cl. 26.  
 Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 738,604, can. Cl. 26.  
 Air Reduction Co., Inc.: See—  
 National Carbide Corp.  
 Air Reduction Co., Inc., New York, N.Y. 860,569, pub. 9-3-68. Cl. 34.  
 Air Reduction Sales Co., to Air Reduction Co., Inc., New York, N.Y. 505,291, ren. 11-19-68. Cl. 14.  
 Airhardware, Inc., Van Nuys, Calif. 860,393, pub. 9-3-68. Cl. 13.  
 Aktiebolaget Bahco: See—  
 Eskilstuna Jernmanufaktur Aktiebolag.  
 Alaska Packers Association, to Alaska Packers Association, Inc., San Francisco, Calif. 71,739, ren. 11-19-68. Cl. 46.  
 Alaska Packers Association, to Alaska Packers Association, Inc., San Francisco, Calif. 71,741, ren. 11-19-68. Cl. 46.  
 Alaska Packers Association, to Alaska Packers Association, Inc., San Francisco, Calif. 72,059, ren. 11-19-68. Cl. 46.  
 Alaska Packers Association, Inc.: See—  
 Alaska Packers Association.  
 Alcan Aluminum Corp., Cleveland, Ohio. 860,417, pub. 9-3-68. Cl. 14.  
 Allen-Babcock Computing, Inc., Los Angeles, Calif. 860,688, pub. 9-3-68. Cl. 100.  
 Allied Impex Corp., New York, N.Y. 860,517, pub. 9-3-68. Cl. 26.  
 Ameresco, Inc., Little Falls, N.J. 738,614, can. Cl. 26.  
 American Broadcasting Companies, Inc., New York, N.Y. 860,724-6, pub. 9-3-68. Cl. 104.  
 American Can Co., New York, N.Y. 860,366, pub. 9-3-68. Cl. 2.  
 American Center for Theological Studies, Inc., New York, N.Y. 860,734, pub. 9-3-68. Cl. 107.  
 American Concertone, Inc., Culver City, Calif. 738,658, can. Cl. 36.  
 American Cystoscope Makers, Inc., Pelham Manor, N.Y. 502,099, ren. 11-19-68. Cl. 18.  
 American Hospital Supply Corp., Evanston, Ill., from Institutional Industries, Inc., Cincinnati, Ohio. 860,546, pub. 9-3-68. Cl. 32.  
 American Marketing Institute, Inc., Dallas, Tex. 860,620, pub. 9-3-68. Cl. 44.  
 American Mutual Liability Insurance Co., Wakefield, Mass. 860,712, pub. 9-3-68. Cl. 102.  
 American Oil Co., The: See—  
 Standard Oil Co.  
 American Safety Equipment Corp. of Michigan: See—  
 Buegeleisen, Joseph, Co.  
 American Society of Mechanical Engineers, New York, N.Y. 245,754, ren. 11-19-68. Cl. 38.  
 American Standard Inc., New York, N.Y. 860,570, pub. 9-3-68. Cl. 34.  
 American Stores Co.: See—  
 Acme Markets, Inc.  
 Americom Corp., New York, N.Y. 860,575-6, pub. 9-3-68. Cl. 36.  
 Ametek, Inc., New York, N.Y. 860,458, pub. 9-3-68. Cl. 21.  
 Ametek, Inc., New York, N.Y. 860,506, pub. 9-3-68. Cl. 24.  
 Ametek, Inc., New York, N.Y. 860,525, pub. 9-3-68. Cl. 26.  
 Ametek, Inc., New York, N.Y. 860,544, pub. 9-3-68. Cl. 31.  
 Ametek, Inc., New York, N.Y. 860,571, pub. 9-3-68. Cl. 34.  
 Andeck Industries Inc., Temple City, Calif. 860,595, pub. 9-3-68. Cl. 38.  
 Anderson & Sons, Inc., Westfield, Mass. 738,582, can. Cl. 26.  
 Angier Corp., Framingham, to Ludlow Corp., Needham Heights, Mass. 504,970, ren. 11-19-68. Cl. 5.  
 Anson Inc., Providence, R.I. 860,534, pub. 9-3-68. Cl. 28.  
 Aqualana Corp. of America: See—  
 X-Wax Corp.  
 Arden, Elizabeth, Sales Corp., New York, N.Y. 504,405, ren. 11-19-68. Cl. 51.

Argos Products Co., Inc., Genoa, Ill. 860,436, pub. 9-3-68. Cl. 21.  
 Associated Lerner Shops of America, Inc., New York, N.Y. 860,600, pub. 7-9-68. Cl. 39.  
 Associated Testing Laboratories, Inc., Wayne, N.J. 860,508, pub. 9-3-68. Cl. 26.  
 Astem-Hill Mfg. Co., Philadelphia, Pa. 860,488, pub. 9-3-68. Cl. 23.  
 Athol Plastics Corp., New York, N.Y. 860,732. Cl. 44.  
 Automated Building Components, Inc., Miami, Fla. 860,719, pub. 9-3-68. Cl. 103.  
 Automatic Control Co.: See—  
 Control Data Corp.  
 Autoservizi Maggioro S.p.A., Rome, Italy. 860,728, pub. 9-3-68. Cl. 105.  
 Avon Products, Inc., New York, N.Y. 860,678-9, pub. 9-3-68. Cl. 51.  
 Bagat Bros., Forest Park, Ill. 860,475, pub. 9-3-68. Cl. 23.  
 Baird & Warner, Inc., Chicago, Ill. 860,703, pub. 9-3-68. Cl. 101.  
 Baker Industries, Inc., Newark, N.J. 860,723, pub. 9-3-68. Cl. 104.  
 Bamberger's New Jersey: See—  
 Macy, R. H., & Co., Inc.  
 Bamby Bakers, Inc., Greensboro, N.C. 860,660, pub. 9-3-68. Cl. 46.  
 Bates, C. J., & Son Inc., Chester, Conn. 738,652, can. Cl. 34.  
 Battle Creek Equipment Co.: See—  
 Sanitarium Equipment Co.  
 Bausch & Lomb Inc.: See—  
 Bausch & Lomb Optical Co.  
 Bausch & Lomb Optical Co., to Bausch & Lomb Inc., Rochester, N.Y. 251,463, ren. 11-19-68. Cl. 26.  
 Beam, Edward, Jr., Washington, D.C., to Dixon-Bartlett, Inc., Baltimore, Md. 437,003, ren. 11-19-68. Cl. 39.  
 Beatrice Foods Co., Chicago, Ill. 860,652, pub. 9-3-68. Cl. 46.  
 Beauty-Rama Corp.: See—  
 Colgate-Palmolive Co.  
 Bemis Bro. Bag Co., St. Louis, Mo. 738,829, can. Cl. 2.  
 Bencke Corp., Columbus, Miss. 860,394, pub. 9-3-68. Cl. 13.  
 Bergeron, Victor J., d.b.a. Trader Vic's, San Francisco, Calif. 502,788, ren. 11-19-68. Cl. 46.  
 Bergset, Arne, Milwaukee, Wis. 738,818, can. Cl. 26.  
 Berkley & Co., Inc., Spirit Lake, Iowa. 860,473, pub. 9-3-68. Cl. 22.  
 Bernzomatic Corp., Rochester, N.Y. 860,559-60, pub. 9-3-68. Cl. 34.  
 Bio Metal Associates: See—  
 BioQuip Products Co.  
 BioQuip Products Co., Santa Monica, from R. P. Fall, d.b.a. Bio Metal Associates, El Segundo, Calif. 860,559, pub. 4-25-67. Multiple Class (Classes 2 and 32).  
 Bishop & Babcock Corp.: See—  
 Prestite Everlock Inc.  
 Bliss, E. W. Co.: See—  
 Mackintosh-Hemphill Co.  
 Blue Bell, Inc., Greensboro, N.C. 860,606, pub. 9-3-68. Cl. 39.  
 Blue Jeans Corp., Whiterville, N.C. 738,681, can. Cl. 39.  
 Blumenthal, B., & Co., Inc., New York, N.Y. 504,333-4, ren. 11-19-68. Cl. 40.  
 Boden, Lawrence D., d.b.a. Speedometer Service Co., Atlanta, Ga. 738,606, can. Cl. 26.  
 Boffinger, Wilhelm, Wurttemberg, Germany. 860,548, pub. 9-3-68. Cl. 32.  
 Borden Co., The, New York, N.Y. 860,354, pub. 9-3-68. Cl. 1.  
 Bradley, Milton, Co., Springfield, Mass. 860,462, pub. 9-3-68. Cl. 22.  
 Bray, J. W., Co., Inc., Dalton, Ga. 860,604, pub. 9-3-68. Cl. 39.  
 Breneman-Hartshorn Inc., Cincinnati, Ohio. 738,643, can. Cl. 32.  
 Brenninkmeyer, C. & A., Inc., Brooklyn, N.Y. 738,683, can. Cl. 39.  
 Brenninkmeyer, C. & A., Inc., Brooklyn, N.Y. 738,705-6, can. Cl. 39.  
 Bristol Inc., New York, N.Y. 860,512, pub. 9-3-68. Cl. 26.  
 Bristol-Myers Co., New York, N.Y. 860,425-6, pub. 9-3-68. Cl. 18.  
 Brunswick Corp., Chicago, Ill. 860,549, pub. 9-3-68. Cl. 32.  
 Budrich Co., The, San Diego, Calif. 860,520, pub. 9-3-68. Cl. 26.  
 Buegeleisen, Joseph, Co., to American Safety Equipment Corp. of Michigan, Detroit, Mich. 502,920, ren. 11-19-68. Cl. 39.  
 Bulova Watch Co., Inc., Flushing, N.Y. 860,531, pub. 9-3-68. Cl. 27.  
 Burnett Instrument Co., Inc., Lawrence, Kans. 860,625, pub. 9-3-68. Cl. 44.  
 Bush, W. J., & Co. Ltd., London, England. 738,501, can. Cl. 18.  
 Business Incentives, Inc., Minneapolis, Minn. 860,588, pub. 9-3-68. Cl. 38.  
 CRS Industries, Inc., Dresher, Pa. 860,558, pub. 9-3-68. Cl. 34.



Calcedas Pellegrini S/A, Industria e Comercio, Sao Paulo, Brazil, 738,835, can. Cl. 39.  
 Candygram, Inc., Beverly Hills, Calif. 860,753, Cl. 46.  
 Capitol Pipe & Steel Products, Inc., Philadelphia, Pa. 738,480, can. Cl. 13.  
 Caravan Seafoods, Inc., New Rochelle, N.Y. 860,656, pub. 9-3-68, Cl. 46.  
 Cargill, Inc., Minneapolis, Minn. 860,657, pub. 9-3-68, Cl. 46.  
 Carlton Tyre Saving Co., Ltd., The, Essex, England. 860-468,70, pub. 9-3-68, Cl. 22.  
 Caroline Poultry Farms, Inc., Federalburg, Md. 729,526, can. Cl. 46.  
 Central Chemical Co.: See—  
 Nobrega, Frank B.  
 Central Soya Co., Inc., Fort Wayne, Ind. 738,755, can. Cl. 46.  
 Cereal Soaps Co., Inc., East Northport, N.Y. 507,423, ren. 11-19-68, Cl. 40.  
 Chatham International Corp., New York, N.Y. 738,552, can. Cl. 23.  
 Chesebrough-Pond's Inc.: See—  
 Northam Warren Corp.  
 Chevron Chemical Co., San Francisco, Calif. 860,353, pub. 9-3-68, Cl. 1.  
 Chicago Tribune Co.: See—  
 Tribune Co., The.  
 Chilton Co., Philadelphia, Pa. 860,593, pub. 9-3-68, Cl. 38.  
 Chilton Co., Philadelphia, Pa. 860,751, Cl. 38.  
 Chrom-Ever Corp., New York, N.Y. 860,397, pub. 9-3-68, Cl. 13.  
 City Baking Co., The, d.b.a. Rice's Bakery, Baltimore, Md. 738,760, can. Cl. 46.  
 Clairol, Inc., New York, N.Y. 860,674, pub. 9-3-68, Cl. 51.  
 Clark, Keith, Inc.: See—  
 Ever Ready Calendar Mfg. Co.  
 Clear-A-Tor Corp., Chicago, Ill. 860,502, pub. 9-3-68, Cl. 23.  
 Coats & Clark Inc., New York, N.Y. 738,487, can. Cl. 13.  
 Colbert Die Casting Co., South Gate, Calif. 860,485, pub. 9-3-68, Cl. 23.  
 Colgate-Palmolive Co., New York, N.Y., from Beauty-Rama Corp., Chicago, Ill. 860,671, pub. 1-19-65, Cl. 51.  
 Colgate-Palmolive Co., New York, N.Y. 860,685, pub. 9-3-68, Cl. 52.  
 Colonial Electric & Specialty Co., Inc., Northridge, Calif. 860,445, pub. 9-3-68, Cl. 21.  
 Colony, The: See—  
 Skelotes, Dean J.  
 Columbia Broadcasting System, Inc., New York, N.Y. 860-579, pub. 9-3-68, Cl. 36.  
 Columbia Enterprises, Inc., Portland, Oreg. 860,487, pub. 9-3-68, Cl. 23.  
 Commer Cars Ltd., London, England. 502,211, ren. 11-19-68, Cl. 19.  
 Compagnie d'Equipelement Sanitaire Limitee, Montreal, Quebec, Canada. 738,494, can. Cl. 15.  
 Complete Electric Motor Repair Co.: See—  
 Fox, Alex.  
 Conforma Laboratories, Inc., Norfolk, Va. 860,513, pub. 9-3-68, Cl. 26.  
 Consolidated Companies, Inc., New Orleans, La. 860,641, pub. 9-3-68, Cl. 46.  
 Consolidated Controls Corp.: See—  
 Ultradyne, Inc.  
 Consolidated Foods Corp., d.b.a. Joe Lowe Co., Englewood, N.J. 860,653, pub. 9-3-68, Cl. 46.  
 Consolidated Packaging Corp., Chicago, Ill. 860,367, pub. 9-3-68, Cl. 2.  
 Consolidation Coal Co.: See—  
 Truax-Traer Coal Co.  
 "Constructiewerkhuizen Emile d'Hooge," Personenvennootschap Met Beperkte Aansprakelijkheid, in French: "Ateliers de Construction Emile d'Hooge, Societe de Personnes a Responsabilite Limitee, Belle Vuestraat, Belgium. 738,579, can. Cl. 26.  
 Continental Paint & Varnish Co., Chicago, Ill. 508,513, ren. 11-19-68, Cl. 16.  
 Control Data Corp., Minneapolis, from Automatic Control Co., St. Paul, Minn. 860,509, pub. 9-3-68, Cl. 26.  
 Controls Co. of America, Melrose Park, Ill. 860,567, pub. 9-3-68, Cl. 34.  
 Cooperative Blood Replacement Plan, Chicago, Ill. 860,710, pub. 9-3-68, Cl. 102.  
 Copy Van Co.: See—  
 Copy Van, Inc.  
 Copy Van, Inc., from Copy Van Co., Richmond, Va. 860-698-9, pub. 9-3-68, Cl. 101.  
 Corey, Edward S., d.b.a. Fuzzy's Hobo Cafe & Drive-In, Alexandria, La. 860,637, pub. 9-3-68, Cl. 46.  
 Coty, Inc., to Chas. Pfizer & Co., Inc., New York, N.Y. 242-663, ren. 11-19-68, Cl. 51.  
 Country Kitchen Inc. of Middletown, Ohio, Cincinnati, Ohio. 860,687, pub. 9-3-68, Cl. 100.  
 Crane Co., New York, N.Y. 860,407, pub. 9-3-68, Cl. 13.  
 Crawford Fitting Co., Solon, Ohio. 860,497, pub. 9-3-68, Cl. 23.  
 Creative Programs Corp., New York, N.Y. 860,700, pub. 9-3-68, Cl. 101.  
 Creative Specialty Manufacturers: See—  
 Santa Claus Industries, Inc.  
 Creat Mfg. Co., The, Southfield, Mich. 860,429, pub. 9-3-68, Cl. 19.  
 Crossbow, Inc., Cincinnati, Ohio. 860,510, pub. 9-3-68, Cl. 26.  
 Cummins Engine Co., Inc., Columbus, Ind. 860,428, pub. 9-3-68, Cl. 19.

Cupani, Bob: See—  
 Cupani, Robert A.  
 Cupani, Robert A., d.b.a. Bob Cupani, Benton Harbor, Mich. 738,660, can. Cl. 36.  
 Curwood, Inc., New London, Wis. 860,582, pub. 9-3-68, Cl. 37.  
 Cyclops Corp.: See—  
 Cyclops Steel Co., Inc.  
 Universal-Cyclops Steel Corp.  
 Cyclops Steel Co., Inc., Titusville, to Cyclops Corp., Pittsburgh, Pa. 248,002, ren. 11-19-68, Cl. 14.  
 Dakota Plastics, Inc., Madison, S. Dak. 738,483, can. Cl. 13.  
 Dana Corp.: See—  
 Perfect Circle Corp.  
 Daybrook-Ottawa Corp., Detroit, Mich. 860,484, pub. 9-3-68, Cl. 23.  
 Dayco Corp., Dayton, Ohio. 860,351, pub. 9-3-68, Multiple Class (Classes 1 and 35).  
 Day's Tailor-D Clothing, Inc., Tacoma, Wash. 507,129, ren. 11-19-68, Cl. 39.  
 Day's Tailor-D Clothing, Inc., Tacoma, Wash. 507,132, ren. 11-19-68, Cl. 39.  
 Daystrom, Inc., Murray Hill, N.J., from Wiancko Engineering Co., Pasadena, Calif. 738,512, can. Cl. 21.  
 Daytona Sports Co., Reseda, Calif. 860,603, pub. 9-3-68, Cl. 39.  
 Deacon, George P., d.b.a. The Rayboard Co., Martins Ferry, Ohio. 738,656, can. Cl. 34.  
 Del Laboratories, Inc., Farmingdale, N.Y. 860,673, pub. 9-3-68, Cl. 51.  
 Den Kongelige Gronlandske Handel (The Royal Greenland Trade Department), Copenhagen, Denmark. 860,643, pub. 9-3-68, Cl. 46.  
 Dentist Toothpick Co., Inc., The, Tyler, Tex. 738,734, can. Cl. 44.  
 Dentists' Supply Co., The, York, Pa., from Jacob A. Saffir, Los Angeles, Calif. 738,732, can. Cl. 44.  
 Deschner Corp., Inglewood, Calif. 860,498, pub. 9-3-68, Cl. 23.  
 Destlin Chemical Co., Providence, R.I. 216,628, can. Cl. 18.  
 Diametal AG., Biel, Switzerland. 860,373, pub. 9-3-68, Cl. 4.  
 Diamond Shamrock Corp., Cleveland, Ohio. 860,380, pub. 9-3-68, Cl. 6.  
 Dietzgen, Eugene Co., Chicago, Ill. 860,586, pub. 9-3-68, Cl. 38.  
 Diverser Corp., The, Chicago, Ill. 860,379, pub. 9-3-68, Cl. 6.  
 Dixon-Bartlett, Inc.: See—  
 Beam, Edward, Jr.  
 D'Merle Guitars, Inc., Huntington Station, N.Y. 860,578, pub. 9-3-68, Cl. 36.  
 Dolphin: See—  
 Feaster, Ray, & Associates.  
 Doodling Balls AG, Zurich, Switzerland. 860,465, pub. 9-3-68, Cl. 22.  
 Douglas Communications, Inc., New York, N.Y. 860,750, Cl. 38.  
 Drackett Co., The, Cincinnati, Ohio. 860,740, Multiple Class (Classes 4 and 52).  
 Dragewerk, Helmr., & Bernh. Drager, Lubeck, Germany. 860-623, pub. 9-3-68, Cl. 44.  
 Drug & Food Capital Corp., Chicago, Ill. 738,817, can. Cl. 102.  
 Duff-Mott Co., Inc., New York, N.Y. 442,130, ren. 11-19-68, Cl. 46.  
 Dunlop Semtex Ltd., London, England. 860,431, pub. 9-3-68, Cl. 20.  
 Du Pont de Nemours, E. I. & Co., Wilmington, Del. 860-357-8, pub. 9-3-68, Cl. 1.  
 Du Pont de Nemours, E. I. & Co., Wilmington, Del. 860-617-18, pub. 9-3-68, Cl. 43.  
 Easterling Co., The, Wheaton, Ill. 503,209, ren. 11-19-68, Cl. 28.  
 Easterling Co., The, Wheaton, Ill. 503,892, ren. 11-19-68, Cl. 28.  
 Eastern Co., The, Naugatuck, Conn. 860,523, pub. 9-3-68, Cl. 26.  
 Eastern Corrugated Container Corp., Clifton, N.J. 860,369, pub. 9-3-68, Cl. 2.  
 Eastern Seaboard Plastics, Inc., Newark, N.J. 860,362, pub. 9-3-68, Cl. 2.  
 Eberhard Faber Inc., Wilkes-Barre, Pa. 738,535, can. Cl. 22.  
 Economy Finance Corp., Indianapolis, Ind. 860,714, pub. 9-3-68, Cl. 102.  
 E-Donolite Corp., Beverly Hills, Calif., from Nu-Dent Porcelain Studio, Inc., New York, N.Y. 738,722, can. Cl. 44.  
 Efdyn Corp., Chicago, Ill. 860,477, pub. 9-3-68, Cl. 23.  
 Elgin Sweeper Co., Elgin, Ill. 860,490, pub. 9-3-68, Cl. 23.  
 Ellenville Wood Novelty Co., Inc., Ellenville, N.Y. 860,667, pub. 9-3-68, Cl. 50.  
 Elsan Ltd., London, England. 860,378, pub. 9-3-68, Cl. 6.  
 Ely, T. J., Mfg. Co., Girard, Pa. 738,536, can. Cl. 22.  
 Emanuel, Jay, Publications, Inc., from Jay Emanuel Publications, Inc., Philadelphia, Pa. 860,594, pub. 9-3-68, Cl. 38.  
 Emulsion Process Corp., The, Jersey City, N.J., to Humble Oil & Refining Co., Houston, Tex. 246,874, ren. 11-19-68, Cl. 12.  
 Endicott Johnson Corp., Endicott, N.Y. 738,700, can. Cl. 39.  
 Engel Equipment, Inc., St. Louis, Mo. 860,499, pub. 9-3-68, Cl. 23.  
 Enterprise Development Corp., Indianapolis, Ind. 860,557, pub. 9-3-68, Cl. 34.  
 Enterprise Mfg. Co., The, to Pfueger Corp., Akron, Ohio. 71,940, ren. 11-19-68, Cl. 22.

Enterprise Publishing Co., Brockton, Mass. 507,876, ren. 11-19-68, Cl. 38.  
 Eskilstuna Jernmanufaktur Aktiebolag, Eskilstuna, to Aktiebolaget Bahco, Stockholm, Sweden. 241,053, ren. 11-19-68, Cl. 23.  
 Essex Club Foods, Inc.: See—  
 Essex Foods, Inc.  
 Essex Foods, Inc., d.b.a. Essex Club Foods, Inc., Methuen, Mass. 860,635, pub. 9-3-68, Cl. 46.  
 Eutectic Welding Alloys Corp., Flushing, N.Y. 860,561, pub. 9-3-68, Cl. 34.  
 Ever Ready Calendar Mfg. Co., Jersey City, N.J., to Keith Clark, Inc., New York, N.Y. 504,956, ren. 11-19-68, Cl. 37.  
 Eveready Canvas Corp., New York, N.Y. 503,744, ren. 11-19-68, Cl. 50.  
 Eveready Canvas Corp., New York, N.Y. 503,880, ren. 11-19-68, Cl. 19.  
 Ever-Tex, Inc., Cranston, R.I. 860,743, Cl. 20.  
 Evlurude Motor Co., Milwaukee, Wis., to Outboard Marine Corp., Waukegan, Ill. 242,521, ren. 11-19-68, Cl. 23.  
 Evlurude Motor Co., Milwaukee, Wis., to Outboard Marine Corp., Waukegan, Ill. 243,476, ren. 11-19-68, Cl. 23.  
 Excel Co., The, Minneapolis, Minn. 860,602, pub. 9-3-68, Cl. 39.  
 FMC Corp., Chicago, Ill. 860,494, pub. 9-3-68, Cl. 23.  
 Fairmont Foods Co., Omaha, Nebr. 860,662, pub. 9-3-68, Cl. 46.  
 Fall, Richard P.: See—  
 BioQuip Products Co.  
 Farah Mfg. Co., Inc., El Paso, Tex. 738,693-4, can. Cl. 39.  
 Feaster, Ray, & Associates, d.b.a. Dolphin, Garden Grove, Calif. 860,466, pub. 9-3-68, Cl. 22.  
 Federal-Mogul Corp., Southfield, Mich. 860,574, pub. 9-3-68, Cl. 35.  
 Fedtro, Inc., Rockville Centre, N.Y. 860,493, pub. 9-3-68, Cl. 23.  
 Fidelity Electronics, Ltd., Chicago, Ill. 860,624, pub. 9-3-68, Cl. 44.  
 Fieldcrest Mills, Inc., Eden, N.C. 860,614-16, pub. 9-3-68, Cl. 42.  
 Fine Products Co., Inc., d.b.a. Hollingsworth Unusual Candles, Augusta, Ga. 860,645, pub. 9-3-68, Cl. 46.  
 Flex-O-Lite Division: See—  
 General Steel Industries, Inc.  
 Fluostatic Ltd., London, England. 860,556, pub. 4-30-63, Cl. 34.  
 Formica Corp., Cincinnati, Ohio. 738,479, can. Cl. 12.  
 Fountain Hill Mills, Bethlehem, Pa. 738,686, can. Cl. 39.  
 Fox, Alex, d.b.a. Complete Electric Motor Repair Co., Chicago, Ill. 738,818, can. Cl. 103.  
 Freeman & Gossage, Inc., San Francisco, Calif. 860,547, pub. 9-3-68, Cl. 32.  
 Frostie Bottling Co., Alexandria, Va. 738,741, can. Cl. 45.  
 Fuzzy's Hobo Cafe & Drive-In: See—  
 Corey, Edward S.  
 GCA Corp., Bedford, Mass. 860,514, pub. 9-3-68, Cl. 26.  
 G. & M. Packing Co., Inc., New York, N.Y. 738,747, can. Cl. 46.  
 Gary Industries, Inc., d.b.a. Acco Products, Chicago, Ill. 860,583, pub. 9-3-68, Cl. 37.  
 Gates Rubber Co., The, Denver, Colo. 860,573, pub. 9-3-68, Cl. 35.  
 Geigy Chemical Corp., Ardsley, N.Y. 854,962, cor. Cl. 6.  
 General Battery & Ceramic Corp.: See—  
 Vitalic Battery Co., Inc.  
 General Cigar Co., Inc., New York, N.Y. 860,383, pub. 9-3-68, Cl. 8.  
 General Electric Co., Plainville, Conn. 860,454-5, pub. 9-3-68, Cl. 21.  
 General Electric Co., Louisville, Ky. 860,566, pub. 9-3-68, Cl. 34.  
 General Electric Co., Milwaukee, Wis. 860,621, pub. 9-3-68, Cl. 44.  
 General Mills, Inc., Minneapolis, Minn. 860,655, pub. 9-3-68, Cl. 46.  
 General Steel Industries, Inc., d.b.a. Flex-O-Lite Division, St. Louis, Mo. 860,668, pub. 9-3-68, Cl. 50.  
 Genesco Inc., Nashville, Tenn. 738,708-9, can. Cl. 39.  
 Genistron, Inc., to Genisco Technology Corp., Compton, Calif. 738,186, Am. 7(d), Cl. 21.  
 Gibson Refrigerator Co., Greenville, Mich., to White Consolidated Industries, Inc., Lakewood, Ohio. 503,916, ren. 11-19-68, Cl. 21.  
 Giddings & Lewis, Inc., Fond Du Lac, Wis. 860,518, pub. 9-3-68, Cl. 26.  
 Gillette Co., The, d.b.a. The Tont Co., Boston, Mass. 590,898, Am. 7(d), Cl. 51.  
 Giltech Corp., St. Paul, Minn. 860,717, pub. 9-3-68, Cl. 103.  
 Glam-O-Rama, Inc., Benson, N.C. 860,716, pub. 9-3-68, Cl. 103.  
 Glenwood Range Co., Taunton, Mass., from The Sunray Stove Co., Delaware, Ohio. 860,565, pub. 9-3-68, Cl. 34.  
 Goldenberg, Ruby, d.b.a. Goldenberg & Zitter, New York, N.Y. 738,675, can. Cl. 39.  
 Goldenberg & Zitter: See—  
 Goldenberg, Ruby.  
 Goodyear Aerospace Corp., Akron, Ohio. 860,524, pub. 9-3-68, Cl. 26.  
 Goodyear Tire & Rubber Co., The, Akron, Ohio. 738,711, can. Cl. 39.  
 Gordon, Claud S., Co., Richmond, Ill. 860,519, pub. 9-3-68, Cl. 26.  
 Gorman-Rupp Co., The, Mansfield, Ohio. 860,401, pub. 9-3-68, Cl. 13.  
 Gould-Mercereau Co., Inc., The, New York, N.Y. 860,399, pub. 9-3-68, Cl. 13.

Grand Rapids Varnish Corp., Grand Rapids, Mich. 738,498, can. Cl. 16.  
 Graniteville Co., Graniteville, S.C., from McCampbell & Co., Inc., New York, N.Y. 738,714, can. Cl. 42.  
 Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 500,966, ren. 11-19-68, Cl. 46.  
 Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 500,975-6, ren. 11-19-68, Cl. 46.  
 Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 500,981, ren. 11-19-68, Cl. 46.  
 Great Atlantic & Pacific Tea Co., Inc., The: See—  
 Great Atlantic & Pacific Tea Co., The.  
 Great Lakes Dredge & Dock Co., Chicago, Ill. 248,738, ren. 11-19-68, Cl. 23.  
 Greet Our Babies, Inc., Memphis, Tenn. 860,695, pub. 9-3-68, Cl. 101.  
 Griley, Victor P., Miami, Fla. 738,533, can. Cl. 22.  
 Grimsinger, Raymond C., d.b.a. R. G. Circuits Co., Lawndale, Calif. 738,531, can. Cl. 21.  
 Guardian Chemical Corp., Long Island City, N.Y. 860,421, pub. 8-9-66, Cl. 18.  
 H & H Engineering Co.: See—  
 Pines Engineering Co., Inc.  
 H & H Poultry Co., Inc., Selbyville, Del. 860,640, pub. 9-3-68, Cl. 46.  
 Hall, Henry J., Southfield, Mich. 860,543, pub. 9-3-68, Cl. 31.  
 Halo Import Corp., New York, N.Y. 738,687, can. Cl. 39.  
 Halperin, Herbert, Distributing Corp., Cheverly, Md. 860-646, pub. 9-3-68, Cl. 46.  
 Hambro Forest Products, Inc., Crescent City, Calif. 860,389, pub. 9-3-68, Cl. 12.  
 Harding, Milo, Co., Monterey Park, Calif. 860,482, pub. 9-3-68, Cl. 23.  
 Hardware Dealers Mutual Fire Insurance Co., Stevens Point, Wis. 504,858, ren. 11-19-68, Cl. 102.  
 Harley-Davidson Motor Co., Milwaukee, Wis. 507,163, ren. 11-19-68, Cl. 39.  
 Harris, John I., d.b.a. National Latex Co., Nashville, Tenn. 738,727, can. Cl. 44.  
 Harris-Intertype Corp., Cleveland, from The Schirber Co., Dayton, Ohio. 860,489, pub. 9-3-68, Cl. 23.  
 Havig Industries, Inc., Wilmington, Del. 860,446, pub. 9-3-68, Cl. 21.  
 Haynes, H. A., Wichita Falls, Tex. 860,382, pub. 9-3-68, Cl. 8.  
 Head Big Beef, Inc., Hartsdale, N.Y. 860,692, pub. 9-3-68, Cl. 100.  
 Hedwin Corp., New York, N.Y. 860,368, pub. 9-3-68, Cl. 2.  
 Heli Co.: See—  
 Krasner, Fred C., and Helen Krasner.  
 Hickory Farms of Ohio: See—  
 Ransom, Richard K.  
 Hillcrest Engineering Ltd., London, from Styla Accessories Ltd., Warwick, England. 860,427, pub. 9-3-68, Multiple Class (Classes 19 and 21).  
 Hilsenbeck, L., Inc., to Julius Schmid, Inc., New York, N.Y. 247,841, ren. 11-19-68, Cl. 44.  
 Hoffmann-La Roche Inc., Nutley, N.J. 860,423, pub. 9-3-68, Cl. 18.  
 Holitt, Clifford E., d.b.a. Marine Products & Engineering Co., New York, N.Y. 860,416, pub. 9-3-68, Cl. 13.  
 Hollingsworth Unusual Candles: See—  
 Fine Products Co., Inc.  
 Holly Hill Fruit Products, Inc., Davenport, Fla. 504,919, ren. 11-19-68, Cl. 46.  
 Hollywood Recreation Research, Inc., Hollywood, Calif. 860-464, pub. 9-3-68, Cl. 22.  
 Holmes Electric Protective Co., New York, N.Y. 738,801, can. Cl. 100.  
 Holophone Co., Inc., New York, N.Y. 860,444, pub. 9-3-68, Cl. 21.  
 Hooze, L. A., Co., San Antonio, Tex. 738,745, can. Cl. 46.  
 Horlacher Brewing Co., Allentown, Pa. 504,535, ren. 11-19-68, Cl. 48.  
 Hospital Marketing Services Co., Inc., Fairfield, Conn. 860-622, pub. 9-3-68, Cl. 44.  
 Houdaille Industries, Inc.: See—  
 Houdaille Engineering Corp.  
 Houde Engineering Corp., to Houdaille Industries, Inc., Buffalo, N.Y. 248,513, ren. 11-19-68, Cl. 19.  
 Hubbard-Hall Chemical Co., The, Waterbury, Conn. 738,436, can. Cl. 1.  
 Hudnut, Richard, Morris Plains, N.J. 738,848-9, can. Cl. 51.  
 Hughes, Harold S., d.b.a. Pops Corn Crib, Crystal Lake, Ill. 860,634, pub. 9-3-68, Cl. 46.  
 Humble Oil & Refining Co.: See—  
 Emulsion Process Corp., The.  
 Pennsylvania Lubricating Co.  
 Stanco Inc.  
 Hunt, Rodney, Co., Orange, Mass. 860,501, pub. 9-3-68, Cl. 23.  
 Illinois Electric Porcelain Co., Macomb, to McGraw-Edison Co., Elgin, Ill. 502,121, ren. 11-19-68, Cl. 21.  
 Industrial Electric Reels, Inc., Omaha, Nebr. 860,440, pub. 9-3-68, Cl. 21.  
 Institute for Scientific Information, Inc., Philadelphia, Pa. 811,503, cor. Cl. 101.  
 Institute for Scientific Information, Inc., Philadelphia, Pa. 734,569, cor. Cl. 38.  
 Institute for Scientific Information, Inc., Philadelphia, Pa. 760,381, cor. Cl. 38.  
 Institute for Scientific Information, Inc., Philadelphia, Pa. 806,105, cor. Cl. 100.



Institutional Industries, Inc.: See—  
American Hospital Supply Corp.  
Interchemical Corp., New York, N.Y. 738,457, can. Cl. 11.  
Interlake Window Industries, Inc., Novi, Mich. 860,390, pub. 9-3-68, Cl. 12.  
International Armament Corp., Alexandria, Va. 860,384, pub. 9-3-68, Cl. 9.  
International Cultured Pearl Co., Inc., d.b.a. International Jewelry Creations, New York, N.Y. 860,538, pub. 9-3-68, Cl. 28.  
International Jewelry Creations: See—  
International Cultured Pearl Co., Inc.  
International Silver Co., The, Meriden, Conn. 860,479, pub. 9-3-68, Cl. 23.  
International Silver Co., The, Meriden, Conn. 860,503, pub. 9-3-68, Cl. 23.  
Ionair, Inc.: See—  
West Electric Heater Co.  
Irvington Co., The: See—  
Phillips, Louis P.  
Ives, Publ. Inc., Yonkers, N.Y. 860,680, pub. 9-3-68, Cl. 51.  
Jackdaw Publications Ltd., London, England. 860,589, pub. 9-3-68, Cl. 38.  
Jackson-Guldan, Inc., Columbus, Ohio. 860,580, pub. 9-3-68, Cl. 86.  
Jacquin, Charles, et Cie., Inc., Philadelphia, Pa. 860,664, pub. 9-3-68, Cl. 49.  
Jaeger Machine Co., The, Columbus, Ohio. 860,491, pub. 9-3-68, Cl. 23.  
Jerrol Electronics Corp., Philadelphia, Pa. 860,447, pub. 9-3-68, Cl. 21.  
Jewel Companies, Inc., from Jewel Tea Co., Inc., Melrose Park, Ill. 860,630, pub. 9-3-68, Cl. 46.  
Jewel Tea Co., Inc.: See—  
Jewel Companies, Inc.  
Johnny on the Spot Temporary Help Inc., New York, N.Y. 860,896, pub. 9-3-68, Cl. 101.  
Johnson & Johnson, New Brunswick, N.J. 860,684, pub. 9-3-68, Cl. 51.  
Journal Co., The, Milwaukee, Wis. 860,722, pub. 9-3-68, Cl. 104.  
Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd., Osaka, Japan. 860,356, pub. 9-3-68, Cl. 1.  
Kanegafuchi Spinning Co., Ltd.: See—  
Kanegafuchi Boseki Kabushiki Kaisha.  
Kansas Southern Baptist Foundation, Wichita, Kans. 860,737, pub. 9-3-68, Cl. 107.  
Kartparks, Inc., Rockford, Ill. 738,803, can. Cl. 100.  
Kasprians, Inc., Los Angeles, Calif. 860,555, pub. 9-3-68, Cl. 32.  
Kellom Co., Battle Creek, Mich. 860,650-1, pub. 9-3-68, Cl. 46.  
Kelly, William F., New Orleans, La. 860,744, Cl. 23.  
Kelly-Springfield Tire Co., The: See—  
Richmond Rubber Co., Inc.  
Kent Rubber Corp., Jerico, N.Y. 860,596, pub. 9-3-68, Multiple Class (Classes 39 and 44).  
Ketcham & McDougall, Inc., Roseland, N.J. 860,668, pub. 9-3-68, Cl. 50.  
Kiddle Kapers, Inc., New York, N.Y. 738,697, can. Cl. 39.  
King, John J., Chicago, Ill. 738,565, can. Cl. 23.  
Kin-Line, Inc., Oakland, Calif. 860,408, pub. 9-3-68, Cl. 13.  
Kiplinger Washington Editors, Inc., The, Washington, D.C. 738,671, can. Cl. 38.  
Kiplinger Washington Editors, Inc., The, Washington, D.C. 738,799, can. Cl. 100.  
Koehn, Harold, Coral Gables, Fla. 860,599, pub. 9-3-68, Cl. 89.  
Kohler & Campbell, Inc., Granite Falls, N.C. 441,856, ren. 11-19-68, Cl. 36.  
Kollmeyer Chemicals, Chicago, Ill. 860,360, pub. 9-3-68, Cl. 2.  
Krasner, Fred C., and Helen Krasner, d.b.a. Helli Co., Lincolnwood, Ill. 860,539, pub. 9-3-68, Cl. 28.  
Known Foods, Inc., Hazelcrest, Ill. 860,639, pub. 9-3-68, Cl. 46.  
Kwik-Stok Basket Corp., San Mateo, Calif. 738,830, can. Cl. 2.  
LCN Closures Division: See—  
Schlage Lock Co.  
LTV Ling Altec, Inc., Anaheim, Calif. 860,432, pub. 9-3-68, Cl. 21.  
Lafayette Radio Electronics Corp., Jamaica, N.Y. 738,527, can. Cl. 21.  
Lakeside, Inc., Royal Oak, Mich. 860,636, pub. 9-3-68, Cl. 46.  
Lakeside Industries, Inc., Minneapolis, Minn. 860,461, pub. 9-3-68, Cl. 22.  
Lake-States Conservation Co., Inc., Waukesha, Wis. 738,804, can. Cl. 100.  
Lamborn & Co., Inc., New York, N.Y. 860,713, pub. 9-3-68, Cl. 102.  
Landis Machine Co.: See—  
Oster Mfg. Co., The.  
Lantern Lane Gallery: See—  
Meler, Jack E.  
Lanvin-Charles of the Ritz, Inc., from Jean Nate, Inc., New York, N.Y. 860,676, pub. 9-3-68, Cl. 51.  
Larutan Corp., The, Dallas, Tex. 860,392, pub. 8-13-68, Cl. 12.  
Lauritzen & Co., Inc., Chicago, Ill. 860,638, pub. 9-3-68, Cl. 46.  
Lefton, Geo. Z., Co., Chicago, Ill. 860,541, pub. 9-3-68, Cl. 30.  
Leonard, Charles, Inc., Glendale, N.Y. 738,670, can. Cl. 37.

Lever Bros. Co., New York, N.Y. 860,372, pub. 8-23-66, Multiple Class (Classes 4 and 52).  
Libbey-Owens-Ford Glass Co., Toledo, Ohio. 738,646, can. Cl. 33.  
Liberty Records, Inc., Los Angeles, Calif. 860,577, pub. 8-27-68, Cl. 36.  
Lieberman, Nathan I., Evansville, Ind. 860,897, pub. 9-3-68, Cl. 101.  
Lily-Tulip Cup Corp., New York, N.Y. 860,364-5, pub. 9-3-68, Cl. 2.  
Limestone Products Corp. of America, Newton, N.J. 860,352, pub. 9-3-68, Cl. 1.  
Lindauer & Co., San Francisco, Calif. 860,386, pub. 9-3-68, Cl. 10.  
Lindeman, Peter, Inc., New York, N.Y. 860,536, pub. 9-3-68, Cl. 28.  
Lion Country Safari, Inc., West Palm Beach, Fla. 860,739, pub. 9-3-68, Cl. 107.  
Lionel Corp., The, Hillside, N.J. 738,544, can. Cl. 22.  
Lippert Tile, Inc., Menomonee Falls, Wis. 860,413, pub. 9-3-68, Cl. 13.  
Litton Business Systems, Inc., from Royal McBee Corp., New York, N.Y. 860,474, pub. 9-3-68, Cl. 23.  
Locke Mfg. Companies, Inc., Huntington, Ind. 860,504, pub. 9-3-68, Cl. 23.  
Lowe, Joe, Co.: See—  
Consolidated Foods Corp.  
Lubri-Graph Corp., The, to The Lubrizol Corp., Wickliffe, Ohio. 275,737, Am. 7(d), Cl. 15.  
Ludlow Corp.: See—  
Angier Corp.  
Mackintosh-Hemphill Co., to E. W. Bliss Co., Pittsburgh, Pa. 440,689, ren. 11-19-68, Cl. 23.  
Macy, R. H., & Co., Inc., d.b.a. Bamberger's New Jersey, New York, N.Y. 860,585, pub. 8-31-65, Cl. 38.  
Magnavox Co., The, Fort Wayne, Ind. 502,098, ren. 11-19-68, Cl. 21.  
Magnavox Co., The, Fort Wayne, Ind. 502,117, ren. 11-19-68, Cl. 21.  
Magnavox Co., The, Fort Wayne, Ind. 502,171, ren. 11-19-68, Cl. 21.  
Magram Corp., Burlington, Vt. 860,705, pub. 9-3-68, Cl. 101.  
Maigu: See—  
Maigu Co., Inc.  
Maigu Co., Inc., d.b.a. Maigu, Tehran, Iran. 738,749, can. Cl. 46.  
Mallinckrodt Chemical Works, St. Louis, Mo. 860,375, pub. 3-16-65, Cl. 6.  
Maltby Co., The, Culver City, Calif. 860,486, pub. 9-3-68, Cl. 23.  
Manifold Supplies Co., Brooklyn, N.Y. 398,883, can. Cl. 11.  
Marcel Paper Mills, Inc., East Paterson, N.J. 860,363, pub. 9-3-68, Cl. 2.  
Marine Products & Engineering Co.: See—  
Holitt, Clifford E.  
Marine Studios, Inc., St. Augustine, Fla. 860,738, pub. 9-3-68, Cl. 107.  
Marion Laboratories, Inc., Kansas City, Mo. 860,424, pub. 9-3-68, Cl. 18.  
Marion Power Shovel Co., Inc.: See—  
Marion Steam Shovel Co., The.  
Marion Steam Shovel Co., The, to Marion Power Shovel Co., Inc., Marion, Ohio. 141,294, ren. 11-19-68, Cl. 21.  
Mar-Jac, Inc., Gainesville, Ga. 860,644, pub. 9-3-68, Cl. 46.  
Marmon-Herrington Co., Inc., Chicago, Ill. 727,460, can. Cl. 23.  
Marquette Corp., Minneapolis, Minn. 860,443, pub. 9-3-68, Multiple Class (Classes 21, 23, 26, and 34).  
Mason, Lion G., & Co., Atlanta, Ga. 860,706, pub. 9-3-68, Cl. 102.  
Master Trading Corp., New York, N.Y. 860,610, pub. 9-3-68, Cl. 40.  
Mathes, Curtis, Sales Co., Dallas, Tex. 860,448-9, pub. 9-3-68, Multiple Class (Classes 21 and 36).  
Mauna Mining Corp., Dillsburg, Pa. 738,478, can. Cl. 12.  
McCampbell & Co., Inc.: See—  
Grantville Co.  
McElwain, Charlotte, New York, N.Y. 860,609, pub. 9-3-68, Cl. 40.  
McGraw-Edison Co.: See—  
Illinois Electric Porcelain Co.  
McGraw-Hill, Inc., New York, N.Y. 860,591, pub. 9-3-68, Cl. 38.  
McMartin Industries, Inc., Omaha, Nebr. 860,435, pub. 9-3-68, Multiple Class (Classes 21 and 26).  
Mead Johnson & Co., Evansville, Ind. 860,647, pub. 9-3-68, Cl. 46.  
Mead Johnson & Co., Evansville, Ind. 860,661, pub. 9-3-68, Cl. 46.  
Medical Plastics Corp. of America, Greensboro, N.C. 860,626, pub. 9-3-68, Cl. 44.  
Meler, Jack E., d.b.a. Lantern Lane Gallery, Houston, Tex. 860,590, pub. 9-3-68, Cl. 38.  
Mercurio, Lucille R., Belleville, Ill. 860,632, pub. 9-3-68, Cl. 40.  
Meyer, Georges, Corp.: See—  
Scherrer, E. C., Inc.  
Milburn Bros., Inc., Mount Prospect, Ill. 860,720, pub. 9-3-68, Cl. 103.  
Miller Brewing Co., Milwaukee, Wis. 738,843, can. Cl. 48.  
Mintzer, Milton L., New York, N.Y. 860,381, pub. 9-3-68, Cl. 7.  
Miramul, Inc., Diboll, Tex. 860,387, pub. 9-3-68, Cl. 10.

Mister Softee, Inc., Runnemede, N.J. 860,693, pub. 9-3-68, Cl. 100.  
Mobawk Plastics, Inc., Barnardston, Mass. 860,370, pub. 9-3-68, Cl. 2.  
Montre de Sport Geneva S.A., Geneva, Switzerland. 860,529-30, pub. 9-3-68, Cl. 27.  
Montres Henex S.A., Tavannes, Switzerland. 441,014, ren. 11-19-68, Cl. 27.  
Montres Rolex S.A., Geneva, Switzerland. 860,527-8, pub. 9-3-68, Cl. 27.  
Morgenstern Fabrics Development Corp., New York, N.Y. 738,715, can. Cl. 42.  
Morris, John O., Hartford, Conn. 860,691, pub. 9-3-68, Cl. 100.  
Morton International, Inc., Chicago, Ill. 860,654, pub. 9-3-68, Cl. 46.  
Motec Industries, Inc., Hopkins, Minn. 738,558, can. Cl. 23.  
NTT Enterprises, Inc., Hollywood, Calif. 860,745, Cl. 26.  
N.Y. Betonfabriek "De Meteor," De Steeg, The Netherlands. 504,995, ren. 11-19-68, Cl. 12.  
NYTC Corp., New York, N.Y. 860,729, pub. 9-3-68, Cl. 105.  
Nate, Jean, Inc.: See—  
Lanvin-Charles of the Ritz, Inc.  
National Carbide Corp., to Air Reduction Co., Inc., New York, N.Y. 502,189, ren. 11-19-68, Cl. 6.  
National Carbon Co., Inc., to Union Carbide Corp., New York, N.Y. 440,741, ren. 11-19-68, Cl. 13.  
National Frozen Meat Products, Inc., Philadelphia, Pa. 738,776-7, can. Cl. 46.  
National Furniture Mfg. Co., Inc., Evansville, Ind. 860,552, pub. 9-3-68, Cl. 32.  
National Gramophone Works Corp., Mount Kisco, N.Y. 860,581, pub. 9-3-68, Cl. 36.  
National Gypsum Co., Buffalo, N.Y. 738,832, can. Cl. 12.  
National Gypsum Co., Buffalo, N.Y. 860,741, Cl. 12.  
National Latex Co.: See—  
Harris, John I.  
National Lock Co., Rockford, Ill. 860,400, pub. 9-3-68, Cl. 13.  
National Lock Co., Rockford, Ill. 860,409, pub. 9-3-68, Cl. 13.  
National Tea Co., Chicago, Ill. 441,964, ren. 11-19-68, Cl. 46.  
Nationwide Mutual Insurance Co., Columbus, Ohio. 860,715, pub. 9-3-68, Cl. 102.  
New Jersey Zinc Co., The, Newark, N.J., to The New Jersey Zinc Co., New York, N.Y. 251,579, ren. 11-19-68, Cl. 14.  
Newall Engineering Co. Ltd., The, Peterborough, England. 738,607, can. Cl. 26.  
Newaygo Engineering Co., Newaygo, Mich. 860,490, pub. 9-3-68, Cl. 23.  
Newcomer Corp., The, Columbia, Mo. 738,433, can. Cl. 1.  
Nichols Wire & Aluminum Co., Davenport, Iowa. 841,901, cor. Cl. 13.  
Nimet Industries, Inc., South Bend, Ind. 860,732, pub. 2-6-68, Cl. 106.  
Nobrega, Frank B., d.b.a. Central Chemical Co., to Central Chemical Co., Kansas City, Mo. 246,942, ren. 11-19-68, Cl. 6.  
Norman, Merle, Cosmetics, Inc., Los Angeles, Calif. 860,754-5, Cl. 51.  
North Central Co., The, St. Paul, Minn. 860,707, pub. 9-3-68, Cl. 102.  
Northam Warren Corp., Stamford, Conn., to Chesebrough-Pond's Inc., New York, N.Y. 504,412, ren. 11-19-68, Cl. 51.  
Northwestern Engineering Co., Rapid City, S. Dak. 860,718, pub. 9-3-68, Cl. 103.  
Nu-Dent Porcelain Studio, Inc.: See—  
E-Donolite Corp.  
Nu-Look Fashion Inc., The, Columbus, Ohio. 860,607, pub. 9-3-68, Cl. 40.  
Oak Electro/Netles Corp., Crystal Lake, Ill. 860,433, pub. 9-3-68, Cl. 21.  
Oakite Products, Inc., Berkeley Heights, N.J. 860,511, pub. 9-3-68, Cl. 26.  
Obolensky, Ivan, Inc., New York, N.Y. 860,587, pub. 9-3-68, Cl. 38.  
Oetiker, Inc., Livingston, N.J. 860,404-6, pub. 9-3-68, Cl. 13.  
Oila, Inc., Chicago, Ill. 860,742, Cl. 15.  
Olin Mathieson Chemical Corp., New York, N.Y. 738,504, can. Cl. 18.  
Oneida Ltd., Oneida, N.Y. 502,331, ren. 11-19-68, Cl. 28.  
Oneida Ltd., Oneida, N.Y. 860,747, Cl. 28.  
Ornapress AG, Schwerzenbach, Switzerland. 860,495, pub. 9-3-68, Cl. 23.  
Oster Mfg. Co., The, Cleveland, Ohio, to Landis Machine Co., Waynesboro, Pa. 70,024, ren. 11-19-68, Cl. 23.  
Oumansky Et Co., Geneva, Switzerland. 738,834, can. Cl. 39.  
Outdoor Marine Corp.: See—  
Ervinude Motor Co.  
P.C. Products (1001) Ltd., Salford, England. 738,792, can. Cl. 52.  
Patrick, Mary, North Little Rock, Ark. 738,788, can. Cl. 50.  
Pech (H), Gabriel M., Buenos Aires, Argentina. 860,631, pub. 9-3-68, Cl. 46.  
Penn Products Co.: See—  
Pentapco, Inc.  
Pennsylvania Lubricating Co., Pittsburgh, Pa., to Humble Oil & Refining Co., Houston, Tex. 246,590, ren. 11-19-68, Cl. 5.  
Pentapco, Inc., d.b.a. Penn Products Co., Elizabeth, N.J. 860,608, pub. 9-3-68, Cl. 40.  
Perfect Circle Corp., Hagerstown, Ind., to Dana Corp., Toledo, Ohio. 502,546, ren. 11-19-68, Cl. 35.  
Perfect Circle Corp., Hagerstown, Ind., to Dana Corp., Toledo, Ohio. 502,555, ren. 11-19-68, Cl. 35.  
Perfect Circle Corp., Hagerstown, Ind., to Dana Corp., Toledo, Ohio. 504,746, ren. 11-19-68, Cl. 26.  
Perkins, Dan, Co., Inc.: See—  
Perkins, Dan, Co., The.  
Perkins, Dan, Co., The, to Dan Perkins Co., Inc., Memphis, Tenn. 439,282, ren. 11-19-68, Cl. 46.  
Personal Gift Service, Inc., Waterloo, Iowa. 738,809, can. Cl. 101.  
Peter Pan Swimwear International, Inc., New York, N.Y. 738,885, can. Cl. 39.  
Petroleum Pipe Inspectors, Inc., Lafayette, La. 860,721, pub. 9-3-68, Cl. 103.  
Petzal, Henry, New Shrewsbury, N.J. 860,535, pub. 9-3-68, Cl. 28.  
Petzetakis, Aristovoulos G., Moschaton, Piraeus, Greece. 860,572, pub. 9-3-68, Cl. 35.  
Pfizer, Chas., & Co., Inc.: See—  
Coty, Inc.  
Pfizer, Chas., & Co., Inc., New York, N.Y. 860,672, pub. 9-3-68, Cl. 51.  
Pfizer, Chas., & Co., Inc., New York, N.Y. 860,677, pub. 9-3-68, Cl. 51.  
Pfueger Corp.: See—  
Enterprise Mfg. Co., The.  
Pheasant Run, Inc., St. Charles, Ill. 860,689, pub. 9-3-68, Cl. 100.  
Phillips, Louis P., d.b.a. The Irvington Co., Cable, Wis., to Walter S. Wanecke, Minneapolis, Minn. 246,886, ren. 11-19-68, Cl. 51.  
Phillips Drill Co., Michigan City, Ind. 860,592, pub. 9-3-68, Cl. 38.  
Pigalle, Marie, Inc., New York, N.Y. 860,682, pub. 9-3-68, Cl. 51.  
Pilling Co.: See—  
Pilling, George P., & Son Co.  
Pilling, George P., & Son Co., Philadelphia, to Pilling Co., Fort Washington, Pa. 504,056, ren. 11-19-68, Cl. 44.  
Pines Engineering Co., Inc., Aurora, Ill., from H & H Engineering Co., Denver, Colo. 860,500, pub. 5-7-68, Cl. 23.  
Plaque Craft, Inc., Baltimore, Md. 718,338, can. Cl. 50.  
Plas-Steel Products, Inc., Walkerton, Ind. 860,438, pub. 9-3-68, Cl. 21.  
Plusa-Stauffer (North America) Inc., New York, N.Y. 860,355, pub. 9-3-68, Cl. 1.  
Plywood International Corp., Brooklyn, N.Y. 738,468, can. Cl. 12.  
Polaroid Corp., Cambridge, Mass. 738,699, can. Cl. 39.  
Polaroid Corp., Cambridge, Mass. 860,526, pub. 9-3-68, Cl. 26.  
Polystructures, Inc., Stoneham, Mass. 738,787, can. Cl. 50.  
Pops Corp Crib: See—  
Hughes, Harold S.  
Portable Drill & Dredge Co., Pomona, Calif. 738,554, can. Cl. 23.  
Powerlock Floors, Inc., Philadelphia, Pa. 860,391, pub. 9-3-68, Cl. 12.  
Prestole Everlock Inc., from The Bishop & Babcock Corp., Toledo, Ohio. 860,886, pub. 9-3-68, Cl. 100.  
Profit Index Systems, Inc., Los Angeles, Calif. 860,701, pub. 9-3-68, Cl. 101.  
Prospect Farms, Inc., Fort Atkinson, Wis. 860,658, pub. 9-3-68, Cl. 46.  
Pullman Vacuum Cleaner Corp.: See—  
Purax Corp., Ltd.  
Purax Corp., Ltd., d.b.a. T. F. Washburn Co., Lakewood, Calif. 860,420, pub. 9-3-68, Cl. 16.  
Purax Corp., Ltd., d.b.a. Pullman Vacuum Cleaner Corp., Lakewood, Calif. 860,441, pub. 9-3-68, Cl. 21.  
Quality Products, Inc., Bayamon, Puerto Rico. 860,398, pub. 9-3-68, Cl. 13.  
Quarto Editorial Service, The, New York, N.Y. 738,811, can. Cl. 101.  
Quik-Stik Co., The, Baltimore, Md. 860,584, pub. 9-3-68, Cl. 37.  
R. G. Circuits Co.: See—  
Grimsinger, Raymond C.  
R & W Medical Equipment, Inc., North Hollywood, Calif. 738,731, can. Cl. 44.  
Rainway Mfg. Co., Veradale, Wash. 860,430, pub. 9-3-68, Cl. 19.  
Ramcor Inc., Huntington, N.Y. 860,507, pub. 9-3-68, Cl. 26.  
Ransom, Richard K., d.b.a. Hickory Farms of Ohio, Toledo, Ohio. 860,629, pub. 12-19-67, Cl. 46.  
Ray, Robert H., Co., Inc., Houston, Tex. 738,600, can. Cl. 26.  
Rayboard Co., The: See—  
Deacon, George P.  
Red Dog Inc., Boston, Mass. 860,453, pub. 9-3-68, Cl. 21.  
Reliable Typewriter & Adding Machine Corp., Chicago, to R. B. Zajeski, Dolton, Ill. 244,386, ren. 11-19-68, Cl. 26.  
Reliance Trading Corp.: See—  
Tong, Duncan.  
Remark Corp., Westport, Conn. 860,704, pub. 9-3-68, Cl. 101.  
Republic Steel Corp., Cleveland, Ohio. 860,410, pub. 9-3-68, Cl. 18.  
Research Products Corp., Madison, Wis. 860,542, pub. 9-3-68, Cl. 31.  
Resinous Products & Chemical Co., The, to Rohm & Haas Co., Philadelphia, Pa. 502,992, ren. 11-19-68, Cl. 1.  
Restaurant Viosin, Inc., New York, N.Y. 860,690, pub. 9-3-68, Cl. 100.  
Reynolds Metals Co., Richmond, Va. 860,670, pub. 9-3-68, Cl. 50.  
Rice's Bakery: See—  
City Baking Co., The.  
Richmond Rubber Co., Inc., Richmond, Va., to The Kelly-Springfield Tire Co., Cumberland, Md. 505,468, ren. 11-19-68, Cl. 35.



Robinson Ventilating Co., Zellenople, Pa. 860,568, pub. 9-3-68. Cl. 34.  
 Roger Office Furniture Co., Inc., Denver, Colo. 860,553, pub. 9-3-68. Cl. 32.  
 Rohm & Haas Co.: See—  
 Resinous Products & Chemical Co., The.  
 Roman Meal Co., Tacoma, Wash. 860,642, pub. 9-3-68. Cl. 46.  
 Rosenfeld-Berman Corp., Los Angeles, Calif. 738,679, can. Cl. 39.  
 Rosenstein, Nettie, Inc., New York, N.Y. 745,224, cor. Cl. 51.  
 Royal McBee Corp.: See—  
 Liffon Business Systems, Inc.  
 Rubbermaid Inc., Wooster, Ohio. 781,527, can. Cl. 103.  
 Rubbermaid Inc., Wooster, Ohio. 835,261, can. Multiple Class (Classes 100 and 103).  
 Samir, Jacob A.: See—  
 Dentists' Supply Co., The.  
 St. Thomas, Inc., Gloversville, N.Y. 860,371, pub. 9-3-68. Cl. 3.  
 Samson Cordage Works, Boston, Mass. 247,579, ren. 11-19-68. Cl. 7.  
 Samsonite Corp., Denver, Colo. 860,748, Cl. 32.  
 Sanco Corp., Winston-Salem, N.C. 860,481, pub. 9-3-68. Cl. 28.  
 Sanford Ink Co.: See—  
 Sanford Mfg. Co., Chicago, to Sanford Ink Co., Bellwood, Ill. 70,802, ren. 11-19-68. Cl. 5.  
 Sanitarium Equipment Co., to Battle Creek Equipment Co., Battle Creek, Mich. 247,181, ren. 11-19-68. Cl. 44.  
 Santa Claus Industries, Inc., d.b.a. Creative Specialty Manufacturers, Waterloo, Iowa. 860,459, pub. 9-3-68. Cl. 21.  
 Scherrer, E. C., Inc., to Georges Meyer Corp., New York, N.Y. 506,178, ren. 11-19-68. Cl. 40.  
 Schicht, Georg, A.G., Ausselz, Czechoslovakia, to Unilever Ltd., Port Sunlight, Birkenhead, England. 247,094, ren. 11-19-68. Cl. 46.  
 Schlage Lock Co., d.b.a. LCN Closers Division, Princeton, Ill. 860,395-6, pub. 9-3-68. Cl. 13.  
 Schlumberger-Kurdle Co., Inc., Baltimore, Md. 860,633, pub. 9-3-68. Cl. 46.  
 Schmid, Julius, Inc.: See—  
 Hilsenbeck, L., Inc.  
 Schomacker Piano Forte Mfg. Co., The, to John Wanamaker Philadelphia, Philadelphia, Pa. 72,174, ren. 11-19-68. Cl. 36.  
 Schreiber Co., The: See—  
 Harris-Intertype Corp.  
 Schwinn Bicycle Co., Chicago, Ill. 860,476, pub. 9-3-68. Cl. 23.  
 Seaboard Allied Milling Corp., Kansas City, Mo. 860,648, pub. 9-3-68. Cl. 46.  
 Seager Evans & Co., Ltd., London, England. 860,665, pub. 9-3-68. Cl. 49.  
 Sears, Roebuck & Co., Chicago, Ill. 738,567, can. Cl. 23.  
 Sears, Roebuck & Co., Chicago, Ill. 860,605, pub. 9-3-68. Cl. 39.  
 Secret Wand, Inc., Chicago, Ill. 860,675, pub. 9-3-68. Cl. 51.  
 Security Svstems, Inc., Kansas City, Mo. 860,439, pub. 9-3-68. Cl. 21.  
 Serblo, Inc., Miami, Fla. 860,601, pub. 9-3-68. Cl. 39.  
 Serva Tool Corp., Dayton, Ohio. 860,492, pub. 9-3-68. Cl. 23.  
 Service Industries, Philadelphia, Pa. 505,741, ren. 11-19-68. Cl. 52.  
 Seymour Industries, Inc.: See—  
 Lear Siegler, Inc.  
 Sheldon Metal Products Co., Inc., Fall River, Mass. 738,548, can. Cl. 23.  
 Sherry, Louis, Inc., New Hyde Park, N.Y. 860,649, pub. 7-2-68. Cl. 46.  
 Shoe Corp. of America, Columbus, Ohio. 860,598, pub. 9-3-68. Cl. 39.  
 Lear Siegler, Inc., Santa Monica, Calif., from Seymour Industries, Inc., Seymour, Ind. 860,505, pub. 9-3-68. Cl. 24.  
 Lear Siegler, Inc., Santa Monica, Calif. 860,554, pub. 9-3-68. Cl. 32.  
 Sierra Engineering Co., Sierra Madre, Calif. 738,620, can. Cl. 26.  
 Silopark S.A., St. Moritz, from Sotefin S.A. Soc. d'Etudes Techniques et Financieres, Zurich, Switzerland. 738,464-5, can. Cl. 12.  
 Simons Co., Chicago, Ill. 860,374, pub. 9-3-68. Cl. 4.  
 Smucker, J. M., Co., The, Orrville, Ohio. 506,835, ren. 11-19-68. Cl. 46.  
 Societe d'Applications Chimiques d'Etudes et de Recherches "SACER," Monte Carlo, Monaco. 738,508, can. Cl. 18.  
 Societe d'Optique et de Mecanique de Haute Precision, Paris, France. 738,587, can. Cl. 26.  
 Societe Maxime Girard, Puy-de-Dome, France. 860,483, pub. 9-3-68. Cl. 23.  
 Sofia Bros. Inc., New York, N.Y. 738,822, can. Cl. 105.  
 Sotefin S.A. Soc. d'Etudes Techniques et Financieres: See—  
 Silopark S.A.  
 Southern Graphic Industries, Nashville, Tenn. 860,361, pub. 9-3-68. Cl. 2.  
 Southern Railway Co., Richmond Va., and Washington, D.C. 505,909, ren. 11-19-68. Cl. 105.  
 Southern Suction & Equipment Corp., Charlotte, N.C. 860,480, pub. 9-3-68. Cl. 23.  
 Southern Tackle Distributors, Inc., Miami, Fla. 860,463, pub. 9-3-68. Cl. 22.  
 Sparling, Frederick, & Dawn Sparling, d.b.a. Woodsworld, Santa Cruz, Calif. 860,666, pub. 9-3-68. Cl. 50.  
 Speedometer Service Co.: See—  
 Boden, Lawrence D.  
 Spencer Co., The, Cranston, R.I. 860,532, pub. 9-3-68. Cl. 28.  
 Springer Industries, Inc., Long Island City, N.Y. 738,630, can. Cl. 31.  
 Springfield College, Springfield, Mass. 860,736, pub. 9-3-68. Cl. 107.  
 Stanco Inc., Wilmington, Del., and New York, N.Y., to Humble Oil & Refining Co., Houston, Tex. 250,426, ren. 11-19-68. Cl. 18.  
 Standard Elektrik Lorenz Aktiengesellschaft, Stuttgart-Zuffenhausen, Germany. 738,524, can. Cl. 21.  
 Standard Oil Co., Whiting, Ind., and Chicago, Ill., to The American Oil Co., Chicago, Ill. 440,951, ren. 11-19-68. Cl. 18.  
 Standard Oil Co., Flemington, N.J. 860,460, pub. 9-3-68. Cl. 21.  
 Standard Oil Co., Flemington, N.J. 860,545, pub. 9-3-68. Cl. 31.  
 Staples-Hoppmann, Inc., Alexandria, Va. 738,615-16, can. Cl. 26.  
 Stauffer Chemical Co., San Francisco, Calif., to Stauffer Chemical Co., New York, N.Y. 501,005, ren. 11-19-68. Cl. 6.  
 Stellotes, Dean J., d.b.a. The Colony, Pittsburgh, Pa. 738,838, can. Cl. 46.  
 Sterno Industries, Inc., Harrison, N.J. 860,650, pub. 9-3-68. Cl. 46.  
 Stevens, J. P., & Co., Inc., New York, N.Y. 860,612, pub. 9-3-68. Cl. 42.  
 Stitchecraft Corp., Forest City, Iowa. 860,550, pub. 9-3-68. Cl. 32.  
 Stonco Electric Products Co.: See—  
 Stone Mfg. Co.  
 Stone Mfg. Co., to Stonco Electric Products Co., Kenilworth, N.J. 502,362, ren. 11-19-68. Cl. 21.  
 Strait & Richards, Inc., Newark, N.J. 860,564, pub. 9-3-68. Cl. 34.  
 Strauss, Levi, & Co., to Levi Strauss & Co., San Francisco, Calif. 250,265, Am. 7(d). Cl. 39.  
 Stylis Accessories Ltd.: See—  
 Hillcrest Engineering Ltd.  
 Sugarlogics Corp., Miami, from Sugarlogics World Corp., Delray Beach, Fla. 738,743, can. Cl. 46.  
 Sugarlogics World Corp.: See—  
 Sugarlogics Corp.  
 Summittours of New England, Inc.: See—  
 AITS, Inc.  
 Sunbeam Corp., Chicago, Ill. 860,521-2, pub. 9-3-68. Cl. 26.  
 Sunray Stove Co., The: See—  
 Glenwood Range Co.  
 Swank, Inc., by merger from Prince Gardner Co., Inc., Attleboro, Mass. 852,299, cor. Cl. 27.  
 Swenson, Austyn O., d.b.a. Swenson Thrillcade, Springfield, Mo. 738,824, can. Cl. 107.  
 Swenson Thrillcade: See—  
 Swenson, Austyn O.  
 Swingline Inc.: See—  
 Ace Fastener Corp.  
 TA Mfg. Corp., Los Angeles, Calif. 860,414-15, pub. 9-3-68. Cl. 13.  
 TRW, Inc., New York, N.Y. 860,450, pub. 9-3-68. Cl. 21.  
 TV Time Foods, Inc., Chicago, Ill. 860,628, pub. 11-29-66. Cl. 46.  
 Talboys Instrument Corp., Emerson, N.J. 738,577, can. Cl. 26.  
 Tavarro S.A., Geneva, Switzerland. 738,519, can. Cl. 21.  
 Tavarro S.A., Geneva, Switzerland. 738,573, can. Cl. 24.  
 Taylor, Frank J., Los Altos, Calif. 738,561, can. Cl. 23.  
 Tech Serv, Inc., College Park, Md. 738,566, can. Cl. 26.  
 Tee-Pak, Inc., Chicago, Ill. 860,376, pub. 9-3-68. Cl. 8.  
 Tennessee Continental Corp., Centerville, Tenn. 860,442, pub. 9-3-68. Cl. 21.  
 Texaco Inc.: See—  
 Texas Co., The.  
 Texas Co., The, to Texaco Inc., New York, N.Y. 504,600, ren. 11-19-68. Cl. 15.  
 Textron Electronics, Inc., Providence, R.I. 860,437, pub. 9-3-68. Multiple Class (Classes 21 and 26).  
 Thomas Flexible Coupling Co., Warren, Pa. 299,599, can. Cl. 23.  
 Thompson, J. A., Inc., Brooklyn, N.Y. 738,546-7, can. Cl. 22.  
 Thornton Canning Co., Lodi, Calif. 738,758, can. Cl. 46.  
 Thornton Canning Co., Thornton, Calif. 738,840, can. Cl. 46.  
 Tile Council of America, Inc., New York, N.Y. 738,474, can. Cl. 12.  
 Tong, Duncan, d.b.a. Reliance Trading Corp., Hong Kong. 860,467, pub. 9-3-68. Cl. 22.  
 Torwico Electronics, Inc., Lakewood, N.J. 860,451-2, pub. 9-3-68. Cl. 21.  
 Towle Mfg. Co., Newburyport, Mass. 860,537, pub. 9-3-68. Cl. 28.  
 Trader Vic's: See—  
 Bergeron, Victor J.  
 Trans World Airlines, Inc., New York, N.Y. 860,731, pub. 9-3-68. Cl. 105.  
 Trend Products Co., Los Angeles, Calif. 860,411-12, pub. 9-3-68. Cl. 13.  
 Tribune Co., The, to Chicago Tribune Co., Chicago, Ill. 250,088, ren. 11-19-68. Cl. 38.  
 Triplex Fabrics Corp., New York, N.Y. 860,613, pub. 4-9-68. Cl. 42.  
 Truax-Traer Coal Co., Chicago, Ill., to Consolidation Coal Co., Pittsburgh, Pa. 504,146, ren. 11-19-68. Cl. 1.  
 Tru-Center Products Co., Decatur, Ill. 738,589, can. Cl. 26.  
 Ultradyne, Inc., Albuquerque, N. Mex., from Consolidated Controls Corp., Bethel, Conn. 738,614, can. Cl. 21.

Uncas Mfg. Co., Providence, R.I. 247,216, ren. 11-19-68. Cl. 28.  
 Unilever Ltd.: See—  
 Schicht, Georg, A.G.  
 Union Carbide Corp.: See—  
 National Carbon Co., Inc.  
 Union Carbide Corp., New York, N.Y. 860,533, pub. 9-3-68. Cl. 28.  
 Union Carbide Corp., New York, N.Y. 860,733, pub. 9-3-68. Cl. 106.  
 Uniroyal, Inc.: See—  
 U.S. Rubber Co.  
 United Auto Brokers, Inc., Brooklyn, N.Y. 860,694, pub. 9-3-68. Cl. 101.  
 U.S. Photo Supply Co., Inc., Washington, D.C. 738,597, can. Cl. 26.  
 United States Rubber Co., to Uniroyal, Inc., New York, N.Y. 505,559, ren. 11-19-68. Cl. 32.  
 United States Rubber Co., to Uniroyal, Inc., New York, N.Y. 507,065, ren. 11-19-68. Cl. 35.  
 United States Rust Control Corp., Miami, Fla. 860,418-19, pub. 9-3-68. Cl. 16.  
 Universal Electronics Laboratories Corp., Hackensack, N.J. 738,659, can. Cl. 36.  
 Universal Packaging Corp., Bow, N.H. 852,104-5, cor. Cl. 2.  
 Universal-Cyclops Steel Corp., Bridgeville, to Cyclops Corp., Pittsburgh, Pa. 501,951, ren. 11-19-68. Cl. 14.  
 Univis Inc., Fort Lauderdale, Fla. 860,746, Cl. 26.  
 Valco, Inc., Chicago, Ill. 738,529, can. Cl. 21.  
 Valley Poultry Co., Russellville, Ark. 738,744, can. Cl. 46.  
 Valtronic Corp., The, Bronx, N.Y. 860,551, pub. 9-3-68. Cl. 32.  
 Veterinary Supply Depot Inc., Dallas, Tex. 860,619, pub. 9-3-68. Cl. 44.  
 Vikoa, Inc., Hoboken, N.J. 860,457, pub. 9-3-68. Cl. 21.  
 Vitalic Battery Co., Inc., Dallas, Tex., to General Battery & Ceramic Corp., Reading, Pa. 502,056, ren. 11-19-68. Cl. 21.  
 Vocational Horizons, Inc., Long Island City, N.Y. 860,735, pub. 9-3-68. Cl. 107.  
 Voyageplan, Inc., New York, N.Y. 860,730, pub. 9-3-68. Cl. 105.  
 Wallson Associates, Inc., Elizabeth, N.J. 738,578, can. Cl. 26.  
 Walton Laboratories, Inc., Irvington, N.J. 738,633, can. Cl. 31.  
 Wanaker, John, Philadelphia: See—  
 Schomacker Piano Forte Mfg. Co., The.  
 Waneke, Walter S.: See—  
 Philippi, Louis P.  
 Warner Bros. Pictures, Inc., New York, N.Y. 738,664, can. Cl. 36.  
 Washburn, T. F., Co.: See—  
 Porex Corp., Ltd.  
 Water-In, Altadena, Calif. 860,377, pub. 9-3-68. Cl. 6.  
 Weatherhead Co., The, Cleveland, Ohio. 860,456, pub. 9-3-68. Cl. 21.  
 Welch Grape Juice Co., Inc., The, Westfield, N.Y. 860,627, pub. 9-3-68. Cl. 45.  
 Welco Enterprises, Inc., from Welco Ro-Search Industries, Inc., Wayneville, N.C. 860,597, pub. 9-3-68. Cl. 39.  
 Welco Ro-Search Industries, Inc.: See—  
 Welco Enterprises, Inc.  
 Weller Electric Corp., Easton, Pa. 860,563, pub. 9-3-68. Cl. 34.  
 Wellington Management Co., Claymont, Del. 860,708-9, pub. 9-3-68. Cl. 102.  
 Wenatchee-Beebe Orchard Co., Chelan, Wash. 504,769, ren. 11-19-68. Cl. 46.  
 Wesix Electric Heater Co., from Ionaire, Inc., San Francisco, Calif. 738,516, can. Cl. 21.  
 West Point-Pepperell, Inc., West Point, Ga. 860,611, pub. 8-30-68. Cl. 42.  
 Wham-O Mfg. Co., San Gabriel, Calif. 860,471-2, pub. 9-3-68. Cl. 22.  
 White's Comb Vendor, Inc., Elgin, Ill. 738,506, can. Cl. 18.  
 White Consolidated Industries, Inc.: See—  
 Gibson Refrigerator Co.  
 Wiancko Engineering Co.: See—  
 Daystrom, Inc.  
 Wilcox Color Corp., Charlotte, N.C. 860,388, pub. 9-3-68. Cl. 11.  
 Wilton Corp., Schiller Park, Ill. 860,478, pub. 9-3-68. Cl. 23.  
 Winegard Co., Burlington, Iowa. 860,434, pub. 9-3-68. Cl. 21.  
 Wirth Co., Inc.: See—  
 Wirth, Leon J.  
 Wirth, Leon J., d.b.a. Wirth Co., Inc., Oakland, Calif. 860,749, Cl. 37.  
 Woodmen of the World Life Insurance Society, and/or Omaha Woodmen Life Insurance Society, Omaha, Nebr. 860,711, pub. 9-3-68. Cl. 102.  
 Woodsworld: See—  
 Sparling, Frederick, & Dawn Sparling.  
 X-Wax Corp., New York, N.Y., from Aqualana Corp. of America, Clifton, N.J. 860,422, pub. 1-10-67. Cl. 18.  
 Yardley of London, Inc., Totowa, N.J. 860,540, pub. 9-3-68. Cl. 29.  
 Yardley of London, Inc., Totowa, N.J. 860,681, pub. 9-3-68. Cl. 51.  
 Yardley of London, Inc., Totowa, N.J. 860,683, pub. 9-3-68. Cl. 51.  
 Young, Stephen A., Corp., Flora, Ind. 860,402-3, pub. 9-3-68. Cl. 13.  
 Zajeski, Robert B.: See—  
 Reliable Typewriter & Adding Machine Corp.  
 Zebra Distributing Co., Inc., Tacoma, Wash. 860,385, pub. 9-3-68. Cl. 9.  
 Zehner Packing Co., The, Bellevue, Ohio. 247,998, ren. 11-19-68. Cl. 46.  
 Zelas-Aerotopograph G.m.b.H., Munich, Bavaria, Germany. 738,608, can. Cl. 26.  
 Zelas-Aerotopograph G.m.b.H., Munich, Bavaria, Germany. 738,611, can. Cl. 26.  
 Zephyr American Corp., Long Island City, N.Y. 505,572, ren. 11-19-68. Cl. 37.  
 Zlabicki Co., The, Division of Zlabicki Import Co.: See—  
 Zlabicki, Joseph M.  
 Zlabicki, Joseph M., d.b.a. The Zlabicki Co., Division of Zlabicki Import Co., Racine, Wis. 738,540, can. Cl. 22.  
 Zig-Zag Ltd., London, England. 860,663, pub. 9-3-68. Cl. 47.



PATENTS  
NOTICES

Board of Appeals Decisions Rendered in the Month of  
September 1968

Examiner affirmed .....	142
Examiner affirmed in part .....	18
Examiner reversed .....	50
Total .....	210

Adjudicated Patents

(Ct. Cl.) Huber Patent 2,715,008 (248—361), for APPARATUS FOR CARGO TIE-DOWN AND THE LIKE. Claims 1, 2, 4, 6 and 7 *Held* valid and infringed. *Eastern Rotorcraft Corp. v. U.S.*, 297 F.2d 978; 158 USPQ 294.

(C.A. Okla.) Carson Patent No. 2,918,310 (280—478), for TOWING BAR WITH WIDE RANGE HITCH, *Held* invalid. *Carson v. Bland*, 298 F.2d 423; 158 USPQ 529.

(C.A.N.Y.) Laguerre Patent No. 3,140,038 (229—54), for HANDLE AND CLOSURE DEVICE FOR THERMOPLASTIC BAGS, *Held* invalid. *C-Thru Products Inc. v. Uniflex Inc.*, 397 F.2d 952; 158 USPQ 433.

(C.A.N.Y.) Laguerre Patent No. 3,227,358 (229—54), for HANDLE AND CLOSURE DEVICE FOR THERMOPLASTIC BAGS, *Held* invalid. *Id.*

(D.C.S.C.) Blum Design Patent No. D. 171,963 (28—1), for RAIL, *Held* valid and infringed. *Blumcraft of Pittsburgh v. Citizens and Southern National Bank of S.C.*, 286 F. Supp. 448; 158 USPQ 642.

(D.C. Fla.) Hirs Patent No. 2,867,324 (210—97), for HIGH CAPACITY INDUSTRIAL FILTERS. Claims 1, 3 and 4 *Held* valid and infringed. *Hirs v. De Laval Turbine Inc.*, 286 F. Supp. 754; — USPQ —.

(D.C. Fla.) Hirs Patent No. 2,867,326 (210—104), for FILTER APPARATUS. Claims 6 and 7 *Held* valid and infringed. *Id.*

(D.C. Fla.) Hirs Patent No. 2,967,325 (210—97), for FILTER APPARATUS. Claim 11 *Held* valid and infringed. *Id.*

(D.C.S.C.) Blum Patent No. 2,905,445 (256—655), for ORNAMENTAL RAIL. Claims 1 and 3 *Held* valid and infringed. *Blumcraft of Pittsburgh v. Citizens and Southern National Bank of S.C.*, 286 F. Supp. 448; 158 USPQ 642.

(D.C.S.C.) Falm Patent No. 2,981,644 (134—37), for METHOD OF CLEANING LOOMS. Claims 1 and 2 *Held* valid and infringed. *Grinnell Corp. v. American Monorail Co.*, 285 F. Supp. 219; 158 USPQ 129.

(D.C.N.Y.) Millnowski Patent No. 3,043,310 (128—422), for TREATMENT HEAD FOR ATHERMAPEUTIC APPARATUS, *Held* invalid and not infringed. *Diapulse Corp. of America v. Rochester Leasing Corp.*, 286 F. Supp. 74; 157 USPQ 141.

(D.C. Tex.) Atkinson, Cline and Cunningham Patent No. 3,075,781 (277—83), for BEARING SEAL, *Held* valid and infringed. *Hughes Tool Co. v. Smith Industries International*, 284 F. Supp. 908; 158 USPQ 249.

(D.C.N.Y.) Millnowski Patent No. 3,181,535 (128—422), for ATHERMAPEUTIC APPARATUS, *Held* invalid and not infringed. *Diapulse Corp. of America v. Rochester Leasing Corp.*, 286 F. Supp. 74; 157 USPQ 141.

New Application Received During September 1968	
Patents .....	7274
Designs .....	443
Plant Patents .....	11
Reissues .....	23
Total .....	7751

Issue—November 26, 1968	
Patents.....	1250—No. 3,412,406 to No. 3,413,655, incl.
Designs.....	43—No. 212,799 to No. 212,841, incl.
Total.....	1293



# PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

## CONDITION OF PATENT APPLICATIONS AS OF NOVEMBER 4, 1968

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
Denotes date of oldest application for each Operation.		
<b>CHEMICAL EXAMINING OPERATION</b>		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director..... Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7-01-66	1-27-64
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director..... Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-07-66	*6-10-63
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—L. J. BERCOVITZ, Director..... Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	7-28-66	2-17-64
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBER- MAN, Director..... Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*2-23-66	6-17-63
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director..... Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	6-28-66	5-06-64
<b>ELECTRICAL EXAMINING OPERATION</b>		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director..... Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	8-17-66	4-01-64
SECURITY, GROUP 220—S. BOYD, Director..... Ordinance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	6-13-67	5-25-65
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Director..... Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*10-12-65	*10-23-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director..... Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	1-14-66	9-14-63
PHYSICS, GROUP 280—R. L. EVANS, Director..... Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	10-28-66	4-21-65
DESIGNS, GROUP 290—S. BOYD, Director..... Industrial Arts; Household, Personal and Fine Arts.	2-01-68	4-18-67
<b>MECHANICAL EXAMINING OPERATION</b>		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director..... Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	4-03-67	10-01-65
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director..... Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Wood- working; Tools; Cutlery; Jacks.	12-05-66	2-11-65
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Di- rector..... Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Ex- cavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletary; Printing; Type- writers; Stationery; Information Dissemination.	12-12-66	9-21-64
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director..... Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	10-30-67	1-11-67
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director..... Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Struc- tures.	5-18-67	4-16-65
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director..... Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manu- facture; Sewing Machines; Winding and Reeling.	*6-01-66	*5-31-63

Total number of pending applications (excluding Designs)..... 187,351  
Total number of Design applications pending..... 2,618

Expiration of patents: The patents within the range of numbers indicated below expire during November 1968, except those which may have ex-  
pired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law  
619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their term curtailed by disclaimer under the provisions  
of 35 U.S.C. 253.

Patents..... Numbers 2,573,674 to 2,576,908, inclusive  
Plant Patents..... Number 1,048

# DECISIONS IN PATENT AND TRADEMARK CASES

## U.S. Court of Customs and Patent Appeals

IN RE KRIM-KO CORPORATION (KRIM-KO DIVISION, THE NATIONAL SUGAR REFINING  
COMPANY) v. THE COCA-COLA BOTTLING COMPANY OF NEW YORK, INC.

No. 7,897. Decided February 15, 1968

[55 CCPA —; 390 F.2d 728; 156 USPQ 523]

### 1. TRADEMARK—CANCELLATION—OPPOSITION.

"The attorneys for the parties had stipulated to hold up the opposition proceeding against 'BEEP' until the 'BEEP FOR BREAKFAST' trademark was published so that it then would be opposed by Coca-Cola. The publication of 'BEEP FOR BREAKFAST' was not noted by either counsel because they were both out of their respective offices during almost the entire summer of 1964 and the 'BEEP FOR BREAKFAST' registration issued. A cancellation proceeding was then instituted and the two proceedings were consolidated for record and briefing purposes. Under these circumstances, the cancellation proceeding is here treated as if it were, in fact, an opposition proceeding and no additional weight has been given to the fact that the registration has issued."

### 2. SAME—CONFUSING SIMILARITY—EVIDENCE—ABSENCE OF ACTUAL CONFUSION.

"While the absence of evidence of actual confusion is not determinative of an issue of likelihood of confusion, it is a factor which may be accorded some weight. *American Drill Bushing Co. v. Rockwell Mfg. Co.*, 52 CCPA 1178, 1177, 342 F.2d 1019, 145 USPQ 144 (1965); *Coral Chemical Co. v. H.D.T. Company Factors, Inc.*, 51 CCPA 1413, 332 F.2d 841, 141 USPQ 835 (1964)."

### 3. SAME—SAME—"VEEP" AND "BEEP."

"While appellant argues that 'Veep' and 'Beep' are well known dictionary terms and cites several cases allegedly in support of the theory that where words have *well known* and *understood*, *widely different meanings*, a small difference or spelling *may* be sufficient to distinguish them, the fact is the words 'Beep' and 'Veep' are entirely arbitrary marks in reference to the goods involved, without any significance or suggestive connotation. There is virtually no distinction in sound or visual impression between the words. It is sufficient if the similarity in either form, spelling or sound alone is likely to cause confusion. *Purex Corp. Ltd. v. Maryland Paper Products Co.*, 48 CCPA 848, 287 F.2d 186, 129 USPQ 59 (1961)."

### 4. SAME—SAME—SAME.

"The likelihood of confusion of the marks 'Veep' and 'Beep' has been found to reside in the similarity of the consonant sounds of 'V' and 'B' which control the meaning assigned to the words as entreties. The Trademark Trial and Appeal Board properly observed: ' \* \* \* sound is of particular importance when we are dealing with products like soft drinks which may frequently be purchased by the spoken word.'"

### 5. SAME—SAME—DOUBT RESOLVED IN FAVOR OF FIRST USER.

"While this resolution of the issue [likelihood of confusion] is not entirely free from doubt, we think such doubt as there is should be resolved in favor of the first user \* \* \*."

### 6. SAME—SAME—COMPOSITE MARK—DISSECTION IMPROPER.

"The conclusion of the Trademark Trial and Appeal Board that confusion of the marks involved in the cancellation proceeding would be likely can be justified only by a dissection of the composite mark, segregating the word 'BEEP' therein, and then comparing it with the word 'VEEP.' It seems clear to us that such dissection is an improper basis for decision of this issue."

### 7. SAME—SAME—SAME—SAME.

"Coca-Cola's position on the cancellation proceeding, like the decision of the Trademark Trial and Appeal Board, is based on a dissection of the [com-  
posite] registered mark. We have disapproved of such an analysis on many occasions."

### 8. SAME—SAME—"VEEP" AND "BEEP" IN COMPOSITE MARK.

" \* \* \* we conclude the Trademark Trial and Appeal Board was in error in



comparing 'VEEP' with only the 'BEEP' portion of the registered composite mark instead of comparing the entire marks."

APPEAL from the Patent Office, Opposition No. 41,711; Cancellation No. 8,172.

MODIFIED.

*John Rex Allen* for appellant.

*Julius R. Lunsford, Jr., Francis Browne* for appellee.

Before RICH, Acting Chief Judge, SMITH and ALMOND, Associate Judges, and WILLIAM H. KIRKPATRICK<sup>1</sup>

SMITH, J., delivered the opinion of the court.

This proceeding involves appeals from the decision of the Trademark Trial and Appeal Board in Opposition No. 41,711, sustaining appellee's opposition to appellant's application to register "BEEP,"<sup>2</sup> and in Cancellation No. 8,172 granting the appellee's petition to cancel appellant's registered composite mark "BEEP FOR BREAKFAST,"<sup>3</sup> 148 USPQ 396 (1965).

Appellant, the applicant-respondent (hereinafter Krim-Ko) was originally Krim-Ko Corporation, an Illinois corporation, which later merged with and became a division of The National Sugar Refining Company, a New Jersey corporation. The original opposer-petitioner (hereinafter Coca-Cola) was The Coca-Cola Bottling Company of New York, Inc., a Delaware corporation, whose trademark "VEEP" for "Carbonated Flavored Beverages Sold as Soft Drinks and for Use as Mixers" was registered October 21, 1958, under Registration No. 668,753. The Coca-Cola Company, a Delaware corporation of Atlanta, Georgia, appears to have acquired the rights in said mark and is here as the appellee in both the above proceedings.

#### *The Opposition Proceeding*

The opposition involves the Coca-Cola trademark "VEEP" and the Krim-Ko trademark "BEEP." The Trademark Trial and Appeal Board found, and the record establishes, that "VEEP" is sold like other soft drinks or mixers in bottles and cans through food stores, vending machines, refreshment stands, bars, restaurants and home distributors of beverage products. The original owner of the mark advertised and sold the product extensively in the area of New York City and in the Buffalo-Niagara Falls area.

Krim-Ko's product "BEEP" is described variously as a fruit juice drink base or a breakfast juice concentrate or breakfast fruit cocktail drink base. This base or concentrate is sold under a franchise license agreement to processing dairies which mix it with water, sugar and ascorbic acid to make the end consumer drink "BEEP." Krim-Ko argues that since the base or concentrate is not a soft drink and must be kept refrigerated, the only direct purchasers of the base or concentrate are processing dairies who are equipped to refrigerate the base or concentrate and to process it to make the drink (which requires refrigeration) for sale to the end consumer. From these facts Krim-Ko further argues that its product is not suitable for sale to other purchasers.

<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.  
<sup>2</sup> Serial No. 112,847 for "A Fruit Juice Concentrate Preparation for Use in Making a Food Drink." Use is alleged since January 19, 1961. See section 13 of the Trademark Act of 1946, 15 U.S.C. 1063.  
<sup>3</sup> Registration No. 757,862, issued October 1, 1963, for "A Food Drink Made From a Variety of Fruit Juices." Use is asserted since May 15, 1961. See section 14 of the Trademark Act of 1946, 15 U.S.C. 1064.

#### *The Cancellation Proceeding*<sup>4</sup>

The cancellation proceeding involves Coca-Cola's "VEEP" trademark and Krim-Ko's registered composite mark "BEEP FOR BREAKFAST." The composite mark is:



It is used in selling and advertising the drink compounded from the "BEEP" concentrate. The product is advertised as a fruit juice drink and is sold as a breakfast food drink. Krim-Ko stresses that "BEEP FOR BREAKFAST," like the "BEEP" concentrate, must be kept refrigerated at all times and can be sold only by dairies on their home delivery routes or for resale in the refrigerated compartments of supermarkets and the like. The record establishes that about 75% of the product is sold on home delivery routes and the remainder through supermarkets and the like.

#### *Both Proceedings*

It is clear that use of "VEEP" by Coca-Cola antedates Krim-Ko's use of both "BEEP" and "BEEP FOR BREAKFAST." It appears that all three trademarks have been used concurrently and extensively since early in 1961 and have been extensively advertised and, in part, sold in the same territory. Krim-Ko's cost of advertising "BEEP FOR BREAKFAST" has been over \$300,000 and sales during the first three and one-half years exceeded thirty-four million quarts. The testimony adduced by both parties failed to show any instances of actual confusion. [2] While the absence of evidence of actual confusion is not determinative of an issue of likelihood of confusion, it is a factor which may be accorded some weight. *American Drill Bushing Co. v. Rockwell Mfg. Co.*, 52 CCPA 1173, 1177, 342 F.2d 1019, 145 USPQ 144 (1965); *Coral Chemical Co. v. H.D.T. Company Factors, Inc.*, 51 CCPA 1413, 332 F.2d 841, 141 USPQ 835 (1964).

#### *Opinion*

The record establishes that there are specific differences in the marks in issue, the goods with which the marks are used, and in the manner of merchandising the goods sold under the marks. We have considered these differences in the light of the record and the argu-

[1] The attorneys for the parties had stipulated to hold up the opposition proceeding against "BEEP" until the "BEEP FOR BREAKFAST" trademark was published so that it then would be opposed by Coca-Cola. The publication of "BEEP FOR BREAKFAST" was not noted by either counsel because they were both out of their respective offices during almost the entire summer of 1964 and the "BEEP FOR BREAKFAST" registration issued. A cancellation proceeding was then instituted and the two proceedings were consolidated for record and briefing purposes. Under these circumstances, the cancellation proceeding is here treated as if it were, in fact, an opposition proceeding and no additional weight has been given to the fact that the registration has issued.



ments advanced by both parties. As to the respective goods, "VEEP" and "BEEP FOR BREAKFAST" are both applied to beverages for human consumption which, in part, would be sold in grocery stores and the like. "BEEP" concentrate, however, is sold only to dairies for processing. Coca-Cola's "VEEP" is unrestricted as to trade channels except as above noted. The end products of both parties are sold through some of the same trade channels and have, at times, been advertised in the same general manner to the same prospective purchasers.

The observation we made in *Hollywood Water Heater Co. v. Hollymatic Corp.*, 47 CCPA 782, 274 F.2d 679, 124 USPQ 452 (1960), is also relevant here. There we stated, *id.* at 784, 274 F.2d at 680, 124 USPQ at 453:

Appellant, in asserting that the automatic gas-fired water heaters on which it uses the mark are so different from the goods on which appellee uses the mark that no mistake, confusion or deception is likely, ignores the changes made by the Trademark Act of 1946 and is founded upon the mistaken assumption that appellee is entitled to protection of its mark only with respect to specific goods, i.e., electrically operated hamburger patty molding machines. We reject appellant's position. Section 2(d) of the Trademark Act of 1946 and the unquestioned weight of modern authority in this field does not require a finding of confusing similarity of goods as the basis for sustaining a trademark opposition but instead requires us to determine whether it is "likely" that the mark when applied to the goods of the applicant will cause confusion or mistake or deceive purchasers.

While specific differences in goods (orange concentrate used in the preparation of uncarbonated orange drink *v.* carbonated soft drinks) and their channels of distribution were noted by the Trademark Trial and Appeal Board and this court in *The Seven-Up Co. v. Tropicana Products, Inc.*, 142 USPQ 384 (TTAB 1964), *affirmed*, 53 CCPA 1209, 356 F.2d 567, 148 USPQ 604 (1966), and the differences in the marks "SUN-UP" and "SEVEN-UP" were considered, no likelihood of confusion was found. As stated in our opinion, *id.* at 1211, 356 F.2d at 568, 148 USPQ at 605:

\*\*\* Where the words have well known and understood, widely differing meanings, a small difference in spelling or appearance may be sufficient to distinguish them and avoid a finding of confusing similarity. On the other hand, with coined words which are meaningless so far as the English language is concerned, slight variations in spelling or arrangement of letters are often insufficient to direct the buyer's attention to the distinction between marks.

Here, as distinguished from the *Seven-Up* decision, we have the words "VEEP" and "BEEP," both of which have definite dictionary meanings assigned to them. Thus, our analysis of the issues must start with a comparison of the words themselves. Considering the linguistic aspects of the words, the word "BEEP" is an onomatopoeic word which as spoken is a vocal imitation of the sound associated with it. "Veep" is not. It is the phonetic equivalent of the abbreviation "V.P." which has gained popular acceptance as indicating a Vice-President. As a coined word, it fills a specialized semantic need so well that it has become a part of our growing language. When so compared, the substance and meaning of the words make it seem quite unlikely that they would create any confusion as to meaning in the mind of a purchaser. Despite specific differences in spelling and in probable meaning, the dominant factor for consideration is the likelihood of confusion arising from the similarity in sound of the two words when spoken. The consonants "V" and "B" provide the initial aural impact on the listener and initiate the psychological processes leading

to recall and assignment of a meaning to the words. The consonant sounds "B" and "V" are likely to be misunderstood by the listener, depending as they do on such variables as the diction of the speaker and the hearing acuity of the listener. Thus there may well be a doubt as to whether the entire words when spoken are likely to confuse a listener-purchaser. Unless both the one speaking and the one hearing the two words are particularly careful, the sound similarities of "V" and "B" may lead to a confusion in the recall process, so as to negate the effect of the differences in meaning of the words.

[3] While appellant argues that "Veep" and "Beep" are well known dictionary terms and cites several cases allegedly in support of the theory that where words have *well known and understood, widely different meanings*, a small difference or spelling *may* be sufficient to distinguish them, the fact is the words "Beep" and "Veep" are entirely arbitrary marks in reference to the goods involved, without any significance or suggestive connotation. There is virtually no distinction in sound or visual impression between the words. It is sufficient if the similarity in either form, spelling or sound alone is likely to cause confusion. *Purex Corp. Ltd. v. Maryland Paper Products Co.*, 48 CCPA 848, 287 F.2d 186, 129 USPQ 59 (1961).

[4] The likelihood of confusion of the marks "VEEP" and "BEEP" has been found to reside in the similarity of the consonant sounds of "V" and "B" which control the meaning assigned to the words as entireties. The Trademark Trial and Appeal Board properly observed:

\*\*\* sound is of particular importance when we are dealing with products like soft drinks which may frequently be purchased by the spoken word.

[5] While this resolution of the issue is not entirely free from doubt, we think such doubt as there is should be resolved in favor of the first user, see, e.g., *Castle & Cooke, Inc. v. Joseph E. Seagram & Sons, Inc.*, 52 CCPA 1425, 346 F.2d 621, 145 USPQ 715 (1965); *Coral Chemical Co. v. H.D.T. Company Factors, Inc.*, *supra*; *Polymer Corp. v. Dayco Corp.*, 51 CCPA 794, 324 F.2d 1019, 139 USPQ 524 (1963). Thus, we *affirm* the decision of the Trademark Trial and Appeal Board in the opposition proceeding.

We pass now to the cancellation proceeding and the question of confusion between the mark "VEEP" and the composite registered mark. As we noted above, we found the probable aural similarities of the mark "VEEP" and "BEEP" to be such that confusion would be likely. However, in the composite mark, we are dealing with other factors than the aural impact of the two words. Instead, we must compare the word "Veep" with the total composite mark in which both the impact of visual perception and the alliteration of the spoken portion of the mark must be considered. Thus, in the composite mark, the representation of a bird directly above the word "Beep" immediately creates in the mind of the viewer an association between the word "Beep" and the bird there shown.<sup>5</sup> This association of a bird image with the entire mark is further reenforced by the alliterative slogan "BEEP FOR BREAKFAST" which suggests the common association of the morning song of birds with the time for breakfast.

In this analysis we are mindful of the argument advanced by appellee that "BEEP" as used in the composite mark may be considered

<sup>5</sup> This possibility is increased for a substantial number of persons who are potential customers for the products of the parties by the "Beep-Beep" sound of the "Road-Runner" in animated cartoons popular since the early 1940's and now frequently shown on television.



a verb by some who hear or see the mark in its entirety. To the extent this be true, one cannot "BEEP" for breakfast without creating a distinct "Beep." When so read, the entire slogan would not be likely to be associated with the word "Veep." Just how one might "Veep" for his breakfast has not been demonstrated on this record. Considering all the factors, the substitution of "VEEP" for "BEEP" in the composite mark does not seem likely.

[6] The conclusion of the Trademark Trial and Appeal Board that confusion of the marks involved in the cancellation proceeding would be likely can be justified only by a dissection of the composite mark, segregating the word "Beep" therein, and then comparing it with the word "Veep." It seems clear to us that such dissection is an improper basis for decision of this issue.

A review of the record establishes that applicant's franchise dairies use the term "BEEP FOR BREAKFAST." The fact is that the trademark which applicant has registered for the breakfast drink made and sold by such dairies is the composite mark which includes the words "BEEP FOR BREAKFAST," not "BEEP," and it is this mark as a whole which is involved in the cancellation proceeding.

The appellee argues that in most instances Krim-Ko's franchised dairies labelled the product "BEEP FOR BREAKFAST" with the word "BEEP" in somewhat larger letters than the words "FOR BREAKFAST" (as shown in the preceding reproduction of the mark). The words "FOR BREAKFAST" as there shown also are printed in large type. In most instances where the trademark was printed in smaller type, the entire mark "BEEP FOR BREAKFAST" was so reproduced. In one instance, however, a dairy did not use the words "FOR BREAKFAST" after "BEEP." In another instance a dairy put the word "Trademark" below the word "BEEP" and in a third instance the ® trademark symbol followed the word "BEEP". In all other instances so far as the record shows the trademark was displayed in accordance with Krim-Ko's instructions which required use of the entire composite mark. We do not regard these few aberrations as determinative of the issue in the cancellation proceeding. Resolution of this issue does not permit dissection of the registered mark, nor should we resolve it on the basis of the few scattered instances of record in which some of the franchised dairies may have improperly displayed the mark.

In *B. Kuppenheimer & Co. v. Kayser-Roth Corp.*, 51 CCPA 902, 326 F.2d 820, 140 USPQ 262 (1964), this court reversed the decision of the Trademark Trial and Appeal Board holding two marks to be confusingly similar. The decision had been predicated upon an advertisement showing that only part of the trademark, i.e., "SUP-PANTS," was used whereas the applicant had sought to register "KUPPENHEIMER SUP-PANTS" written in an unusual manner. A majority of this court held this to be error, saying:

We cannot predicate our decision upon the wording of this advertisement. Our decision can properly be based only upon what the application shows as the trademark for which applicant wishes registration. If abuses develop in connection with the use of this mark, remedies are available to the abused. \* \* \*

See also *Schwarzkopf v. John H. Breck, Inc.*, 52 CCPA 957, 340 F.2d 978, 144 USPQ 433 (1965).

[7] Coca-Cola's position on the cancellation proceeding, like the decision of the Trademark Trial and Appeal Board, is based on a dissection of the registered mark. We have disapproved of such an

analysis on many occasions. See *In re Blanchard Importing & Distributing Co.*, 53 CCPA 1229, 360 F.2d 254, 149 USPQ 699 (1966); *Murray Corp. of America v. Red Spot Paint & Varnish Co.*, 47 CCPA 1152, 280 F.2d 158, 126 USPQ 390 (1960).

We have considered Coca-Cola's argument that "BEEP" is the dominant part of Krim-Ko's composite mark. We do not find that the record establishes the dominance of the word "BEEP" over the other elements which comprise the entire mark.

[8] Thus, we conclude the Trademark Trial and Appeal Board was in error in comparing "VEEP" with only the "BEEP" portion of the registered composite mark instead of comparing the entire marks.

The decision of the Trademark Trial and Appeal Board in Opposition No. 41,711 is affirmed. Its decision in Cancellation No. 8,172 is reversed.

MODIFIED.

### U.S. Court of Customs and Patent Appeals

IN RE ARTHUR C. BORG AND STEPHEN J. ZAJAC

No. 7824. Decided April 18, 1968

[55 CCPA—; 392 F.2d 642; 157 USPQ 359]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—NEW ISSUE—STATUTORY PRIOR ART—35 U.S.C. 102(e) AND 103—35 U.S.C. 141.

"We decline to treat the issue posed by appellants for, as pointed out by the Solicitor, the issue is not presented by the decision of the Board. Curiously, the Examiner and Board appear to have made no rejection employing the Zajac patent as a prior art reference under §§ 102(e) and 103 to show what would have been obvious to one of ordinary skill in the art at the time appellants made their invention, although the description therein of the Zajac invention seemingly enjoys the status of statutory prior art as to Borg and Zajac under those provisions and appellants' present application acknowledges Zajac's invention as something that has 'heretofore been discovered.' Our jurisdiction, of course, does not encompass review of a nonexistent decision of the Board. 35 U.S.C. 141; *In re Johnsen*, 53 CCPA 1401, 359 F.2d 905, 149 USPQ 630."

2. PATENTABILITY—DOUBLE PATENTING—TERMINAL DISCLAIMER—FILING DATE OF PATENT IRRELEVANT IN DOUBLE PATENTING SITUATIONS.

Upon considering a distinction over *In re Bowers* in that the present double patenting rejection (although a terminal disclaimer had been filed) was based on an earlier filed patent, *Held* that "The \* \* \* distinction offered by the Solicitor is immaterial to the present issue for, as the court pointed out in *Bowers*, 'the filing date [of the patent relied on] is of no concern' in double patenting situations and, as we have observed earlier, the Patent Office has made no rejection in the present case that employs the Zajac patent as prior art."

3. SAME—SAME—SAME—"MERE COLORABLE VARIATION"—TWO AND THREE COMPONENT COMPOSITIONS.

"The second distinction offered by the Solicitor was not discussed below, as the Examiner and Board did not explicitly express their views as to whether they thought the present claims to be drawn to a different invention than that claimed by Zajac or a 'mere colorable variation' thereof. While we appreciate the Solicitor's arguments, it seems to us that the presently claimed composition in which three components, including silica, are expressly recited is something more than a 'mere colorable variation' of the Zajac claimed composition in which but two components are expressly recited, even though the silica component may be an obvious modification of, or addition to, the Zajac composition in a double patenting sense."



APPEAL from the Patent Office. Serial No. 178,539.

REVERSED.

Arthur G. Gilkes (Edward B. Beale, Arthur H. Bransky, Robert J. Wagner, of counsel) for appellants.

Joseph Schimmel (Raymond E. Martin, of counsel) for the Commissioner of Patents.

Before WORLEY, Chief Judge, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK<sup>1</sup>

WORLEY, Chief Judge, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals affirming the Examiner's rejection of claims 2, 5, 6 and 9-11 in appellants' application<sup>2</sup> entitled "High Temperature Grease."

The claimed invention relates to a high temperature grease composition containing (1) an oleaginous lubricant base, (2) a reaction product of boric acid and an aromatic polyisocyanate as a thickener, and (3) finely divided silica, also a thickener.

The Examiner's rejection is predicated on the following patents:

Stross, 2,554,222, May 22, 1951.

Zajac, 3,166,506, Jan. 19, 1965 (filed Feb. 21, 1962).

The Zajac patent, issued on an application filed by one of the appellants here shortly before the application at bar was filed and having the same assignee, describes and claims a grease composition comprising two of the components of appellants' grease composition: (1) an oleaginous lubricant base and (2) a reaction product of boric acid and an aromatic polyisocyanate as a thickener. Stross discloses that finely divided silica is well known as a thickener for lubricating greases, a fact further confirmed by appellants' specification.

Before discussing the primary issue before us, it is well to dispose initially of a secondary contention raised by appellants. They urge that the Zajac patent "was improperly applied as a reference" against the present claims, arguing that:

"... It was error to apply Zajac as a reference in the present application since the claimed subject matter of the present application was disclosed, but not claimed, in the application of Zajac as originally filed [3], thus entitling appellants under 35 U.S.C. 120 [4] to the filing date as to that subject matter in the present application which is common to the parent Zajac application.

Implicit in appellants' contention is their apparent belief that the Patent Office has erroneously applied the Zajac patent as evidence of *prior art* under 35 U.S.C. 103.

[1] We decline to treat the issue posed by appellants for, as pointed out by the Solicitor, the issue is not presented by the decision of the Board. Curiously, the Examiner and Board appear to have made *no* rejection employing the Zajac patent as a *prior art* reference under §§ 102(e) and 103 to show what would have been obvious to one of ordinary skill in the art at the time appellants made their invention, although the description therein of the Zajac invention seem-

<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

<sup>2</sup> Serial No. 178,539, filed March 9, 1962.

<sup>3</sup> The description of the presently claimed subject matter appearing in the Zajac application does not appear in the Zajac patent, having been deleted by amendment under Patent Office Rule 312 before issuance.

<sup>4</sup> Section 120 reads:

An application for patent for an invention disclosed in the manner provided by the first paragraph of section 112 of this title in an application previously filed in the United States by the same inventor shall have the same effect, as to such invention, as though filed on the date of the prior application, if filed before the patenting or abandonment of or termination of proceedings on the first application or on an application similarly entitled to the benefit of the filing date of the first application and if it contains or is amended to contain a specific reference to the earlier filed application. [Emphasis supplied.]

ingly enjoys the status of statutory prior art as to Borg and Zajac under those provisions<sup>5</sup> and appellants' present application acknowledges Zajac's invention as something that has "heretofore been discovered."<sup>6</sup> Our jurisdiction, of course, does not encompass review of a nonexistent decision of the Board. 35 U.S.C. 141; *In re Johnsen*, 53 CCPA 1401, 359 F.2d 905, 149 USPQ 630.

We turn, then, to the rejection actually before us. The Examiner rejected the present claims solely "on the ground of double patenting" as unpatentable over the claims of the commonly-assigned Zajac patent. He appears to have found appellants' addition of silica to the composition claimed by Zajac to be obvious in the double patenting, rather than statutory, sense in view of the Stross reference. Thereupon, after the Examiner's answer, appellants' assignee filed a terminal disclaimer under 35 U.S.C. 253, disclaiming "that terminal portion of the term of such patent as is granted upon the \* \* \* [Borg and Zajac] application, to whatever extent such term extends beyond the expiration date of January 19, 1982 of [Zajac] Letters Patent No. 3,166,506." The avowed purpose of that document, according to appellants, was "[t]o overcome the rejection of double patenting." Said the Board:

While appellants have filed a terminal disclaimer, this is not a situation where such a disclaimer could be effective to avoid a double patenting rejection. See *In re Siu*, 42 CCPA 864; \* \* \* 222 F.2d 287; 105 USPQ 428. Neither *In re Robeson*, 51 CCPA 1271; \* \* \* 331 F.2d 610; 141 USPQ 485 relied on by appellants, nor in *In re Kaye*, 51 CCPA 1465; \* \* \* 332 F.2d 816; 141 USPQ 829 involving a question similar to *In re Robeson*, *supra*, are applicable, since different legal entities, i.e., different inventorships, as between the instant application and assignee's patent, are involved in the situation before us.

That decision preceded the decision of this court in *In re Bowers*, 53 CCPA 1590, 395 F.2d 886, 149 USPQ 570, heavily relied on here by appellants. There the Board similarly gave "no weight" to a terminal disclaimer filed by the assignee of the application and patents involved on appeal, stating that "it is not apparent" that *Robeson* or *Kaye* "apply to the situation where a terminal disclaimer is offered with respect to the commonly owned patent of a different inventive entity." In reversing the Board, the court stated:

It is true that in both *Robeson*, *supra*, and *Kaye*, *supra*, the double patenting rejections which we found to be obviated by the terminal disclaimer were predicated in each case on the same inventorship. However, we find this to be a distinction without legal significance in the present context.

Statutory authority for the terminal disclaimer here in issue is found in 35 U.S.C. 253, the second paragraph of which provides:

In like manner any patentee or applicant may disclaim or dedicate to the public the entire term, or any terminal part of the term, of the patent granted or to be granted.

It is to be noted that the parties authorized by the statute to file the terminal disclaimer are "any patentee or applicant." It seems clear that Congress intended that the remedies of this section were also to be available to assignees in view of the express provision of 35 U.S.C. 100(d) that:

(d) The word "patentee" includes not only the patentee to whom the patent was issued but also the successors in title to the patentee.

The court concluded:

We agree with the Court of Appeals in *Hays* [v. *Brenner*, 357 F.2d 287, 148 USPQ 365 (D.C. Cir. 1966)] that a terminal disclaimer will not obviate a rejection for obviousness in view of the prior art under 35 U.S.C. 103. That situation is not presented here and the Solicitor's reliance on the *Hays* decision is

<sup>5</sup> See, for example, *In re Land*, 54 CCPA 806, 368 F.2d 866, 151 USPQ 621; *In re Ornitz*, 54 CCPA 1304, 376 F.2d 330, 153 USPQ 453; *In re Fong*, 54 CCPA 1482, 378 F.2d 977, 154 USPQ 25.

<sup>6</sup> See *In re Lo Presti*, 52 CCPA 755, 333 F.2d 932, 142 USPQ 176; *In re Ornitz*, *supra*.



misplaced. The facts here, however, present a case in which the filing of a terminal disclaimer, as permitted under section 253, is effective to overcome a rejection based only on double patenting. The different chemical compounds defined in the respective claims are different inventions. The claims specify these differences and thus do not define the same invention. *In re Siu*, supra.

In summary, where there are in fact separate inventions, each of which is considered patentable over the prior art absent a patent on the other, a rejection based upon double patenting can be obviated by the filing of a terminal disclaimer under 35 U.S.C. 253 which may be filed by a common assignee.

The Solicitor does not argue that the above reasoning and conclusion are not in point here. Rather, he seeks to distinguish *Bowers* on the grounds that (1) in *Bowers*, the patents on which the double patenting rejection was predicated issued on later-filed applications whereas the Zajac patent here issued on an earlier-filed application, and (2) the application claims in *Bowers* were directed to different inventions than those appearing in the patent claims, whereas the claims here are allegedly directed to the same invention as that claimed by Zajac or, at best, a "mere colorable variation" thereof.

[2] The first distinction offered by the Solicitor is immaterial to the present issue for, as the court pointed out in *Bowers*, "the filing date [of the patent relied on] is of no concern" in double patenting situations and, as we have observed earlier, the Patent Office has made no rejection in the present case that employs the Zajac patent as prior art.

[3] The second distinction offered by the Solicitor was not discussed below, as the Examiner and Board did not explicitly express their views as to whether they thought the present claims to be drawn to a different invention than that claimed by Zajac or a "mere colorable variation" thereof. While we appreciate the Solicitor's arguments, it seems to us that the presently claimed composition in which three components, including silica, are expressly recited is something more than a "mere colorable variation" of the Zajac claimed composition in which but two components are expressly recited, even though the silica component may be an obvious modification of, or addition to, the Zajac composition in a double patenting sense.

We conclude that the terminal disclaimer filed in appellants' application is effective to overcome the double patenting rejection made by the Patent Office. Accordingly, we are obliged to reverse its decision.

REVERSED.

ALMOND, J., concurring.

While I agree with the majority opinion, I feel that some amplification is in order on the rather limited nature of the change which has been made in the law by this and other decisions involving common assignees.

At first reading, it would appear that the majority opinion would permit the assignee of these applications to obtain a very large number of patents as a result of Zajac's invention of a single new grease. If coworker Borg may obtain a patent on Zajac's grease with the addition of a prior art grease thickener, then it would appear that Borg or other coworkers could obtain individual patents for each prior art grease additive which they thought to add to Zajac's new grease.

The holding of this opinion is not nearly so sweeping, however, for nothing which we have said about terminal disclaimers has any effect upon the requirements for patentability set forth in 35 U.S.C. 102

and 103. If an applicant cannot meet these requirements, then a terminal disclaimer is of no help to him whatever.

It is, therefore, clear that coworkers of Zajac cannot obtain an unlimited number of patents for the addition of obvious additives to the Zajac grease because the Zajac patent is prior art to them under section 102(e) as of Zajac's filing date. If a coworker cannot overcome that date under Rule 131, he cannot obtain a patent.

From what has been said, it will be recognized that a coworker of Zajac stands upon an equal footing, as to his right to obtain a patent, with a stranger to Zajac. Either one may patent an obvious modification of Zajac's invention only if he made his invention prior to Zajac's filing date. Prior to our decision in *In re Bowers*, 53 CCPA 1590, 359 F.2d 886, 149 USPQ 570, wherein we held that terminal disclaimers can be used in overcoming double patenting rejections in those cases involving commonly assigned applications, the coworker was at a definite disadvantage in respect to a stranger, for his application would be rejected for double patenting even if he could remove his coworker's patent under Rule 131. Whether or not a patent would issue in such cases depended, therefore, on the presence or absence of common identity of the assignees. Thus basing patentability on the identity of the assignees effected no public benefit which I can discern.

The effect of our decision in *Bowers*, as well as in this case, is no more than to place a coworker in the same position as a stranger in regard to his right to obtain a patent.<sup>7</sup>

The question of patentability of obvious modifications of inventions made by coworkers is now to be determined by reference to statutory standards, and not by reference to the identity of the assignee. It therefore seems to me that the impact of these decisions is to remove an anomaly from the law.

While it may be argued that the effect of these decisions will be to encourage delay in filing applications on basic inventions in order to allow coworkers time to discover obvious modifications which may also be patented, I do not feel this will become a substantial problem. The possible penalties which an applicant may suffer because of a charge of lack of diligence or of suppression of his invention provide an adequate safeguard against such delay.

<sup>7</sup> The coworker will, however, have a shorter patent term than would a stranger because of the terminal disclaimer.

## U.S. Court of Customs and Patent Appeals

IN RE LEWIS E. REVEN

No. 7875. Decided March 7, 1968

[55 CCPA—; 390 F.2d 997; 156 USPQ 679]

### 1. PATENTABILITY—CRITICALITY—BROADER RANGE IN THE PRIOR ART.

"We think it sufficient to note that the range disclosed in Rule envelops the range claimed by appellant, and that appellant has produced no evidence tending to show superior results because of his selection of the narrower range within the disclosed range. The Examiner noted, and we agree that, absent a showing to the contrary, discovering particular ranges within a range disclosed by the prior art would be within the skill of the art."

### 2. SAME—OBVIOUSNESS—FACTUAL DIFFERENCES OVER PRIOR ART MUST BE CONSIDERED—35 U.S.C. 103.

"Appellant claims a specific conductance of the charge sol greater than  $4 \times 10^{-4}$  mho/cm. at 28° C. and 10% SiO<sub>2</sub>. Rule discloses that a specific conductivity less than  $4 \times 10^{-4}$  mho/cm. is preferred for the higher concentration of



SiO<sub>2</sub>. The Board considered this difference to be 'at best \* \* \* a mere matter of degree.' This difference, however, is a factual difference which must be considered before reaching the legal conclusion of obviousness or nonobviousness under section 103. *In re Krazinski*, 52 CCPA 1447, 347 F.2d 656, 146 USPQ 25 (1965)."

3. SAME—SAME—BURDEN TO SHOW SIGNIFICANCE OF DIFFERENCES OVER PRIOR ART ON APPLICANT.

\* \* \* the substance of appellant's argument is predicated upon an allegation that he achieves the same result as disclosed in the Rule reference without utilizing the step of delonization. We agree with the Solicitor, however, that appellant's position is not supported by probative evidence in this record. The relevant disclosures in the Rule patent and in appellant's application as to stability of the sols provides support for the position of the Solicitor that the appellant's sols have not been shown to be as stable as those produced by the Rule process. Thus, the position of the Patent Office is supported by the disclosures of the cited references. While we recognize certain factual differences between the claimed invention and the Rule disclosures, the burden of establishing the significance of such differences in evaluating the obviousness of the invention as a whole falls on the appellant. Appellant's failure to go forward with convincing proofs factually supporting this argument removes this question from the case."

4. SAME—CRITICALITY.

"Finally, appellant urges that the Board erred in considering that adjustment of pH as claimed by appellant would be obvious. However, appellant has presented no persuasive argument which convinces us of error by the Board in this respect. Wolter's disclosure is a clear teaching that, to be highly stable, a silica sol should have its pH adjusted to a value from about 7 to 10, but preferably values in the upper portions of this range which very nearly coincide with the claim range [between about 8.7 to about 9.5]."

5. SAME—PARTICULAR SUBJECT MATTER—PROCESS FOR PREPARING STABLE CONCENTRATED SILICA SOL.

The refusal of certain claims to a process for preparing a stable and concentrated silica sol, as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 185,840.

AFFIRMED.

*Marzall, Johnston, Cook & Root, Richard L. Johnston, Herbert B. Keil* for appellant.

*Joseph Schimmel (Jack E. Armore, of counsel)* for the Commissioner of Patents.

Before WORLEY, Chief Judge, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK<sup>1</sup>

SMITH, J., delivered the opinion of the court.

The sole issue for adjudication on the present record is whether appellant's claimed invention is obvious under 35 U.S.C. 103 in view of the cited prior art.

The issue arises in an appeal from the decision of the Patent Office Board of Appeals,<sup>2</sup> adhered to on reconsideration, affirming the Examiner's rejection of all of appellant's claims.<sup>3</sup>

The invention relates to a process for preparing stable and highly concentrated aqueous silica sols. Appellant explains that silica sols contain discrete particles of colloidal silica, SiO<sub>2</sub>, dispersed in a liquid

<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

<sup>2</sup> The Board consisted of Messrs. Rosa, Examiner-in-Chief, and Stone and Vertiz, Acting Examiners-in-Chief. We note that the composition of the board is such that more than one acting examiner-in-chief participated in this decision. For the view of the majority on such boards, as well as the views of Almond, J., and myself, see *In re Wiechert*, 54 CCPA 957, 370 F.2d 927, 152 USPQ 247 (1967). While I continue to question the legality and jurisdiction of a board so constituted, neither issue was raised by appellant nor considered below. While I doubt that this can constitute a waiver of the jurisdictional defect, a majority of the court considers it to be otherwise, hence my participation in this decision.

<sup>3</sup> Application Serial No. 185,840, filed April 9, 1962, for "Concentrated Silica Sols," designated a continuation-in-part of appellant's copending application, Serial No. 23,358, filed April 20, 1960.

phase such as water. Appellant theorizes that the silica includes a plurality of functional hydroxide groups which are extremely reactive and tend to form links with other particles to produce a three-dimensional cross-linked polymer. In time, the colloidal particles aggregate and convert the sol into an undesirable gel, particularly when the sol is concentrated.

It is appellant's aim to produce sols of higher concentrations of colloidal silica yet having greater stability against gelation than conventional sols of lower concentrations. Appellant explains that a number of factors affect the gel forming tendencies of these sols, e.g., the concentration of the particular sol, its pH, the presence of impurities, the size of the particle, the SiO<sub>2</sub> to Na<sub>2</sub>O ratio, and the specific conductance of the sol.

The gist of appellant's invention resides in the discovery that the pH of the sol and the particle size of the dispersed particles are of primary importance in determining its stability.

Appellant's specification states:

\* \* \* The particle size should be between about 15 and 30 millimicrons, and the pH should be between about 8.7 and 9.5. Although the concentration of the sol can vary somewhat, the invention is particularly directed to sols having an SiO<sub>2</sub> content of from 48% to 52%. My preferred sol has an average particle diameter of from 18 to 24 millimicrons and a pH from about 8.7 to about 9.2. The SiO<sub>2</sub>:Na<sub>2</sub>O ratio of the sols should be between about 150:1 to 350:1 and preferably from about 200:1 to about 250:1.

The method used to concentrate the sol can consist of merely boiling off water. The particle size of the sol before the boiling off step, however, should be between about 15 and 30 millimicrons. Ordinarily, the sol will have an SiO<sub>2</sub> concentration of from about 30% to about 38%. The pH of the final product must be from about 8.7 to about 9.5.

Appellant's specification further states that the prior art processes are not satisfactory to produce a stable sol having a concentration of greater than about 40% to 45% of dispersed particles, while appellant's product was found to be "highly stable" at concentrations "as high as 52%."

Three independent claims have been appealed. Claim 1 is illustrative:

1. A process for preparing a stable and concentrated silica sol which comprises preparing an aqueous silica sol containing from about 30% to about 38% SiO<sub>2</sub>, said sol having a particle size of from about 15 to about 30 millimicrons, an SiO<sub>2</sub> to Na<sub>2</sub>O ratio of from about 150:1 to 350:1, and a specific conductance greater than  $4 \times 10^{-4}$  mho/cm. at 28° C. and 10% SiO<sub>2</sub>, boiling off water from said sol until the SiO<sub>2</sub> content of the sol is from about 48% to about 52%, and thereafter adjusting the pH of said sol to between about 8.7 and about 9.5.

Claims 2 and 3 more specifically limit the particle size to from about 18 to about 24 millimicrons and the pH to between about 8.7 and 9.2. Claim 3 also further limits the SiO<sub>2</sub> to Na<sub>2</sub>O ratio to from about 200:1 to 250:1.

The Patent Office relied upon the following patents to sustain the rejection:

Rule, 2,577,485, Dec. 4, 1951.

Wolter (Canadian), 521,741, Feb. 14, 1956.

The Rule patent describes a process for making stable silica sols in which a silica sol is first prepared containing dense, non-agglomerated silica particles having an average diameter of from 10 to 130 millimicrons, and a specific conductance less than  $4 \times 10^{-4}$  mho/cm. at 28° C. and 10% SiO<sub>2</sub>. In preparing the sol to be treated, the Rule proc-



ess includes the formation of a low molecular weight sol by a known process in which a sodium silicate solution is passed through an ion exchange material to remove most of the sodium ions and provide a silica sol having a high ratio of silica to sodium. The sol is then concentrated by another known method in which the silica particles are allowed to grow to a diameter of from 10 millimicrons to about 130 millimicrons. The ion content of a sol thus produced results in a specific conductance *greater than*  $4 \times 10^{-4}$  mho/cm. at 28° C. and 10%  $\text{SiO}_2$ . Rule teaches that the ion content of the sol must be decreased, preferably by passing it through a cation exchanger. The use of an anion exchanger to remove anions is also said by Rule to be desirable.

An alkali metal hydroxide is added to the sol in an amount sufficient to provide a silica to alkali oxide mole ratio in the sol of from 130:1 to 500:1. These sols are said to be indefinitely stable at ordinary temperatures against gelation and stable for extended periods even at a temperature as high as 95° C.

Rule teaches that the aqueous sols may be concentrated to a very high silica content merely by boiling off water and that stable sols containing silica in proportions as high as "50% by weight or more" may be prepared. Rule points out that in a specific embodiment giving especially advantageous results, the average particle size is from 15 to 30 millimicrons and, in one example, employed a starting sol containing 28.73%  $\text{SiO}_2$ .

The Wolter patent discloses a process for producing stable silica sols in which a sol containing from 20 to 35%  $\text{SiO}_2$ , having an average diameter of 10 to 150 millimicrons, is purified by 2 to 4 treatments with an anion exchanger and, preferably, also with a cation exchanger. The purified sol may be made more stable by the addition of ammonia, amines or strong acids. Wolter explains that the stability is less for the sols of higher concentrations, i.e., 30% and greater. According to Wolter, a 30% sol could be stabilized with ammonium hydroxide or with any organic nitrogen base which would not be objectionable in the particular use for which the sol is to be employed. The amount of organic nitrogen base or of ammonium hydroxide to use is the quantity required to raise the pH of the sol to a value from about 7 to 10 and preferably to values in the upper portions of this range. Wolter states that such sols may be stable for years at room temperature.

The patentee adds that, in a preferred sol, the particles have "an average diameter in the range of from 15 to 30 millimicrons," and that the "conductance of the completely deionized sols is less than 4 times  $10^{-4}$  mho/cm. at 28° C. and 10%  $\text{SiO}_2$ ." Instead of stabilizing the sol with a base, Wolter states that it may be stabilized with a small amount of an acid.

The Examiner finally rejected all of appellant's claims as "unpatentable over Rule, alone or in view of Wolter." The Board affirmed, stating:

The claims stand rejected as unpatentable over Rule, alone or in view of Wolter under 35 U.S.C. 103. The Examiner holds the claims are substantially met by Rule who subjects an aqueous silica sol substantially similar to that recited in the claim to a concentration step of boiling off water to produce a stable and concentrated silica sol within the proportions of silica claimed. He considers the specific conductance of appellant's starting material to differ merely in degree as compared with the starting material of the reference which has a conductance less than that recited and that the final adjustment of the concentrated silica sol to the designated pH to be [sic] obvious and within the skill of

the art, relying on Wolter to show pH adjustment to the alkaline side for stabilizing silica sols.

While appellant lays great emphasis on the fact that he does not use the ion exchange resin treatments used by the references, yet the claims do not exclude such treatment. The starting silica sol used by appellant does not appear to be materially different from that of Rule who uses a sol of 28.73%  $\text{SiO}_2$ , which is very close to the 30% recited in the claims.

We are not satisfied that the difference in the specific conductance of appellant's sol, which is greater than the standard recited while the reference is less than the standard, can in any way be regarded as a patentable distinction. At best, it appears to be a mere matter of degree. Furthermore, the fact that Rule obtains a final product which is just about as stable as appellant's and of substantially the same concentration, leads to the conclusion that the specific conductance used is of no patentable significance. We agree with the Examiner that the adjustment of pH as the final step would be obvious and within the skill of the art.

Appellant here urges, as he did below, that the claimed process produces unobvious results. He further argues that it could not possibly have been predicted that, by carefully controlling the characteristics of an intermediate or charge sol and by adjusting the pH of the final product within a narrow range, a highly concentrated stable silica sol could be produced. Appellant emphasizes that, in both the Rule and Wolter processes, it is necessary to treat the sol with an ion exchanger.

The factual differences between the appealed claims and the prior art must first be determined, 35 U.S.C. 103. Appellant's charge sol has an  $\text{SiO}_2$  concentration of from about 30% to about 38%; Rule discloses a sol having an  $\text{SiO}_2$  concentration of 28.73%. We note that appellant does not emphasize this difference before this court.

Appellant claims a particle size of from about 15 to about 30 millimicrons. Rule discloses a much broader range, i.e., from 10 to 130 millimicrons, but states that in a specific embodiment giving "especially advantageous results," the average particle size is from 15 to 30 millimicrons. Similarly, Rule discloses a silica:alkali oxide mole ratio of 130:1 to 500:1, while appellant claims a  $\text{SiO}_2:\text{Na}_2\text{O}$  ratio of 150:1 to 350:1. [1] We think it sufficient to note that the range disclosed in Rule envelops the range claimed by appellant, and that appellant has produced no evidence tending to show superior results because of his selection of the narrower range within the disclosed range. The Examiner noted, and we agree that, absent a showing to the contrary, discovering particular ranges within a range disclosed by the prior art would be within the skill of the art.

[2] Appellant claims a specific conductance of the charge sol greater than  $4 \times 10^{-4}$  mho/cm. at 28° C. and 10%  $\text{SiO}_2$ . Rule discloses that a specific conductivity less than  $4 \times 10^{-4}$  mho/cm. is preferred for the higher concentration of  $\text{SiO}_2$ . The Board considered this difference to be "at best \* \* \* a mere matter of degree." This difference, however, is a factual difference which must be considered before reaching the legal conclusion of obviousness or nonobviousness under section 103. *In re Krazinski*, 52 CCPA 1447, 347 F.2d 656, 146 USPQ 25 (1965).

Appellant makes the related argument here that his claimed process produces sols which are "as stable" as those of Rule, without requiring a deionization step. This fact, in appellant's view, "provides the ingredient of unobviousness which makes the claims patentable over the art." Similarly, at oral argument, counsel for appellant urged that



the claimed specific conductance is higher than that preferred by Rule to emphasize that appellant's process does not require a deionization step. Rule, however, teaches that the specific conductance of the sol is a function of deionization. More precisely, the specific conductance of the sol becomes lower as the cation and anion content of the sol is reduced.

[3] Thus, the substance of appellant's argument is predicated upon an allegation that he achieves the same result as disclosed in the Rule reference without utilizing the step of deionization. We agree with the Solicitor, however, that appellant's position is not supported by probative evidence in this record. The relevant disclosures in the Rule patent and in appellant's application as to stability of the sols provides support for the position of the Solicitor that the appellant's sols have not been shown to be as stable as those produced by the Rule process. Thus, the position of the Patent Office is supported by the disclosures of the cited references. While we recognize certain factual differences between the claimed invention and the Rule disclosures, the burden of establishing the significance of such differences in evaluating the obviousness of the invention as a whole falls on the appellant. Appellant's failure to go forward with convincing proofs factually supporting this argument removes this question from the case.

[4] Finally, appellant urges that the Board erred in considering that adjustment of pH as claimed by appellant would be obvious. However, appellant has presented no persuasive argument which convinces us of error by the Board in this respect. Wolter's disclosure is a clear teaching that, to be highly stable, a silica sol should have its pH adjusted to a value from about 7 to 10, but preferably values in the upper portions of this range which very nearly coincide with the claimed range.

Based upon the factual differences between appellant's claimed invention and the prior art evidenced by Rule and Wolter, we, like the Examiner and the Board, are not persuaded on this record that those differences are such that the claimed invention, *considered as a whole*, would have been unobvious under 35 U.S.C. 103.

[5] The decision of the Board is therefor affirmed.  
AFFIRMED.

### U.S. Court of Customs and Patent Appeals

IN RE GEORGE B. KARNOFSKY

No. 7885. Decided March 7, 1968

[55 CCPA—; 390 F.2d 994; 156 USPQ 682]

#### 1. APPLICATION—DISCLOSURE—SUFFICIENCY OF DISCLOSURE—"ENABLING" AND "BEST MODE" REQUIREMENTS—OPERATING CONDITIONS WITHIN THE SKILL OF THE ART—35 U.S.C. 112.

As this court observed in *In re Bosy* \* \* \* the issue of whether a disclosure satisfies the requirements of 35 U.S.C. 112 requires two separate analyses: i.e., first, whether the disclosure contains a full and clear description of the invention, and of the manner and process of making and using it, and second, whether the best mode contemplated by the inventor for carrying out the invention is set forth. As there noted, these two requirements are referred to as the "enabling" and "best mode" requirements of 35 U.S.C. 112, *In re Gay* \* \* \*. Since the brief for the Solicitor argues that the specification does not satisfy either requirement, it is appropriate to note that *each* argument is felt to be unpersuasive when considered according to the analysis set forth in our recent decisions on this point. Where one of ordinary skill in the art

would know how to select operating conditions so as to achieve a particular result, the failure to include a recitation of some specific operating conditions in the specification cannot give rise to a rejection either under the "enabling" or under the "best mode" requirement of 35 U.S.C. 112. *In re Bosy*, supra.

APPEAL from the Patent Office. Serial No. 238,525.

REVERSED.

*Christy, Parmelee & Strickland, William H. Parmelee, Robert I. Dennison (Dennison & Dennison, of counsel)* for appellant.

*Joseph Schimmel (Raymond E. Martin, of counsel)* for the Commissioner of Patents.

Before WORLEY, Chief Judge, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK<sup>1</sup>

ALMOND, J., delivered the opinion of the court.

This is an appeal from a decision of the Patent Office Board of Appeals affirming the rejection of all claims in appellant's application entitled "Method of Manufacturing Vinyl Acetate Monomer."<sup>2</sup>

The invention relates to a process for separating the products of the reaction of acetylene and glacial acetic acid. The primary product sought by this reaction is vinyl acetate. Since the desired reaction does not go to completion, the following principal additional compounds are produced: ethylidene diacetate and acetic anhydride, characterized as the heavy ends, (i.e. having higher boiling points), and acetaldehyde and crotonaldehyde, characterized as the lighter ends (lower boiling points). The various products produced by the reaction are separated by fractional distillation, in several stages, the broad technique followed by the prior art. However, in the instant case, instead of allowing ethylidene diacetate to pass through several stages before it is separately recovered, this compound is removed at the first stage of separation as "bottoms" along with acetic acid and acetic anhydride. The remaining products come off as "overhead" to be separated at succeeding stages. This initial separation of crude reaction products takes place in a "crude splitter column." The early separation of the ethylidene diacetate is said to produce a more pure vinyl acetate end product.

For the purposes of this appeal the differences between the various claims on appeal are immaterial. Claim 1 is reproduced as illustrative:

1. In the process of manufacturing vinyl acetate monomer from the reaction of acetylene and acetic acid in a reactor where vinyl acetate, unreacted acetic acid and acetylene comprise the major products from the reaction and crotonaldehyde, acetic anhydride and ethylidene diacetate comprise minor reaction products and wherein unreacted acetic acid is rectified for re-use, the steps of effecting the separation of the acetic acid and vinyl acetate free of crotonaldehyde and other side reaction products comprising initially separating the crude products by distillation in a distillation column into acetic acid, vinyl acetate and crotonaldehyde as overhead product, and acetic acid with minor reaction products less volatile than acetic acid as still bottoms, distilling the overhead from the first distillation in another distillation column to recover vinyl acetate as overhead and acetic acid with crotonaldehyde as bottoms, distilling said last-named bottoms in a third last column to remove the crotonaldehyde as overhead and rectified acetic acid as bottoms, and recycling said acetic acid so obtained as bottoms to the reactor.

The Board of Appeals held that the claims were properly rejected because the disclosure of the specification is inadequate to meet the requirements of 35 U.S.C. 112. That is the only issue before us. The Board's position was explicitly based upon the lack of disclosure of

<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.  
<sup>2</sup> Serial No. 238,525, filed November 19, 1962.



conditions of operation of the crude splitter column. It was the opinion of the Board that one skilled in the art would not understand how to operate the splitter column in such a way as to achieve the results taught by appellant without himself exercising the "inventive faculty," presumably meaning that how to operate the still would be unobvious.

The portion of appellant's specification in issue is:

With the present invention, the crude reaction products are introduced initially into a column which I designate a "crude splitter column." *Enough acetic acid is removed from the top of this column to carry with it all or substantially all of the crotonaldehyde along with the vinyl acetate and acetaldehyde. The bottoms consist of acetic acid in which is dissolved the heavier end products, acetic anhydride and ethylidene diacetate.* Also there will be unreacted acetylene removed from the top of the crude splitter. [Emphasis added.]

It is the contention of appellant that this language directs anyone knowing how to run a still, particularly a fractionating still, how to practice the invention. Based upon the law of partial pressures and the differences in the boiling points of the materials, the appellant argues that one skilled in the art would have no difficulty in choosing his operating conditions so as to strip all of the crotonaldehyde from the bottom product of the still. He says that his directions in effect say "boil off everything until there is no crotonaldehyde left," and that one skilled in distillations would know how to do this.

The Board did not agree that one skilled in the art would have such an easy task in effecting this separation, and stated:

The specification does not provide sufficient information to allow one skilled in the art to obtain the desired results without considerable experimentation. The separation will be influenced by many factors, some interacting in an additive or cancelling manner. Thus, the flow rate, temperature, pressure and ratio of feed materials may be varied. Appellant's disclosure is considered to be in the nature of a mere invitation to experiment rather than a sufficient disclosure of how the process is carried out. \* \* \*

The Board further noted the operation of a prior art process disclosed in Patent 2,794,827 to Stanton,<sup>3</sup> and stated:

We do not understand why, in the Stanton et al. process, in the first fractionation column, identified as column 10, the withdrawn overhead vapors contain acetylene, acetaldehyde and acetone and stripped condensate withdrawn at the bottom contains vinyl acetate, acetic acid and other heavy ends (including ethylidene diacetate), while in the described process, the top materials include vinyl acetate and acetic acid, the bottom materials including the ethylidene diacetate. It appears that the crude splitter column 20 described by appellant is similar to column 10 of Stanton et al., yet the materials taken off the top and bottom are different. We do not think that one skilled in the art would, without the exercise of the inventive faculty, know how to carry out the operation in the splitter column so as to obtain the results described by appellant, rather than those obtained by Stanton et al.

In its decision on request for rehearing, the Board went a bit further:

It is further pointed out that one skilled in the art and knowing the results obtained by operation of the still of the Stanton et al. patent would be led to believe that the claimed still would operate in the same manner and would not readily know how to vary the conditions to obtain a different result.

In support of the Board's decision, the Solicitor pointed out that one wishing to practice appellant's invention would have to determine such variables as the richness of the feed to the splitter column and expected variations in that richness, temperatures at top and

<sup>3</sup> The Stanton patent was mentioned in appellant's specification as showing one type of prior art process to which appellant's invention can be applied.

bottom of the splitter column, and feed rates, and would have to correlate these values with pressure, recycle rate, and design of the column itself before he could determine the method of operating his process to achieve appellant's results.

Assuming all of this to be true, it does not answer the question before us. Our concern is whether one of ordinary skill in the art would know how to adjust these operating variables to achieve the desired result.

Appellant has asserted throughout the prosecution of his application that such adjustments would present no more than a routine operating problem to a chemical engineer. He has noted the fact that the materials involved have widely separated boiling points.<sup>4</sup> He has explained the physical phenomenon of the law of partial pressure in multi-component distillations, and argued that a distillation engineer of ordinary skill, being conversant with these physical facts, would know how to operate a still to achieve the results of the specification. It appears from the record that these facts were discussed in an interview between the inventor and the Examiner.

The Examiner and the Board did not dispute the facts presented by appellant, and made no answer to his arguments. We find nothing in the record or in the Solicitor's brief to controvert appellant's position except mere conclusory statements as to the level of skill in the art. Based upon this record, which contains no factual basis for the Board's conclusions, we cannot find that the Board has demonstrated how appellant's specification fails to meet the requirements of 35 U.S.C. 112.

The issue of whether a given disclosure satisfies the requirements of 35 U.S.C. 112 has been considered by this court several times during the past few years. See, e.g., *In re Bartholome*, 55 CCPA —, — F.2d —, 156 USPQ 20 (1967); *In re Engler*, 54 CCPA 1007, 371 F.2d 508, 152 USPQ 432 (1967); *In re Long*, 54 CCPA 835, 368 F.2d 892, 151 USPQ 640 (1966); *In re Honn*, 53 CCPA 1469, 364 F.2d 454, 150 USPQ 652 (1966); *In re Bosy*, 53 CCPA 1231, 360 F.2d 972, 149 USPQ 789; *In re Gay*, 50 CCPA 725, 309 F.2d 769, 135 USPQ 311 (1962). See also *Autogiro Co. of America v. United States*, 384 F.2d 391, 155 USPQ 697 (Ct. Cl. 1967).

[1] As this court observed in *In re Bosy*, supra, the issue of whether a disclosure satisfies the requirements of 35 U.S.C. 112 requires two separate analyses: i.e., first, whether the disclosure contains a full and clear description of the invention, and of the manner and process of making and using it, and second, whether the best mode contemplated by the inventor for carrying out the invention is set forth. As there noted, these two requirements are referred to as the "enabling" and "best mode" requirements of 35 U.S.C. 112. *In re Gay*, supra. Since the brief for the Solicitor argues that the specification does not satisfy either requirement, it is appropriate to note that *each* argument is felt to be unpersuasive when considered according to the analysis set forth in our recent decisions on this point. Where one of ordinary skill in the art would know how to select operating conditions so as to achieve a particular result, the failure to include a recitation of some specific operating conditions in the specification cannot give rise to a

	Boiling Point
Ethylidene Diacetate	166° C.
Crotonaldehyde	102.3° C.
Acetic Acid (glacial)	118.1° C.

(Handbook of Chemistry and Physics, 35th ed., 1953.)



rejection either under the "enabling" or under the "best mode" requirement of 35 U.S.C. 112. *In re Bosy*, supra.

The decision of the Board of Appeals is reversed.  
**REVERSED.**

Worley, Chief Judge, did not participate.

## PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,520,402, Fredrickson, Bolling and Zinkll, VALVE; Reg. No. 293,974 (CRANE), Crane Co., Heating materials—namely, check valves, stop valves, and gate valves; screwed and flanged pipe fittings, cocks, stop check valves, emergency valves, butterfly valves, throttle valves, balanced valves, pressure regulators, temperature control valves, relief valves, exhaust relief valves, safety valves, blowoff valves, back pressure valves; boiler trimmings—namely, fusible plugs, union fittings, gauge cocks, drain cocks; and engine trimmings—namely, cylinder cocks, cylinder relief valves, gauge glass valves, vent valves, steam and ammonia separators for removing condensation, oil separators for removing oil from steam or air, strainers, steam traps, expansion pipe joints, pipe flanges; pipe unions, screwed and flanged; pipe supports and hangers, drip pockets, all made of brass, cast iron, malleable iron, ferrous steel, cast, forged or rolled steel or other alloy; faucets, bibbs, plumbing waste fixtures, flush valves, mixing valves, ball cocks, and supply valves, all made of brass, cast iron, malleable iron or other alloys; lavatory and sink traps made of earthenware, iron, or brass, bath tubs, showers, closets, urinals, lavatories, sinks, laundry wash trays, flush tanks; fountains and bath room trimmings—namely, clothes hooks, shelves, towel bars, holders for tumblers and soap, all made of iron, brass, glass, marble, wood, or earthenware; Reg. No. 426,777 (DIAL-ESE), same, Supply and waste fittings—namely, spouts, handles and escutcheons, combined bath and shower supply fittings, shower supply fittings, supply valves, bath and shower valves, lavatory valves, combined lavatory supply and waste fittings, lavatory supply fittings, sink supply fittings with spray attachment, laundry faucets, bath supply fittings, bath faucets, seat rings, float supply valves, ball cocks, sink supply fittings, sink faucets laundry tub fittings, and lavatory and bath faucets, filed July 12, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1214, Crane Co. v. Chicago Specialty Mfg. Co. By agreement, dismissed with prejudice, Feb. 16, 1968.

2,600,518, Fyler and Rowe, COLOR PICTURE TUBE; 3,179,338, J. Gluffrida, COMPENSATOR FOR EARTH'S MAGNETIC FIELD BY COLOR DOT DISPLACEMENT; 3,222,172, same, METHOD FOR MAKING COLOR TELEVISION PICTURE TUBES, filed Mar. 11, 1968, D.C. S.D.N.Y., Doc. 68-C-1014, The Rauland Corporation v. Columbia Broadcasting System. Notice of dismissal, May 21, 1968.

2,605,077, J. Suozzo, ELEVATOR SYSTEM HAVING DISPATCHING DEVICES; 2,609,227, W. F. Eames, ELEVATOR SYSTEM HAVING PLURAL OPERATING MODES; 2,740,495, Santini and Suozzo, ELEVATOR SYSTEMS; 2,740,496, Santini, Kelper and Suozzo, same; 2,795,296, J. Suozzo, same, filed May 27, 1968, D.C., S.D. Ill. (Peoria), Doc. P-2939, Westinghouse Electric Corporation v. Montgomery Elevator Company and Modern Woodmen of America.

2,699,227. (See 2,695,077.)

2,740,495. (See 2,695,077.)

2,740,496. (See 2,695,077.)

2,795,296. (See 2,695,077.)

3,018,189, G. W. Traver, METHOD OF CONDITIONING POLYETHYLENE SURFACES FOR THE ADHESION OF MATERIALS COATED THEREON AND RESULTING PRODUCT, filed May 23, 1968, D.C., S.D. Ill. (Springfield), Doc. 4235, E. I. du Pont de Nemours and Company v. Mobil Oil Corporation.

3,057,467, R. R. Williams, PACKAGE FOR TREATING AGENTS AND DISPOSABLE APPLICATOR FORMING A PART THEREOF; 3,129,311, G. Bergstrasser, DAMPING MEANS FOR MAGNETIC REED CONTACT, filed Nov. 21, 1966, D.C., S.D.N.Y., Doc. 06-C-3944, Holland-Rantos Company, Inc. v. Canaan Products, Inc. et al., Consent order, action dismissed with prejudice, May 31, 1968.

3,129,311. (See 3,057,467.)

3,179,336. (See 2,690,518.)

3,205,624, S. I. Weiss, ANNULAR CUTTING WHEELS, filed May 9, 1968, D.C., E.D.N.Y. (Brooklyn), Doc. 68-C-458, Electronics Semi-Conductor Corp. v. M. A. Martin, Inc.

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3,266,053, K. Rochla, METHOD OF MANUFACTURING CARRIER BAGS OF WELDABLE MATERIAL, filed June 18, 1968, D.C., District of Columbia (Washington), Doc. 1522-68, Windmoller & Holcher v. C-Thru Products, Inc. et al.

3,249,177, S. V. Chelminski, ACOUSTIC WAVE IMPULSE GENERATOR REPEATER, filed May 28, 1968, D.C., N.D. Calif. (San Francisco), Doc. 49321, Bolt Associates, Inc. v. Ritz Industries.

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3,343,196, P. L. Barnhouse, SCRUB PUFF, filed June 7, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68-952-1H, Paul L. Barnhouse v. Product Improvement Corporation.

Reg. No. 293,974. (See 2,520,092.)

Reg. No. 426,777. (See 2,520,092.)

U.S. GOVERNMENT PRINTING OFFICE: 1968

## DEFENSIVE PUBLICATIONS

PUBLISHED NOVEMBER 26, 1968

Published at the request of the applicant or owner in accordance with Notice of Apr. 11, 1968, 849 O.G. 1221. The abstracts are identified by serial number of the applications and arranged in chronological order. The heading of each abstract of application published herein indicates the number of pages of specification, including claims and sheets of drawing contained in the application as originally filed. The files of these applications are available to the public for inspection and reproduction may be purchased for 30 cents a sheet.

Applications published under the Defensive Publication Program have not been examined as to the merits of alleged invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

549,423  
**LINEAR POLYESTER MATERIALS DYED WITH 1,4-DIAMINO-(2 OR 3), 5-DINITRO-ANTHRAQUINONE**  
David J. Wallace and James M. Straley, both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662  
Filed May 11, 1966. Published Nov. 26, 1968  
Class 8—39

No Drawing. 5 Pages Specification  
Textile materials of linear polyester, e.g. polyethylene terephthalate fibers, having a melting point of at least 200° C. dyed with 1,4-diamino-(2 or 3), 5-dinitro-anthraquinone.

556,587  
**PROCESS FOR THE PRODUCTION OF FAST BLACK DYEINGS WITH HALO-IMINO HETEROCYCLIC COMPOUNDS**  
John G. Fisher and James M. Straley, both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662  
Filed June 10, 1966. Published Nov. 26, 1968  
Class 8—32

No Drawing. 10 Pages Specification  
A method for producing black dyed polyacrylonitrile textile materials which comprises (1) pre-dyeing the fiber with an active hydrogen compound and (2) subsequently dyeing the fiber with a compound having the formula



wherein R<sub>1</sub> is alkyl; R<sub>2</sub> and R<sub>3</sub> each is hydrogen, alkyl, or aryl, or when taken collectively R<sub>2</sub> and R<sub>3</sub> are the residue of a fused benzene ring; Q is an oxygen, sulfur or nitrogen atom; and X is halogen.

561,732  
**EXHAUST DYEING PROCESS FOR DYES CONTAINING 2,3-DICHLORO-6-QUINOXALINECARBONYLAMINO OR VINYL SULFONE REACTIVE GROUPS**  
Victor Tullio, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
Filed June 30, 1966. Published Nov. 26, 1968  
Class 8—54.2

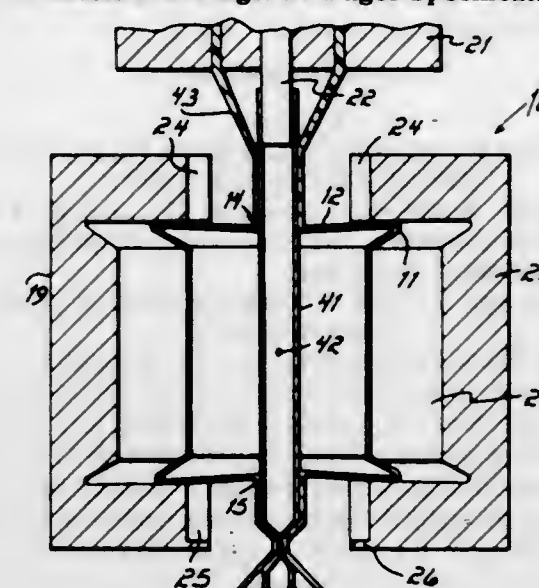
No Drawing. 19 Pages Specification  
In a process for exhaust dyeing cellulosic fibers with fiber-reactive dyes having a 2,3-dichloro-6-quinoxalinecarbonylamino or a vinyl sulfone group, wherein said process salt is added to the dye liquor to promote exhaustion of dye onto the fiber and alkali is added to the dye liquor to promote interaction of dye and fiber, the improvement which comprises adding simultaneously and stepwise to the dye liquor a mixture of salt, for example, sodium chloride, and an alkali selected from sodium bicarbonate, sodium carbonate and trisodium phosphate.

571,633  
**METHOD OF PREVENTING IMAGE DECAY OF PHOTO RESIST ON TRANSPARENT SUBSTRATES**  
Stuart M. Oliver, 424 N. Oakhurst Drive, Beverly Hills, Calif. 90210  
Filed Aug. 10, 1966. Published Nov. 26, 1968  
Class 96—84  
1 Sheet Drawing. 9 Pages Specification



In the field of photoresist masking for high resolution substrates of transparent or translucent materials, light scattering decreases the definition of the mask. This invention aids in the reduction of such light scattering. The invention comprises the method of improving resolution of photoresist masks by coating the surface of the transparent or translucent substrate, prior to the application of the photoresist coating, with a thin film of material taken from the group consisting of metallic oxides, nitrides, sulfides, selenides, tellurides, arsenides, antimonides and silicon monoxide. The particular component of the thin film material should be chosen to absorb radiation over the spectral range of photosensitivity of the photoresist coating.

598,013  
**THREAD SPOOL AND METHOD OF MANUFACTURE BY BLOW MOLDING**  
Gerard V. Delaire, % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662  
Filed Nov. 30, 1966. Published Nov. 26, 1968  
Class 242—118.7  
2 Sheets Drawings. 16 Pages Specification



A thermoplastic spool formed of a hollow barrel hav-



ing rimmed ends integral with and located at opposite ends thereof, a core tube disposed between and secured to the rimmed ends and located axially within the barrel. The hollow spool is formed by placing a core tubing having air exit holes therein between mold halves in a mold cavity, extruding a softened thermoplastic tube axially around the core tubing, bringing the mold halves together and sealing the ends of the outer tube and one end of the core tube, introducing a fluid under pressure into the core tube which passes through the exit holes therein into the outer tube forcing it into the shape of the mold, cooling the thus formed hollow spool and removing it from the mold. Alternatively, the core tubing may be formed simultaneously with the outer tube by extruding a softened thermoplastic material about a sizing mandrel. In this alternative embodiment, the outer tube is blown to its final shape by inserting a blowing needle through the outer tube.

617,897

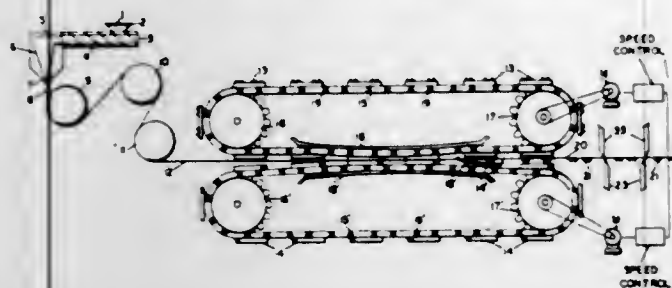
# METHOD AND APPARATUS FOR FORMING SHAPED ARTICLES FROM A CONTINUOUSLY MOVING BODY OF THERMOPLASTIC MATERIAL

Charles J. Villier and Charles G. Chandler, both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662

Filed Feb. 23, 1967. Published Nov. 26, 1968

Class 264—151

2 Sheets Drawings. 13 Pages Specification



A method for forming shaped articles by passing a heat-softened body of thermoplastic material, either drawn or undrawn between matching die or mold halves which are moving in the direction and at the speed of the thermoplastic body, forcing the mold or die halves into forming relationship, cooling the formed article, separating the matched die halves, and removing the formed article. The apparatus used to accomplish the method includes die mountings which cause or permit the die halves to move vertically into forming relationship and horizontally at the speed of the heat-softened body of thermoplastic material. The die halves are brought together either by hydraulic pressure applying means or by guides located along their path of movement.

630,114

# PROCESS FOR REMOVING DIVINYLAACETYLENE FROM AMIDE SOLVENT

Donald Nellis Robinson, Louisville, Ky., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 11, 1967. Published Nov. 26, 1968

Class 260—678

1 Sheet Drawing. 9 Pages Specification

The process of manufacturing monovinylacetylene from acetylene wherein (1) divinyl acetylene and acetylenic polymers in an amide solvent are mixed with (2) aromatic hydrocarbon solvent having a specific gravity below about 0.97 and water, said divinylacetylene and acetylenic polymers dissolving in the aromatic hydrocarbon phase which phase is then separated from the aqueous phase, the improvement wherein the pH of the resulting mixture of said (1) and (2) is maintained at a pH between about 7.0 and about 9.5, by adding, as needed, an amine and, optionally,

an inert soluble basic ionizable salt, followed by separating the aromatic hydrocarbon phase from the aqueous amide solvent phase. A preferred process is one wherein the weight ratio of said amine to said salt is within the range of about 1:0.05 to about 1:0.15, said hydrocarbon solvent is toluene, said amine is diethanol amine, said salt is trisodium phosphate and said amide is dimethylformamide.

Additional amines which will perform in equivalent manner to the preferred diethanol amine include triethanol amine and tetraethylene pentamine. Although trisodium phosphate is the preferred salt, other salts which can be utilized include sodium benzoate, tetraethyl ammonium bromide, sodium phthalate and sodium terephthalate. Other hydrocarbon solvents which can be utilized include xylene and ethylbenzene. Additional amide solvents include those in U.S. Patent 3,147,312.

emulsion which heretofore caused large amounts of divinylacetylene and polymer, with water and amide solvent, to be carried to the amide solvent recovery column.

630,130

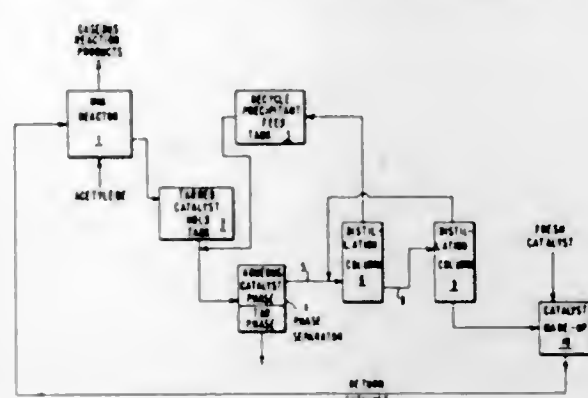
# PROCESS FOR SEPARATING BY-PRODUCT TAR FROM ANHYDROUS MONOVINYLAACETYLENE CATALYST SOLUTION

Earle Eugene Fischer, Richmond, Va., and Richard Misak Tabibian, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 11, 1967. Published Nov. 26, 1968

Class 260—678

1 Sheet Drawing. 12 Pages Specification



The process of polymerizing acetylene to monovinyl acetylene in the presence of an essentially anhydrous cuprous chloride catalyst solution containing less than 40% by weight of said solution of an anhydrous liquid carboxylic acid amide solvent containing not more than six carbon atoms, monovinylacetylene being recovered from the exit gas and the resulting tar-containing catalyst being continuously withdrawn, the improvement being one wherein said withdrawn tar-containing catalyst is contacted with a tar-precipitating amount of an aqueous solution of an aliphatic nitrile compound such as acetonitrile to insolubilize and precipitate said tar, followed by recovering said cuprous chloride catalyst which can be recycled for further acetylene polymerization. This removal of tar permits the process to be run at high temperatures and high conversion rates. It is preferred that said nitrile compound be present in aqueous solution between about 3% and 30% by volume and that the ratio of said aqueous tar precipitating solution to said tarred catalyst solution be between about 0.5:1 to about 2:1 by volume. The aliphatic nitrile compounds that can be utilized should have a boiling point below that of said amide solvent and include valeronitrile, dimethylpropionitrile, 1-methylbutyronitrile, propionitrile and butyronitrile. The heretofore described use of said nitrile compounds facilitates the removal of same from the reaction catalyst.

669,425

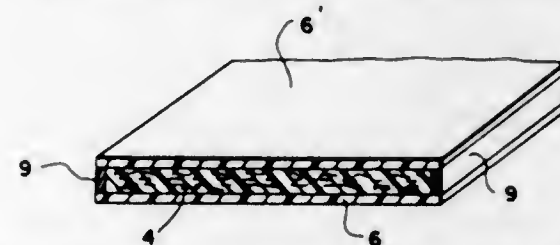
# WRINKLED SURFACE AND THE METHOD OF PREPARING SAME

Daniels L. Edwards, Jr., and Parker J. Trent, both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662

Filed Sept. 21, 1967. Published Nov. 26, 1968

Class 161—194

1 Sheet Drawing. 3 Pages Specification



Preparation of re-enforced synthetic resin articles of manufacture having a decorative wrinkled surface by coating a particular polyester film with a layer of liquid, thermosetting resin containing fibrous re-enforcement material, curing the coated film and stripping away the polyester film. The polyester film is the condensation product of terephthalic acid, isophthalic acid and 1,4-cyclohexanedimethanol in a molar ratio of about 5:1:6.

678,114

# POLYESTER TEXTILE MATERIALS DYED WITH ANTHRAQUINONE DYES

James M. Straley, Ralph R. Giles, and David J. Wallace, all % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662

Filed Oct. 25, 1967. Published Nov. 26, 1968

Class 8—39

No Drawing. 13 Pages Specification

Polyester textile materials dyed with an anthraquinone dye having a substituted or unsubstituted sulfamoyl group at the 2-position.

717,416

# PHENOXAONIUM COMPOUNDS

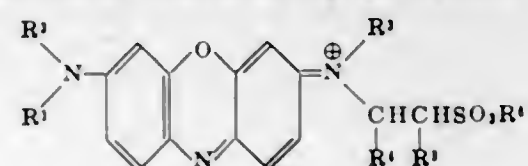
David J. Wallace and John I. Dale III, both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662

Filed Mar. 29, 1968. Published Nov. 26, 1968

Class 260—243

No Drawing. 14 Pages Specification

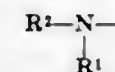
Phenoxazonium cations having the formula:



wherein

R<sup>1</sup> is hydrogen, a lower alkyl radical, or a phenyl radical;

R<sup>2</sup> is hydrogen or a lower alkyl radical;

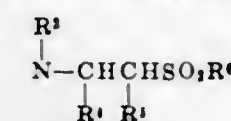


taken collectively represent morpholino- or piperidino;

R<sup>3</sup> is a lower alkyl radical;

R<sup>4</sup> and R<sup>5</sup> are the same or different and each is hydrogen or lower alkyl;

R<sup>6</sup> is vinyl or the group —CH<sub>2</sub>CH<sub>2</sub>—R<sup>7</sup> wherein R is a lower alkylthio radical, an arylthio radical, a dicarboximido radical, a lower alkylamino radical, an arylamino radical, morpholino, or piperidino; and



taken collectively represent a morpholino-1,1-dioxide group are disclosed.

The compounds are prepared according to known procedures by reacting the appropriate p-nitrosoarylamine with the appropriate m-aminophenol in the presence of a strong acid. The disclosed compounds are useful as dyes for polyacrylonitrile and acid modified polyester textile materials.

736,248

# POLYFULVENES HAVING A CONTINUOUS NETWORK STRUCTURE AND A MANUFACTURING PROCESS THEREFOR

John F. Fellers, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed June 12, 1968. Published Nov. 26, 1968

Class 260—93.1

No Drawing. 6 Pages Specification

6,6-dimethylfulvene monomer is irradiated in the absence of water with gamma rays from Cobalt 60 to produce a polyfulvene having a continuous network structure. The polymer has good impact strength, a high glass transition temperature, and is thermosetting, and can be used as a structural material for vehicle body components, as a film forming constituent, or as a fiber. Other lower alkyls can be substituted for the methyl radicals on the number 6 carbon, and minor substitutions also can be made on the ring atoms of the monomer. Irradiation is carried out at a relatively low temperature, usually about 0° C., after the monomer has been carefully purified.

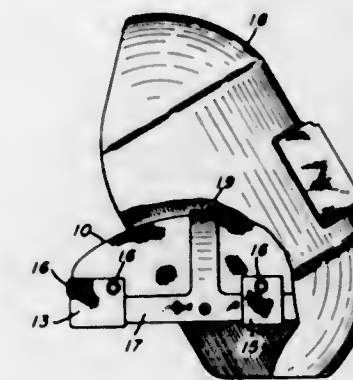


# PATENTS

GRANTED NOVEMBER 26, 1968

## GENERAL AND MECHANICAL

**3,412,406**  
**ARC WELDER'S ATTACHABLE CLOTH CAP**  
 Charles E. Blackburn, 105 Lexington Ave.,  
 Bloomfield, N.J. 07003  
 Filed June 22, 1965, Ser. No. 466,129  
 1 Claim. (Cl. 2-8)



A cloth work cap attachable to an arc welder's helmet and having a front flap and rear tabs extending from the rim thereof, the flap and tabs being adapted to overlap the flat headband of the helmet and having end portions attachable to the crown of the cap by snap fasteners.

**3,412,407**  
**INFANT'S RECEIVING BLANKET**  
 Virginia Key, 332 Amherst St.,  
 East Orange, N.J. 07018  
 Filed Sept. 19, 1966, Ser. No. 580,264  
 2 Claims. (Cl. 2-69.5)

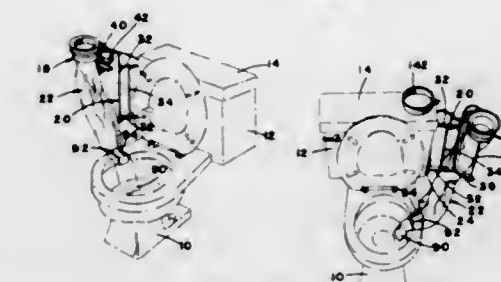
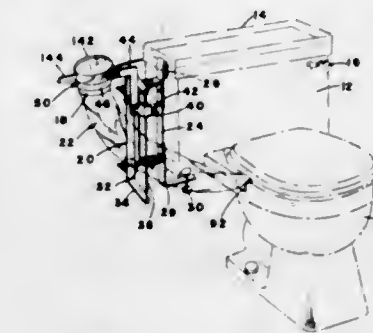


A receiving blanket made from a single square piece of goods by folding up one corner partially and sewing the edges of the corner to the remainder of the blanket leaving an opening at the top to provide a trapezoidal pocket. The open portion of the pocket is just wide enough for the girth of an infant. Thus the pocket will hold the infant in position while allowing sufficient room for his legs to move.

**3,412,408**  
**URINAL ATTACHMENT FOR TOILET BOWL**  
 John H. Michal, Jr., 2467 Auburn Road,  
 York, Pa. 17402  
 Filed July 1, 1966, Ser. No. 562,349  
 14 Claims. (Cl. 4-99)

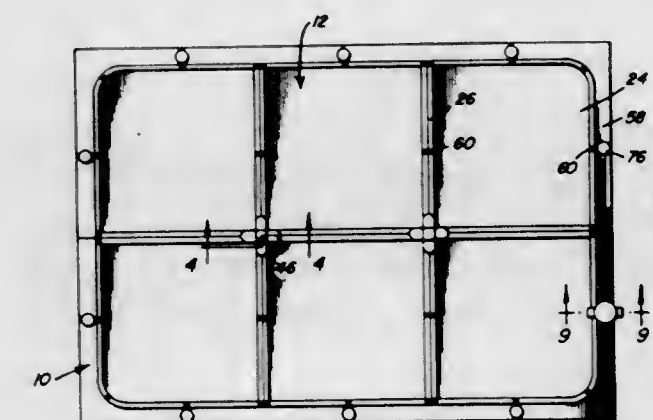
1. A urinal attachment for a conventional toilet bowl, having a flush tank mounted adjacent the rear thereof

and connected thereto in conventional manner to flush the bowl, said urinal attachment comprising in combination, a urinal bowl having a discharge opening in the bottom thereof, bracket means to which said urinal bowl is connected for support thereby, means to support said bracket means adjacent said toilet bowl and flush tank, a



flexible disposable drain duct connected at the inlet end thereof to said discharge opening of said urinal bowl and extending downwardly therefrom to dispose the discharge end thereof in the toilet bowl for discharge therein, and means detachably securing said drain duct adjacent its discharge end to said toilet bowl.

**3,412,409**  
**SECTIONAL SWIMMING POOL COVER**  
 Harry E. Putney, 1234 E. Circle Drive,  
 Tucson, Ariz. 85719  
 Filed Dec. 30, 1965, Ser. No. 517,761  
 6 Claims. (Cl. 4-172)

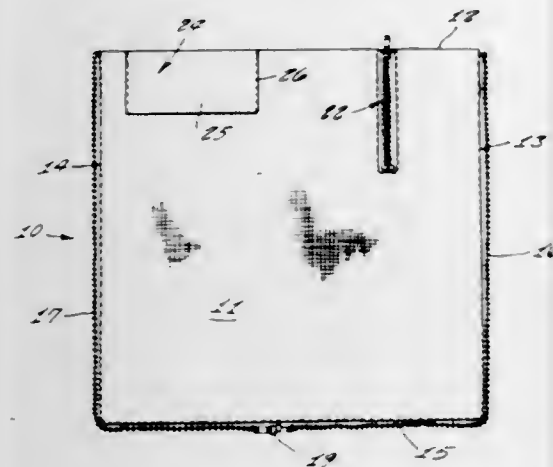


A swimming pool cover comprising a number of removable interconnecting sections maintained in abutting relation by a framework. The cover is maintained in substantially coplanar relation with respect to the top



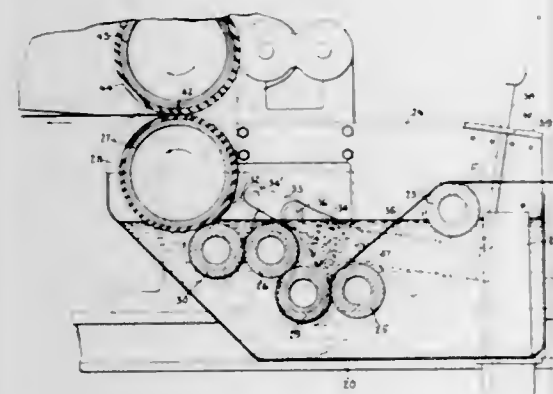
peripheral pool edge by means of flotation members interposed between the undersurface of the pool cover and the water surface.

**3,412,410**  
**STROLLER BLANKET**  
Traudl M. Denfeld, 97 Whitman Ave.,  
Islip Manor, N.Y. 11751  
Filed Apr. 12, 1967, Ser. No. 630,314  
1 Claim. (Cl. 5—343)



A blanket for an infant when placed in a stroller, comprising a panel having securing means around three edges thereof so that the panel may be folded over to form a bag, a slide fastener extending from the center of the fourth edge when the panel is folded to form the bag, the slide fastener extending a short distance so as to allow selectively the opening up thereof to form a pair of flaps.

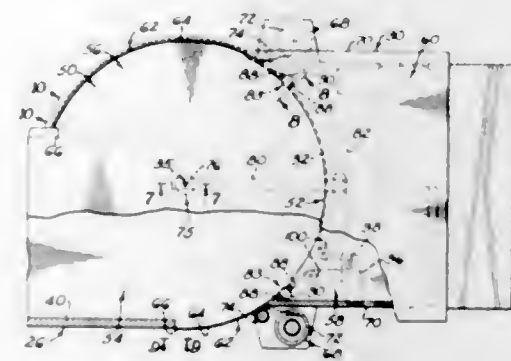
**3,412,411**  
**METHOD FOR DYEING TUBULAR KNIT MATERIAL**  
Samuel Cohn, New York, Eugene Cohn, Great Neck, and Frank Catallo, Elmont, N.Y., assignors to Samco Holding Corporation, Woodside, N.Y., a corporation of New York  
Application Aug. 14, 1963, Ser. No. 302,094, now Patent No. 3,263,458, dated Aug. 2, 1966, which is a continuation of application Ser. No. 55,672, Sept. 13, 1960. Divided and this application June 27, 1966, Ser. No. 560,764  
8 Claims. (Cl. 8—151)



A process for the continuous dyeing of tubular knitted fabrics is disclosed. The process includes alternately exposing opposite sides of the tubular knitted fabric to a dye bath while the fabric is in a flat condition and continuously submerged in the dye bath. A uniformly dyed tubular knitted fabric, free of edge marks, is thereby achieved.

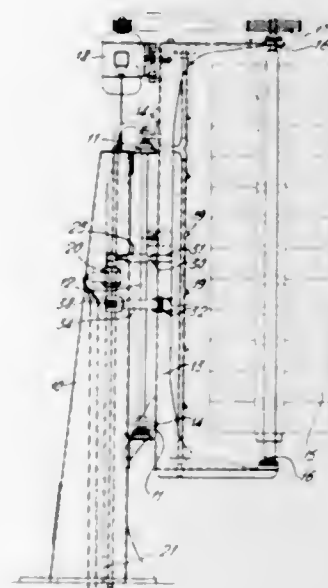
**3,412,412**  
**AIRCRAFT LOADING AND UNLOADING RAMP WITH PIVOTABLE OUTER PASSAGEWAY**  
Hans F. Kjerulf, Los Angeles, and Harry L. Warner, West Covina, Calif., assignors to Stanray Corporation, Chicago, Ill., a corporation of Delaware  
Filed Jan. 27, 1966, Ser. No. 523,455  
10 Claims. (Cl. 14—71)

A passenger loading and unloading ramp for airplanes which includes an arcuate, convex outer end having an angular extent of more than 180° and having a diameter greater than the width of the portion of the ramp lying between the outer and inner ends thereof, and which further includes an outer cab having an arcuate, concave



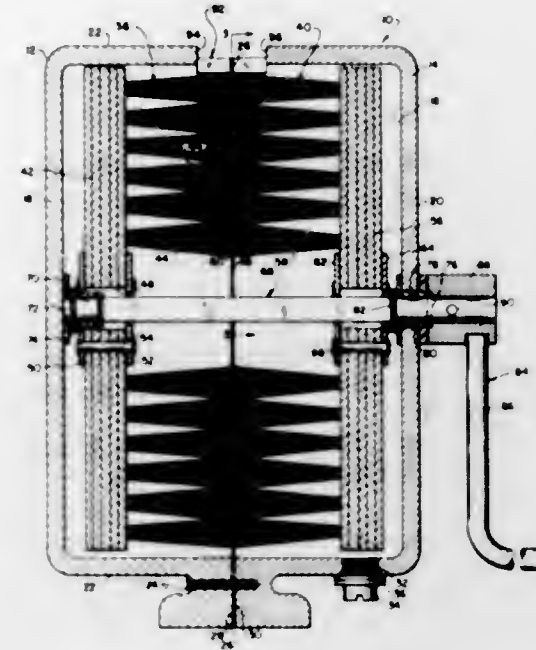
surface of a smaller angular extent than and movable along the arcuate, convex outer end of the ramp, whereby the outer cab is pivotable or rotatable relative to the arcuate, convex outer end of the ramp through a large angle, e.g., 100° or more.

**3,412,413**  
**APPARATUS FOR WASHING VEHICLES**  
Charles W. Huxley, Birmingham, and George A. N. Jennings, Sutton Coldfield, England, assignors to Sparkbrook Developments Limited, Birmingham, England, a British company  
Filed July 11, 1966, Ser. No. 564,315  
3 Claims. (Cl. 15—21)



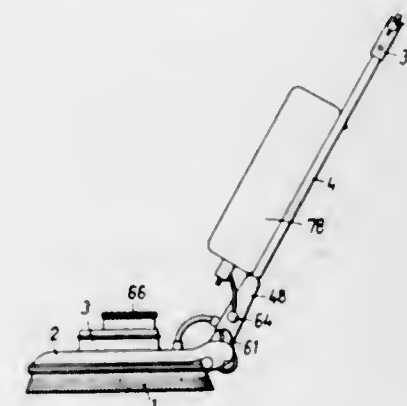
In vehicle washing apparatus including a generally cylindrical brush which is rotated over the surface to be washed and which is moved towards that surface by an actuator fed by an hydraulic circuit, the maximum pressure of the circuit is controlled by an adjustable pressure relieving valve.

**3,412,414**  
**GOLF CLUB CLEANING DEVICE**  
Donald D. Perkins, 1458 Fullen Road,  
Columbus, Ohio 43224  
Filed July 25, 1966, Ser. No. 567,420  
7 Claims. (Cl. 15—21)



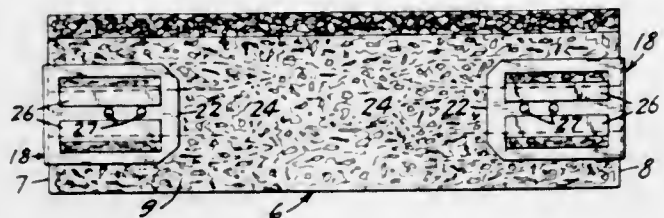
A golf club cleaning device in which a pair of opposed brushes are rotatably mounted in a housing for reception of a club head between them, the brushes being resiliently urged together to maintain the effectiveness of the brushes despite wear.

**3,412,415**  
**ELECTRICALLY DRIVEN FLOOR TENDING AND CLEANING MACHINES**  
Hubert Brab, Richterich, Germany, assignor to Messrs. Vertex-Vertriebsgesellschaft mit beschränkter Haftung, Aachen, Germany, a corporation of Germany  
Filed June 3, 1965, Ser. No. 460,911  
Claims priority, application Germany, June 10, 1964, V 26,129  
16 Claims. (Cl. 15—50)



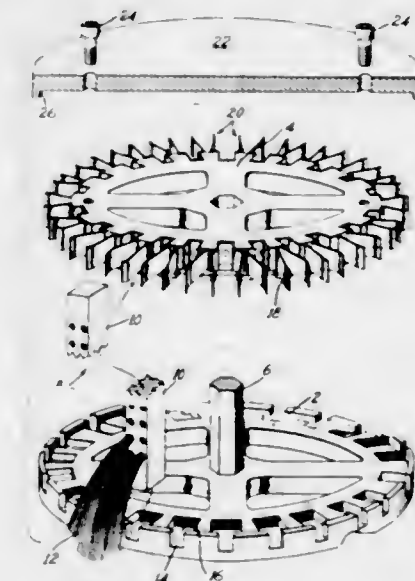
A floor polishing and cleaning machine is provided whereby an electric motor drives a tool through a starting or overrunning clutch and reduction gearing. The clutch is operative to prevent driving of the tool until the motor has reached its normal drive speed and torque. The machine includes a housing portion and a handle portion which is pivotally connected to the housing portion and removable therefrom. A dual safety device is provided in the handle portion for preventing accidental starting of the motor. The starting clutch and reduction gearing may also comprise a hydraulic gearing assembly. Means are provided for connecting auxiliary devices, such as a wax spray device to facilitate floor polishing.

**3,412,416**  
**SPONGE MOPHEAD AND ATTACHING CLIPS**  
John G. Simon, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware  
Filed July 31, 1967, Ser. No. 657,258  
6 Claims. (Cl. 15—118)



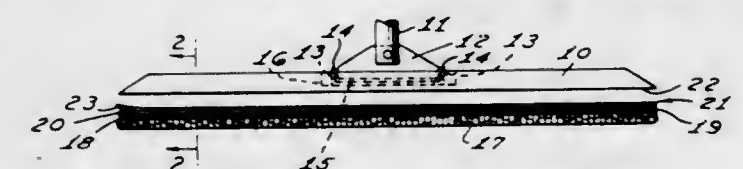
A sponge mophead adapted for attachment on the mounting plate of a mop frame by means of two separable attaching clips having prong means piercing the prismatic sponge body.

**3,412,417**  
**ROTARY BRUSH ASSEMBLIES**  
Edward J. Ahern, Manchester, and Richard B. Maxner, Amherst, N.H., assignors to S. A. Felton & Son Company, Incorporated, Portland, Maine, a corporation of Maine  
Filed Aug. 25, 1967, Ser. No. 663,419  
6 Claims. (Cl. 15—183)



A rotary brush assembly including brush elements which may be easily removed from the brush assembly and replaced with new elements. The brush elements are held between two end members which have means for receiving and retaining the brush elements and for readily releasing the brush elements when it is desired to replace them.

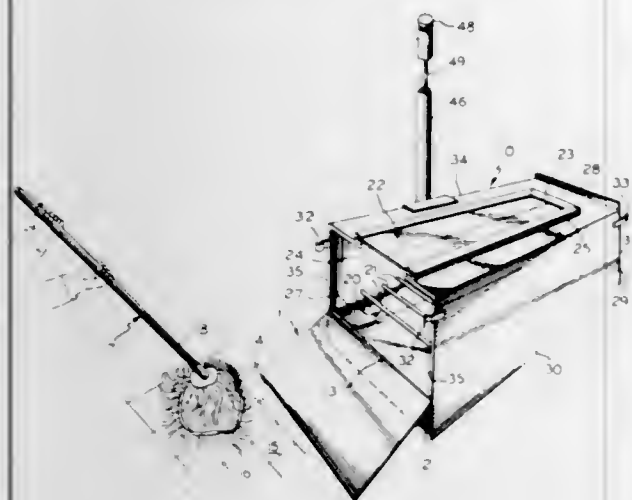
**3,412,418**  
**ADHESIVELY ATTACHED DISPOSABLE MOP**  
Dana K. Griffin, Detroit, Mich., assignor of fifty percent to John R. Wilson, Birmingham, Mich.  
Continuation-in-part of application Ser. No. 627,793, Apr. 3, 1967. This application Feb. 7, 1968, Ser. No. 707,369  
1 Claim. (Cl. 15—229)



A mop having a releasably attached, disposable mop pad which is secured to a mop pad carrier by a pressure-sensitive adhesive means.

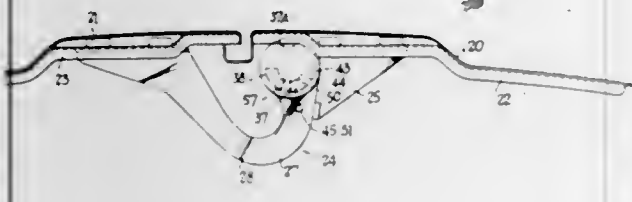


**3,412,419**  
**MOP DELINTER CART**  
 Ruth K. Barnhart, 918 S. 2nd St.,  
 Festus, Mo. 63028  
 Filed Nov. 7, 1966, Ser. No. 592,533  
 8 Claims. (Cl. 15—257.1)



The dust-sealable container includes a ramp providing a dust-sealing closure for the container aperture. A delinting grill is disposed within the container at the head of the ramp to facilitate transference of the cleaning head from the ramp to the grill. A self-sealing slot communicates with the container aperture to receive the handle of a cleaning utensil and thereby permit the utensil to be disposed on the support means in the proximity of an orifice through which dust-settling disinfectant fluid is supplied to the container.

**3,412,420**  
**HINGES**  
 Clifford Alexander Seckerson, Iver Heath, England, assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware  
 Filed June 30, 1966, Ser. No. 561,870  
 Claims priority, application Great Britain, July 12, 1965, 29,379/65  
 7 Claims. (Cl. 16—146)

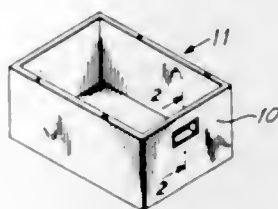


A hinge which can be locked in a predetermined position and manually released includes first and second overlying members which are pivoted together for relative movement. The first member carries a latch which normally rides on the overlying surface of the second member and the second member has an aperture for snap receipt of the latch when said members are in the predetermined position. The hinge also includes means for manually releasing the latch to permit further relative movement of the members.

**3,412,421**  
**HANDLES**  
 Bernard M. Gerber, 80 Hamilton Drive,  
 Roslyn, N.Y. 11576  
 Filed May 5, 1966, Ser. No. 547,805  
 1 Claim. (Cl. 16—124)

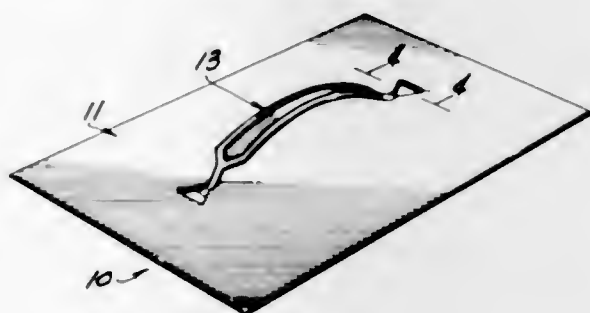
This invention relates to rearwardly mounted handles

for furniture use and for sliding doors. The handles are inserted into an aperture until a peripheral recessed ledge



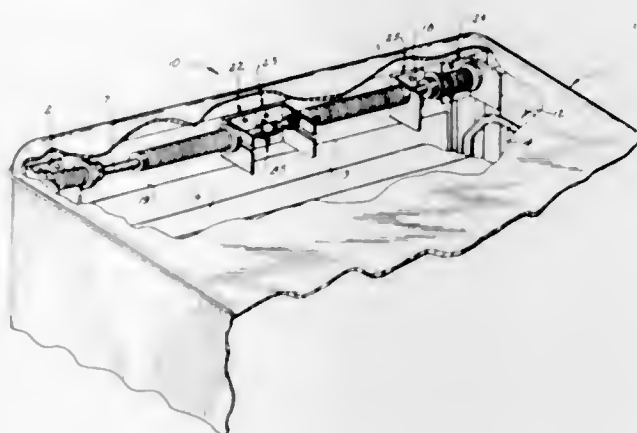
or wall thereon suitably engages a co-acting portion located in the drawer or door.

**3,412,422**  
**HANDLE ASSEMBLY**  
 Charles L. Champlin, Rittman, Ohio, assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware  
 Filed Apr. 22, 1966, Ser. No. 544,525  
 1 Claim. (Cl. 16—125)



1. A handle assembly for use with a container, said assembly comprising a base member for engaging a concealed surface of the container, and a handle connected to said base member for projecting from the container; said base member including a plurality of foldable connected panels arranged in superimposed relation whereby one of said panels is sandwiched between a pair of second panels, one of said second panels having a flap foldably connected to an edge thereof and being secured to a corresponding edge portion of the other of said second panels; one of said second panels and said sandwiched panel being provided with means for accommodating an end portion of said handle.

**3,412,423**  
**COUNTERBALANCING APPARATUS**  
 John W. Binns, Claridon Township, Marion County, Ohio, assignor to Overhead Door Corporation, Dallas, Tex., a corporation of Indiana  
 Filed Feb. 2, 1967, Ser. No. 613,534  
 8 Claims. (Cl. 16—198)



A counterbalancing mechanism for an upwardly acting door is secured to the frame around a door opening and comprises a pair of coaxial shafts rotatably supported at

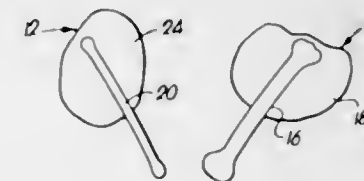
the ends thereof upon the door frame of a truck, for example, near the upper edge of the opening. Each of the shafts supports a cable drum which is securely fastened thereto, and the cables are connected between said drums and the lower end of said door. The counterbalancing mechanism is provided with coupling means interconnecting said shafts and permitting a limited amount of relative rotation of said shafts. Tension means connected between said shafts and said door urges said shafts to wind the cables on the drums.

**3,412,424**  
**BONE PINNING MACHINE**  
 Frank M. Brown, Jean A. Burton, and Gerald L. Helgeson, Austin, and Jesse A. Willcox, Excelsior, Minn., assignors to Geo. A. Hormel & Company, Austin, Minn., a corporation of Delaware  
 Filed Aug 12, 1966, Ser. No. 572,077  
 8 Claims. (Cl. 17—1)



1. Apparatus for immobilizing an articulated joint between a pair of bones in a chunk of meat, said apparatus comprising a support, releasable clamping means mounted on said support for releasably clamping a chunk of meat therein, alignment means shiftably interconnected with the clamping means for relative shifting movement therebetween to cause shifting of the bones of the articulated joint in the chunk of meat into more aligned relation, joint immobilizing mechanism having pin means projecting outwardly therefrom, an impeller means positioned in proximal relation with said clamping means and having means thereon for releasable engagement and support of said joint immobilizing mechanism, said impeller means being operable to impel the joint immobilizing mechanism towards said clamping means whereby said pin means will pierce and be driven into the bones of the chunk of meat at the articulated joint thereof to interlock the bones in their aligned relation.

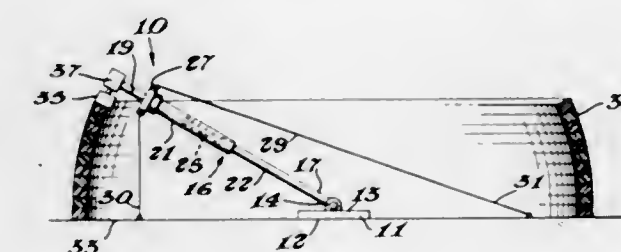
**3,412,425**  
**METHOD OF PREPARING A FOWL WING**  
 James L. Sturm, 4513 Maxwell Road,  
 St. Joseph, Mo. 64506  
 Filed Oct. 11, 1966, Ser. No. 585,892  
 5 Claims. (Cl. 17—45)



1. A method of producing at least one simulated drumstick from a defeathered wing of a fowl wherein the wing has a bone covered with meat, said method comprising the steps of:  
 separating said bone and said meat from the remainder of said wing; and

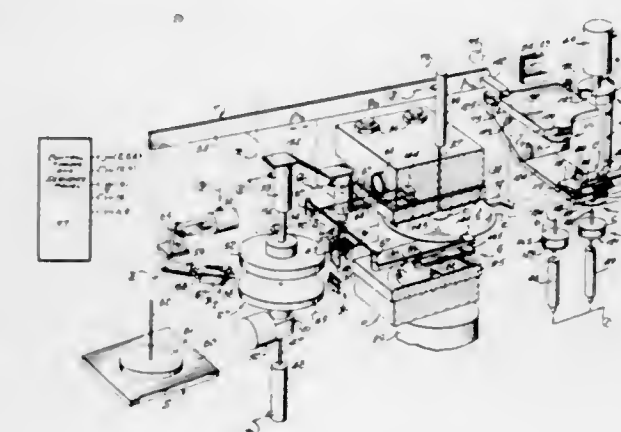
shifting said meat along the bone from one of its ends toward the opposite end thereof until said meat is formed into an enlarged mass at said opposite end.

**3,412,426**  
**APPARATUS FOR THE PREPARATION OF ELLIPTICAL STRUCTURES**  
 William W. O'Dell, Jr., Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
 Filed Dec. 19, 1966, Ser. No. 602,898  
 6 Claims. (Cl. 18—5)



An apparatus is described for the preparation of generally elliptical structures by sequentially depositing strips of a building material in a helical manner, the apparatus consists essentially of a three dimensional string and pencil control for a material depositing head.

**3,412,427**  
**APPARATUS FOR MANUFACTURING DISC RECORDS**  
 Joseph Flusfeder, 93 Cromwell Court, Berkley Heights, N.J. 07922, and Leonard Palmer, 22 Lakeview Ave., Florham Park, N.J. 07932  
 Filed June 23, 1965, Ser. No. 466,167  
 13 Claims. (Cl. 18—5.3)



1. In an apparatus for manufacturing disc records, press means situated along a predetermined path for pressing a disc record from a cake, cake-molding means situated along said path in advance of said press means for molding a cake to be subsequently pressed into a record by said press means, trimming means situated along said path subsequent to said press means for trimming flash from the periphery of a previously pressed record, so that said cake-molding means, said press means, and said trimming means are located one after the other along said path, and transfer means movable along said path for transferring a cake molded by said cake-molding means into said press means, for transferring a record by said press means to said trimming means, for transferring a previously trimmed record away from said trimming means, and for transferring at least one label into said press means to be pressed into a record formed by said press means from a cake therein.



3,412,428

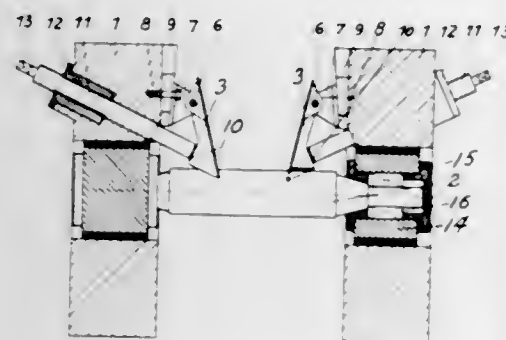
# MEANS FOR ADJUSTING THE END WALLS OF THE ROLL GAP OF ROLLING MILLS FOR THE PRODUCTION OF SHEETS OR STRIPS FROM PARTICLES, PARTICULARLY METAL PARTICLES

Werner Marx, Düsseldorf, Germany, assignor to Schloemann Aktiengesellschaft, Düsseldorf, Germany, a German company

Filed July 15, 1966, Ser. No. 565,490

Claims priority, application Germany, July 19, 1965, S 37,409

4 Claims. (Cl. 18—9)



Means for adjusting the movable end walls of a feeding container, and thereby limiting the breadth of flow of particles, particularly metal particles, to the roll gap of a rolling mill for the production of sheets, plates or strips from particles, wherein pressure spindles extend towards the roll gap through the housing cheeks in which the rolling-mill rolls are journaled, and bear against the end walls of the feeding container in the neighborhood of the roll gap, to support the thrust of the particles against the said end walls.

The end walls are preferably pivotally mounted on axially slidable shafts journaled in bearing blocks secured to the housing cheeks, the breadth of flow of the particles being adjustable by lifting slidable wedges which are interposed between the bearing blocks and the housing cheeks.

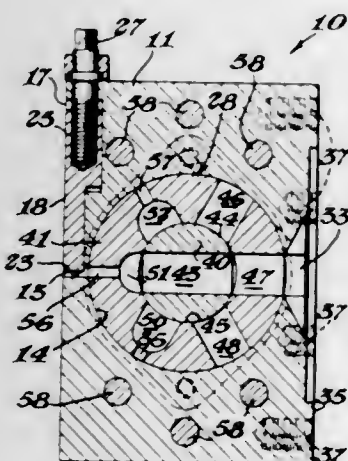
3,412,429

# EXTRUSION DIE

Kenneth Nold, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Nov. 2, 1966, Ser. No. 591,537

6 Claims. (Cl. 18—12)



A die is disclosed which has an inner rotor having a plurality of passageways which provide communication between the inlet of the die and the extrusion orifice, each of the passageways has a varying land length and the passages can be selectively positioned by moving the rotor to vary the land length in the stream of plastic ma-

terial in the extruder. The die is of principle value in the extrusion of foam plastics.

3,412,430

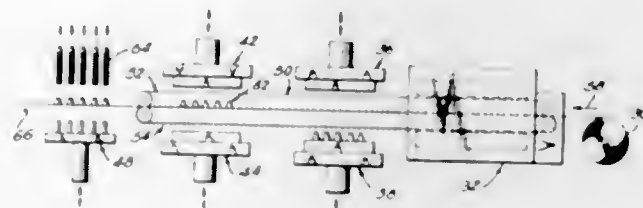
# CONVEYOR INDEXING APPARATUS

Norman Zwiebel, Bayside, N.Y.

(132—29 33rd Ave., Flushing, N.Y. 11354)

Continuation-in-part of application Ser. No. 484,048, Aug. 31, 1965. This application Dec. 5, 1966, Ser. No. 630,778

23 Claims. (Cl. 18—19)



A conveyor chain drive in which a piston drives a rack which in turn drives a pinion, a stop being provided for the rack and being adjustable according to the pitch of teeth on the rack.

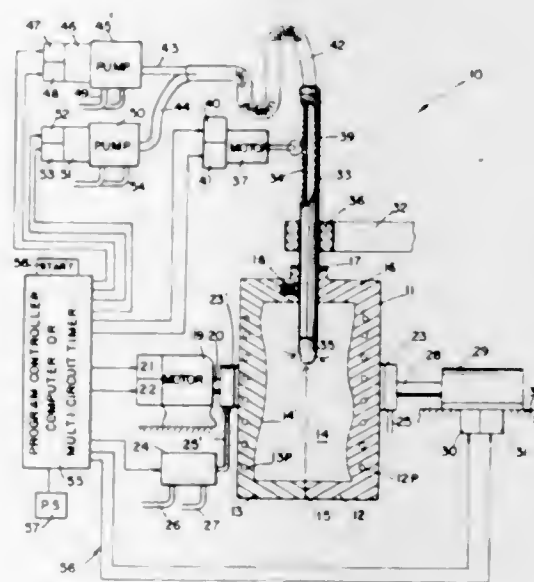
3,412,431

# DEPOSITION MOLDING APPARATUS AND METHOD

Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840

Continuation-in-part of applications Ser. No. 734,340, May 9, 1958, and Ser. No. 439,548, Mar. 15, 1965. This application Feb. 6, 1968, Ser. No. 703,287

26 Claims. (Cl. 18—26)



A molding apparatus and method of molding are provided whereby the flow of molding material into a mold or against the surface of a mold preform is predeterminedly controlled together with other molding variables so as to produce a molded article of predetermined shape. Such variables as rate-of-flow of molding material, relative position between a material dispensing means and the molding surface, rate of flow of heat transfer liquid, rotation of mold or preform, and variations in the molding material utilized are predeterminedly controlled by means of a computer or cycle controller to predeterminedly form or coat articles having predetermined physical characteristics and shape. The computer or controller is of the self-recycling type so that a plurality of articles may be pro-

3,412,432

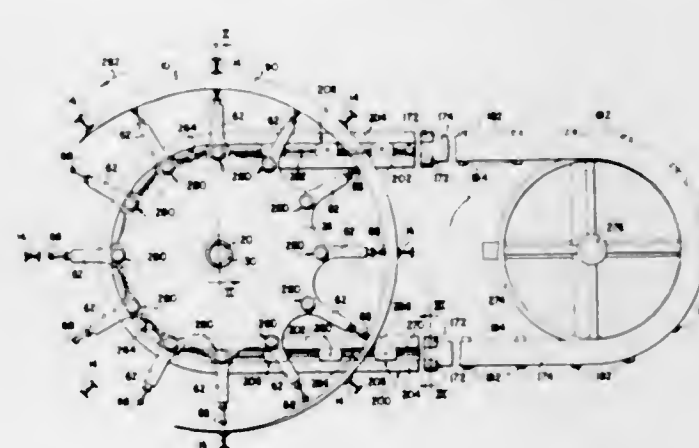
# INJECTION MOLDING MACHINES

Erik Fuglsang-Madsen, 2 Humlebakken, Birkerød, Denmark

Filed June 10, 1965, Ser. No. 462,854

Claims priority, application Denmark, June 10, 1964, 2,902/64

6 Claims. (Cl. 18—30)



An injection molding machine for non-metallic compounds having a plurality of circularly movable injection nozzles, each communicating with a main cylinder, and a movable mold conveyor with a number of mold inlets. The mold conveyor is movable along a portion of a path common to the path of the injection nozzles. The machine is provided with mold supporting members, which support the molds while opposite the injection nozzles, and pressure means by which each injection nozzle can, under pressure, be brought into engagement with the mold inlet located opposite thereto to deliver a compound.

3,412,433

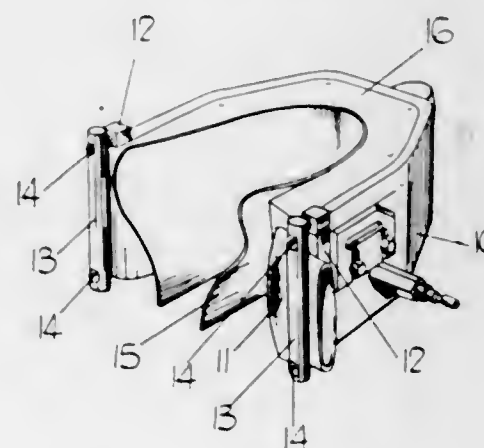
# APPARATUS FOR USE IN LASTING FOOTWEAR

George Trevor Ralphs, Oadby, Leicestershire, and Derek Peter Hull, Coalville, Leicestershire, England, assignors to Ralphs Unified Limited, Leicester, England, a British company

Filed Nov. 5, 1965, Ser. No. 506,505

Claims priority, application Great Britain, Nov. 5, 1964, 45,094/64

5 Claims. (Cl. 18—34)



1. A component for a shoe end mould comprising a lining sheet of polyfluorocarbon material moulded to the shape of a shoe end upper part and a supporting band of elastomeric material extending around an edge part of the lining sheet corresponding to the region of the featherline of a shoe and moulded to the shape of the lining sheet at that place and bonded to it.

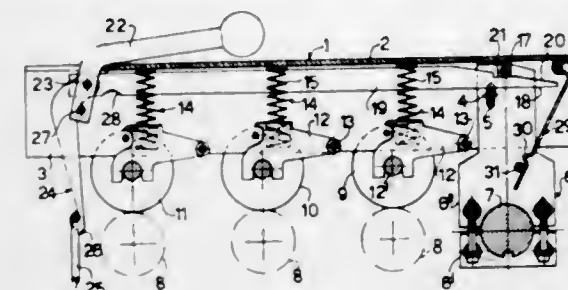
3,412,434

# UPPER ROLLER SUPPORTING ARM FOR TEXTILE DRESSING AND SPINNING MACHINES

Goffredo Fusaroli, Via Lancetti 29, Milan, Italy

Filed Aug. 19, 1965, Ser. No. 481,139

5 Claims. (Cl. 19—267)



An upper roller carrying arm for the drawing frame of textile dressing and spinning machines in which the arm can be moved from a working position to a rest position parallel to the working position and vice versa and the arm can only be rotated about its supporting member when the rest position has been attained.

3,412,435

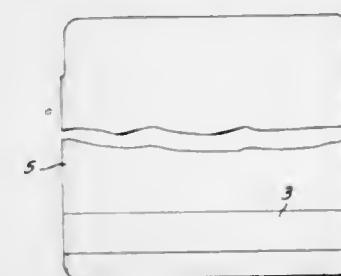
# HANDKERCHIEF HOLDER

Walter Poppe, Steinweg 1, Frankfurt am Main, Germany

Filed Mar. 9, 1967, Ser. No. 621,906

Claims priority, application Germany, Mar. 16, 1966, P 26,892

5 Claims. (Cl. 24—3)



A handkerchief holder designed for retaining a handkerchief within the outer pocket of a coat. The holder has two walls secured together at their side edges so as to leave openings at the top and bottom of the holder. The handkerchief projects through both the top opening and bottom opening. The projecting bottom portion of the handkerchief is folded over 180 degrees so that when the holder is located within the coat pocket the folded-over portion lies between the exterior surface of the holder and the interior surface of the pocket. The top portion of the handkerchief projecting through the top opening, also projects through the coat pocket and is arranged in the desired manner. A strap is provided across the width of the holder and also secured to the edges thereof. The strap serves as an additional clamping arrangement whereby the lower portion of the handkerchief after being folded over is also tucked beneath the strap. The lower portion of a handkerchief is thus securely held between the strap and the exterior surface of one of the walls of the holder.

3,412,436

# POCKET CLIP

Robert John Darst, Fort Madison, Iowa, assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island

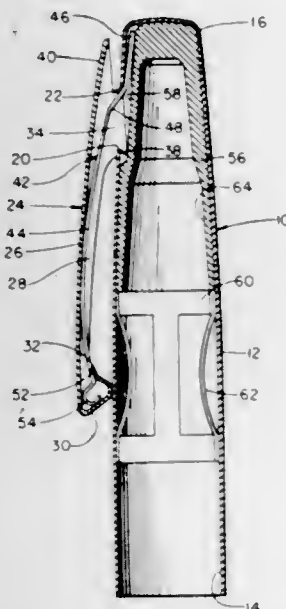
Filed Feb. 27, 1967, Ser. No. 618,924

6 Claims. (Cl. 24—11)

In the illustrated embodiment of the present invention, there is provided a fountain pen cap or the like, having a generally rectangular clip mounting slot formed



therein. Mounted on the cap is a clip unit including a rigid arm having a lower contact end, and a generally co-extensive resilient arm. The rigid arm is provided intermediate its ends with an assembly portion which is positioned forwardly in and fulcrumed on the lower edge of the slot, whereby the rigid arm is pivotally movable between predetermined limits as defined by abutting contact between the ends of the arm and the cap. The forward

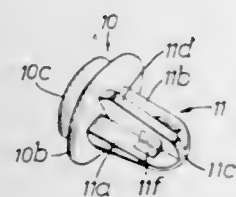


positioning of the assembly portion is effected by the resilient arm which extends between and operatively engages the contact end of the rigid arm and the upper edge of the mounting slot. Further, the resilient arm is bowed inwardly to yieldably bias the contact end of the rigid arm toward the cap while simultaneously maintaining the arms in operative engagement with one another and the cap.

3,412,437

**SNAP-ACTION FASTENING DEVICES**

Alan James Bennett, Pontypridd, Wales, assignor, by mesne assignments, to Tinnerman Products, Inc., Cleveland, Ohio, a corporation of Ohio  
Filed Oct. 27, 1965, Ser. No. 505,387  
Claims priority, application Great Britain, Oct. 29, 1964, 44,097/64  
19 Claims. (Cl. 24-73)



A snap-action fastener including a head portion and root portion, the root portion being adapted to flex inwardly of itself as it passes through a hole in a panel and to return to its original condition with a snap-action after a certain portion of the root has passed through the hole for securing the fastener to the panel.

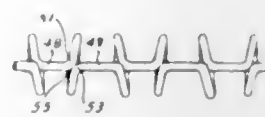
3,412,438

**SLIDE FASTENER**

Alan A. Sim, Meadville, Pa., assignor to Talon, Inc., a corporation of Pennsylvania  
Filed June 1, 1965, Ser. No. 460,182  
4 Claims. (Cl. 24-205.13)

A stringer for a slide fastener wherein a continuous filament is constructed to include a series of head portions

interconnected by a series of heel portions. The heel portions are located in substantially axial alignment with each other with the respective ends of each heel portion in abutting relationship with the next adjacent heel portions,

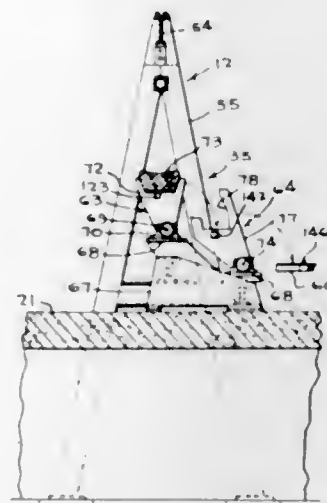


whereby the head portions are spaced evenly apart and said heel portions provide a substantially unitary axially extending filament member for supporting said stringer when it is mounted to a tape.

3,412,439

**APPARATUS FOR REMOVING CONCRETE ARTICLES FROM PALLETS AND INVERTING SAID ARTICLES**

Robert S. Baker, Tampa, Fla., assignor, by mesne assignments, to American Concrete Crosstie Corporation, Tampa, Fla., a corporation of Florida  
Original application Feb. 11, 1964, Ser. No. 344,095, now Patent No. 3,305,907, dated Feb. 28, 1967. Divided and this application Feb. 27, 1967, Ser. No. 618,745  
3 Claims. (Cl. 25-1)



Apparatus to separate cured concrete members from pallets in which they are formed and cured and transport them to an accumulating area, wherein there is a carriage with means to grip the members and there is means to hold the pallet against movement during separation of the members, and the carriage transports the members to one or more member-inverting cradles at the accumulating area, the operating sequence being automatically and electrically controlled.

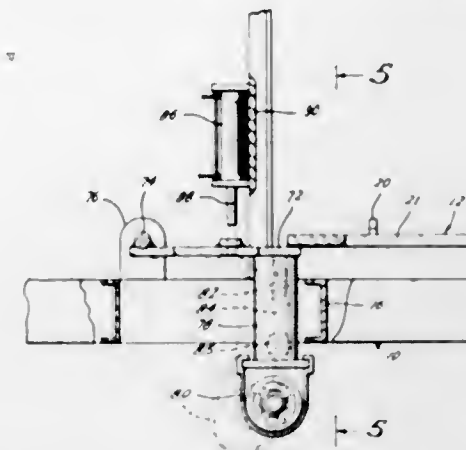
3,412,440

**MACHINE FOR MAKING CONCRETE CONDUIT AND VIBRATING SAME DURING FORMING**

James C. McGrew, Houston, Tex., assignor, by mesne assignments, of forty-four percent to Douglas N. Norton; twelve and one-half percent to Marion C. McKinley; seven and one-half percent to H. W. Lehman; two and one-half percent to Ruth G. Garnett; one and one-half percent to John W. Brandenberger; five percent to Ida Perkins; one percent each to Vernon G. Stamm and Henry J. Denton; one-half percent each to Caroline Jean Edgar, executrix of the estate of James B. Simms, deceased, and Ralph R. Browning; twenty-two percent to William F. Newton; and one percent each to W. R. Sellers and Glynn S. McClellan  
Filed Oct. 23, 1965, Ser. No. 503,687  
11 Claims. (Cl. 25-36)

A concrete conduit forming machine having a frame and a rotatable forming carrier. A vibrator is movably

mounted on the frame adjacent the form filling position. Means are provided to move the vibrator into engagement

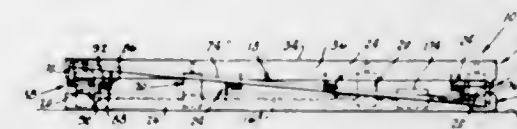


with the carrier for transmitting vibration thereto and for holding the vibrator out of contact with the carrier for movement of the carrier.

3,412,441

**METHOD AND APPARATUS FOR CONSOLIDATING POURED CONCRETE UNITS**

Richard Wells, Marietta, Ohio, assignor to Marietta Concrete Company, Marietta, Ohio, a corporation of Ohio  
Filed Jan. 14, 1966, Ser. No. 520,800  
16 Claims. (Cl. 25-41)

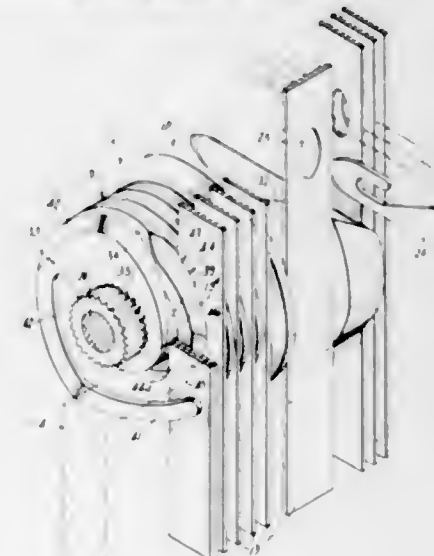


A vibrating table is provided wherein the amplitude of vibration may be adjusted, the cyclic rate of vibration may be altered and the downward movement of the table may be supplemented by inflatable means all at the discretion of the operator.

3,412,442

**MECHANISM FOR SEPARATING FLAT ARTICLES**

Charles B. Crandall, Rockford, Albert F. Scheff, Cherry Valley, Ill., assignors to Barber-Colman Company, Rockford, Ill., a corporation of Illinois  
Filed Feb. 23, 1967, Ser. No. 618,109  
16 Claims. (Cl. 28-46)



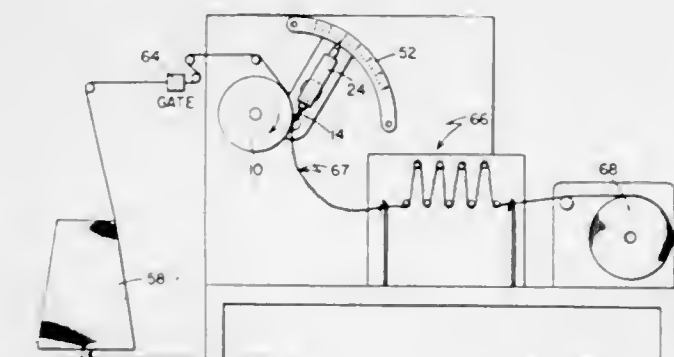
A rotary heddle feeding mechanism incorporated in a warp drawing-in machine and having coaxial leader and

turning worms disposed alongside a heddle frame. A coaxial separator at the entry end of the leader worm is formed with a spiral edge that traverses across the parting line between the two terminal heddles and the remainder of the pack and presses into the pack, and with a spring finger that follows the spiral edge and presses the two separated heddles firmly against the leader worm for separation by a similar spiral edge on the leader worm, the lead angle of the active portion of the second spiral edge being less than the angle of the leader worm.

3,412,443

**METHOD FOR TEXTURING YARNS**

Leonard N. Backer, Westport, Conn., assignor to Fabric Research Laboratories, Inc., Dedham, Mass., a corporation of Massachusetts  
Filed May 31, 1966, Ser. No. 554,084  
6 Claims. (Cl. 28-72)

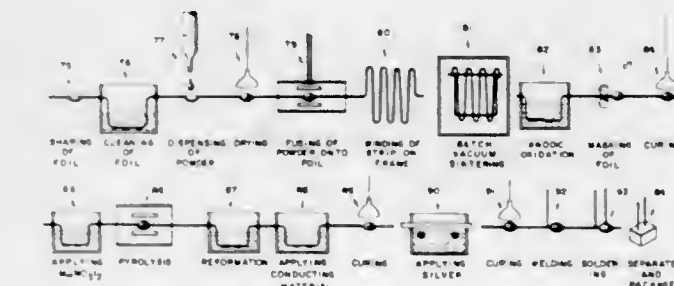


Mono- and multi-filament yarn is continuously textured by running the yarn linearly into and out of head-on engagement with a surface angularly intersecting its projected path of travel continuously to bend the yarn beyond its elastic limit at the temperature of operation and running the yarn away from the bending operation in a freely suspended and in an untaut relaxed state which prevails until the yarn has cooled so as to maximize retention of coil configurations imparted by the bending, thereafter straightening the yarn to at least partially uncoil the yarn and collecting the straightened yarn.

3,412,444

**METHOD FOR MAKING CAPACITOR HAVING POROUS ELECTRODE OF SINTERED POWDER ON FOIL**

Gerhart P. Klein, Manchester, Mass., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware  
Filed May 2, 1966, Ser. No. 546,714  
14 Claims. (Cl. 29-25.41)



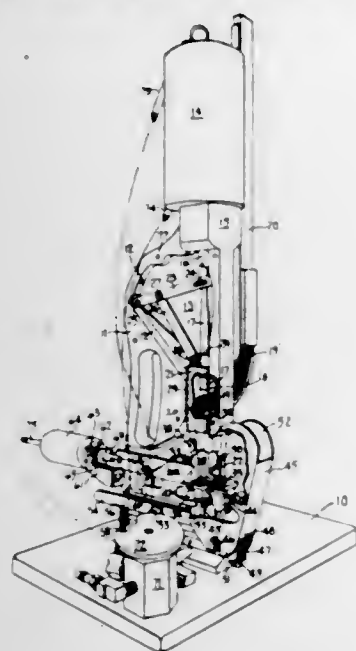
A method for fabricating structures suitable for use as anodes for capacitors. Moistened powder is deposited on each of film-forming metal appendages which extend from and are integral with a film-forming metal strip. The powder is fused to the appendages at a temperature below the sintering temperature of the film-forming metal thereby providing a porous mass of the powder



bonded to each of the appendages. The porous mass and the appendages are thereafter sintered to provide capacitor anodes.

**3,412,445**  
**CASING FASTENING MACHINE WITH**  
**ADJUSTABLE CRIMPING DIE**

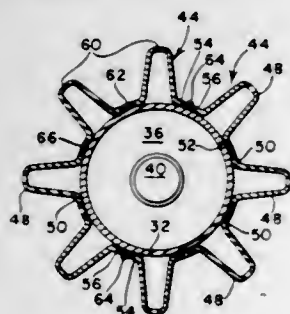
Paul G. K. Schroeder, 28 Island Trail, Lake Mohawk, Sparta, N.J. 07871  
Filed Feb. 10, 1967, Ser. No. 615,225  
6 Claims. (Cl. 29—33.5)



The present invention deals with a machine for fastening the ends of casings, bags, and the like. Besides the base and vertical mounting plate carrying the throat into which the casing end is inserted, as well as the driver, the end of which is the upper crimping die for the fastener, it has a lower crimping die assembly rotatable on the support, below the throat, said assembly carrying a series of crimping dies of different heights disposed therearound to accommodate various thicknesses or sizes of casings, as well as a locking means to hold the lower die in place. The machine also has a laterally-sliding knife blade for cutting off the excess casing end with engagement means on its operating ram so that the blade may be readily lifted therefrom. A casing gatherer is also provided adjacent the throat opposite the knife mounting which has sliding means for pushing the casing end laterally further into the throat just prior to the crimping operation.

**3,412,446**  
**ROLL CONSTRUCTION**

William Robert Wood, Ottumwa, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware  
Filed Aug. 24, 1966, Ser. No. 574,592  
3 Claims. (Cl. 29—121)

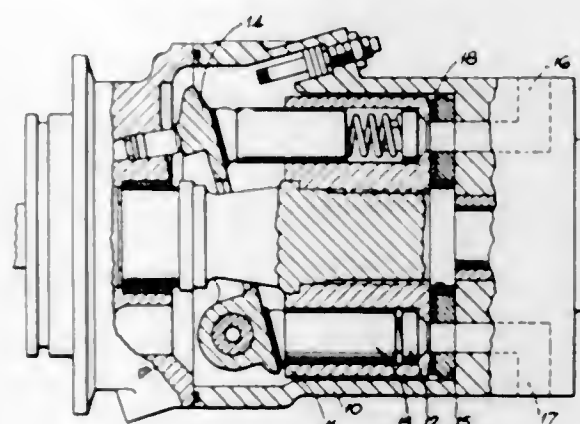


A pull-type hay conditioner having a pair of cooperating and meshing fluted rolls, the crop being picked up by the lower roll as the machine advances, passing rear-

wardly between the rolls, and being crimped thereby. The rolls are identical and are fabricated by welding a pair of semi-cylindrical longitudinally corrugated outer members to an elongated tubular core having the same radius as the concave side of the outer members, the members conjunctively encircling the core.

**3,412,447**  
**MOUNTING CARBON INSERTS IN A METAL BODY**  
Lionel Measures Summerfield, Hadley, Coed-y-Paen, Wales, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

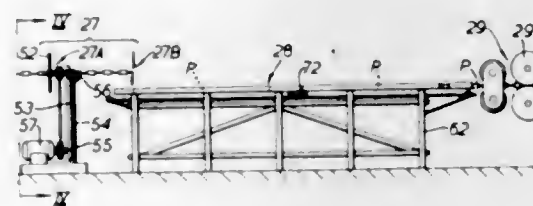
Filed Apr. 14, 1966, Ser. No. 542,528  
2 Claims. (Cl. 29—149.5)



In a method of mounting a carbon insert in a metal body, the carbon insert is first accurately formed and is then used as an electrode in a spark erosion process to form a recess of the shape corresponding to the shape of the carbon insert and into which the insert is fitted.

**3,412,448**  
**METHOD AND APPARATUS FOR MANUFACTURING SHEET METAL CENTRAL HEATING RADIATORS**

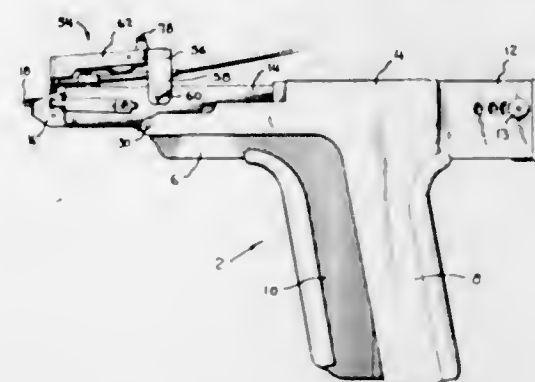
Erik Landberg, Monte Carlo, Monaco, assignor to Polyventions Limited, Valetta, Malta, a Maltese company  
Filed Nov. 19, 1965, Ser. No. 508,869  
Claims priority, application Great Britain, Nov. 27, 1964, 48,273/64  
10 Claims. (Cl. 29—157.3)



In manufacturing central heating radiator panels, a pair of confronting sheet metal strips are fed intermittently through a press with a reciprocating press action to form appropriate grooves which when the strips are brought together face to face constitute inter alia conduits extending lengthwise one along each margin of the strips, the pressed strips being tack welded thus together. To sever the welded strips transversely to form panels, each margin including its conduit section is cut through using high speed rotary cutter means at one station, the remaining central portion between the margins is sheared through at another station, and such marginal cutting and shearing are effected during appropriate normal dwell periods of the intermittent strip feed.

**3,412,449**  
**METHOD AND APPARATUS FOR MAKING ELECTRICAL CONNECTIONS**

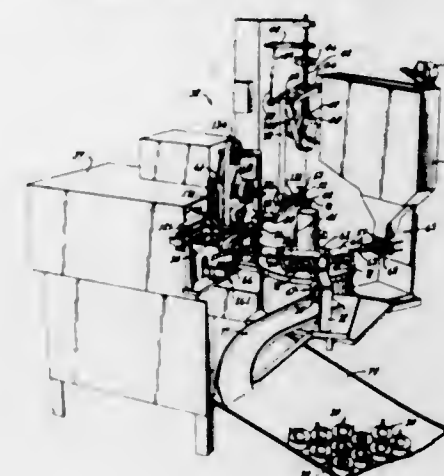
John Roy Vickery, Jr., York, Pa., assignor to AMP Incorporated, Harrisburg, Pa.  
Filed Dec. 10, 1965, Ser. No. 512,888  
5 Claims. (Cl. 29—203)



Apparatus for making clip-type electrical connections comprises clip guide or mandrel having a wire-receiving opening therein and clip pusher for pushing a terminal clip over the mandrel, past the opening, and onto a terminal post. A wire tucking means is provided beside the mandrel and is effective to form a bight in an intermediate portion of the wire and tuck the bight into the opening. Severing means in the opening cuts the wire so that when tucking means is thereafter moved out of the opening, the cut end of a wire remains in the opening. Upon subsequent movement of a clip over the mandrel and past the opening, the clip moves against the wire and drags the wire end over the mandrel and onto the terminal post thereby to form a clip-type connection.

**3,412,450**  
**STRIP CONDUCTOR COIL MAKING APPARATUS OR THE LIKE**

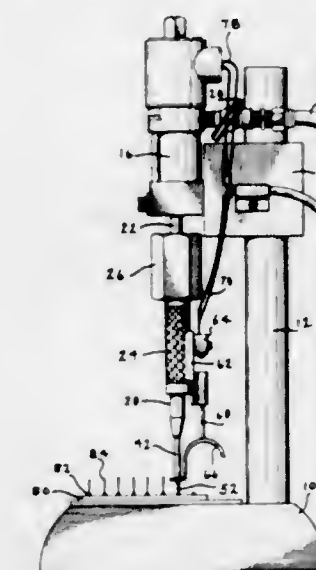
Benton A. Whiteman, Richmond, and Robert B. Lightner, Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware  
Filed Oct. 18, 1965, Ser. No. 497,069  
24 Claims. (Cl. 29—203)



This disclosure relates to an apparatus for winding a strip of conductive material into a plurality of strip conductor coils at a predetermined location in the apparatus while securing two leads in side-by-side relation to the strip of conductive material in advance of the coil making location so that the strip can be separated between the two leads in order that one of the leads will form the outer lead on the coil being wound at the predetermined location and the other lead will form the inner lead on a subsequent coil that will be wound by the apparatus, the apparatus having a movable carriage carrying a pair of movable taping heads so that one of the taping heads

can attach a length of tape to one end of the strip of conductive material and tape the same to a core on which the strip will be subsequently drawn and wound into coil form and the other taping head being utilized to secure the outer end of the strip of conductive material onto the coil being formed therefrom.

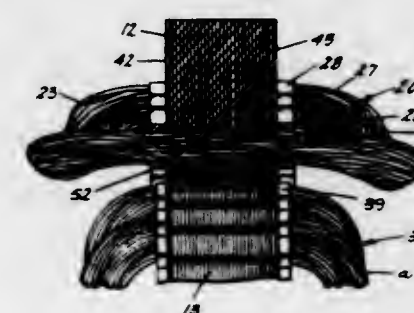
**3,412,451**  
**FORCE LIMITING TOOL**  
Carl Frederick Vieser and Frank Irvin Douglass, Mechanicsburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.  
Filed Feb. 10, 1966, Ser. No. 526,574  
5 Claims. (Cl. 29—203)



A staking tool is provided which is capable of delivering uniform maximum pressure during assembly of inter-fitting articles. Force imposing springs provide both for the uniform pressure output and for reduced shock in applying to the tool to the workpiece. Sensing means are connected to the power means for disabling the power means upon reaching the desired predetermined pressure.

**3,412,452**  
**ARRANGEMENTS FOR ALTERING THE OVERALL CONFIGURATION OF ELECTRICAL COILS WOUND FROM A NUMBER OF CONDUCTOR TURNS**

Marion W. Sims, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York  
Original application Nov. 30, 1964, Ser. No. 414,824, now Patent No. 3,333,335, dated Aug. 1, 1967. Divided and this application Dec. 23, 1966, Ser. No. 604,292  
5 Claims. (Cl. 29—205)



At least two electrical coils are supported in proximity to one another in coil accommodating members, with the

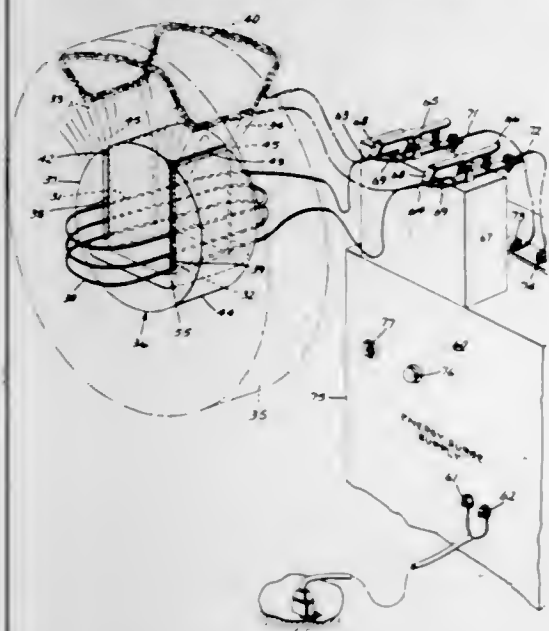


coils being connected in circuit with an electric power impulse supply means. At least one electric power impulse is simultaneously applied from the supply means to the at least two electric coils to produce current flow therein. Magnetic fields and electromagnetic forces are established which act upon at least one of the coils to effect its alteration into the desired configuration.

3,412,453

# APPARATUS FOR INTRODUCING ELECTRICAL CONDUCTORS INTO CONDUCTOR ACCOMMODATING STRUCTURE

John E. Larsen, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York  
Original application Nov. 30, 1964, Ser. No. 414,822, now Patent No. 3,333,327, dated Aug. 1, 1967. Divided and this application Dec. 23, 1966, Ser. No. 604,307  
8 Claims. (Cl. 29-205)



Movable portions of electrically conductive convolutions are introduced into slots of a slotted structure and developed into an electrical coil. The apparatus has a device with channels which hold the portions adjacent the slot entrances. An electrical energy surge supply is coupled with the convolutions to generate an electrical energy surge in the convolutions which creates electromagnetic forces for acting upon the convolutions. Those forces drive the portions out of the device and into the slotted structure where the convolutions are developed into an electrical coil of the desired configuration.

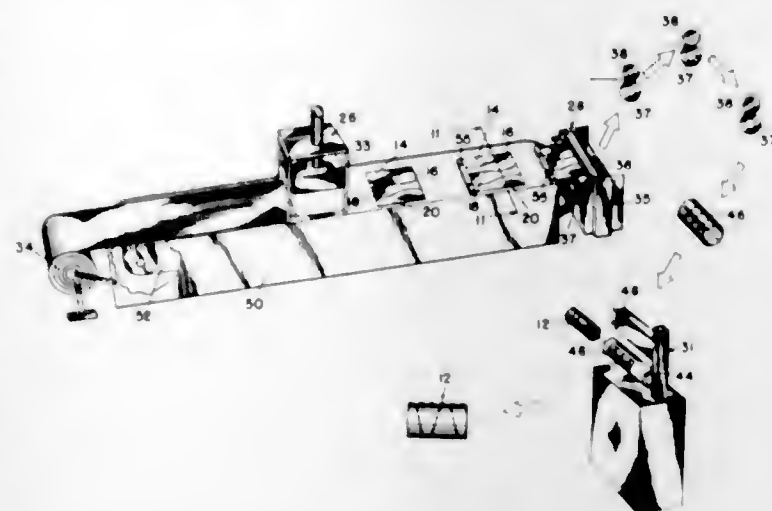
3,412,454

# METHOD OF MANUFACTURING ADJUSTABLE SEGMENTED CONDUIT TURNS

George H. Cardiff, 725 E. 37th St. N.,  
Wichita, Kans. 67219  
Filed June 27, 1966, Ser. No. 560,765  
6 Claims. (Cl. 29-437)

1. A method of manufacturing a segmented conduit turn comprising the following steps:
  - (a) conveying a sheet metal material into a punch press apparatus,
  - (b) stamping the sheet metal with said punch press apparatus into a plurality of elongated contoured segments,
  - (c) overlaying adjacent edges of said contoured segments into nesting engagement,
  - (d) inserting said segments into a forming machine,
  - (e) forming said segments into a cylindrical shape by said forming machine,
  - (f) conveying said segments in the cylindrical shape to a joining fixture with adjacent opposite ends of said segments held in overlapping positions, and

- (g) securing said opposite ends of said segments by said joining fixture forming a segmented, conduit

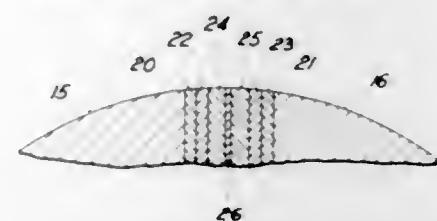


turn having each of said segments movable independently to a desired angular conduit turn.

3,412,455

# FUSION BONDING TO NON-METALS

Robert L. Bronnes, Irvington, Ray C. Hughes, Ardsley, and Richard C. Sweet, North Tarrytown, N.Y., assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware  
Continuation-in-part of application Ser. No. 247,246, Dec. 26, 1962. This application Aug. 13, 1963, Ser. No. 301,866  
2 Claims. (Cl. 29-472.7)



1. A method of hermetically sealing a zinc-sulfide wafer to a metal body comprising the steps, applying to a clean surface portion of the wafer, by cathodic sputtering, a thin layer of an alloy of nickel, iron, and cobalt; applying over the alloy layer, by cathodic sputtering, a thin layer of platinum; applying over the platinum layer, by cathodic sputtering, a thin layer of gold; and soldering the so-coated wafer to the metal body.
2. A method of joining two ferrite bodies together comprising the steps, applying to cleaned surfaces of each of said bodies, by cathodic sputtering, a thin layer of a first metal selected from the group consisting of Mo, W, Mn, Fe, Co, Ni and alloys thereof; applying over the first metal layer, by cathodic sputtering, a thin layer of platinum; applying over the platinum layer, by cathodic sputtering, a thin gold layer; and thereafter fusion joining the gold layers.

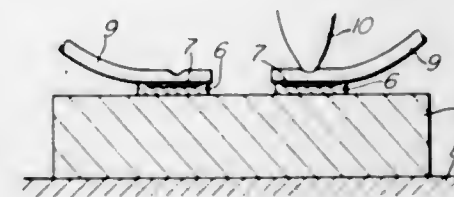
3,412,456

# PRODUCTION METHOD OF SEMICONDUCTOR DEVICES

Yasuo Ebisawa, Kodaira-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan  
Filed Dec. 9, 1965, Ser. No. 512,675  
Claims priority, application Japan, Dec. 17, 1964, 39/70,740  
15 Claims. (Cl. 29-472.9)

A method for forming electrodes upon a silicon substrate, including the successive steps of coating a predetermined portion of the surface of the substrate with a photosensitive resist, depositing a first layer of aluminum upon the selectively-coated surface of the substrate at a temperature on the order of 550° C., depositing a second

layer of aluminum upon the first layer, the deposition of the second layer being conducted at a relatively low temperature, for example about 200° C., such that the photo-

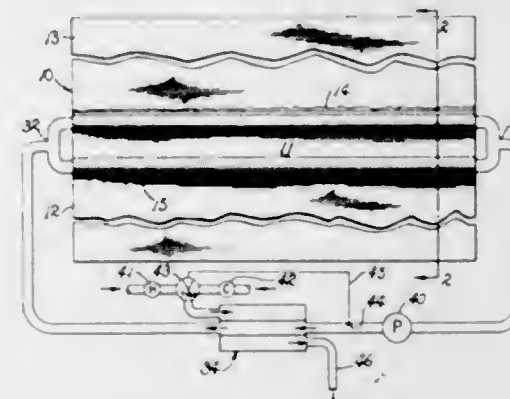


sensitive resist is neither carbonized nor volatilized, and finally, removing the photosensitive resist together with the aluminum layers formed thereon.

3,412,457

# FABRICATED WELDMENT AND METHOD OF CONSTRUCTING

George W. Gregory, 1243 E. Saginaw Way,  
Fresno, Calif. 93704  
Filed Sept. 1, 1964, Ser. No. 393,628  
9 Claims. (Cl. 29-487)

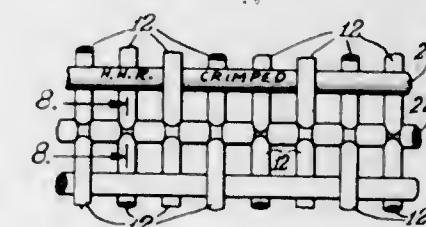


A method of welding an attachment sheet to an elongated element having a conduit therethrough includes the steps of directing a controlled temperature fluid through the conduit. A heated fluid is first passed through the conduit in order to uniformly preheat the element. While the fluid continues to pass through conduit the sheet is welded to the element. The fluid is adjusted to a suitable temperature lower than the welding temperature and is continually passed through the conduit subsequent to welding for cooling the weldment.

3,412,458

# FOURDRINIER WIRE

Nicholas Delnero, Springfield, Mass., assignor to Cheney Bigelow Wire Works Inc., Springfield, Mass., a corporation of Delaware  
Filed Aug. 8, 1966, Ser. No. 571,050  
3 Claims. (Cl. 29-488)



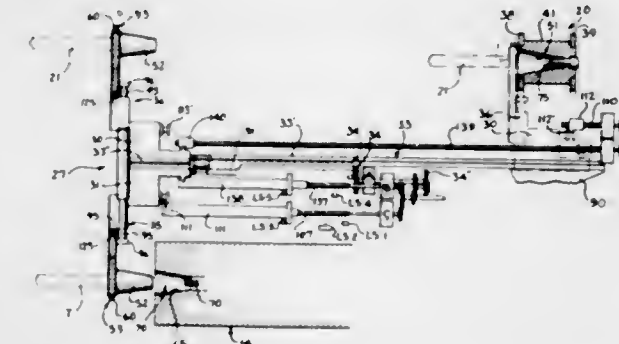
1. The method of seaming fourdrinier wire cloth composed of warp wires having a relatively hard metal core made of a material having a modulus of elasticity of at least  $25 \times 10^6$  p.s.i., and an outer metal coating on said

hard core made of material having a modulus of elasticity which does not exceed  $20 \times 10^6$  p.s.i., said outer coating comprising approximately 10%-50% by weight of said warp wires, a plurality of first shutes extending transversely of said warp wires, said first shutes being of materials having a melting temperature less than 1925° F. comprising the steps of removing at least one of said first shutes from at least one end of said fourdrinier wire, substituting a second shute wire characterized by a melting temperature in excess of 1925° F. for said removed first shute warp wires, positioning the ends of the warp wires at opposite ends of said fourdrinier cloth in opposing relation to form said fourdrinier cloth into an endless loop, and then connecting said opposed ends of said warp wires by brazing material diffused through the coatings of and bonded to the cores of said warp wires.

3,412,459

# AUTOMATIC TOOL CHANGING SYSTEM

John C. Hollis, Cincinnati, Ohio, assignor to Giddings & Lewis Inc., a corporation of Wisconsin  
Continuation of application Ser. No. 784,550, Jan. 2, 1959. This application Sept. 5, 1967, Ser. No. 666,237  
38 Claims. (Cl. 29-568)

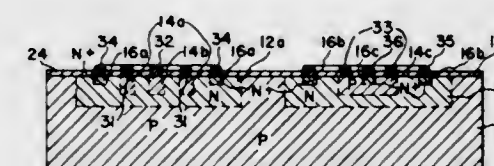


A tool changer for a horizontal spindle machine tool, with a tool storage matrix, and a tool carrier for transferring tools over successive longitudinal and lateral paths between the spindle and the matrix, the tool carrier being horizontally movable along a track to move a tool between the matrix and an intermediate, tool exchange station laterally adjacent the spindle, and laterally therefrom into alignment with the spindle.

3,412,460

# METHOD OF MAKING COMPLEMENTARY TRANSISTOR STRUCTURE

Hung C. Lin, Monroeville, Pittsboro, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Original application May 31, 1963, Ser. No. 284,611, now Patent No. 3,197,710, dated July 27, 1965. Divided and this application June 24, 1965, Ser. No. 466,782  
3 Claims. (Cl. 29-577)

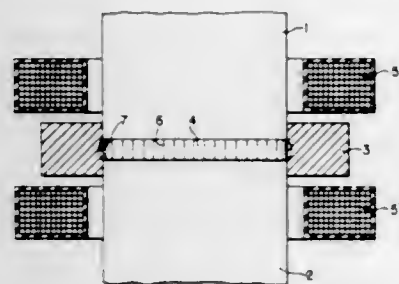


A semiconductor unitary structure, and method of making it, including both p-n-p and n-p-n transistors of which one type has laterally disposed emitter and collector regions that may be simultaneously diffused with the base region of the other type transistor.



3,412,461

**METHOD FOR MAKING FERRITE MAGNETS**  
 Alexander Cochardt, Franklin Township, Westmoreland County, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
 Filed Dec. 9, 1963, Ser. No. 328,912  
 Claims priority, application Germany, Dec. 11, 1962, C 28,629  
 18 Claims. (Cl. 29—608)



1. In the method of making improved ferrite magnets, the steps comprising, pressing a slurry of finely divided ferrite material into a relatively flat body having its smallest lateral dimension at least five times the average thickness of the body, and concurrently subjecting the entire body to a strong magnetic field during the pressing, the magnetic field having its lines of force applied parallel to the pressing direction and substantially perpendicular to the face of the relatively flat body, thereby producing a green oriented ferrite body, subdividing the green ferrite body into a plurality of shapes generally corresponding to the desired magnets, sintering the individual shapes and thereafter magnetizing the resulting sintered shapes to provide the desired magnets.

3,412,462

**METHOD OF MAKING HERMETICALLY SEALED THIN FILM MODULE**  
 Guy Robert Stutzman, Fort Wayne, Ind., assignor to the United States of America as represented by the Secretary of the Navy  
 Original application May 6, 1965, Ser. No. 453,848, now Patent No. 3,316,459, dated Apr. 25, 1967. Divided and this application Nov. 7, 1966, Ser. No. 600,331  
 7 Claims. (Cl. 29—627)

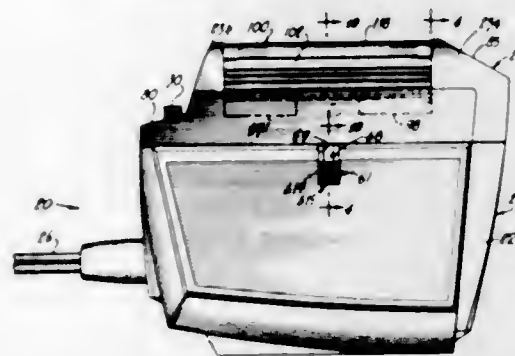


1. A method of making a hermetically sealed thin film electric circuit module comprising:  
 press forming a cup-shaped member of metal;  
 affixing a plurality of metal pins and capacitor blocks to the bottom of said cup-shaped member to extend upwardly thereof to the plane of the cup rim, said cup-shaped member, metal pins, and capacitor blocks having the same thermal expanding rates;

heating a vitreous substrate blank of the same thermal expanding rate to a molten state and pressing said vitreous substrate into said cup causing said vitreous substrate to flow around said plurality of metal pins and capacitor blocks and to hermetically seal thereto and to said cup upon cooling;  
 etching out portions of said metal cup bottom surrounding said metal pins and capacitor blocks providing electric insulation of said metal pins and blocks from said metal cup and from each other;  
 lap-polishing the exposed surface of said vitreous substrate producing a common optical plane for said vitreous substrate, said metal pins, and said capacitor blocks;  
 thin film vacuum depositing a thin film circuit on said exposed surface of said vitreous substrate connecting said metal pins and capacitor blocks at the thin film circuit terminations;  
 resistance welding discrete transistors and diodes to said thin film circuit terminations at said metal pins;  
 forming a multiple connector means on the exposed ends of the metal pins exposed by said etching away of said metal cup; and  
 welding a metal cover on the periphery of said metal cup to hermetically seal in said thin film circuitry whereby a thin film moisture resistant module is provided for electric plug-in use.

3,412,463

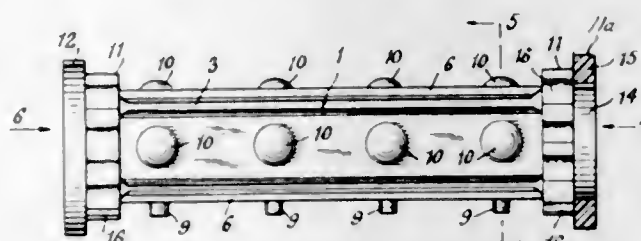
**DRY SHAVER WITH CLUTCH FOR LONG HAIR CLIPPING ATTACHMENT**  
 Alfons Rundzaitis, Chicago, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois  
 Filed Nov. 28, 1966, Ser. No. 597,429  
 6 Claims. (Cl. 30—34.1)



Electric dry shaver with two cutting means, one for trimming sideburns, mustaches and the like, and the other for the conventional shaving operation in which by suitable clutch means one cutting means may be selectively rendered effective and ineffective as dictated by the desires of the user.

3,412,464

**RAZOR HAVING A ROTATIVE BLADE HOLDER**  
 Karl M. Keck, 2155 Silver Palm W., Boca Raton, Fla. 33432  
 Filed Jan. 16, 1967, Ser. No. 609,534  
 4 Claims. (Cl. 30—40)

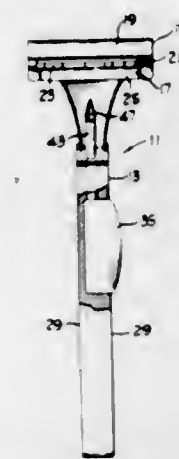


A razor having a carrier mounted for rotative adjustment in a groove or channel in a holder in a manner to

expose the opposed cutting edges of a pair of blades in spaced relation. The carrier has a number of blades so that one after another can be brought into the exposed shaving position by the rotative adjustment of the carrier as required. The holder may be of a "clamshell" shape and it maintains the carrier in a groove or channel between a pair of jaws, the jaws and the carrier having co-operating parts to provide "click stops" for the rotatively-adjustable carrier to enable registration of the blades with a slot in the holder to thereby locate selected blades in shaving position. Means is provided to either permanently or removably mount the carrier in the holder, and parts of the holder are arranged to be disposed in protective position for the blades and carrier during periods of non-use of the razor.

3,412,465

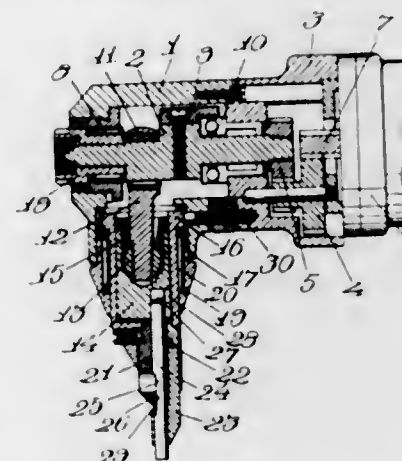
**LUBRICATING DEVICE FOR SAFETY RAZOR**  
 John W. Andersen, Evanston, Ill., assignor of ten percent each to Robert V. Jambor, Naperville, Ill., and Richard Pixler, La Grange, Ill.  
 Filed July 29, 1966, Ser. No. 568,931  
 1 Claim. (Cl. 30—41)



A safety razor including a handle and a transverse head portion which includes a liquid retaining bulb secured to the handle having at least one resilient wall. A tube extends outwardly of the liquid retaining bulb terminating in an open end disposed in operative association with the edge of a razor blade adapted to distribute liquid onto the surface to be shaved.

3,412,466

**HANDY ELECTRIC SHEAR**  
 Kiichiro Kurosaki, 25 Azabu Imai-cho, Minato-ku, Tokyo, Japan  
 Filed Nov. 22, 1966, Ser. No. 596,235  
 Claims priority, application Japan, Nov. 26, 1965, 40/72,263  
 2 Claims. (Cl. 30—228)



An electric shear for shearing sheet iron comprising two cutting blades, one fixed with respect to the other,

and the other driven by means of a motor to move axially within the first blade to shear sheet iron.

3,412,467

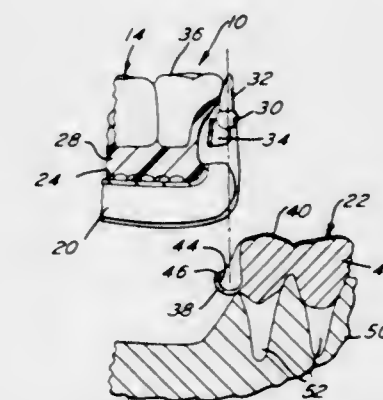
**SURGICAL SCALPEL**  
 John J. Matwijcow, 31 Charles Terrace, New Market, N.J.  
 Filed Nov. 25, 1966, Ser. No. 596,884  
 5 Claims. (Cl. 30—335)



A combined scalpel handle, blade holder and blade wherein the blade holder receives a tongue on the handle and has shoulders complementarily mating with shoulders on the handle, a blade retaining construction on one side of the blade holder and a rearwardly extending shank on the other side of the blade holder engaging a protuberance or a boss on the handle, said handle including a neck portion of reduced size joining a head to the handle and being substantially linear along one side, and said blade being disposed approximately in line with the linear side of the handle.

3,412,468

**DENTURE FASTENER**  
 Jack M. Weinstein, 2613 Elbridge St., Philadelphia, Pa. 19149  
 Filed Apr. 29, 1966, Ser. No. 546,275  
 10 Claims. (Cl. 32—5)



A denture fastener comprising a first member adapted to be attached to a pillar tooth and a second member adapted to be attached to a partial denture. The first member includes a socket having a substantially spherical concave inner wall. The second member includes a ball which is adapted to be inserted in the socket. The socket is configured to permit the ball to be vertically inserted into the socket. When the ball is rotated out of its vertical alignment by means of the gums pressing against the partial denture, the ball will be locked in the socket by a lip formed on the socket.

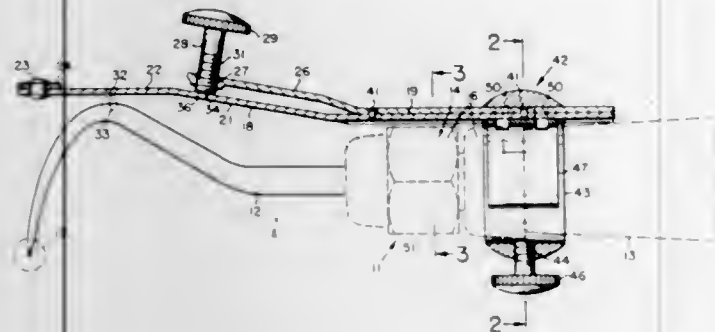
3,412,469

**DENTAL INSTRUMENT**  
 Roy L. Newman, 1102 Broadway, Rockford, Ill. 61104  
 Continuation of application Ser. No. 322,774, Nov. 12, 1963. This application Oct. 27, 1966, Ser. No. 590,094  
 12 Claims. (Cl. 32—50)

A handpiece carries a tip for application to the teeth and which tip is initially vibrated in a line pattern of vi-



brations. A spring is carried by the handpiece and a threaded piece adjustably engages the spring against the

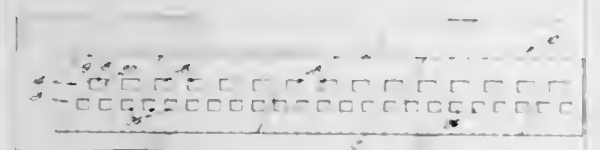


tip to modify the vibrations and produce random vibrations in the tip.

3,412,470

## EDUCATIONAL DEVICE

Ralph C. Williams, La Canada, and Benjamin A. Peters, Los Angeles, Calif., assignors of one-third interest to Roland J. Macci, El Centro, Calif.  
Filed Nov. 30, 1966, Ser. No. 598,116  
3 Claims. (Cl. 33-174)

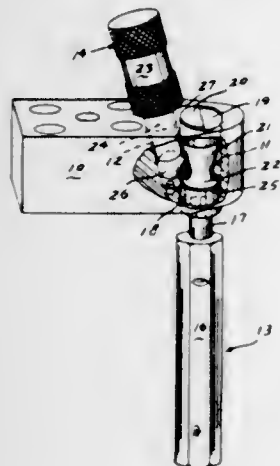


An educational device and scaling tool for use by students in mastering mathematical fundamentals and simple measurements. The opposite lateral edges of the strip are provided with graduated scales of different size units. One face of the strip is treated to accept erasable written indicia of any selected value and readily replaceable with other indicia values by the user. The mid-portion of the strip is provided with one or more rows of rectangular openings so sized and arranged that their parallel transverse edges serve as guides for a pencil or the like writing instrument while making graduated scales of uniform size.

3,412,471

## GAGE SYSTEM

Robert Earl Smith, Kettering, Ohio, assignor to Dayton Perforators Inc., Dayton, Ohio, a corporation of Ohio  
Filed Nov. 2, 1964, Ser. No. 408,024  
10 Claims. (Cl. 33-180)



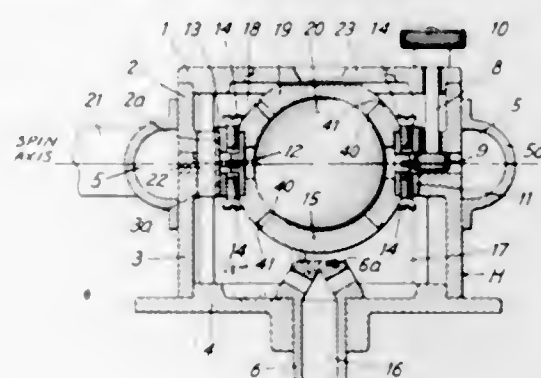
1. A gage unit for a ball retainer production piercing punch comprising a body having a central through pas-

sage accommodating the head of a punch, a peripheral portion of said body being flat, a second passage in said body one end of which opens to said central through passage and the other end of which opens from said flat, a retainer unit positioned for reciprocal movement in said second passage one extremity of which has an arcuate surface portion adapted to project in said central passage and fix relative said body the head of the piercing punch, means connected with said body to limit the extent of the reciprocal movement of said retainer unit, one face of said body lying in a plane substantially perpendicular to the axis of said through passage, and means on said one face of said body defining the acceptable limits of projection of the head extremity of a punch held within said body by said retainer unit.

3,412,472

## UNIVERSAL GYROSCOPE

Robert Annen, 37 Rue du Stand, Bienne, Bern, Switzerland  
Filed July 25, 1966, Ser. No. 567,649  
Claims priority, application Switzerland, Jan. 13, 1966, 401/66  
12 Claims. (Cl. 33-204)



A universal gyroscope comprising two oppositely situated, substantially semi-spherical bearing cups for housing a rotor mounted therein. A pressurized fluid medium serves to drive and floatingly support the rotor. The bearing cups are mounted for rotation at a support ring having discharge bore means for the fluid medium disposed substantially in an equatorial plane. A directional indicating ring is arranged substantially at the region of the equator of the rotor. Further, pick-off means cooperate with the directional indicating ring for signaling the direction and amount of the inclination of the indicating ring about selectable axes relative to its datum position, whereby depending upon the position of the last-mentioned means the gyroscope is capable of performing as directional indicator, artificial horizon or banking indicator.

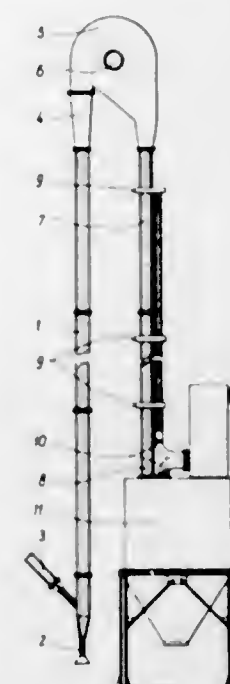
3,412,473

## PROCESS AND APPARATUS FOR COOLING GRANULAR MATERIAL IN A VERTICAL SHAFT ARRANGEMENT

Wolf Mühlrad, Rueil-Malmaison, Hauts-de-Seine, France, assignor to Prat-Daniel S.A., Rueil-Malmaison, Hauts-de-Seine, France, a corporation of France  
Filed Dec. 21, 1966, Ser. No. 603,615  
Claims priority, application France, Dec. 23, 1965, 43,446  
3 Claims. (Cl. 34-10)

Process and apparatus for cooling granular material, including fertilizers after they have been subjected to a drying treatment. The process consists of a preliminary cooling and a separate final cooling, the preliminary cooling being carried out preferably in a vertical shaft with cooling air and granular material both flowing upwardly through the shaft. The final cooling is carried out in a different vertical shaft with granular material moving downwardly and cooling air moving upwardly through that shaft. The two shafts are connected at the top by a diffusor

and a separator, the granular material being transmitted by centrifugal forces to the second shaft. A container may be placed at the top of the second shaft to facilitate homogenization of the granular material. The cooling air of the final cooling continuously loosens the end layers of

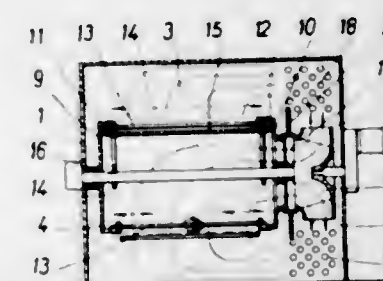


the material and may be used to remove some of the material. Air flowing through one shaft may be regulated or preliminarily treated independently from air in the other shaft. Separate spaced sprays of air may be injected into the air flowing through the second shaft.

3,412,474

## APPARATUS FOR THE TREATMENT OF TEXTILE MATERIAL

Heinz Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to VEPA A.G., Basel, Switzerland  
Filed Dec. 9, 1966, Ser. No. 600,529  
Claims priority, application Germany, Dec. 11, 1965, A 51,054  
9 Claims. (Cl. 34-122)



The present disclosure relates to an apparatus for the treatment of textile materials wherein sieve drums subjected to a suction draft provide the conveying surface for the material being treated said sieve drums being provided with a drum jacket with a large free area, thereby reducing the resistance of the sieve drums and substantially increasing the capacity of the apparatus for treating permeable materials.

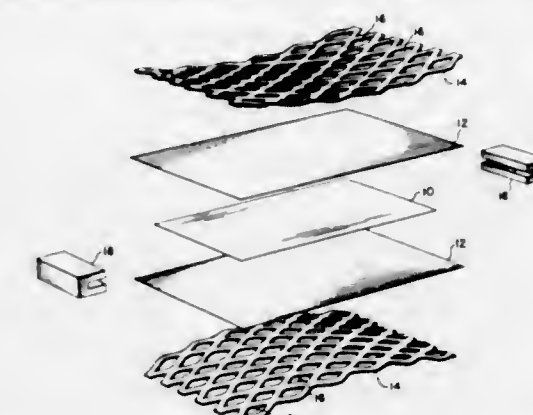
3,412,475

## METHOD AND APPARATUS FOR DRYING THIN MEMBRANES

Zvonimir Juan Zec, Los Altos Hills, Calif., assignor to Beckman Instruments, Inc., a corporation of California  
Filed Dec. 30, 1966, Ser. No. 606,319  
5 Claims. (Cl. 34-19)

A method and an apparatus for drying thin mem-

branes in which the membrane is placed between a pair of moisture-absorbent sheets which in turn are inserted

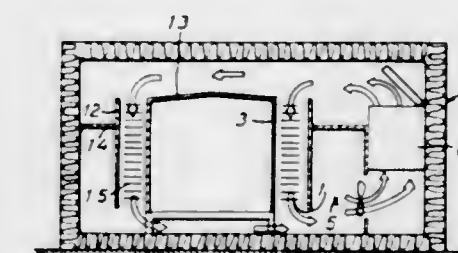


between a pair of apertured frame members suitably clamped together.

3,412,476

## PLANT FOR TREATING PRODUCTS WITH AIR AS A TREATING AGENT

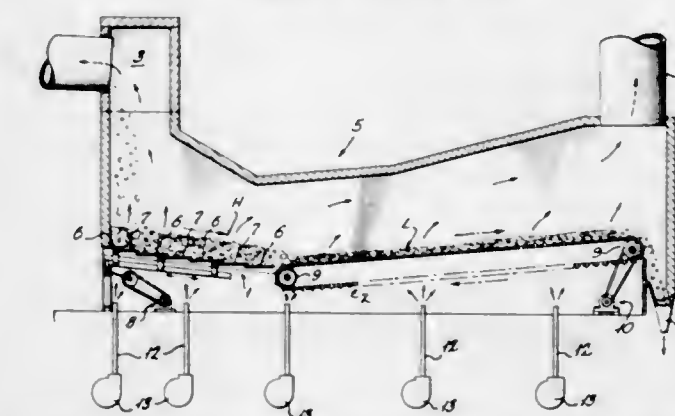
Sture Astrom, Halsingborg, Sweden, assignor to Frigoscandia AB, Halsingborg, Sweden  
Filed Mar. 13, 1967, Ser. No. 622,767  
Claims priority, application Sweden, Mar. 15, 1966, 3,402/66  
5 Claims. (Cl. 34-147)



A plant for treating various products such as foodstuffs with air as a treating agent comprises a treatment chamber in which a perforated endless conveyor belt travels for conveying the products to be treated along at least one path of helical convolutions to expose them to the treating air which is brought to flow along said helically extending path in the treatment chamber between inner and outer cylinders therein, which define between them a duct in which the conveyor belt travels, thereby covering the entire cross section of the duct.

3,412,477  
COOLER COMPRISING SLOPING GRATE SECTIONS

Karl-Heinz Kayatz, Hamburg-Nienstedten, Germany, assignor to Fuller Company, Catasauqua, Pa., a corporation of Delaware  
Filed Jan. 17, 1966, Ser. No. 521,170  
Claims priority, application Germany, Jan. 26, 1965, P 35,948  
3 Claims. (Cl. 34-164)



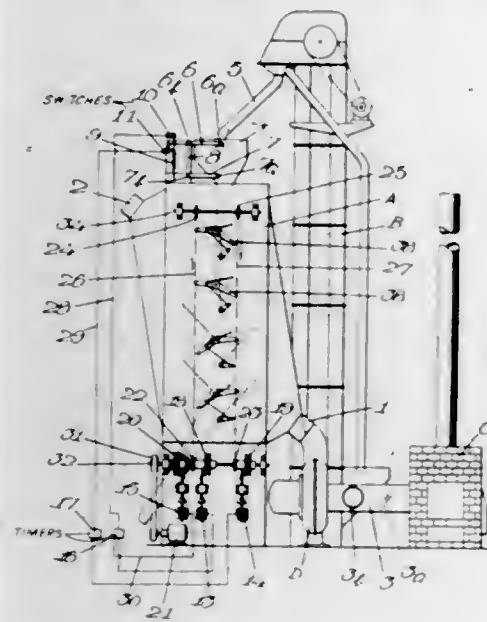
A heat exchanger composed of two grate sections. The



first grate section slopes downwardly towards the second grate section which, itself, slopes upwardly.

### 3,412,478 GRAIN DRIER

Toshihiko Satake, 2-38 Nishihon-machi, Saijyo-cho, Kamo-gun, Hiroshima-Prefecture, Japan  
Filed Feb. 18, 1966, Ser. No. 528,510  
Claims priority, application Japan, Apr. 28, 1965, 40/25,290, 40/25,291, 40/25,292  
9 Claims. (Cl. 34-172)



A grain drier is comprised of a vertically arranged chamber for passing the grain downwardly in contact with an upwardly flowing drying medium such as hot air. At its upper end the drying chamber receives grain from a hopper which is pivotally mounted on the drying chamber. A number of shutters are disposed within the drying chamber and are rotatably movable between opened and closed positions. Each of the shutters is mounted on a rotatable shaft extending transversely of the drying chamber and the shafts are arranged in pairs. As the hopper is filled to a predetermined level due to its pivotal mounting it closes switch means which activates driving means for disposing the shutters from the closed to the opened positions. Similarly, the hopper is arranged to close a second switch means when it is empty to activate other means for moving the shutters from the opened into the closed positions. Interconnected level means are provided on each pair of shafts by means of which the shafts are rotated and the shutters displaced between the opened and the closed positions. A rotatable outlet valve is provided at the lower end of the chamber and is placed in operation as the shutters are moved into their opened positions for positively discharging the grain from the drying chamber.

### 3,412,479 ROLL STRUCTURE FOR DRYING OF CELLOPHANE

Patrick Lewis Markovic, Clinton, Iowa, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
Filed Mar. 25, 1966, Ser. No. 537,288  
1 Claim. (Cl. 34-240)



A roll structure adapted for use in drying cellophane film structures is provided; said roll structure generally

comprises a cylindrical body of aluminum having an initial surface roughness of less than 80 microinches (RMS), a Brinell Hardness of between 25 and 75, and a final surface roughness between 300 and 650 microinches (RMS).

### 3,412,480

#### EDUCATION APPARATUS

Clyde A. Connell, Tyler, Tex., assignor to James W. Fair, Tyler, Tex.  
Filed Sept. 13, 1966, Ser. No. 579,040  
11 Claims. (Cl. 35-9)

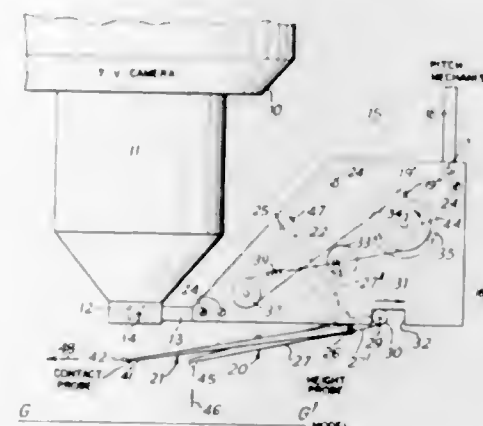


Information displaying apparatus for use in conjunction with projectors comprising a frame having top and bottom panels defining a pocket therebetween for the reception of an information bearing transparency. The bottom panel has an enlarged light passing window therein and the top panel is provided with selectively openable viewing ports so as to enable a selective projection of information through the frame by a projector. Closures are associated with the viewing ports in a manner whereby both a partial and a complete opening of the individual ports can be achieved with the information thereon being read from left to right.

### 3,412,481

#### FLIGHT TRAINING APPARATUS

Maurice Shirley Flower, Forest Row, Sussex, and Roy Alfred George Gasson, Tilgate, Crawley, Sussex, England, assignors to Communications Patents Limited  
Filed May 1, 1964, Ser. No. 364,221  
Claims priority, application Great Britain, July 1, 1963, 26,007/63  
1 Claim. (Cl. 35-12)



This invention provides height determining apparatus for use in conjunction with ground-based flight training equipment of the kind in which visual effects corresponding to the view seen by the crew of an actual aircraft are simulated, using a movable television camera to view a model of the ground and a television receiver to provide the scene presented to the trainee crew.

The height determining apparatus incorporates electromechanical means actuated by a mechanical member to provide a signal which varies with altitude, when the

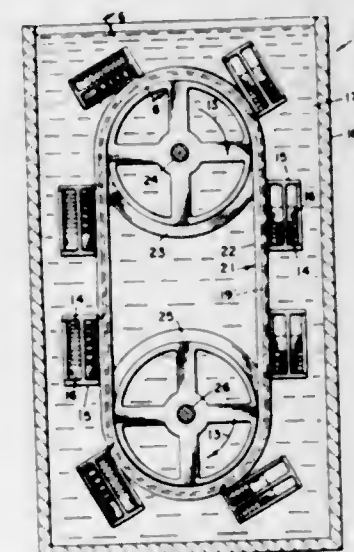
mechanical member is in contact with the surface of the model. When this first signal equals a second signal, corresponding to the height above ground of the pilot's viewpoint, the first signal is fed to means by which this height of the camera above the model is maintained.

The electromechanical apparatus may also be actuated by a second mechanical member, to provide a signal for feeding to electrical computing means in which the limits of a simulated runway of the model are defined. The computing means arrests the camera, if contact is made by the second mechanical member with simulated objects, located external to the simulated runway area, so that crash conditions may be simulated.

### 3,412,482

#### BUOYANCY DEMONSTRATING APPARATUS

Kasimir C. Kusmer, Montgomery, Ill.  
(1021 Cochran St., Aurora, Ill. 60506)  
Filed Jan. 19, 1966, Ser. No. 521,630  
1 Claim. (Cl. 35-19)

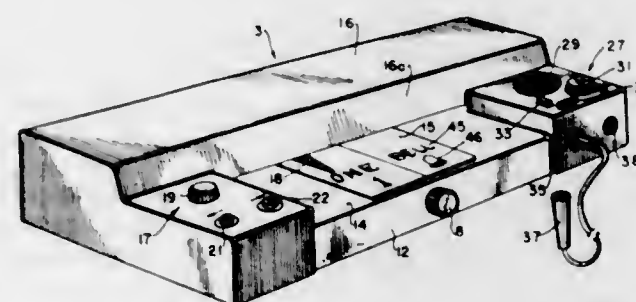


An endless carrier immersed in a liquid and traveling in a vertical plane. Expandable and compressible gas chambers are provided at spaced points along the running length of the carrier, each chamber having a weight which compresses the chamber during downward travel and expands the chamber during upward travel. Ducts are provided for transferring gas from the compressing chambers on the descending run to the expanding chambers on the ascending run on the carrier.

### 3,412,483

#### DEVICE FOR REPRODUCING SOUND FROM A CARD SHAPED RECORD

Marvin Jacobs, 37 Huckleberry Drive, Norwalk, Conn. 06850  
Filed July 7, 1964, Ser. No. 380,810  
8 Claims. (Cl. 35-35)



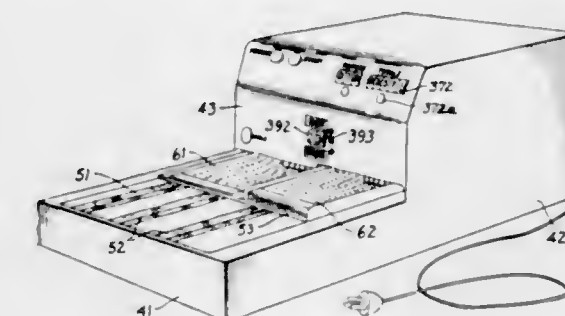
An audio-visual device in which a plurality of cards each having an audio-sound track thereon are held on a

platform with the respective sound tracks in registration with each other and with a pickup means. Relative movement is provided between the cards and the pickup means so that the sound information on the sound tracks is reproduced and an indicator is provided to point to indicia on the card corresponding to the sound being played.

### 3,412,484

TEST SCORING AND CORRECTING MACHINE  
Ralph A. Evans, Chapel Hill, N.C., and Kenneth E. Gell, Naples, N.Y.; said Evans assignor to Loran S. Clark, Gloversville, N.Y.

Filed May 12, 1966, Ser. No. 549,616  
14 Claims. (Cl. 35-48)



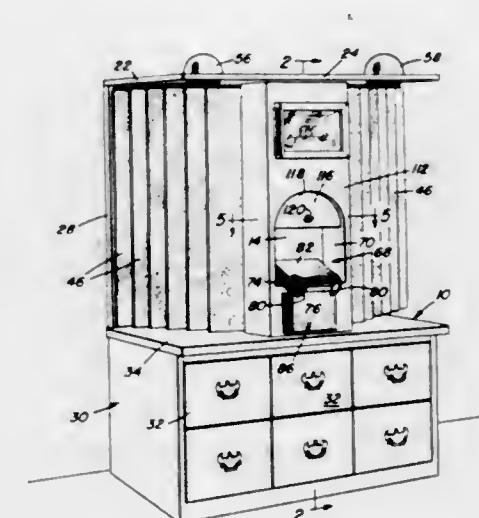
A test scoring machine in which multiple choice answer sheets are scanned synchronously, and electrically compared with a key sheet. Scanning is bidirectional, the left hand side of each sheet being scanned on one pass and the right hand side on the other. The answer sheets are stacked on a carriage, and the answer sheet sensors are vertically adjusted automatically to remain at constant spacing from the top sheet of the stack. Crayon marking devices are automatically actuated to mark the correct answer in the event of a wrong or skipped answer.

### 3,412,485

#### CARPET DISPLAY DEVICE

Guy L. Reigler and William J. Hartley, New York, N.Y., assignors to Thomas Pride Mills, Inc., a corporation of New York

Filed Aug. 22, 1966, Ser. No. 574,019  
10 Claims. (Cl. 35-55)

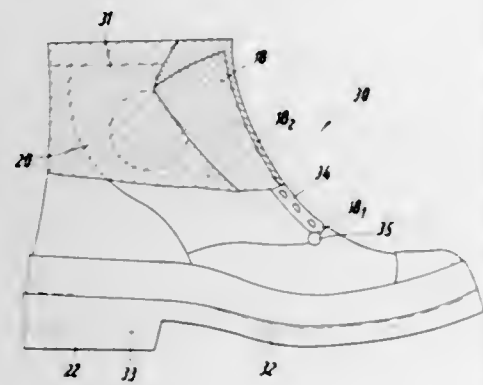


A carpet sample display device including a structure for supporting carpet samples in observable position and illumination devices selectively actuated for illuminating the carpet samples with various types of illuminations.



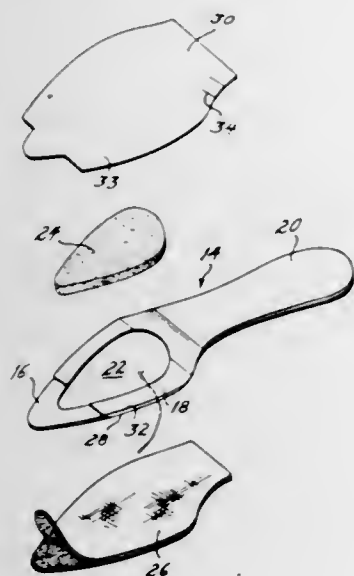
### 3,412,486 FOOTWEAR HAVING A UNITARY MOLDED STRUCTURE

Herbert Ludwig, Uesen via Bremen, Germany; Friedrich Koch and Hans Lowe, executors of the estate of Herbert Ludwig, deceased, assignors to Desma-Werke Gesellschaft mit beschränkter Haftung, Uesen via Bremen, Germany, a firm  
Original application Apr. 30, 1964, Ser. No. 363,965.  
Divided and this application Sept. 9, 1966, Ser. No. 494,299  
Claims priority, application Germany, Apr. 30, 1963, D 41,458  
8 Claims. (Cl. 36—4)



Footwear having a unitary structure produced by a molding process. The footwear includes a lower portion, an outer upper portion, an inner upper portion and tongue. The tongue is unifiedly joined to the inner upper portion and the outer upper portion at the ends and sides of said tongue. The outer portion comprises a moldable material which is connected to the lower portion of the footwear.

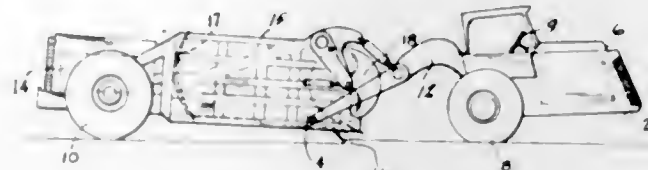
3,412,487  
INSOLE CONSTRUCTION  
Frederick J. Diamant, % Desco Shoe Corporation,  
16 E. 34th St., New York, N.Y. 10016  
Filed Oct. 11, 1965, Ser. No. 494,757  
1 Claim. (Cl. 36—44)



An insole having a base member conforming generally to the shape of the sole of the foot, with the middle portion thereof being flexible and the front and rear portions thereof being relatively rigid; a resilient pad juxtaposed to the base member only at a position corresponding generally to the location of the ball of the foot, a flexible covering overlying the pad and a portion of both the upper and lower surfaces of the base member, a flexible covering on the lower surface of the base member, and joining means extending through the flexible

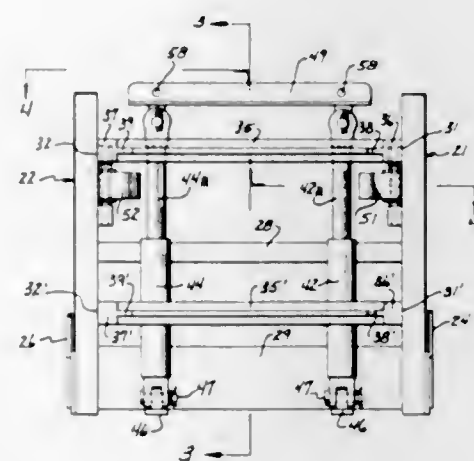
coverings and base members for holding the resilient pad in position; and a method for making insoles of the aforesaid type.

3,412,488  
EARTH-MOVING MACHINE  
Walter Carston, 221 S. Front St.,  
Delano, Calif. 93215  
Filed Mar. 1, 1966, Ser. No. 538,424  
6 Claims. (Cl. 37—9)



A self-loading earth mover is disclosed including a rotary loading structure that is critically positioned in relation to a cutting blade at the forward termination of the load-carrying bowl. The loading structure includes two horizontal elongate blades fixed to revolve in a somewhat planetary manner whereby the blades are held against axial rotation as they are carried in a circular loading pattern of motion to cyclically receive earth from the cutting blade and carry such earth upward and rearward for distribution in the bowl. The loading blades are utilized to close the forward bowl opening while transporting the load. To discharge the load a discharge ram pushes the entire load forward, with a roller-borne false bottom carrying a large portion of the load to the forward opening without sliding friction. When the false bottom has travelled to the front of the bowl it is stopped, as the ram (having removed a substantial part of the load) can now provide sufficient force to overcome the sliding friction of the remaining load.

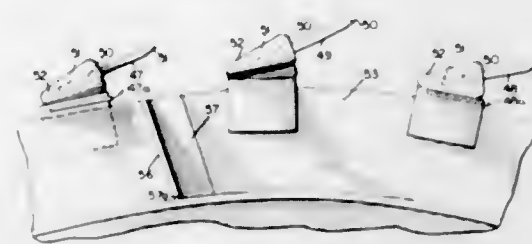
3,412,489  
COUPLING APPARATUS  
Glen Klapprott, Mount Morris, and Eskil W. Swenson, Cherry Valley, Ill., assignors to Swenson Spreader & Mfg. Co., Lindenwood, Ill., a corporation of Illinois  
Filed Sept. 8, 1966, Ser. No. 578,041  
7 Claims. (Cl. 37—42)



A quick-hitch coupling apparatus employs an inverted U-shaped frame on the implement and a corresponding U-shaped rail frame mounted on the vehicle with alignment of the frames effected by a centering bar with shoulders extending outwardly from the rail frame. Lateral movement is prevented by shoulders adjacent the inner side of each rail and by hooks mounted on the rail frame which engage the back sides of the implement frame legs.

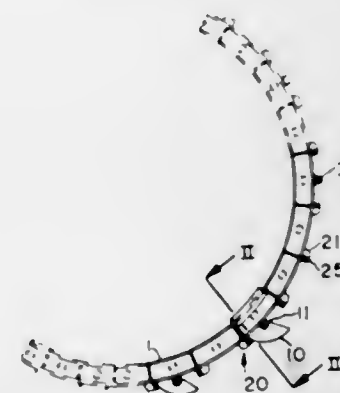
Vertical adjustment is effected by hydraulic lifting means generally following the shape of, the heating element. A thermostat is located such that it senses temperature which engage the central portion of the implement frame.

3,412,490  
TRENCHING MACHINE  
Frank M. Reising, P.O. Box 26,  
Edinburg, Tex. 78539  
Filed Sept. 30, 1965, Ser. No. 491,795  
6 Claims. (Cl. 37—87)



A high-speed trenching machine having a digger wheel provided about its periphery with a plurality of arrays of digging teeth, each array of teeth including teeth of different form arranged in a predetermined manner to perform different cutting functions, the digger wheel being associated with earth deflectors and the mechanism mounted for a resilient application of power.

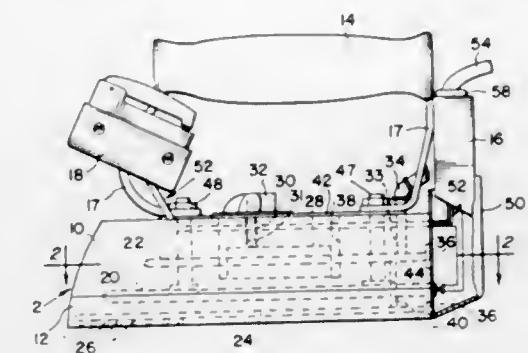
3,412,491  
LOCK FOR REVERSIBLE BUCKET WHEEL  
Johann A. Raabe, Badhoevendorp, and Wiebrand Westerbink, Amsterdam, Netherlands, assignors to Hewitt-Robins, Incorporated, Stamford, Conn.  
Filed Feb. 17, 1966, Ser. No. 528,115  
6 Claims. (Cl. 37—189)



A bucket wheel digger having reversible buckets so that the digger may be operated in both directions of rotation of the wheel. A locking means cooperates with the buckets to lock them in a selective position. The locking means comprises a clamp and a wedge whereby the clamp is wedged against a bucket adjacent the bucket lip and the bucket lip in turn is wedged against the wheel. A barrier plate cooperates with the bucket lip to prevent spillage.

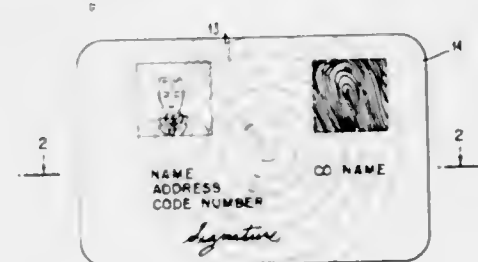
3,412,492  
STEAM IRON  
Leonard J. McCormack, Winchester, Va., assignor to Reimers Electra Steam, Inc., Clearbrook, Va., a corporation of New York  
Filed Aug. 10, 1967, Ser. No. 659,738  
9 Claims. (Cl. 38—77)

An improved steam iron of the type which utilizes an external steam supply and comprises an upper or superheating section and a lower section or sole plate. A heating element is positioned between the upper section and the sole plate. Relatively small steam channels are located in the superheating section in close proximity to, and



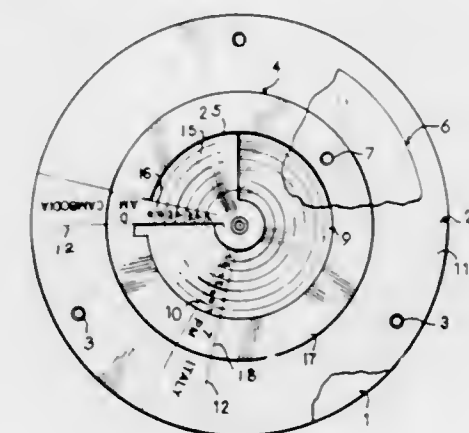
changes occurring both in the vicinity of the superheating channels and in the sole plate.

3,412,493  
TAMPER-PROOF RECORD STRUCTURE  
Walter K. French, Montrose, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed May 2, 1966, Ser. No. 546,793  
7 Claims. (Cl. 40—2.2)



This invention relates to a record structure and more particularly to a structure for a record, such as an identification card, which structure protects the indicia on the record from being counterfeited or tampered with.

3,412,494  
WORLD TIME GUIDE DEVICE  
Arthur C. Vogel, 7 Bittersweet Lane,  
Glen Cove, N.Y. 11542  
Filed Aug. 22, 1966, Ser. No. 574,175  
7 Claims. (Cl. 40—70)



A guide including a main disc marked off into geographical time zone sectors, and including a selector dial marked off into hour sectors each showing a different hour of the day. The days of the week are shown on both the disc and the dial. The dial is pivoted centrally to the disc and interleaved with the latter, so that when the dial



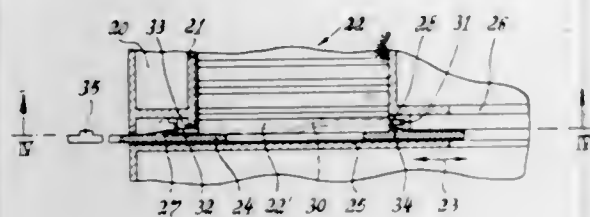
is rotated relative to the disc and a selected hour sector is brought into register with a selected zone sector the corresponding hour for any day will be indicated for each of the other zone sectors.

3,412,495

### SLIDE-CONTROLLING STRUCTURE FOR PHOTOGRAPHIC PROJECTORS

Erich Zillmer, Braunschweig, Germany, assignor to Voiglander A.G., Braunschweig, Germany, a corporation of Germany

Filed Feb. 21, 1966, Ser. No. 528,870  
15 Claims. (Cl. 40-79)



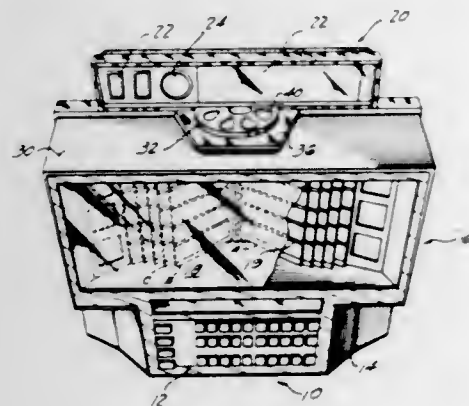
A photographic slide projector with respect to which slides in a container forming part thereof are adapted to pass successively through an outlet from said container to a projection position and wherein the outlet is great enough to permit a slide of maximum thickness to pass therethrough, and wherein slide changing means engage and transfer the slide through the outlet to the projection position; blocking means being provided to obstruct part of the container outlet to permit only a slide of less than maximum thickness to pass therethrough from the container to the projection position; the blocking means having a non-blocking position with no obstruction of the container outlet to permit a slide of maximum thickness to pass from the container to the projector position; and sensing means for sensing the thickness of a slide which is in position to pass through the outlet from said container to the projection position, said sensing means responding to the sensing of a slide of varying thickness to control the positioning of the blocking means to its blocking or non-blocking position.

3,412,496

### REMOTE CONTROL SELECTOR FOR AUTOMATIC PHONOGRAPHS

Roger J. Hendricks and Edwin J. Piersma, Grand Rapids, Mich., assignors to Canteen Corporation, Chicago, Ill., a corporation of Delaware

Filed Dec. 10, 1965, Ser. No. 512,919  
3 Claims. (Cl. 40-104)



The device shown is a title page display unit for use in a remote selector or wall box for a coin-operated phonograph (juke box). In such wall boxes the available

display area is small so that all available titles cannot be shown simultaneously. The titles are mounted on pages which can be turned successively under the control of a manually-operated knob. The knob actuates a gear train including a rack acting on successive sector gears, one on each page to be turned.

3,412,497

### FIRECRACKER SHOOTER

Robert M. Denton, George P. Holt, Jr., and Ray Wilson, Nashville, Tenn. (all of P.O. Box 46, Old Hickory, Tenn. 37138)

Filed July 11, 1967, Ser. No. 652,448  
10 Claims. (Cl. 42-54)



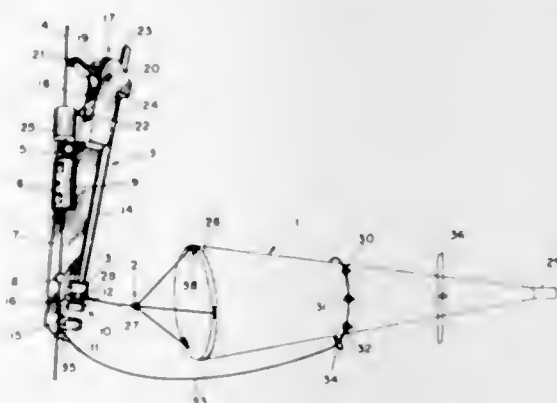
An elongated barrel adapted to receive a firecracker and contain the explosion thereof; the rear end of the barrel being closed in operative position, and the muzzle having a constricted opening for receiving the firecracker.

3,412,498

### APPARATUS FOR PROCURING OCEANOGRAPHIC SAMPLES

Shale J. Niskin, Miami, Fla., assignor to University of Miami, Miami, Fla., a corporation of Florida

Filed Jan. 20, 1966, Ser. No. 521,995  
4 Claims. (Cl. 43-8)



A plankton sampling net is provided with a towing line, a throttling line and a bundling line. The net lines are connected to a towing cable by a bolt-type, lever operated release mechanism. The net is initially bundled in closed condition and the towing and bundling lines are releasably secured to the bolt. A first messenger sent down to

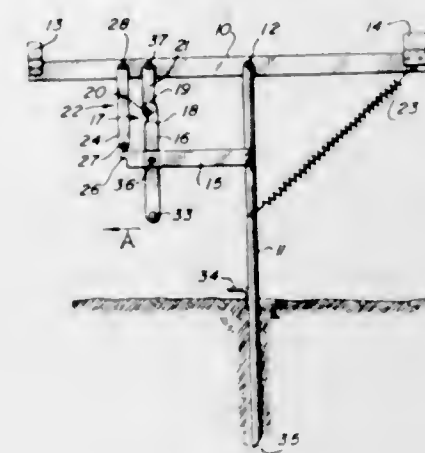
the cable operates the bolt releasing the bundling line to permit the net to open. A second messenger sent down the cable operates the bolt again to release the towing line and the throttling line becomes effective to close the net.

3,412,499

### FISHING ROD HOLDER AND TRIGGER

Sam Pastovich, Sr., Box 27, Morrisonville, Ill. 62546

Filed Sept. 30, 1965, Ser. No. 491,694  
3 Claims. (Cl. 43-15)



A fishing pole holder has a trigger latch mechanism which includes two pivoted elements interengageable with each other under tension. The preferred latch mechanism comprises a rotatable round pin carried by a fishing pole support arm, and a hook carried by a pivotally mounted latch element on a vertical post, with a confining surface on the hook which terminates just beyond the vertical diameter of the rotatable round pin. A safety device may be included for use while the trigger mechanism is being set.

3,412,500

### FISH LURE

Lauri F. Lahtinen, Box 454, Hearst, Ontario, Canada

Filed June 10, 1966, Ser. No. 556,614  
10 Claims. (Cl. 43-41)



The fish lure is formed in the shape of a small fish and comprises an elongated, longitudinally arcuate, hollow body having a head end, a tail end, bottom and opposed sides. The body is also approximately circular in cross section and tapers rearwardly from the head end to a pointed tail end. The convex side of the longitudinally arcuate body has a longitudinally extending tapering slot extending from the head end to the tail end. The head end carries a pivoted spoon-like lip.

3,412,501

### EXTENSIBLE FLY SWATTER

Leonard B. Rosen, R.D. 2, Jamestown, Pa. 16134

Filed Dec. 1, 1966, Ser. No. 598,330  
4 Claims. (Cl. 43-137)

An extensible fly swatter having a pair of telescoping handle members, one of which is provided with an elongated

gated groove and the other of which is provided with a guide which fits into the groove. Relative rotation of the



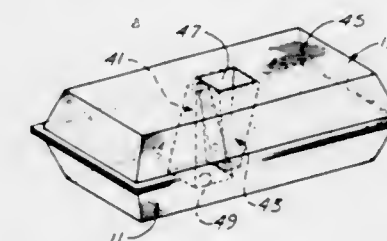
handle members permits the fly swatter to be "locked" with the handles in either retracted position or extended position.

3,412,502

### HOLLOW REINFORCED NESTABLE BUILDING BLOCK

Clay E. Riches, 1596 Fuller Drive, Salt Lake City, Utah 84117

Filed June 2, 1966, Ser. No. 554,852  
8 Claims. (Cl. 46-25)



1. A unitary building block comprising two similar congruous tray elements side walls and having substantially flat bottom walls, united by a flexible hinge along a common boundary line, said tray elements having substantially the same overall dimensions, each tray element being provided with an upstanding structural hollow strut element less than twice the height of said side walls to give support to the bottom wall of the other tray element when said two tray elements are folded together.

3,412,503

### POPGUN TOY

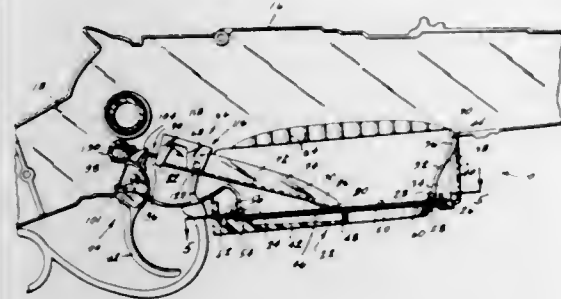
John W. Ryan, Bel-Air, and Lester T. Stormon, Manhattan Beach, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of California

Filed Feb. 9, 1966, Ser. No. 526,268  
9 Claims. (Cl. 46-84)

A gun housing having a plastic diaphragm and a pivoted trigger-actuated hammer. A coil spring surrounds the



hammer pivot and both its ends engage the hammer on respectively opposite sides of the pivot with one of those ends projecting from the hammer to engage a fixed stop and load the spring when the trigger swings the hammer away from the diaphragm. The spring end leaves the



fixed stop before the hammer strikes the diaphragm so that spring force is not exerted on the diaphragm when the hammer is at rest. Optional additional structure includes a spring driven flying hoop actuated by the hammer.

3,412,504

#### MAGNETICALLY CONTROLLED DOLL TEARING MECHANISM

Dorland L. Crosman, Glen Ridge, N.J., assignor to De Luxe Topper Corporation, a corporation of Delaware

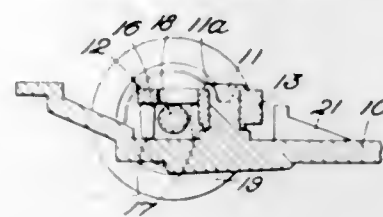
Filed Oct. 6, 1966, Ser. No. 584,763

9 Claims. (Cl. 46—135)



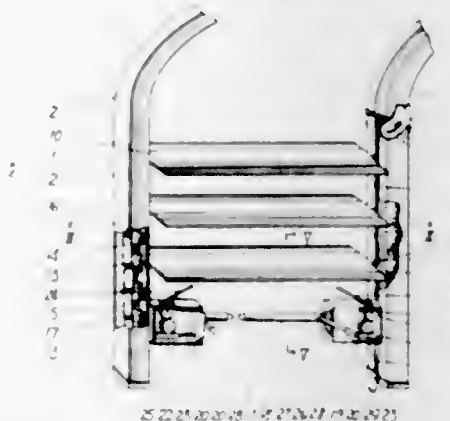
1. In a doll, an apparatus for simulating the appearance of tears at the eyes of the doll, said apparatus comprising:
  - a reservoir within the doll's head for containing the tear-simulating liquid,
  - a tearing conduit extending from said reservoir to a hole in the doll's head near the eye, one end of said conduit communicating with said reservoir at an opening provided therein,
  - means for sealing said opening, said sealing means being movable away from said opening to establish communication between said reservoir and conduit, and
  - magnetic means operatively connected to said sealing means, said magnetic means being adapted to cooperate with an external control magnet to cause said sealing means to move with respect to said opening, thereby controlling the flow of the liquid within said reservoir through said conduit to said hole.

**3,412,505**  
**AXLE SUPPORT FOR TOY VEHICLES**  
 Aubrey Robert Mills, London, England, assignor to Die Casting Machine Tools Limited, London, England, a British company  
 Filed Dec. 16, 1965, Ser. No. 514,282  
 Claims priority, application Great Britain, Feb. 22, 1965, 7,578/65  
 5 Claims. (Cl. 46—221)



A toy vehicle having a rigid base, an axle extending transversely across the base on the upper side thereof and carrying a wheel at each end, and a resilient plastic member rotatably secured to the base and having a portion straddling the axle to urge the axle resiliently down onto the base. The plastic member serves to hold the axle in position, to provide a resilient suspension therefor, and as a steering means for the vehicle.

**3,412,506**  
**SECURING MEANS FOR SUNSHADE SCREENS FOR AUTOMOBILES OR THE LIKE**  
 Masayoshi Shiota, Otsu 479, Oaza Takotsu, Tadotsu-machi, Naka Tado-gun, Kagawa-ken, Japan  
 Filed May 19, 1967, Ser. No. 639,876  
 4 Claims. (Cl. 49—82)



A slatted sunshade for mounting in an automobile and the like, comprising a pair of spaced parallel guide rails each having a hollow interior and guide slots in the opposed faces of the spaced rails opening into the respective hollow interiors, a plurality of rods extending between the guide rails with the ends of the rods extending through the guide slots into the interiors of the guide rails, a slat mounted on each rod, a gear wheel on each end of each rod and positioned in a guide rod, an idler gear between each pair of gear wheels and in mesh with said gear wheels within said guide rails, connecting means connecting the chain of gear wheels and idler gears in each guide rail, and a control means coupled to the lowest of said rods for rotating said rod, whereby the gear trains are rotated to adjust the angle inclination of said slats.

**3,412,507**  
**SUSPENSION DEVICE FOR A SEALED ROLLING DOOR AND THE APPLICATIONS THEREOF**  
 Bernard Sterner, Paris, France, assignor to Societe Armetel, Saint Ouen, France, a French body corporate  
 Filed Feb. 6, 1967, Ser. No. 614,251  
 Claims priority, application France, Feb. 15, 1966, 49,604  
 12 Claims. (Cl. 49—212)

A suspension device for suspending a sealed rolling door from a wall, in particular for a cold store, the sus-

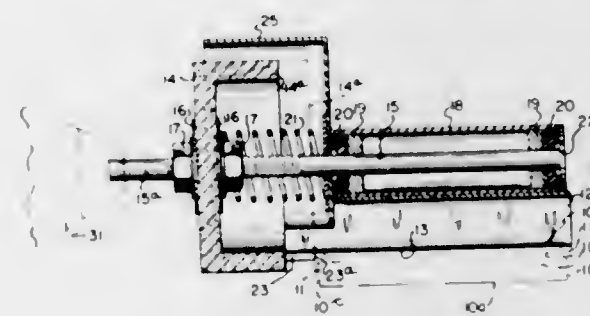
pension device being such as to move the door away from the wall and off the sill of the door opening for rolling

close the same. Sealing means are provided for sealing the peripheral edge of the cover member to the top portion of the structure in a relatively air-tight manner and means are provided for introducing air under pressure



the door along a rail which is connected to the wall by the suspension device.

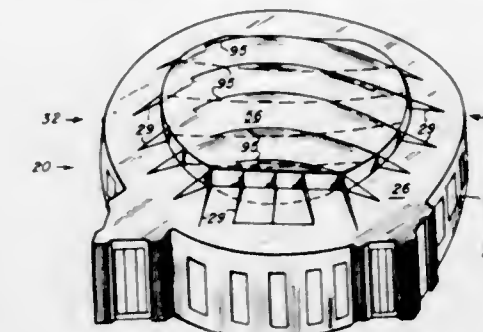
**3,412,508**  
**SKI SHARPENER**  
 Liguori J. Schell, Jr., 18432 Lake Shore Blvd., Cleveland, Ohio 44110  
 Filed Feb. 16, 1966, Ser. No. 527,964  
 2 Claims. (Cl. 51—170)



A grinding wheel for sharpening the running edge of a ski is mounted on a base which is slidable longitudinally of the bottom of an upturned ski, the wheel being mounted on the base for rotation and for axial reciprocation longitudinally of the wheel shaft for advance and withdrawal of the grinding face of the wheel relative to the running edge, and stop means is provided for controlling the engagement of the grinding face with the edge to be sharpened. The grinding wheel shaft extends beyond the grinding wheel away from the base sufficiently to be engaged by the chuck of a portable drill by means of which the wheel may be rotated and may be reciprocated toward the base against the action of the urging means so as to cause the grinding face to engage the running edge of the ski in a sharpening operation.

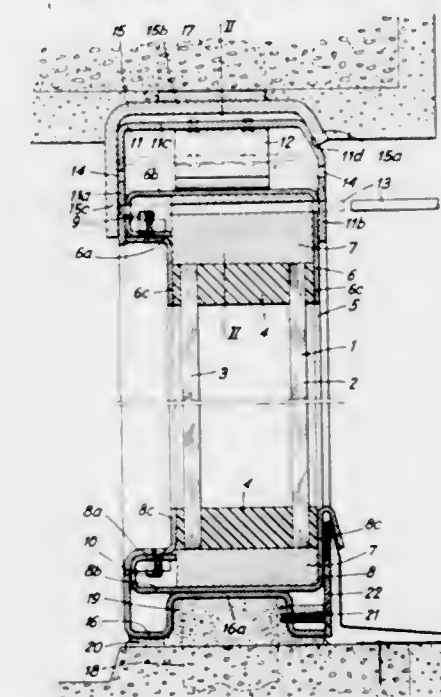
**3,412,509**  
**RETRACTABLE ROOF**  
 Nicholas B. Popil, 6945 W. Pleasant Valley Road, Cleveland, Ohio 44129  
 Filed Mar. 17, 1966, Ser. No. 535,084  
 9 Claims. (Cl. 52—2)

An overhead enclosure or cover for covering large areas such as stadiums, arenas, factories, etc., which comprises a cover member connected to a top portion of the structure at the opening and motive power means are connected to an opposite portion of the cover member for moving the cover back and forth across the opening to



into the enclosure defined by the structure to extend the cover member preferably into a dome-like shape or into any other shape depending upon the fabrication of the cover member.

**3,412,510**  
**FIXTURE WITH AT LEAST ONE INSTALLATION UNIT FORMED OF GLASS ELEMENTS**  
 Siegfried Harcuba, St. Gall, Switzerland, assignor to Transglas A.G., Chur, Graubunden, Switzerland  
 Filed Dec. 9, 1966, Ser. No. 600,530  
 Claims priority, application Switzerland, June 7, 1966, 8,169/66; Dec. 10, 1965, 17,051/65  
 11 Claims. (Cl. 52—127)



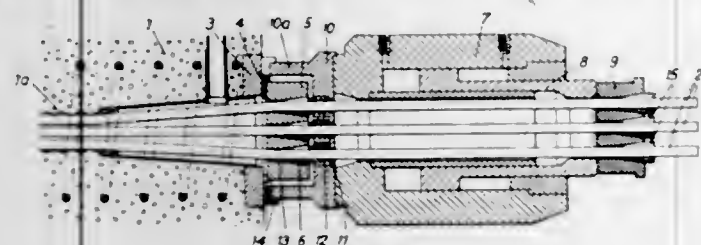
A fixture or frame with at least one installation unit of glass elements manufactured as a prefabricated unit. At least one attachment rail is displaceable in a guide parallel to the plane of the glass. Resilient members act on the displaceable rail and an inclined guide surface cooperates with the resilient members for ready installation of the prefabricated unit in a building.

**3,412,511**  
**DEVICE FOR TENSIONING AND ANCHORING STRESSING MEMBERS OF A STRESSING CABLE**  
 Hans Dietrich, Bern, Switzerland, assignor to Losinger & Co., A.G., Bern, Switzerland, a company of Switzerland (limited by shares)  
 Filed Sept. 2, 1966, Ser. No. 576,955  
 Claims priority, application Switzerland, Sept. 16, 1965, 12,848/65; May 25, 1966, 7,541/66  
 12 Claims. (Cl. 52—223)

An assembly for tensioning stressing members in a concrete structure, including an anchor head receiving the stressing members and having a plurality of wedge clamps engaged on the stressing members, a hold up member positioned adjacent the outer face of the anchor

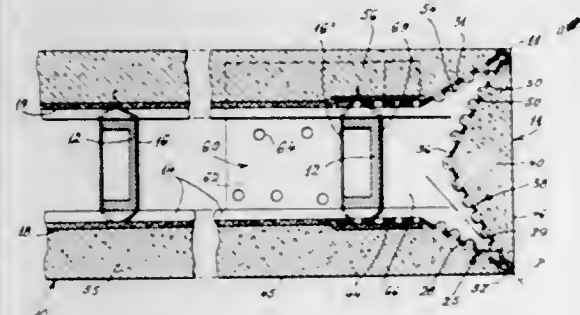


head and having means for uniformly limiting movement of the wedge clamps upon tensioning of the stressing members so that uniform slip results in the wedge clamps



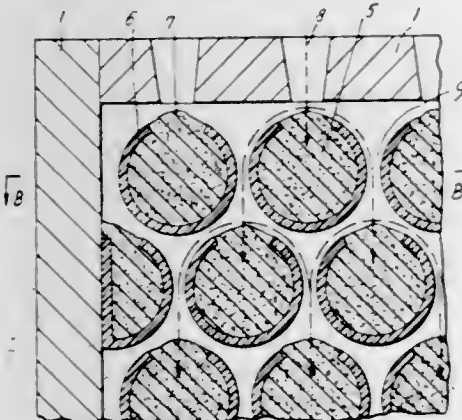
upon lessening of the tension, and a tensioning press mounted on the hold up member for simultaneously tensioning all the stressing members.

**3,412,512**  
**PARTITION CONSTRUCTION EMPLOYING DOUBLE CORNER BEAD**  
Harry W. Hollister, 89 Thayer St.,  
New York, N.Y. 10040  
Filed July 6, 1967, Ser. No. 651,606  
9 Claims. (Cl. 52-239)



The disclosure describes a partition structure in which a free end or edge of the partition has a bead or molding embedded in plaster and formed with dual ribs defining parallel spaced corners. The ribs are V-shaped and are integrally joined by a narrow web defining a recess to receive plaster. A side flange is integrally joined to one panel of one rib. The ribs, web and flange are all apertured to receive plaster keys and nails, clips or wires for laths. Slits can be formed in the bead defining tongues or prongs which can be twisted in or out to engage wire lath, frame bars, and other parts of a partition.

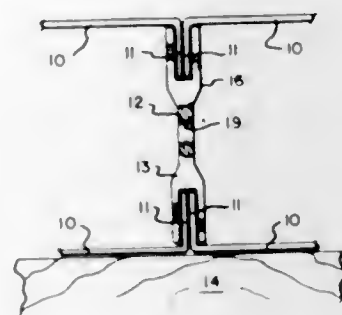
**3,412,513**  
**PLATE-LIKE SOUND-ABSORBING STRUCTURAL ELEMENT PREFERABLY HAVING TWO OUTER PLATE-SHAPED MEMBERS**  
Karl Gosele, Stetten auf den Fildern, Germany, assignor to Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V., Munich, Germany  
Filed Mar. 30, 1965, Ser. No. 443,816  
Claims priority, application Austria, Mar. 31, 1964, A 2,769/64  
5 Claims. (Cl. 52-303)



A sound-absorbing structural element including two outer plate-shaped members, a sheet of sound absorbing

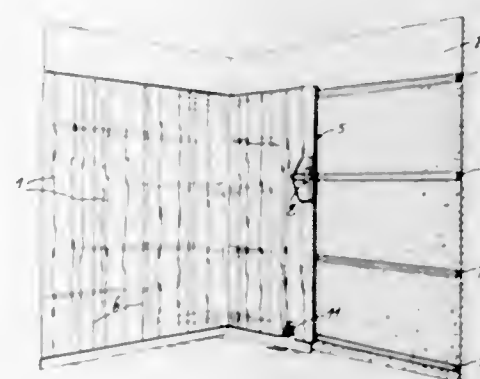
material between the plate-shaped members, a plurality of hollow spaces between at least one of the outer plate-shaped members and the sheet of sound absorbing material, and the hollow spaces being filled with a heavy bulk material such as sand, chipped stone, or the like.

**3,412,514**  
**CARGO-SUPPORTING FLOOR STRUCTURE**  
Julius L. Giovannucci, Rome, N.Y., assignor to Revere Copper and Brass Incorporated, Rome, N.Y., a corporation of Maryland  
Filed Dec. 8, 1965, Ser. No. 512,352  
1 Claim. (Cl. 52-480)



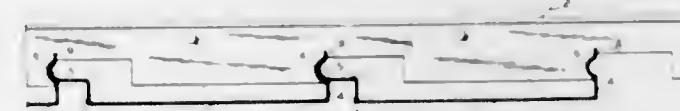
A cargo-supporting floor above the level of a base floor is provided by extruded vertical supporting elements each having a vertical body portion and a lower downwardly projecting forked portion for engaging the adjacent upstanding side portions of proximate base elements of the floor.

**3,412,515**  
**ASSEMBLY FOR INSTALLING PREFABRICATED WALL PANELS**  
Pierre Marie Paul Finon, Etrecty, France, assignor to Société Pour la Fabrication d'Isolants et Revêtements Ligneux "Isorel," Paris, France, a joint-stock company of France  
Filed Nov. 15, 1966, Ser. No. 594,562  
Claims priority, application France, May 6, 1966, 60,676  
4 Claims. (Cl. 52-480)



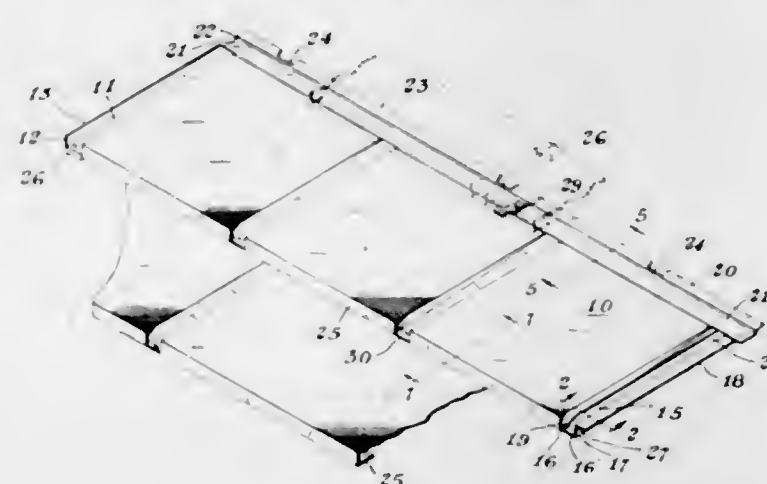
An assembly for installing prefabricated wall panels having opposed marginal grooves, said assembly including elongated base elements having a U-shaped section terminating in lateral flanges spaced above a web attached to base surface which the prefabricated panels will cover, junction elements overlying and secured to the base element flanges transversely of the longitudinal axis of the base elements, the junction elements having opposed reversely bent, resilient wings cooperating in pairs to receive opposed grooved edges of the prefabricated panels, and a panel anchor element suspended from the base elements and providing a lower support edge to support the lower edge of the prefabricated panels thereof.

**3,412,516**  
**CEILING OF PLURAL SHEETS WITH INTER-ENGAGING FLANGES FITTING IN BEAM RECESSES**  
Olov Lindström, Björnvagen 3, Lidings, Sweden  
Filed Nov. 29, 1965, Ser. No. 510,230  
Claims priority, application Sweden, Dec. 1, 1964, 14,479/64  
2 Claims. (Cl. 52-492)



A ceiling having a plurality of metal sheets wherein each sheet has longitudinal edges with upwardly directed flanges. The flanges have projections extending in the same direction which engage the projections upon an adjacent sheet. Laterally spaced beams extend transversely of the sheets with recesses therein corresponding to the projections. In addition, one of the flanges of each sheet has an upwardly directed edge portion which engages in a groove provided in the recesses of the beams.

**3,412,517**  
**SHINGLE**  
John T. Ellis, Damascus, Md., and Charles W. Glesner, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
Filed Sept. 29, 1967, Ser. No. 671,623  
6 Claims. (Cl. 52-520)

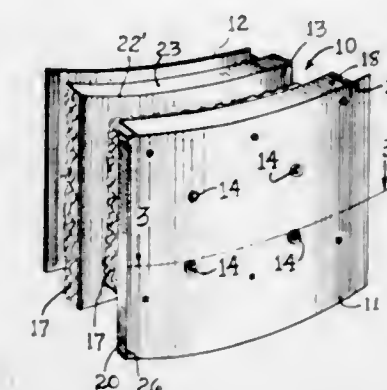


A shingle which comprises: a substantially rectangular sheet; a first trough tapered in depth along one side of the sheet; a second trough along the other side of the sheet, tapered in depth and having at least two distinct channels along the bottom of the trough, said second trough mates with a first trough in an adjacent sheet; a third trough running along the top of said sheet and communicating with said first and second trough; a flange along the top edge of the sheet and an intumed elongated flange along the bottom length of the sheet. Also, a plurality of said shingles can be assembled in an overlapping and staggered position to provide a watertight covering on the surface area, e.g., roof.

**3,412,518**  
**INSULATED WALL PANEL WITH SHIPLAP JOINT**  
William Waite, Elmhurst, Ill., assignor to Transco Inc., Chicago, Ill., a corporation of Delaware  
Filed Oct. 18, 1967, Ser. No. 676,214  
4 Claims. (Cl. 52-592)

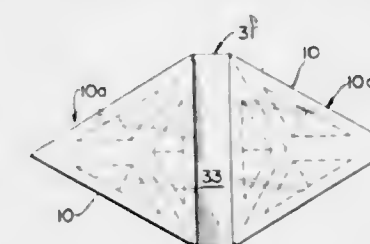
An insulated panel capable of being assembled into a wall structure for ducts, tanks, ovens, furnaces and the

like comprising a plurality of separated metallic supporting members having disposed therebetween a plurality of metallic foil sheets either randomly wrinkled or pre-



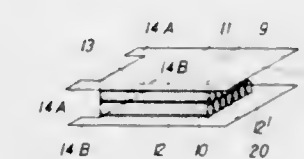
formed so as to provide a cellular structure providing heat retaining baffles, and with the supporting members being so arranged that they can be assembled in a shiplap relation.

**3,412,519**  
**BUILDING BLOCK STRUCTURE**  
David L. Brettingen, 74 Ash, Park Forest, Ill. 60466  
Filed Dec. 3, 1965, Ser. No. 511,533  
18 Claims. (Cl. 52-593)



A building block structure is disclosed herein for the purpose of illustrating the present invention and includes module pairs of assembled discs which can be pivotally linked together to form polyhedrons with openings through which struts may be inserted to connect same with other polyhedrons.

**3,412,520**  
**METHODS OF WRAPPING BLOCK-LIKE ARTICLES**  
Alfred Schmermund, 62 Körnerstrasse, Gevelsberg, Westphalia, Germany  
Filed July 16, 1965, Ser. No. 472,596  
Claims priority, application Germany, Aug. 10, 1964, S 35,606  
4 Claims. (Cl. 53-32)



The disclosure relates to methods of wrapping block-like articles, such as blocks of cigarettes, wherein a wrapper blank that is longer and wider than an article to be wrapped is provided at each of two opposite sides with two slits of which one starts from the corresponding wrapper blank edge and the other is angular, preferably rectangular, to and meets the first slit, to form flaps at said opposite sides of the wrapper blank. The blank is folded about the article to be wrapped along two parallel lines connecting ends of said other slits. Protruding side portions of the wrapper blank carry the flaps. All the protruding side portions are turned to lie flat against the



article, and the flaps protruding from side portions beyond the article are turned to lie flat against portions of the wrapper blank.

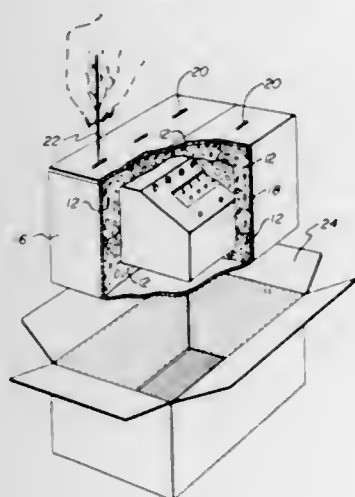
3,412,521

## METHOD FOR PACKING ARTICLES

William C. Bauman, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Continuation-in-part of application Ser. No. 347,910, Feb. 27, 1964. This application Feb. 6, 1967, Ser. No. 614,112

3 Claims. (Cl. 53—36)



A method for packing a fragile article by positioning sealed bags of compressed flexible synthetic foam about said article and then puncturing the bags whereby the compressed foam expands of its own volition to conform to a high degree to the shape of the article.

3,412,522

## MECHANISM FOR SUCCESSIVELY FEEDING BAGS TO A BAG LOADING MACHINE

Roy E. Schorer, Westwood, Mass., assignor to The William Carter Company, Needham Heights, Mass., a corporation of Massachusetts

Filed July 6, 1965, Ser. No. 469,501

4 Claims. (Cl. 53—189)



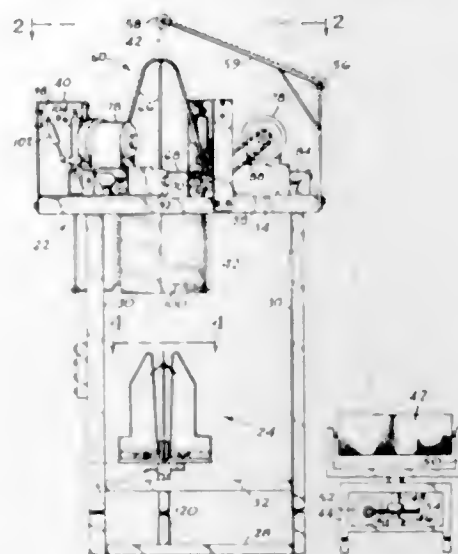
A bag loading machine which has a stack of collapsed bags on a vertically movable platform. The topmost bag is lifted into open-mouthed configuration to receive an article moved into the open bag. The loaded bag is then moved horizontally off the stack of bags. In order to maintain the rest of the bags in alignment on the platform, they are impaled on a U-shaped wicket whose parallel legs pierce flaps of the bags. The wicket is inserted through the flaps so that the connecting leg of the wicket lies on the bottom instead of, as has been common in the art, on top of the stack. As a result, the topmost bag flap is either lifted off the top, free ends of the wickets as the bag is lifted into open-mouthed configuration or cutters can be provided to cut the flap either during movement of the topmost flap upwardly or during its movement away from the fixed wicket, rather than tearing the cutter from a wicket which has its connecting leg on top of the stack.

3,412,523  
APPARATUS FOR LOADING TUBULAR PACKAGING MATERIAL ENDWISE ON SPOOLS

Gary L. Raymond and Gerald L. Raymond, Tacoma, Wash., assignors to G. R. Kirk Co., Puyallup, Wash.

Filed July 29, 1966, Ser. No. 568,803

11 Claims. (Cl. 53—197)



1. Apparatus for loading a continuous length of tubular packaging material endwise on a spool for holding and dispensing the same, the apparatus comprising

- (a) mandrel means dimensioned for insertion within the tubular packaging material,
- (b) feed means arranged for engaging the material and pulling it over the mandrel,
- (c) spool holding means adapted to mount a spool and with the spool mounted thereon dimensioned for insertion inside the mandrel means and for withdrawal therefrom, and
- (d) material transfer means associated with the spool holding means and operative to transfer the material from the mandrel to the spool as the spool holding means and spool are withdrawn from the mandrel.

3,412,524

## APPARATUS FOR PACKING A NUMBER OF OBJECTS ARRANGED UPON EACH OTHER AND FORMING A SUBSTANTIALLY CYLINDRICAL STACK

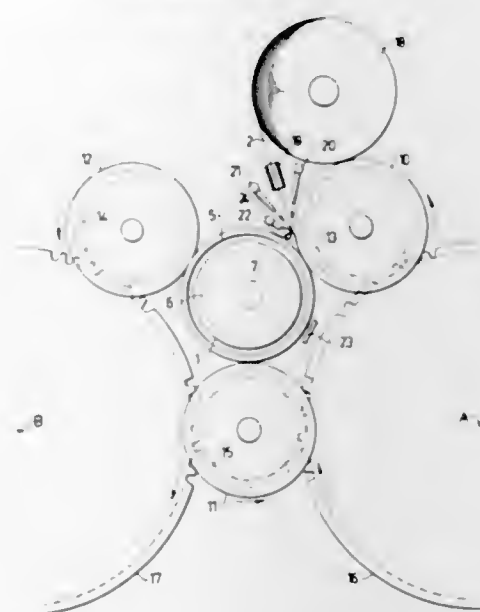
Carl-Gosta Nestell, Jaravallsgatan 47-49 Malmo, Sweden, and Hans Anders Rausing Kraftstorg 8, Lund, Sweden

Filed Nov. 1, 1965, Ser. No. 505,891

Claims priority, application Sweden, Nov. 7, 1964,

13,452/64; Apr. 6, 1965, 4,397/65

3 Claims. (Cl. 53—212)



Apparatus for packing a plurality of disc-like objects such as coins or the like in stack form comprises means

for forming the coins into a cylindrical stack, wrapping the stack in a sheath of heat-shrinkable material, and then heating the material so as to cause it to shrink about the stack.

3,412,525

## APPARATUS FOR WRAPPING OBJECTS

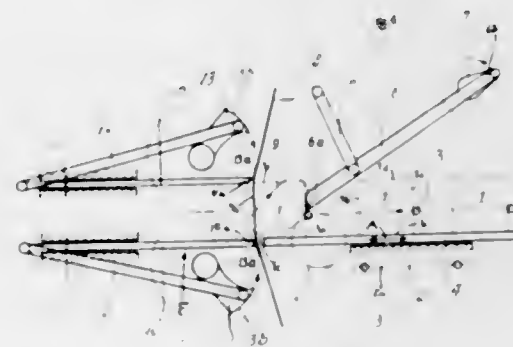
Hans Heinzer, Neuhausen am Rheinfall, Switzerland, assignor to Schweizerische Industrie-Gesellschaft, Neuhausen am Rheinfall, Switzerland, a corporation of Switzerland

Filed June 14, 1965, Ser. No. 463,644

Claims priority, application Switzerland, June 16, 1964,

7,817/64

7 Claims. (Cl. 53—229)



An apparatus for wrapping objects or articles wherein said objects or articles coming from a conveyor mechanism are pushed between a pair of spaced and movable plate members included within a folding compartment by a pusher means mounted for movement such that the operable end thereof describes a closed path. Rotating closing and welding jaws are provided adjacent the pair of spaced and movable plate members for folding-in and welding the ends of wrapping material utilized about each object. Additional means are provided for interconnecting the closing and welding jaws with the pair of spaced and movable plate members for displacing the latter in an oscillatory axial direction during operation of the closing and welding jaws.

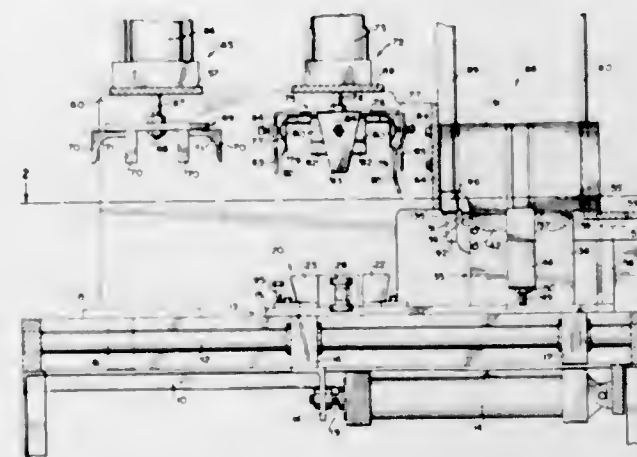
3,412,526

## APPARATUS FOR PREFORMING AND ASSEMBLING LIDS AND TRAYS

William H. Bennert, Ernest L. Bailey, and Paul A. Martin, Atlanta, Ga., assignors to Riegel Paper Corporation, New York, N.Y., a corporation of Delaware

Filed July 18, 1966, Ser. No. 566,014

19 Claims. (Cl. 53—289)



16. Handling and shaping apparatus for erecting and attaching domed lids to bulging type trays, wherein the upper edge portions of the trays and the outer edge portions of the lids are formed by arcuate panels, comprising

- (a) means for folding downward and inward the arcuate panels of a flat lid blank;

(b) said means for folding including lid retaining means;

(c) means for effecting relative closing movement between an erected tray and a folded lid retained in said means for folding;

(d) said lid blanks having locking tabs projecting outward from the arcuate panels thereof, and said apparatus including means cooperating with the means of subparagraph (a) for folding and retaining said locking tabs in a vertically downward direction; and

(e) said tray having locking slits disposed for engagement with said locking tabs and guide panels associated with said slits, and said apparatus including means for folding the guide panels into an upwardly inclined position, whereby said locking tabs engage and are guided by said guide panels into said locking slits upon closing movement of said lid and tray.

3,412,527

## HEAT SEALING PACKING DEVICE

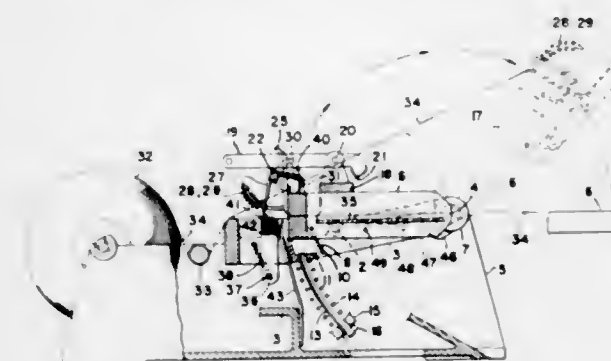
Theodorus H. Aquarius and Joannes F. Aquarius, Stramproy, Netherlands, assignors to N.V. Machinefabriek v/h Gebr. Th. en J. Aquarius, Stramproy, Netherlands, a corporation of Netherlands

Filed July 28, 1965, Ser. No. 476,228

Claims priority, application Netherlands, Aug. 3, 1964,

6408893

13 Claims. (Cl. 53—390)



Apparatus for sealing articles in a heat-sealable packing web, comprising a frame having upper and lower mating U-shaped sealing clamps hinged mounted thereon. An actuating handle is pivotally mounted on the upper sealing clamp and has associated therewith web clamp and cutting means so arranged that, when the handle is depressed, upper and lower sealing clamps engage and seal the periphery of a folded over web having an article placed therein and, as the handle is further depressed, the continuous web stock is cut from the sealed package and the free edge thereof engaged by the web clamping means. When the handle is subsequently retracted to return the upper sealing clamp to the open position, the web is drawn along thereby and placed in position for a subsequent sealing operation.

3,412,528

## PROCESS FOR THE PREPARATION OF HYDROFLUORIC ACID

Albrecht Migule, Liestal, Franco Gaia, Pratellin, and Renato Gentili, Muttentz, Switzerland, assignors to Buss A.G.

Continuation-in-part of application Ser. No. 302,784, Aug. 19, 1963. This application Aug. 17, 1967, Ser. No. 661,475

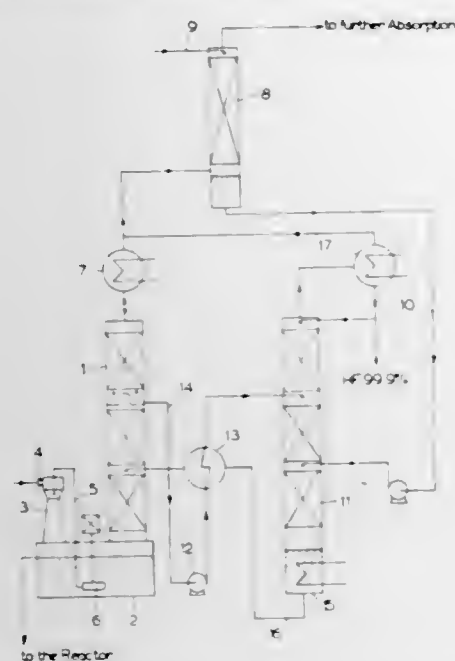
Claims priority, application Germany, Aug. 20, 1962, B 68,501

10 Claims. (Cl. 55—71)

Process for the isolation of pure hydrofluoric acid from reaction gases, comprising removing solid particles from the gases and cooling said gases so that the proportion of

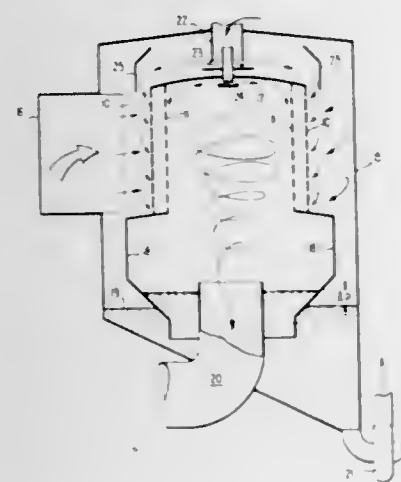


high boiling components are condensed, the still hot gases ascending a first column in which heat exchange and rectification takes place, and then condensing the resulting purified crude hydrofluoric acid substantially free of low boiling components, which is then passed after being



warmed in a heat exchanger into a second column operating under pressure, wherein the hydrofluoric acid is allowed to evaporate and any remaining high boiling components are washed out, and high purity hydrofluoric acid then being collected from a condenser at the end of the second column.

**3,412,529**  
**GAS SCRUBBING APPARATUS AND METHOD**  
John P. Taylor, Box 597, Davenport, Iowa 52805  
Filed Feb. 28, 1966, Ser. No. 530,616  
8 Claims. (Cl. 55-94)

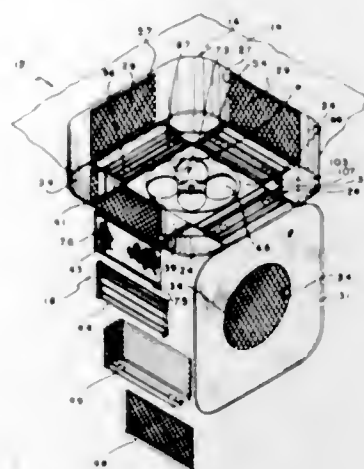


Gas scrubbing method and apparatus wherein an inwardly spiralling gas vortex is contacted with two annular films of scrubbing liquid, one film flowing down the outside of a perforated cylinder and the second film flowing down the inside of a concentric perforated cylinder inside the first cylinder.

**3,412,530**  
**ELECTROSTATIC AIR FILTER STRUCTURE**  
George H. Cardiff, 725 E. 37th St. N.,  
Wichita, Kans. 67219  
Filed Feb. 6, 1967, Ser. No. 614,276  
3 Claims. (Cl. 55-126)

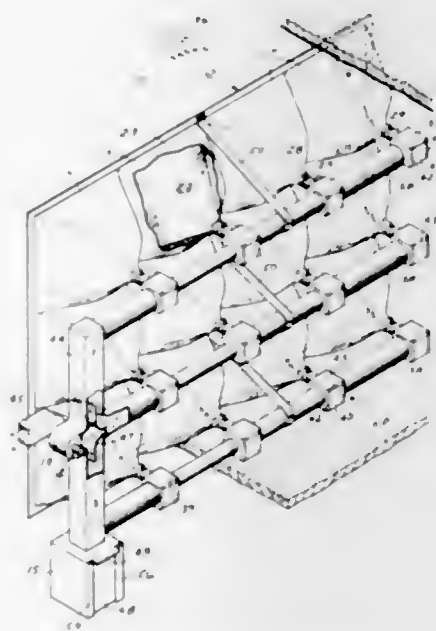
A compact, electrostatic air filter having a plurality of air inlet openings and a common forced air discharge outlet, a plurality of modular electrostatic precipitator cells each individually operable to separate foreign particles

from a given air flow therethrough, each cell having ionizer units and particle collector units readily remov-



able for service and maintenance with a minimum amount of time and effort required.

**3,412,531**  
**CLEANING THE AIR OF CIRCULATING AIR SYSTEMS**  
Louis Schwab, P.O. Box 5146, Orlando, Fla. 32805  
Filed Mar. 15, 1966, Ser. No. 534,359  
7 Claims. (Cl. 55-341)

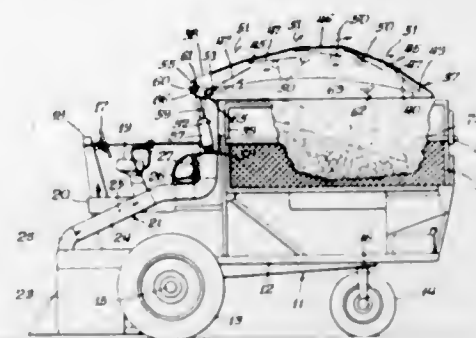


A particle separating assemblage for purifying a particle laden air flow in which the particle laden air is directed into the intake ends of a plurality of adjacent filtering units. In these units, part of the air substantially liberated of particles such as dust escapes for further use and the remaining air flow now heavily laden with particles is discharged from the assembly through a disposal port via the discharge ends of the units, conduits interconnecting the units and a common discharge conduit.

**3,412,532**  
**COTTON PICKER AND COTTON COMPACTOR THEREFOR**  
Louis E. Nickla, Memphis, Tenn., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey  
Filed Aug. 31, 1965, Ser. No. 484,011  
25 Claims. (Cl. 56-12)

A cotton compactor for a cotton container of a cotton harvester, the container having sides and a cotton inlet

through the upper portion of one side, a cover supporting compactor elements swingable from or with the cover into



the container against the stream of cotton for compacting the cotton into the container.

**3,412,533**  
**COTTON PICKER**  
Edward L. Robinson, Jr., Memphis, Tenn., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware  
Filed Aug. 3, 1966, Ser. No. 570,060  
9 Claims. (Cl. 56-12)

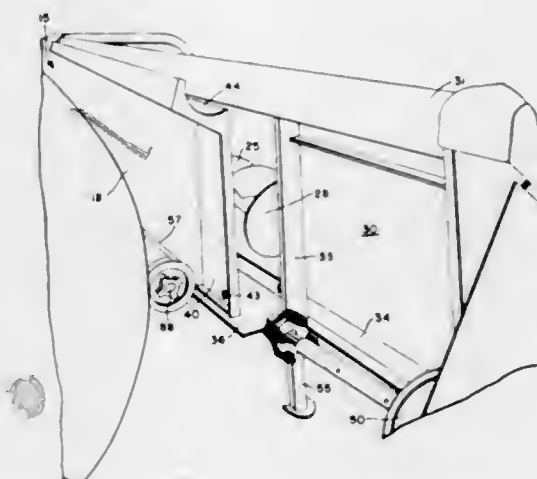


1. In a cotton picker having picker units, a storage basket, and means for conveying picked cotton from the picker units to the basket and operative for producing an air stream blowing the cotton into the basket in a near side thereof which forces trash from the basket through the far side, the trash thereupon falling in a stream down past the far side, the improvement comprising, a power plant incorporated in the picker and positioned generally under the basket and including a component to be cooled also positioned at least adjacent the area under the basket, and the power plant also including means for developing a cooling air stream, drawing the air from a location generally under the basket and removed from said falling trash stream and blowing it over the component to be cooled in a direction generally outwardly from said location.

**3,412,534**  
**CROP HARVESTER**  
Robert Edward Teale, East Moline, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware  
Filed May 2, 1966, Ser. No. 546,773  
5 Claims. (Cl. 56-15)

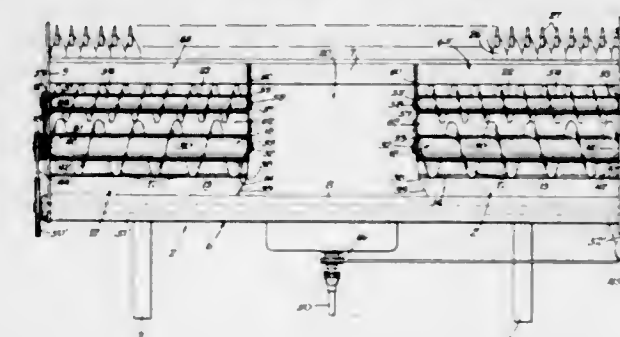
1. In combination, a crop treating unit, a forwardly directed feeding structure extending downwardly from an upper rear end opening into the crop treating unit to a lower forward open end and having a trunnion connec-

tion to the treating unit whereby the structure may move vertically about its rear end; a harvester forwardly of the feeding structure having forwardly directed harvesting mechanism feeding rearwardly to a transverse auger, and having a housing therefor including a trough for the auger and a transverse upright wall rearwardly of the auger with a central horizontally elongated opening therein for accommodating the lower open end of the feeding structure; a transverse horizontal beam having a rounded underside extending across the housing and defining the upper portion of the opening; an upright transverse plate fixed to and extending outwardly of the forward portion



of the feeding structure and adapted to seat in and to close the opening of the wall; a transverse upwardly opening structural means fixed to the plate along its transverse upper edge and adapted to engage and journal on the rounded underside of the transverse beam to thereby provide a transverse pivotal connection between the upper portion of the vertical wall and the upper portion of the plate; power means for raising and lowering the feeder structure to thereby provide a jackknife action between the plate and wall about the pivotal connection and to move the plate in and out of alignment with the wall; and means for fixing the plate to the harvester upon the plate and wall being in alignment.

**3,412,535**  
**DOUBLE AUGER PLATFORM WINDROWER**  
William D. Drummond, Burlington, Ontario, Canada, assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware  
Application Nov. 24, 1964, Ser. No. 418,942, which is a continuation-in-part of application Ser. No. 327,324, Dec. 2, 1963. Divided and this application Oct. 24, 1966, Ser. No. 598,573  
15 Claims. (Cl. 56-23)



A harvester having a platform with a cutter along its forward edge and a ramp behind the cutter providing a stone guard ramp extending abruptly upwardly for a short extent from the cutter to prevent stones from climbing up the platform.



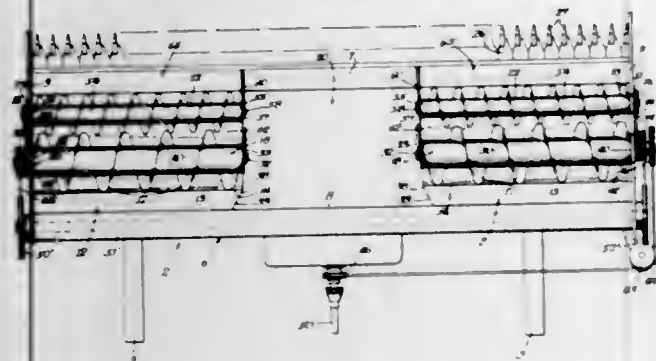
3,412,536

**AUGER PLATFORM WINDROWER**

William D. Drummond, Burlington, Ontario, Canada, assignor to International Harvester Company, a corporation of Delaware

Continuation of application Ser. No. 418,942, Nov. 24, 1964, which is a continuation-in-part of application Ser. No. 327,324, Dec. 2, 1963. This application Jan. 23, 1966, Ser. No. 622,845

19 Claims. (Cl. 56—23)



A harvester having auger conveyor rotatable to provide a top crop supporting surface to move the crops laterally of an elongated platform.

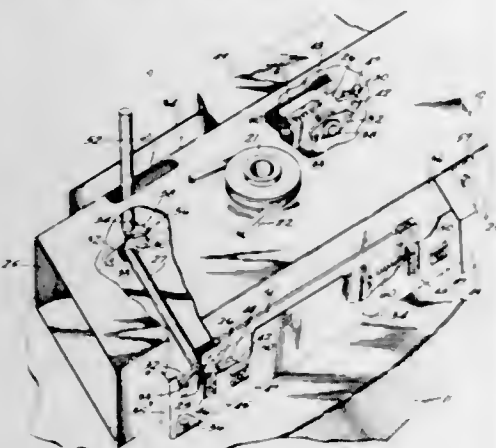
3,412,537

**ADJUSTABLE MOUNTING**

Edward W. Enters, Fredonia, and Norman C. Petersen, Plymouth, Wis., assignors to Gilson Bros. Co., Plymouth, Wis., a corporation of Wisconsin

Filed Apr. 19, 1966, Ser. No. 543,637

8 Claims. (Cl. 56—25.4)



4. In a riding mower having a vehicle frame, a mower blade assembly pendent therefrom and adjustable mechanism for moving the mower blade assembly in a direction to raise and lower it with respect to said frame, the improvement in said mechanism comprising:

- (a) said vehicle frame having a guide, a rotary shaft, and an actuator for the shaft, a crank on the shaft and a lift bearing on the crank,
- (b) said mower blade assembly having a coupling, a first way on the coupling aligned in said direction and engaging said guide and a second way on the coupling transverse to the first way and engaging said lift bearing and comprising means for transmitting movement from said actuator to said mower blade assembly.

3,412,538

**HARVESTER WITH COUNTERBALANCED RECIPROCATING MEMBERS**

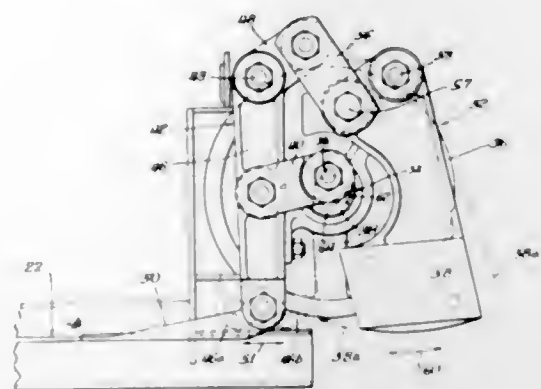
Robert A. C. Calder, Hamilton, Ontario, Canada, assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed June 21, 1966, Ser. No. 559,152

14 Claims. (Cl. 56—306)

1. A harvester of the character disclosed adapted for travel in a forward direction, comprising a frame, a cutter

at a leading edge of the frame and extending substantially thereacross transverse to the direction of travel of the harvester, the cutter including a reciprocating member, means for driving the reciprocating member, and counterbalancing means connected with the driving means and having at least an element mounted for pendulous reciprocating movement in opposition to the reciprocation of the cutter member and in alignment with said cutter and said drive means.



terbalancing means connected with the driving means and having at least an element mounted for pendulous reciprocating movement in opposition to the reciprocation of the cutter member and in alignment with said cutter and said drive means.

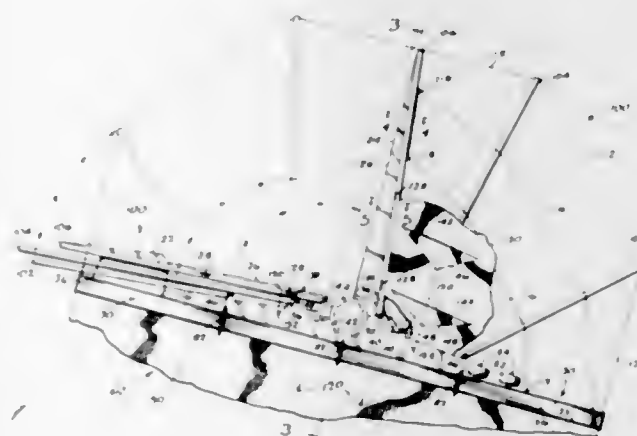
3,412,539

**HARVESTING APPARATUS FOR FRUITS AND NUTS**

Edward I. Gilbert, Rte. 1, and William A. Rogers, 757 NE. 10th St., both of The Dalles, Oreg. 97058

Filed May 16, 1966, Ser. No. 550,350

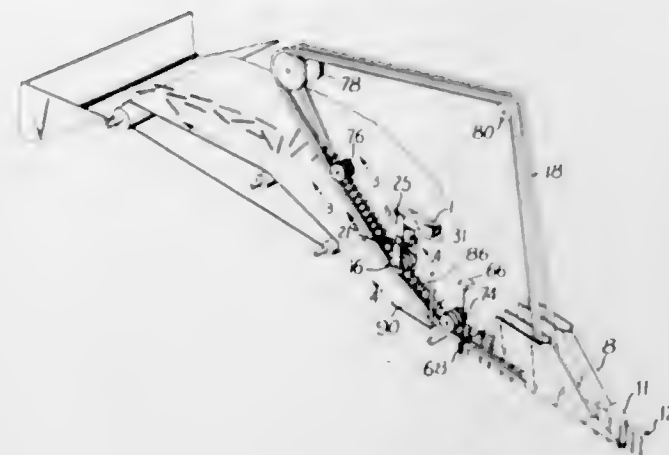
11 Claims. (Cl. 56—329)



1. Fruit and nut harvesting operation comprising:

- (a) an elongated wheeled frame adapted for placement along one side of the trunk of a tree,
- (b) collecting trough means on the frame substantially parallel to the longitudinal axis thereof, extending along said one side of the trunk,
- (c) a fixed collecting web section underlying substantially one-half of the tree fastened to the trough means and inclined toward the same, along the side of the trough means remote from the trunk,
- (d) a pair of angularly collapsible collecting web sections, each underlying substantially one quarter of the tree and inclined toward the trough means on the side thereof adjacent the trunk,
- (e) mounting means for pivotally mounting the collapsible web sections on the trough means for angular movement in a substantially horizontal plane,
- (f) and drive means connected to the collapsible web sections for moving them angularly between extended and retracted positions.

3,412,540

**ASPARAGUS HARVESTER IMPROVEMENT**  
Lewis E. Lawson, Le Sueur, Minn., assignor to Green Giant Company, a corporation of Minnesota  
Filed May 4, 1966, Ser. No. 547,488  
6 Claims. (Cl. 56—327)

1. In an apparatus for harvesting asparagus comprising a wheeled frame movable along an asparagus field, sensing means to contact asparagus spears of at least a preselected height, cutting means for selective raising and lowering in response to signal from said sensing means, means for raising and lowering said cutting means, and means for holding and supporting said asparagus spears before and during cutting including pairs of endless belts with mating vertical edges, said edges consisting of a resilient material for holding and supporting said spears, the improvement in combination therewith comprising means for disengaging the mating vertical edges of said belts at preselected times to release spears of uncut asparagus stalks held therebetween.

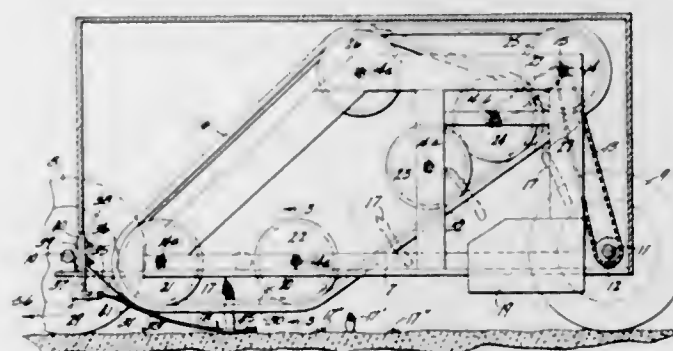
3,412,541

**ASPARAGUS HARVESTER**

Bernard P. Fuchs, R.R. 3, Rochelle, Ill. 61068

Filed Mar. 4, 1966, Ser. No. 531,702

16 Claims. (Cl. 56—327)



In this asparagus harvesting machine, closely spaced endless belts have a horizontal flight at a predetermined elevation relative to the ground, depending on the length of spears to be cut, these belts being designed to take hold on opposite sides of the spears that are long enough to be cut, and, after they are cut off at ground level, convey them upwardly to a drop-off point into a receptacle disposed therebelow. The belts travel at the ground speed of the machine and are driven by a power take-off from an axle turning with the supporting wheels. A snare cooperates with each of the passageways between neighboring cooperating belts, being attached preferably between the dividers disposed in front of the forward pulleys, so that each incoming standing spear passing between a pair of neighboring dividers is entered in the snare and, since the rear end of the snare is dragged on the ground and has cutting means thereon to cut off the spear at or about

ground level, the spear is cut off in time to be conveyed upwardly to the drop-off point. Each snare comprises a pair of elongated, easily flexible side members having upwardly diverging front end portions adapted to receive a standing spear therebetween, the rest of each snare snaking harmlessly in and out, around and between other standing spears of asparagus. The cutting means on the trailing end of the snare may be any one of a number of forms, a preferred form being a generally L-shaped blade, one arm of which extends in a forward direction in the trailing end of the snare and has a cutting edge along its inner side and front end portion, the other arm of the L extending transversely at the rear end of the first arm and having a cutting edge on the front thereof so as to cut the snared spear from the rear as the snare moves forward.

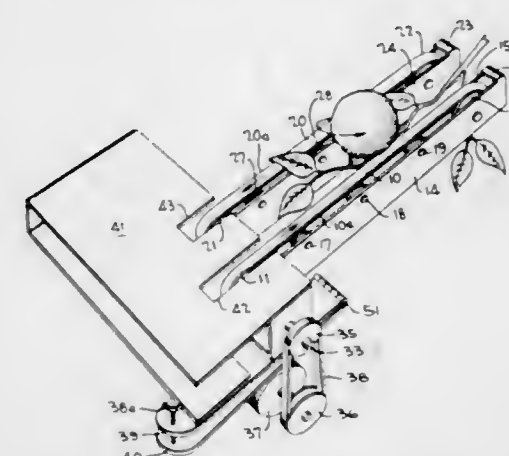
3,412,542

**PICKING HEAD FOR FRUIT HARVESTER**

Ernest L. Kenton, Kissimmee, Fla., assignor to Kid Glove Harvesters, Inc., Orlando, Fla., a corporation of Florida

Filed May 26, 1966, Ser. No. 553,062

13 Claims. (Cl. 56—328)



1. A picking head for a fruit harvester mechanism comprising a pair of resiliently surfaced endless belts; a belt housing for each of said belts containing a pulley rotatably mounted adjacent each extremity thereof to permit rotation of one of said belts therebetween, each of said belt housings being adapted to expose a planar portion of the surface of the belt rotating therein, and each of said belt housings being mounted parallel to the other at a point adjacent to one of its extremities so that the adjacent surfaces of the said belt housings define an unobstructed space between them, the distance between said belts being less than the diameter of the fruit to be picked; motive means to rotate the pulleys nearest the supported end of each of the belt housings in such fashion that the respective belts will rotate each in a direction opposite to that of the other; and a fruit conveying surface co-planar with the exposed surfaces of the said belts and connecting the supported ends of the said belt housings.

3,412,543

**METHOD AND APPARATUS FOR MANUFACTURE OF SLUB-CONTAINING TEXTURED YARNS**

Ludwig Horvath, Wattwil, Switzerland, assignor to Heberlein Patent Corporation, New York, N.Y., a corporation of New York

Filed Feb. 9, 1966, Ser. No. 526,277

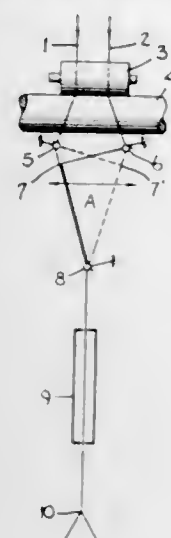
Claims priority, application Switzerland, Feb. 17, 1965, 2,146/65

7 Claims. (Cl. 57—34)

Process and apparatus for the manufacture of slub-containing yarns comprising first temporarily high-twisting a number of yarns together, heat-setting the yarns while in the highly twisted condition and separating the yarns, wherein the yarns are passed through spaced-apart



guide means ahead of the point of juncture and the ratio of the distance between the guide means to the distance



from the plane of the guide means to the juncture point is of the order of 1:1 to 5:1, and product obtained thereby.

3,412,544

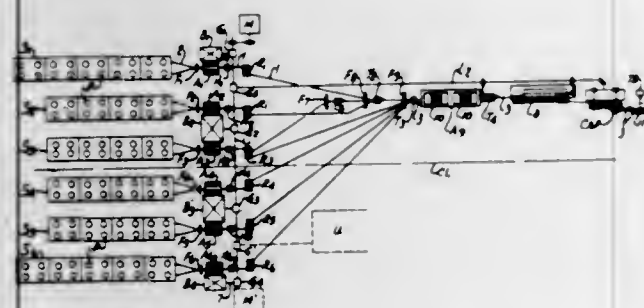
#### APPARATUS FOR THE MANUFACTURE OF COMMUNICATION CABLE

Masao Sugi and Hiroyuki Kumamaru, Kamakura-shi, Hidezi Mizoi, Isogoku, and Shigeatsu Wada, Kohoku-ku, Japan, assignors to Sumitomo Electric Industries, Ltd., Osaka, Japan, a company of Japan

Filed Apr. 12, 1967, Ser. No. 630,447

Claims priority, application Japan, Apr. 14, 1966, 41/23,872

3 Claims. (Cl. 57—34)



An apparatus for the manufacture of a composite communication cable having alternating twists imparted to the groups of elementary wires making up the cable by changing the line speed of the elementary wires in two steps in a time wise rectangular wave form with a compulsory dancer roller system while the takeup speed of the cable remains constant. The machinery for assembling the wire groups into the composite cable may be readily divided to form more than one composite cable at the same time.

3,412,545

#### PNEUMATIC CLEANER FOR ROVING FRAMES AND THE LIKE

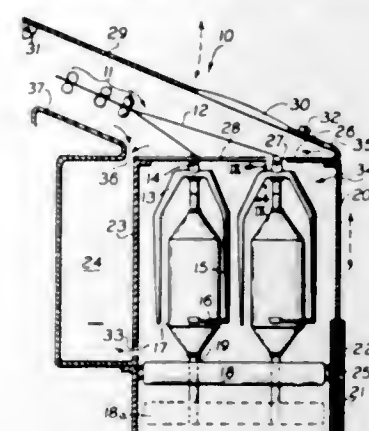
Emil Oscar Lippuner, Wetzikon, Switzerland, assignor to Luwa Ltd., Zurich, Switzerland, a corporation of Switzerland

Filed May 22, 1967, Ser. No. 640,071

6 Claims. (Cl. 57—56)

In combination with yarn processing textile machinery having flyers such as roving frames, or the like, an enclosure surrounding the flyer equipment, and an enclosure surrounding the path of travel of the yarn to the flyer equipment, with suction plenums arranged in communication with said enclosures with scavenging air intake openings into the enclosure to establish air flow paths in the flyer enclosure which pierce the curtain normal-

ly established by the rotation of the flyers, and in the second enclosure, which serves to clear the top wall of



said flyer enclosure to prevent the admission of foreign matter to the flyer enclosure.

3,412,546

#### INTERLEAVED MOULINEE YARN

William R. Gibson, Cumberland, Md., and Eloise McC. Voss, New York, N.Y., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 30, 1966, Ser. No. 583,304

6 Claims. (Cl. 57—140)



A process for the preparation of an iridescent moulinee yarn and the product produced thereby, the process comprising interleaving at least two separate ends of yarns which have hues which are not more than about 72° and not less than about 36° apart, and then twisting.

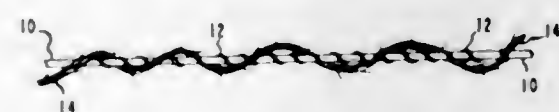
3,412,547

#### ELASTIC COMPOSITE YARN AND PREPARATION THEREOF

Robert S. Martin, Charlotte, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed June 27, 1966, Ser. No. 560,564

4 Claims. (Cl. 57—152)



Composite elastic yarns are prepared by core-spinning stretched continuous filaments of segmented elastomer with a sheath inelastic staple fiber having a shrinkability of at least 15%, heat setting the core-spun yarn to shrink the sheath fibers and plying the heat-set core-spun yarn with a second yarn of these inelastic staple fibers. These

yarns, having the sheath fibers in shrunken engagement with the continuous filament core and interlocked therewith, are useful in fabrics made therefrom. These fabrics have limited stretch and low power, as well as good aesthetics and low pilling tendency, which is highly suitable for particular end uses, e.g., sweaters.

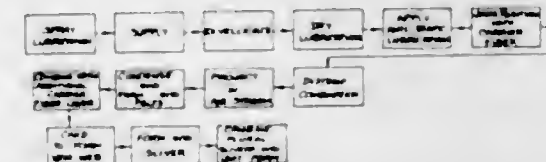
3,412,548

#### METHOD OF BLENDING CERAMIC AND CARRIER FIBERS

Emil Jacob Poltorak, Somerville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York

Filed Aug. 24, 1966, Ser. No. 574,724

9 Claims. (Cl. 57—156)



A process for producing a blended sliver of ceramic and non-ceramic carrier fibers requiring a minimum of carrier fibers while simultaneously avoiding the problems associated with brittle and delicate ceramic fibers.

3,412,549

#### MECHANICAL RESONATOR FOR NORMAL FREQUENCY OSCILLATORS IN TIMEKEEPERS

Heinz Waldburger, Neuchatel, Switzerland, assignor to Centre Electronique Horloger S.A., Neuchatel, Switzerland

Filed May 16, 1966, Ser. No. 550,424

Claims priority, application Switzerland, May 26, 1965, 7,351/65

11 Claims. (Cl. 58—23)



A mechanical resonator for normal frequency oscillators in timekeepers having fixed mounting means. Two resilient vibrators are provided and each of the vibrators forms one half of the resonator having the general shape of a capital theta arranged symmetrically in relation to the center of gravity of the resonator. A mass is located in the middle of each resonator so that a first axis of symmetry runs midway between and parallel to the transverse branches of the theta form and a second axis of symmetry, perpendicular to the first, runs through the middle of the two masses, the axes of symmetry intersecting in the center of gravity of the resonator. Coupling means couple the two vibrators together with resilient bearings connecting the coupling means resiliently with the mounting means whereby the bearing reactions excepting those of a higher order resulting from unavoidable imperfections will disappear and eliminate the influence of a gravitational field on the frequency of the resonator.

3,412,550

#### SELF-WINDING WATCH MOVEMENT

Georges Delessert, Eric Jaccard, and Felipe Lang, Geneva, Switzerland, assignors to Patek, Philippe SA, a corporation of Switzerland

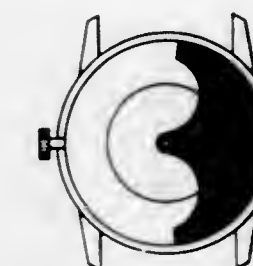
Filed May 26, 1966, Ser. No. 553,211

Claims priority, application Switzerland, June 15, 1965, 8,317/65

2 Claims. (Cl. 58—82)

A self-winding watch movement has a winding mass in the form of an annular segment that swings on ball

bearings about its center of curvature. The mass and its associated gearing are disposed peripherally of the movement and between the planes that bound the front and rear faces of the movement. A winding stem protrudes



from the rear of the movement and has its axis perpendicular to the plane of the movement and disposed between the path of movement of the mass and the center of curvature of the mass.

3,412,551

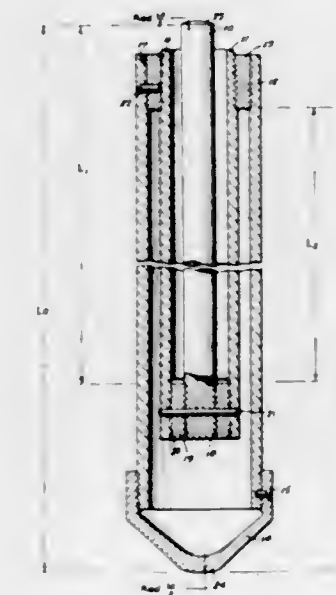
#### CONSTANT LENGTH DEVICE IN A CHANGING TEMPERATURE ENVIRONMENT

George K. Swinzow, Rte. 113A,

East Theford, Vt. 05043

Filed Dec. 22, 1965, Ser. No. 515,784

4 Claims. (Cl. 58—133)



1. A device constructed so as to maintain its length constant despite changes in its temperature comprising, a tube open at at least one end, a sleeve located within said tube having one end thereof fixedly connected to the open end of said tube and being shorter in length than the overall length of said tube, a rod positioned within said sleeve and having a portion thereof extending beyond the end of said sleeve and said tube, said rod fixedly connected to the opposite end of said sleeve located within said tube, said rod and said tube being of equal effective length and of the same metal, said sleeve being of a metal having a coefficient of linear thermal expansion substantially twice that of said tube and said rod and adapted to change in overall length for a change in temperature the same length as the combined changes in length of said tube and said rod due to the same change in temperature, with the change in length of the sleeve being in a direction opposite to the direction of the change in length of said tube and rod, means fixedly connecting said tube to the sleeve, and separate means fixedly connecting said sleeve at its opposite end to the rod, both said means being of the same metal and serving to suspend the remainder

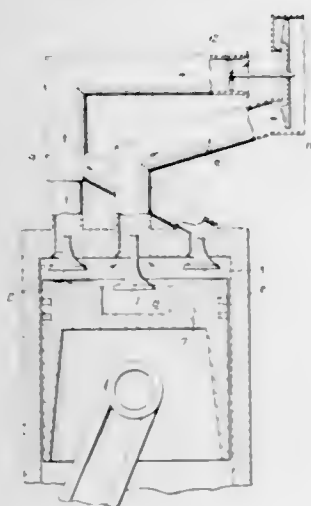


of said sleeve within and free from contact with said tube, and to suspend the remainder of said rod within said sleeve free from contact with said sleeve.

3,412,552

# INTERNAL COOLING FOR A 4-CYCLE INTERNAL COMBUSTION ENGINE CYLINDER

Ludwig Elsbett, Hilpoltstein, Germany, assignor to Elsbett-Konstruktion, Hilpoltstein, Germany  
Filed Sept. 21, 1966, Ser. No. 581,023  
Claims priority, application Germany, Sept. 24, 1965, E 30,155  
6 Claims. (Cl. 60—13)

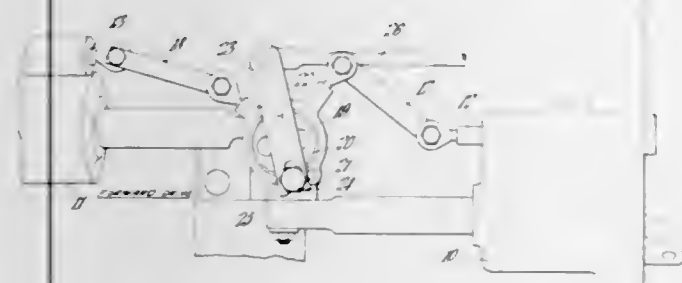


In a 4-cycle internal combustion engine, especially a diesel engine in which the intake air forms an air swirl in the cylinder, the exhaust valve is kept open beyond the conventional closing time and overlaps the open intake valve. This pulls a column of cooling intake air through the cylinder. A protective layer of unburned intake air is formed along the cylinder wall.

3,412,553

# HYDRAULIC TRANSMISSION SYSTEMS

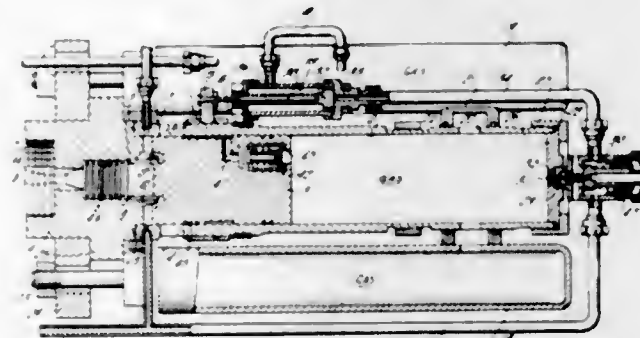
John Thomas Matthew Wright, 23 Grosvenor Road, Birkdale, Southport, Lancashire, England  
Filed Oct. 4, 1966, Ser. No. 584,125  
2 Claims. (Cl. 60—53)



An hydraulic transmission system having a variable capacity hydraulic pump and a variable capacity hydraulic motor, to which the pump supplies motive fluid, the pump and motor having respective servo mechanisms for adjusting their capacities and the servo mechanisms being controlled by a pair of spool valves respectively. The spool valves being connected by rigid rods to a common angularly movable member and the spools being capable of substantial travel without change in the direction of control of the associated servo mechanism, and the arrangement being such that angular movement of the angularly movable member in one direction causes substantial change in the pump capacity and small change in the motor capacity and rotation in the other direction has the opposite effect.

# 3,412,554 DEVICE FOR BUILDING UP HIGH PULSE LIQUID PRESSURES

Bogdan Vjacheslavovich Voitsekhovskiy, Elmar Andreevich Antonov, Valentin Pavlovich Nickolaev, Grigory Jankelevich Shokhet, Vladimir Mikhailovich Dudin, Alexandr Vasiljevich Shevchenko, and Nikolai Fedorovich Olenkov, Novosibirsk, U.S.S.R., assignors to Institute Gidrodinamiki Sibirskogo Otdelenia Akademii Nauk U.S.S.R., Novosibirsk, U.S.S.R.  
Filed May 5, 1965, Ser. No. 453,424  
15 Claims. (Cl. 60—54.5)



1. A device for building up high pressure pulses of liquid, comprising at least one cylinder and one piston housed in said cylinder; said cylinder having at one side of the piston a first space connected through an opening in the cylinder with at least one receiver filled with compressed gas and serving as a low-pressure chamber; said cylinder having at the other side of the piston a second space in the body of the cylinder face portion, filled up with liquid and provided with at least one outlet opening; said second space having a cross-section corresponding to the cross-section of the piston and serving as a high pressure chamber, said high pressure being built up as a result of the impact of said piston upon the liquid, said piston including in the face portion at the side of the high pressure chamber a taper-shaped lug; circular grooves being provided on the external surface of the piston portion entering the high-pressure chamber; an angular through channel being provided in said piston and connecting its side surface with the face surface at the side of the low pressure chamber; a non-return valve with a through opening being provided in the plunger of said non-return valve located in said angular channel; said cylinder having in the side wall of the high pressure chamber at least one opening for delivering the liquid under pressure for forced travel of said piston in the direction of the low-pressure chamber, openings serving for the discharge of the liquid during the piston working stroke; a cylindrical bushing to open and close said openings and having reciprocating motion along the external surface of said cylinder; jacks secured to the external surface of said cylinder, the rods of said jacks being rigidly connected to the cylindrical bushing with one of the spaces of each jack being connected to a main line delivering the liquid under pressure for travel of the piston, and the other space of each jack communicating with said receiver filled with compressed gas; a command valve including a protruding pin entering the low pressure chamber in the face wall of said cylinder, limiting the low pressure chamber and connecting the hydraulic space of each said jack with the atmosphere with said piston acting upon said protruding pin of said command valve.

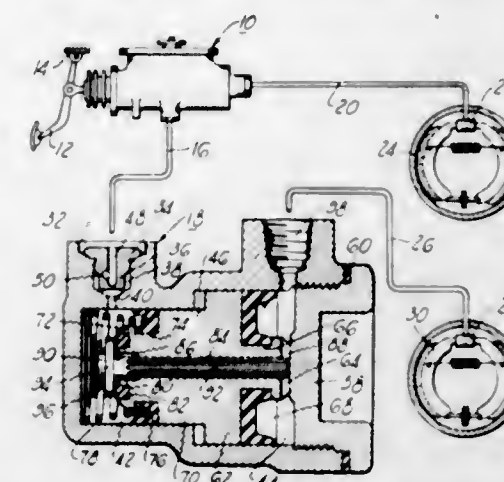
3,412,555

# FLUID PRESSURE SURGE DAMPENING MEANS

Richard L. Lewis, St. Joseph, Mich., assignor to The Bendix Corporation, a corporation of Delaware  
Filed Sept. 12, 1966, Ser. No. 578,683  
6 Claims. (Cl. 60—54.5)

A vortex valve within a hydraulic inlet port to a pressure chamber arranged to create a swirling flow in an

inlet chamber which is directed to a passage between the pressure chamber and inlet chamber such that pressure function in a fluid actuator capable of developing fluid pressures.

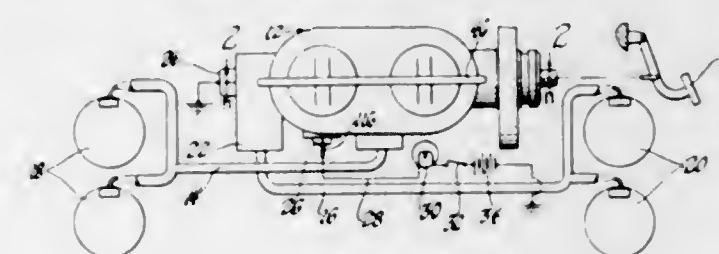


pulsations of the hydraulic fluid are removed prior to entering the pressure chamber.

3,412,556

# MASTER CYLINDER ASSEMBLY

Richard C. Rike and Thomas A. Bratten, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Oct. 10, 1966, Ser. No. 585,569  
13 Claims. (Cl. 60—54.6)

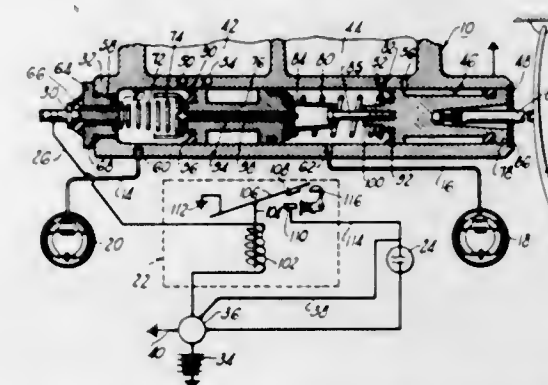


A master cylinder assembly in which excessive pressurizing movement of a pressurizing piston is sensed by a switch positioned internally of the master cylinder bore, the switch being actuated to energize a warning circuit indicating a brake system malfunction. A dual master cylinder assembly having primary and secondary pistons in a common bore uses a part of the secondary piston as a switch contact, and other switch contacts are provided in the bore. The switch changes its condition to actuate the warning circuit if the secondary piston moves excessively, or if the primary piston moves excessively, in a pressurizing direction. Particular piston constructions are disclosed for use when the switch is a normally open, closed when actuated, type.

3,412,557

# MALFUNCTION INDICATOR FOR FLUID ACTUATOR

William R. Williams, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware  
Filed Dec. 19, 1966, Ser. No. 602,786  
11 Claims. (Cl. 60—54.6)

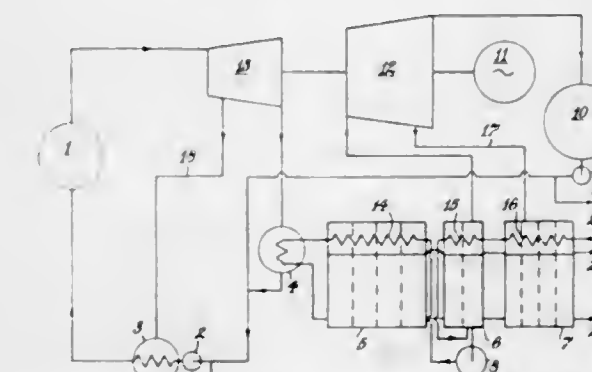


A means carried by a movable wall means and integrated with a housing mounted element to indicate a mal-

3,412,558

# DISTILLATION AND POWER PRODUCING PLANT

Roy Starmer, Peterlee, England, assignor to Applied Research and Engineering Limited, Peterlee, England, a British company  
Filed Mar. 18, 1965, Ser. No. 440,861  
Claims priority, application Great Britain, Mar. 4, 1965, 9,358/65  
5 Claims. (Cl. 60—67)

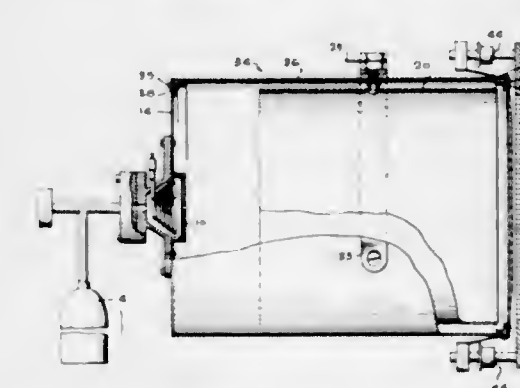


A combination distillation and power plant is described in which the vapor extracted from the distillation plant is expanded in two different stages in the power plant, heat extracted from the gaseous substance after the first stage expansion being utilized to heat the liquid and produce the necessary hot gases and vapors under pressure. Heat rejected by the distillation unit is converted into power by expansion of the gaseous material in the second stage of the power plant.

3,412,559

# ION ENGINE CASING CONSTRUCTION AND METHOD OF MAKING SAME

Gordon Sohl, 84 S. Craig Ave., Pasadena, Calif. 91107  
Filed July 6, 1966, Ser. No. 563,651  
10 Claims. (Cl. 60—202)



An improved ion engine, the casing of which is permanently magnetized to generate a desired magnetic field.

3,412,560

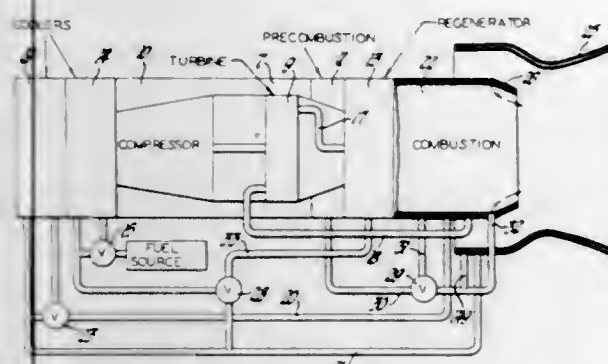
# JET PROPULSION ENGINE WITH COOLED COMBUSTION CHAMBER, FUEL HEATER, AND INDUCED AIR-FLOW

Arthur W. Gaubatz, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Aug. 3, 1966, Ser. No. 570,064  
3 Claims. (Cl. 60—261)

A jet propulsion engine has a fuel cooled combustion chamber with a chamber outlet nozzle also fuel-cooled. The combustion chamber discharges into a fuel-cooled convergent-divergent jet propulsion nozzle which has an air entry around the combustion chamber. Means are provided for variably admitting ambient boundary layer



air into the jet propulsion nozzle. Fuel for combustion is also heated in a heat exchanger disposed between a pre-



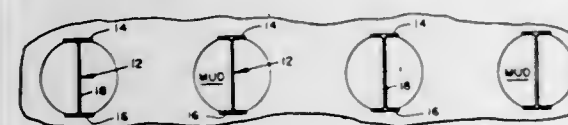
combustion chamber, in which some fuel is burned, and the main combustion chamber.

**3,412,561**  
**REED-TRENCH TERRACING**  
Giorgina Reid, 37-12 85th St.,  
Jackson Heights, N.Y. 11372  
Filed Dec. 16, 1965, Ser. No. 514,418  
2 Claims. (Cl. 61-35)



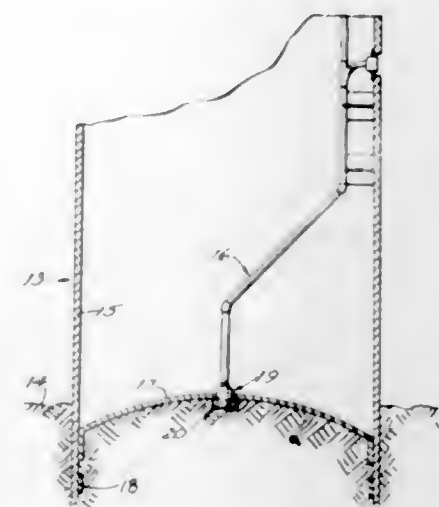
A method of preventing the erosion of a sloping land surface is disclosed wherein the elongated planks are secured to the surface transversely of the slope, trenches are formed adjacent the planks on the upward side thereof controlling shorefront bluff erosion by establishing sand-binding vegetation quickly, with a minimum of expense and effort.

**3,412,562**  
**STRUCTURAL WALL AND METHOD**  
Samuel Clifford Doughty, Burlingame, Calif., assignor to Ben C. Gerwick, Inc., San Francisco, Calif., a corporation of California  
Continuation-in-part of application Ser. No. 418,778, Dec. 16, 1964. This application Nov. 14, 1967, Ser. No. 682,763  
10 Claims. (Cl. 61-39)



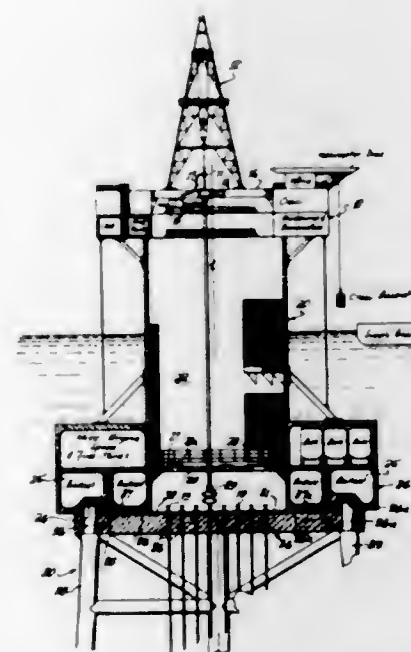
A structural wall formed with a number of upright and laterally spaced apart H-beam members wherein the span between members is provided relative to the thickness of the wall so as to provide arch action support to the wall when earth on one side of the wall is excavated. After excavation, a finish facing is applied to the exposed wall carried by means attached to the exposed flanges of the H-beam members or by attachment to the concrete. To form the wall, the H-beam members are lodged in the ground as guided by pre-drilled holes formed at intervals and followed by the excavation of material from between the webs of the H-beams. A slurry is maintained in the trench being formed and concrete is poured employing the tremie method.

**3,412,563**  
**JET CLOSING DEVICE**  
Frank W. Sharp, Jr., Houston, Tex., assignor to The Off-shore Company, Houston, Tex., a corporation of Delaware  
Filed Jan. 3, 1967, Ser. No. 607,000  
12 Claims. (Cl. 61-46.5)



A closing device for a jet line system of a marine platform caisson. A valve housing an upper seating portion to close off the orifice of the jet line when the caisson is in a marine bottom, and a lower seating portion to seat on a keeper ring to allow flow of jet streams of fluid from the jet line when the caisson is to be raised from the marine bottom, and the valve being sized to be moved between the keeper ring and the orifice so as to permit seating of only one seating portion at a time.

**3,412,564**  
**SUB-SEA WORKING AND DRILLING APPARATUS**  
Ross A. McClintock, Huntington Harbour, Calif., assignor to Pike Corporation of America, Los Angeles, Calif., a corporation of California  
Filed Feb. 21, 1967, Ser. No. 617,580  
2 Claims. (Cl. 61-46.5)

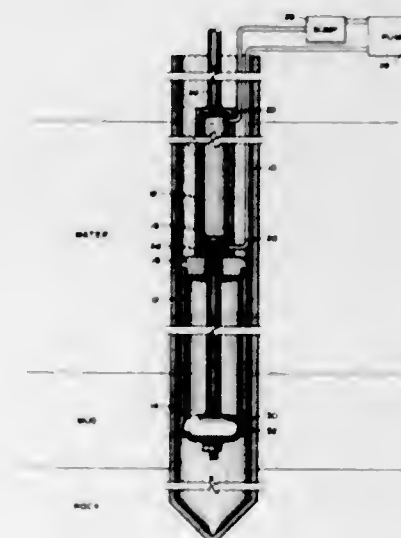


Apparatus and method for stabilizing floating structures, specifically semi-submersible structures by coupling them to a permanent submerged structure constructed on the ocean floor at a desired location. The apparatus as described comprises a platform supported by a floatable hollow cylindrical chamber having ballast tanks attached

thereto and a stationary submerged base structure affixed to the ocean floor and extending upwardly therefrom to a predetermined depth below the ocean surface. To stabilize the platform, the cylinder is coupled to the submerged base structure. The apparatus is described as being particularly applicable for stabilizing drilling platforms for offshore oil drilling operations.

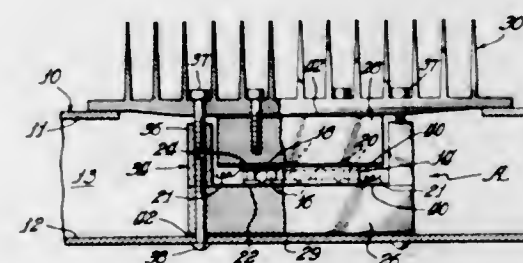
**3,412,565**  
**METHOD OF STRENGTHENING FOUNDATION PILING**

Kenneth B. Lindsey, Houston, Garvin W. Cooper, Pasadena, and William A. Pearce, Houston, Tex., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware  
Filed Oct. 3, 1966, Ser. No. 583,583  
9 Claims. (Cl. 61-53.5)



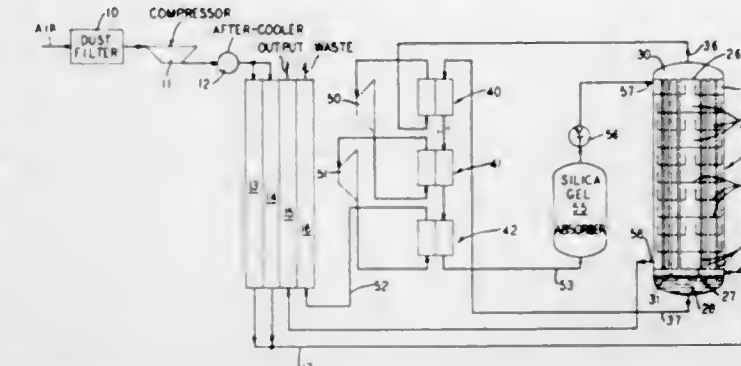
A method for reinforcing foundation piling which are positioned in the ground. Said method comprises positioning a reinforcing member inside the pile at a point of localized stress and rigidly securing said reinforcing member to the inside of said pile by expanding the reinforcing member into frictional engagement with the interior wall of said pile or by securing by chemical or mechanical means.

**3,412,566**  
**THERMOELECTRIC APPARATUS**  
Russell S. Townsend and Richard O. Crouch, Fort Smith, Ark., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois  
Filed June 21, 1965, Ser. No. 465,660  
1 Claim. (Cl. 62-3)



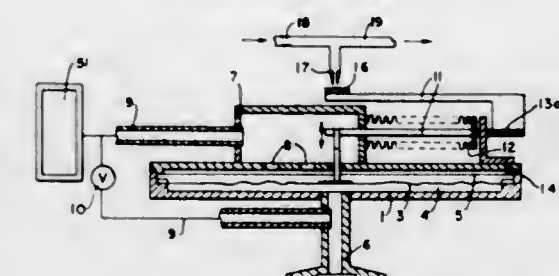
A thermoelectric module block assembly including a matrix of P-type and N-type thermoelectric elements joined by bus bars to provide a matrix having a hot side and a cold side. A pair of aluminum heat transfer blocks, each having a thin enamel coating in engagement with opposite sides of the matrix, are secured tightly thereto; and a thermoplastic tape surrounds the matrix at the periphery to vapor seal the module assembly.

**3,412,567**  
**OXYGEN-ENRICHED AIR PRODUCTION EMPLOYING SUCCESSIVE WORK EXPANSION OF EFFLUENT NITROGEN**  
Donald L. Smith, Berkeley Heights, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York  
Filed Sept. 6, 1966, Ser. No. 577,421  
8 Claims. (Cl. 62-13)



A compressed air stream is initially cooled and then further cooled and partially condensed in the condenser portion of a condenser-vaporizer to form an oxygen-enriched liquid and a nitrogen effluent. The nitrogen effluent subcools the oxygen enriched liquid in three successive heat exchange steps with the nitrogen effluent being work expanded after the first and second heat exchange steps. Subcooled oxygen-enriched liquid is expanded into the vaporizer portion of the condenser-vaporizer where it is vaporized. Vaporized oxygen-enriched material as well as heat exchanged nitrogen are used to cool incoming compressed air.

**3,412,568**  
**PRESSURE REGULATOR FOR BATH CRYOSTATS**  
Albrecht Elsner, Kronach, Upper Franconia, and Gustav Klipping and Gerd Hildebrandt, Berlin, Germany, assignors to Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V., Göttingen, Germany  
Filed June 6, 1967, Ser. No. 643,952  
Claims priority, application Germany, June 10, 1966, M 69,800  
15 Claims. (Cl. 62-50)



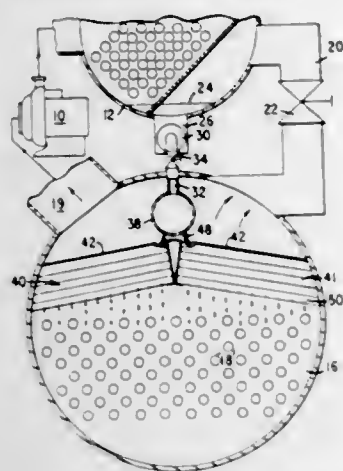
A pressure regulator for maintaining a constant pressure in a bath cryostat and including a pressure regulating valve having a control input communicating with the interior of the cryostat and an output connected to control the output pressure of a pneumatic signal producing device, and a bellows control valve for selectively connecting the interior of the cryostat with a vacuum pump and connected to be controlled by the output of the pneumatic signal producing device.

**3,412,569**  
**REFRIGERATION APPARATUS**  
Arthur E. Arledge, Jr., Springfield, N.J., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware  
Filed Feb. 21, 1966, Ser. No. 528,966  
5 Claims. (Cl. 62-115)

A refrigeration machine having provision for low load operation which includes separate passageways connecting the condenser and evaporator, wherein the passageway for delivering refrigerant to the evaporator from the



condenser includes a refrigerant distribution means assuring flow of refrigerant over the tube bundle in the



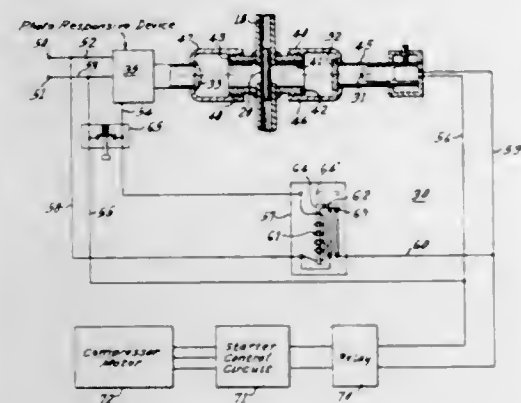
evaporator to increase the efficiency of the machine at low load condition.

3,412,570

### RADIATION SENSITIVE SYSTEM FOR DETECTING REFRIGERANT LEAKS

George H. Pruett, Sr., 3922 Boone Park Ave., Jacksonville, Fla. 32205

Filed May 24, 1965, Ser. No. 458,079  
9 Claims. (Cl. 62-129)



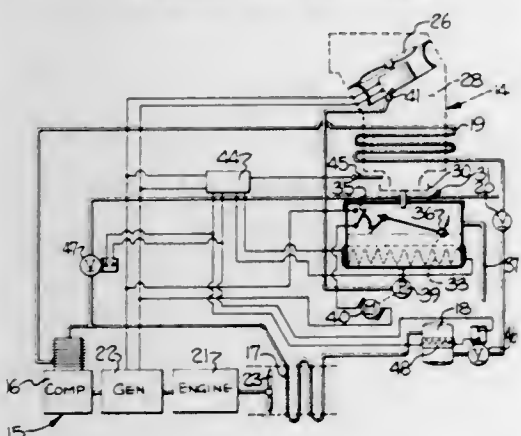
A system for detecting leaks of refrigerant including a liquid refrigerant line having a light transmitting portion therethrough, and a light source on one side of such portion, and a photo responsive device oppositely aligned therewith on the other side of such portion. The device is responsive to light received, and when a refrigerant leak occurs the device controls circuit means to indicate such leak and/or disable further operation of the refrigeration system.

3,412,571

### REFRIGERATION SYSTEM

Andrew T. Bolynn, 4421 Freedom Drive, Charlotte, N.C. 28208

Filed Oct. 12, 1966, Ser. No. 586,129  
3 Claims. (Cl. 62-188)



A refrigerating system and method for conditioning a confined space within an automotive vehicle body where-

in water condensing on an evaporator is accumulated, stored and dispersed as fine droplets adjacent the exit face of the evaporator to facilitate the achievement of predetermined conditions within the conditioned space.

3,412,572

### FREEZING TRAY

Keith K. Kesling, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 22, 1966, Ser. No. 581,313  
10 Claims. (Cl. 62-344)



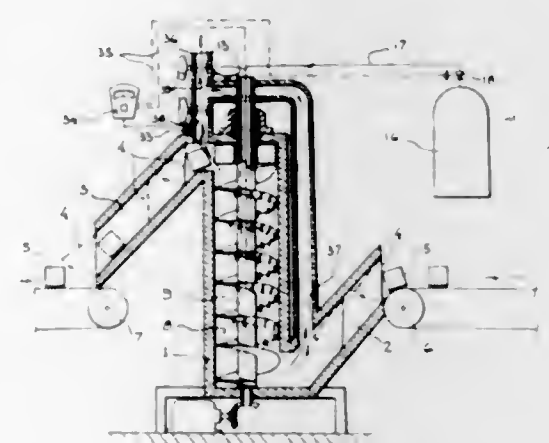
6. A flexible twistable tray provided with walls forming a plurality of compartments therein, said tray having ends and sides, one of the sides of said tray being provided with a taper from one end to the other.

3,412,573

### CRYOGENIC QUICK FREEZING APPARATUS

Richard S. Paulukonis, 6660 Greenbriar Drive, Cleveland, Ohio 44130

Filed Sept. 21, 1966, Ser. No. 581,094  
5 Claims. (Cl. 62-374)



A quick freezing system accomplishes freezing with a helical feeder to which refrigerant is supplied. The helical feeder is within a cylindrical feeder chamber and has a plurality of orifices from which the refrigerant is discharged into the interior of the freezer chamber from which it is vented in gaseous form.

3,412,574

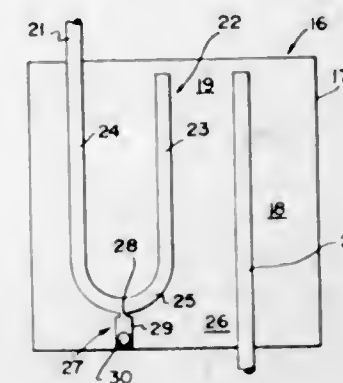
### REFRIGERATION APPARATUS WITH LUBRICANT OIL HANDLING MEANS

Alexander L. Reiter, St. Joseph, Mich., assignor to Whirlpool Corporation, a corporation of Delaware

Filed Dec. 1, 1966, Ser. No. 598,342  
11 Claims. (Cl. 62-471)

A refrigeration system wherein gaseous refrigerant is conducted to a compressor through a duct. A flow control device is provided for metering into the gaseous refrigerant lubricating oil which is collected in a suitable chamber forming a part of the system. The metering de-

vice include a buoyant valve member. In one form of the invention the valve member is adapted to be buoyed by



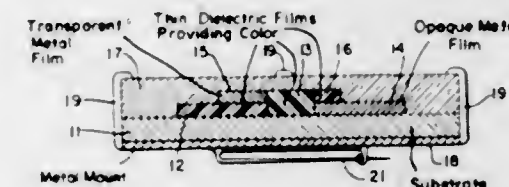
liquid refrigerant but not by the lubricating oil for an improved selective control of the lubricating oil delivery.

3,412,575

### JEWELRY ARTICLE INCLUDING THIN METAL AND DIELECTRIC FILMS

Charles Feldman and Estelle H. Feldman, both of 7400 Rebecca Drive, Alexandria, Va. 22307

Filed Jan. 18, 1966, Ser. No. 521,374  
19 Claims. (Cl. 63-2)



An article of jewelry includes a substrate on which are deposited thin films of dielectric, metal and semiconductor materials, arranged in a predetermined aesthetically pleasing pattern. The substrate forms one protective layer, while a second protective layer is comprised of a plastic coating. The pattern may be viewed either through the substrate or plastic coating. In one embodiment, the substrate is a glazed ceramic and in another embodiment, nonglare glass. In each embodiment light opaque means is provided on one of the protective layers to reflect light to a viewer. A jewelry mount is secured to one of the layers.

3,412,576

### ADJUSTABLE CHAIN BRACELET

Phillip Allan Hodge, Warwick, R.I., assignor to Anson, Incorporated, Providence, R.I., a corporation of Rhode Island

Filed Mar. 3, 1966, Ser. No. 531,573  
6 Claims. (Cl. 63-4)



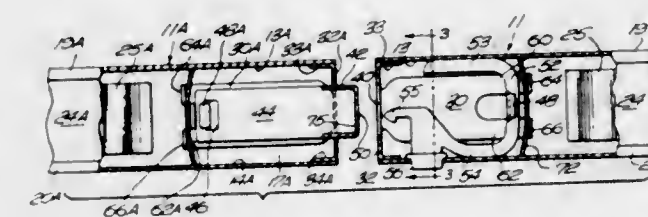
The present structure provides for a special end on one leg of a spring prong forming a part of a spring catch. The special end providing for loosely holding and nesting a chain line and for readily adjusting the length of a bracelet chain and for centering an ornament on a bracelet chain in relation to the end of a casing when a chain is reduced in length. The special end locking the loose link to the casing.

3,412,577

### BRACELET MEANS HAVING A RELATED CLASP MEANS, AND METHOD OF ASSEMBLING SAME

Alfred Eugene Sauer, Warwick, R.I., assignor to B. A. Ballou & Co., Inc., Providence, R.I., a corporation of Rhode Island

Filed June 26, 1964, Ser. No. 378,260  
9 Claims. (Cl. 63-7)



1. A method for constructing a bracelet or the like comprising, providing a pair of mating generally semi-circular channel members having oppositely disposed side walls, frontal openings and rear sections, hinging said pair of members together at the respective rear sections, providing a pair of shanks, each having a radius of curvature conforming to the curvature of said channel members, providing a front wall portion at the front edge of each shank of sufficient dimension to occupy the full frontal opening of each said channel member, providing an aperture through each front wall portion, mounting a catch on one of said shanks in alignment with its respective aperture, providing a catch receiver on the other of said shanks, providing a pocket adjacent the rear edge of each said shank, seating a resilient fastener element of greater length than the width between said side walls, the straight line distance between the ends of each fastener being greater than said width; in each said pocket, and finally pressing each said shank into a respective channel member until each said front wall portion occupies its respective frontal opening, whereby said catch is disposed in register with said catch receiver and each said fastener element presses against the side walls of its respective channel member to lock each said shank in its channel member.

3. In a device of the class described, a pair of mating generally semi-circular members having opposing side walls, a web section joining said side walls to define a channel between said side walls, each said channel having a front opening and rear end, hinge means joining said members together at their respective rear ends, a separate shank positioned in each said channel proximate to the front opening of each said member, each shank having a front wall portion of dimension fully occupying a respective front opening of said member, each said front wall portion having an aperture therein, a catch mounted on one of said shanks in alignment with one of said apertures, a tongue connected to the other of said shanks and protruding through the aperture in the front wall portion thereof, a catch receiver formed in the forward end of said tongue, a pocket formed at the end of each shank remote from said front wall portion, a resilient fastener positioned in each pocket, each said fastener being of greater length than the width between the adjacent side walls, the straight line distance between the ends of each said fastener being greater than said width, whereby said fastener presses against said side walls to lock each said shank in its respective member, said catch and catch receiver being in register to interconnect said mating members when said pair of members are squeezed together, and means for releasing said catch from said catch receiver.

6. A locking device for securing a component to a member having opposing fixed parallel side walls comprising, an elongated shank, a tab upturned from the sur-

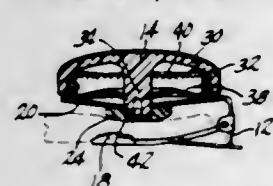


face of said shank for engaging with said component to hold said component on the surface of said shank, a front wall for said shank, said front wall having an aperture therethrough for accommodating an operative portion of said component, a pair of legs extending rearwardly from said shank, the rear terminal edges of said legs being upturned to provide a pair of spaced posts, a web section spanning said legs, an ear upturned from said web section and disposed forwardly of said legs whereby to define a pocket between said ear and said posts, a resilient fastener positioned in said pocket, said resilient fastener being of greater length than the width between said side walls the straight line distance between the ends of said fastener being greater than the said width whereby to press against said side wall and secure said shank in position therewith.

### 3,412,578 EARRING DEVICES

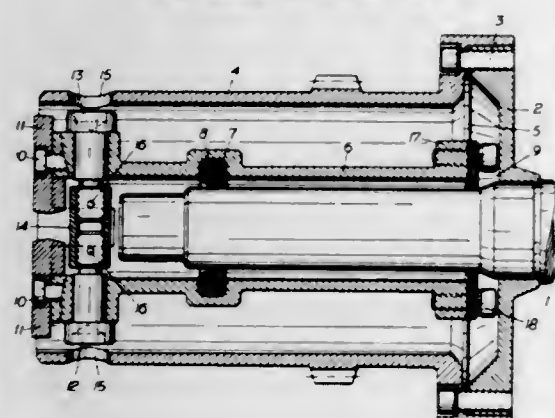
John L. Rosencrans, Lantana, Fla., assignor to The Risdon Manufacturing Company, Naugatuck, Conn., a corporation of Connecticut

Filed May 25, 1966, Ser. No. 552,784  
3 Claims. (Cl. 63—14)



1. The combination in an earring of a finding portion for securing the earring to the wearer, and a separable ornament portion carried by said finding, said ornament portion having a main body and a depending stud, said stud being of non-circular cross-section and formed of resiliently compressible material, said finding having an anvil portion with an aperture therein freely receiving said stud when the stud and aperture are oriented in a first position but causing interference between them when out of said oriented position, said ornament and finding being locked against separation by compressive deformation of the inserted stud against the sides of the aperture effected by relative rotation of said ornament and finding out of said first position.

3,412,579  
COUPLING MEANS FOR A TEST STAND FOR FUEL INJECTION PUMPS  
Richard Hainz, Salzburg, Austria, assignor to Friedmann & Maier, Hallein, Salzburg, Austria  
Filed Aug. 30, 1966, Ser. No. 575,991  
Claims priority, application Austria, Sept. 1, 1965, A 8,028/65  
6 Claims. (Cl. 64—6)



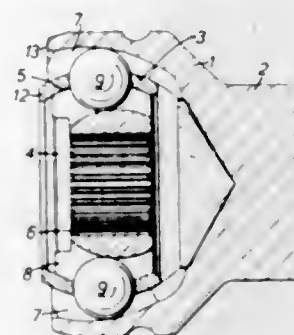
Coupling means for a test stand for fuel injection pumps for coupling a drive shaft protruding from a drive spindle housing of the test stand with engaging dogs of

the pump to be tested in which the drive shaft is surrounded by a sleeve. One end of the sleeve is slotted to define two sleeve halves carrying coupling claws cooperable with the engaging dogs of the pump to be tested with the other end of the sleeve being connected to the drive shaft by a thin annular disc resistant to torsional forces. Moreover, means are provided for elastically supporting the sleeve in a radial direction.

### 3,412,580 UNIVERSAL JOINTS

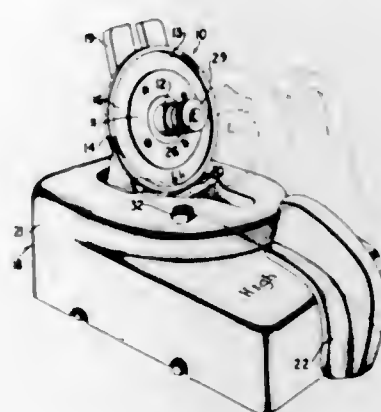
William Cull, Hest Bank, near Lancaster, England, assignor to Birfield Engineering Limited, London, England  
Filed May 4, 1966, Ser. No. 547,657

Claims priority, application Great Britain, May 26, 1965, 22,350/65  
5 Claims. (Cl. 64—21)



A constant velocity universal joint comprising inner and outer joint members formed with ball tracks to accommodate torque-transmitting balls which engage and move along corresponding tracks which are arranged to converge. A one-piece solid annular ball cage between said members is asymmetrical about the plane in which the ball centres lie, and is stronger on the side to which the balls are urged by track convergence so as to be better able to withstand the ball reaction.

3,412,581  
PATTERN WHEEL FILLING METHOD  
Lester Mishcon, Miami Beach, and Paul M. Wolford, North Miami, Fla., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey  
Filed Mar. 3, 1966, Ser. No. 531,619  
3 Claims. (Cl. 66—1)



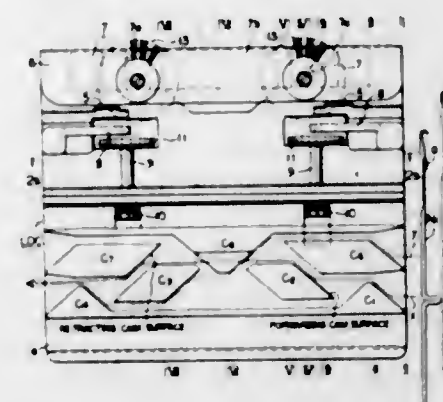
A method is disclosed for filling a pattern wheel with jacks in accordance with a preselected arrangement wherein an annulus of sheet material is imprinted with marks indicative of the desired jack location and then placed beneath the position occupied by the jacks to be loaded in the pattern wheel visually to indicate the jack arrangement of the pattern wheel to be filled.

### 3,412,582 KNITTING MACHINE

Hiroshi Kitazawa, Nagoya-shi, Aichi-ken, Japan, assignor to Brother Kogyo Kabushiki Kaisha, Nagoya-shi, Aichi-ken, Japan

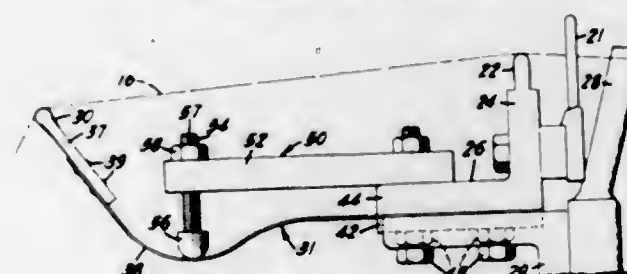
Filed Feb. 7, 1966, Ser. No. 525,406  
Claims priority, application Japan, Feb. 12, 1965, 40/7,933; May 25, 1965, 40/31,027; June 28, 1965, 40/38,907; Aug. 7, 1965, 40/48,163; Sept. 24, 1965, 40/58,469

16 Claims. (Cl. 66—70)



A knitting machine having a single flat needle bed provided with a plurality of sinker elements and a plurality of needles slidably aligned for movement in the forward and rearward directions between the sinker elements, and an apparatus for transferring loops suspended on selected needles at intervals of one or more needles to needles adjacent the selected needles.

3,412,583  
YARN TENSION MEANS FOR WARP KNITTING MACHINES  
Rudolf H. Haehnel, West Lawn, Pa., assignor to Textile Machine Works, Wyomissing, Pa., a corporation of Pennsylvania  
Filed Jan. 27, 1967, Ser. No. 612,240  
5 Claims. (Cl. 66—146)

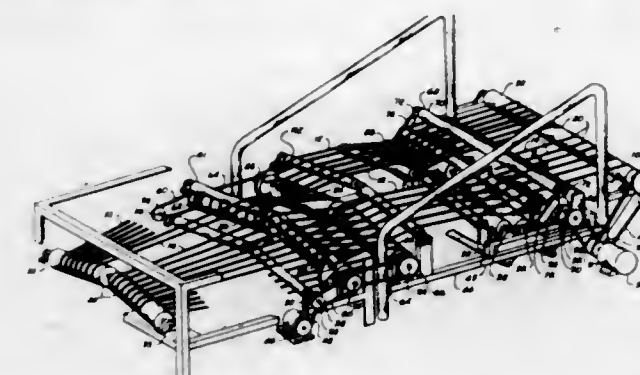


The disclosure herein concerns warp yarn tension bars for warp knitting machines, such as tricot machines, such tension bars comprising a rail over which the warp yarns are drawn in their paths from the warp supply to the knitting instrumentalities of the machine, the rail being supported by a plurality of spaced cantilever spring strips, and is directed particularly to the provision of adjustable snubbers for said strips whereby the characteristics thereof may be varied as required by varying conditions of the machine operation.

3,412,584  
PELT PAINTING DEVICE  
William E. Palmer, Downers Grove, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois  
Filed Apr. 27, 1966, Ser. No. 545,614  
11 Claims. (Cl. 69—32)

Method and apparatus for stretching animal pelts flat and for applying a fluid coating thereto, said apparatus comprising diverging conveyor means to stretch a pelt transversely of the path of said conveyor, a second con-

veyor means lying in the path of said diverging conveyor and moving at a greater speed than said diverging con-



veyor so as to longitudinally stretch the pelt as it passes from the first to the second conveyor, and fluid application means for applying fluid to one side of the pelt.

3,412,585  
SKI-LOCKING DEVICE  
Robert P. Berryman, 1260 Kenilworth Road, Hillsborough, Calif. 94010  
Filed June 12, 1967, Ser. No. 645,364  
7 Claims. (Cl. 70—58)



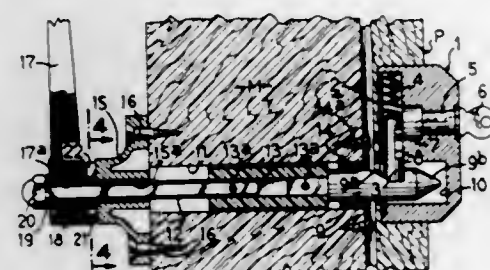
A ski-locking device in which the skis are locked together in crossed relation so that the two skis will form an X. The locking device when connected to the skis will not only hold them in an X formation, but the two skis will be spaced a short distance apart at their points of connection. The locking device when disconnected from the skis may be carried in the pocket or in a packet suspended from a belt or attached to a skier's clothing. Also during the securing of the two skis together, the hand loops of the ski poles may be placed over the locking device and thus be secured to the skis. Further, one end of a flexible steel strand cable having loops formed at each end may be placed over the locking device while the opposite end is threaded through articles of clothing or equipment or around a tree or other permanent member and then also placed over the locking device thus locking the equipment and skis together. If desired the skis with or without such clothing or equipment may be secured to the tree or other permanent member. The locking portions on the skis do not project beyond the outer surfaces of the skis.

3,412,586  
SAFETY LOCK FOR COLDROOMS AND LIKE APPLICATIONS  
Bernard Sterner, Paris, France, assignor to Societe Armetel, Saint Ouen, France, a French body corporate  
Filed June 19, 1967, Ser. No. 646,844  
Claims priority, application France, June 29, 1966, 67,390  
10 Claims. (Cl. 70—92)

A safety lock for a door for a coldroom and the like, comprising a keeper having a notch and rotatable in



the door frame by means of a handle within the coldroom so as to shift the notch away from a bolt mounted on the door and normally elastically biased into the notch for locking the door, the locking position of the bolt



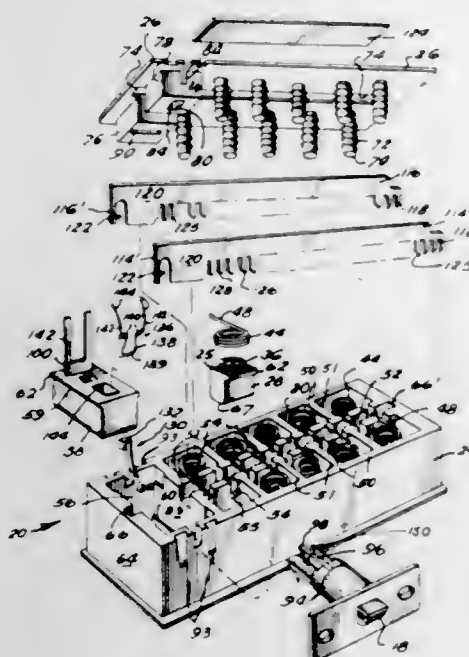
being controlled by a key barrel, so that the door can be unlocked from inside the coldroom even when the bolt has been placed in its locking position by the key barrel.

3,412,587

**PUSHBUTTON OPERATED COMBINATION LOCKS**  
Albert C. Sanowskis, 7321 S. Shore Drive,  
Chicago, Ill. 60649

Continuation-in-part of application Ser. No. 395,372,  
Sept. 10, 1964. This application Aug. 31, 1966, Ser.  
No. 576,456

12 Claims. (Cl. 70—313)



A combination lock device of the general type disclosed in U.S. Patent 3,270,537, wherein there is provided a plurality of buttons requiring the consecutive depression of a chosen sequence of said buttons to effect a change of said lock from an initial locked condition to an open condition, and which includes a lock controlling device coupled to the buttons and shiftable step by step in one direction to pass a latch controlling bolt therethrough to release the latch but only upon depression of the proper sequence of said chosen buttons and wherein depression of said buttons in other but the predetermined sequence serves to disable the lock controlling device; means for resetting the lock controlling device to the initial locked condition which comprises resilient stop means fixedly disposed in the path of movement of the lock controlling device to terminate the movement thereof at a predetermined location, there being bolt withdrawal means described so that for resetting the lock controlling device to its initial condition, the same is released to travel along a

path of movement and be intercepted at a particular location by the resilient stop means thereby automatically to place the lock controlling device in the proper initial condition for resumption of the operation of a lock device. The lock controlling device described is in the form of a pair of flat tined racks arranged side by side and frictionally engaged one with the other and disposed in a channel formed in the lock-housing, and the resilient stop means described is in the form of a band spring of arcuate bent configuration, one end of which is secured to the end wall of the housing and the opposite end arranged to intercept the pair of racks at a predetermined location to terminate the movement thereof. Other forms of the resilient stop means include a pivot lever, one end of which is arranged in the path of the racks at a predetermined location to terminate the movement thereof; a coil spring attached to a threaded screw engaged in the housing whereby the end of the coil spring intercepts the racks at the predetermined location to terminate the movement of the racks; a rubber or a resilient plastic button of predetermined length secured to the housing at one end thereof so that the other end of the button engages the racks at a predetermined location to terminate the movement thereof; there also is described a system whereby the resilient stop means is disposed at opposite ends of the housing to engage the racks at both their opposite ends respectively, whereby the racks are positioned properly when the lock is arranged with the racks horizontally disposed rather than vertically disposed.

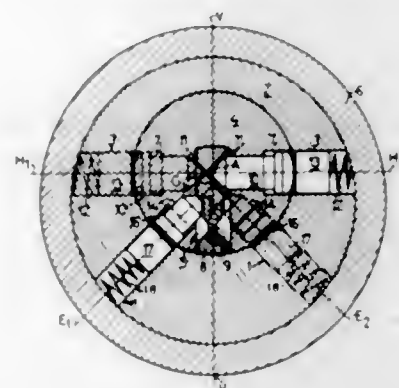
3,412,588

**CYLINDRICAL LOCK WITH ASSOCIATED KEY**  
Edwin Schwegler, Wetzikon, Switzerland, assignor to  
Bauer AG., Wetzikon, Switzerland, a corporation  
of Switzerland

Filed Apr. 25, 1966, Ser. No. 544,730

Claims priority, application Switzerland, Apr. 29, 1965,  
5,925/65

13 Claims. (Cl. 70—358)

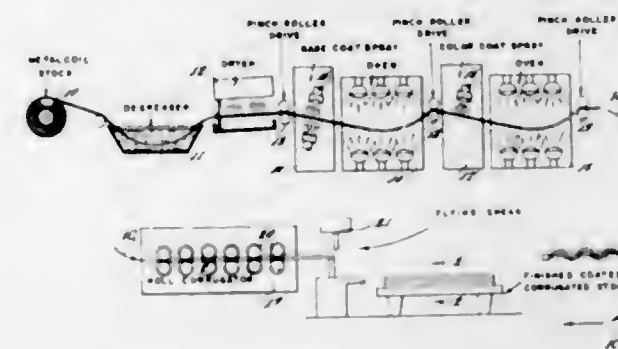


A cylinder lock and key wherein an inner cylinder is rotatable within an outer cylinder; the outer cylinder has one or more rows of tumbler pin bores extending longitudinally of the axes of the cylinders with each row lying in a common plane and with additional rows of tumbler pin bores extending longitudinally of the axes of the cylinders and lying in planes inclined with respect to said common plane; the inner cylinder is provided with rows of locking bolt bores with its bores so arranged that there is a locking pin bore in alignment with each tumbler pin bore in a given rotative position of the inner cylinder with respect to the outer cylinder; an inwardly spring biased tumbler pin is provided in each tumbler pin bore and a cooperating lock bolt is arranged in each locking bolt bore; the spring biased tumbler pin causes the locking bolt to preclude rotation of the inner cylinder with respect to the outer cylinder until a key provided with specifically located recesses on its surface is inserted in

a key slot provided in the inner cylinder and effects displacement of the tumbler pins by the locking bolts.

3,412,589  
**PROCESS FOR PORCELAIN ENAMELING AND FORMING SHEET METAL**

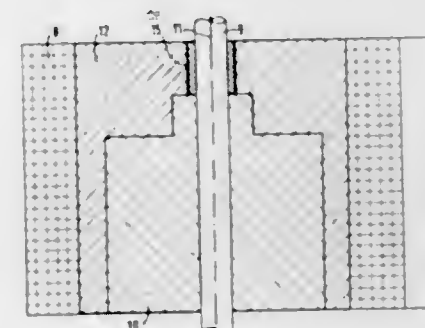
John T. Gartrell, Orwigsburg, Pa., assignor, by mesne assignments, to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware  
Filed July 18, 1966, Ser. No. 565,997  
12 Claims. (Cl. 72—46)



The disclosure relates to a method of porcelain enameling and deforming sheet metal which includes applying porcelain enamel slip to the metal and firing the slip and then deforming the porcelain coated metal sheet at a temperature at which the porcelain enamel is plastic.

3,412,590

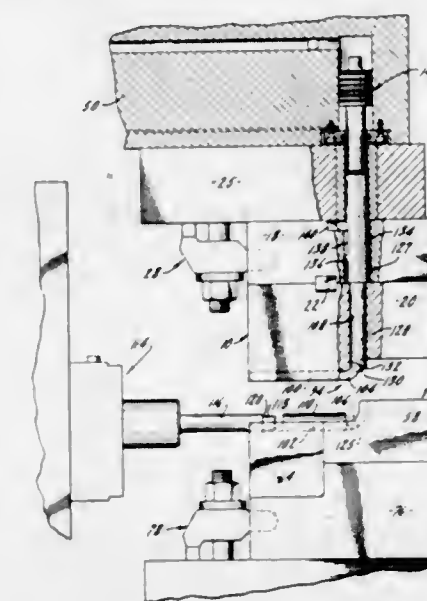
**DEVICE FOR FORMING METAL WORKPIECES**  
Hans Joachim Lippmann, Nuremberg, and Horst Schenk, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany  
Filed Sept. 15, 1965, Ser. No. 487,449  
Claims priority, application Germany, Sept. 19, 1964,  
S 93,239  
6 Claims. (Cl. 72—56)



Device for forming metal workpieces by pulsed magnetic fields includes a compression coil, and a field concentrator snugly contained within the coil, the field concentrator comprising at least two portions each located oppositely spaced from one another in a direction transversely to a longitudinal axis and defining therebetween an opening having an axis substantially coinciding with the longitudinal axis for relatively intimately receiving therein an elongated workpiece having varying cross section along the length thereof, and insulating means on the inner surface of the field concentrator portions within the opening and in the space between the portions for insulating the field concentrator from the workpiece and the field concentrator portions from one another, the insulating means extending radially within the space and having an outer limiting edge located substantially at the outer surface of the field concentrator.

3,412,591

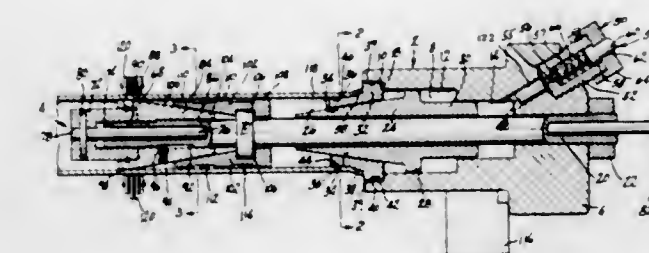
**PRESS FOR ELBOWS AND THE LIKE**  
Joseph W. Tomka, Cape Coral, Fla., assignor to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin  
Filed Mar. 31, 1966, Ser. No. 539,175  
6 Claims. (Cl. 72—150)



This is a press for making elbows from tubular workpieces which includes applying pressure at one end with a controlled pressure withdrawal at the other, the workpiece being filled with a deformable substance.

3,412,592

**PIPE GRIPPING AND FLARING APPARATUS**  
Marcus Ramsay, New Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia  
Filed Oct. 22, 1965, Ser. No. 501,645  
5 Claims. (Cl. 72—316)



An explosive-actuated pipe flaring apparatus having a housing for a tapered expander element. A plurality of flaring segments are disposed about said expanding element, each of the segments having an internal tapering surface in engagement with the tapering surface of the expanding element whereby when the expanding element is driven forward under the force of the gases generated by the explosive cartridge, the flaring segments are driven outwardly to flare the pipe.

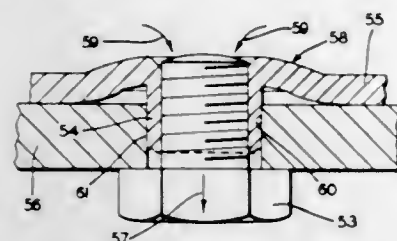
3,412,593

**MANUFACTURE OF PLATE METAL PRODUCTS WITH EXTENDED EXTRUDED INTEGRAL SLEEVES**  
Don C. Price, Canton, Ohio, assignor to The Monarch Rubber Company, Hartsville, Ohio, a corporation of Ohio  
Filed Dec. 16, 1965, Ser. No. 514,277  
1 Claim. (Cl. 72—335)

A thick plate metal product having flat surfaces and an integral sleeve projecting from one surface a restricted distance but with an increased sleeve length of at least two and one-half times the plate metal thickness is made by piercing a hole through the plate metal blank, then shaving the hole to be truly cylindrical, then drawing a



dome-like formation around the hole offset in one direction from the flat blank surfaces and reforming the cylindrical hole to conical shape, and then extruding a



sleeve from blank metal in the dome-like formation to project from the concave dome surface beyond the connected flat blank surface.

#### ERRATUM

For Class 72—377 see: Patent No. 3,412,611

**3,412,594**  
**RIVET INSTALLATION TOOL**  
Richard H. Lund, 4213 E. Montecito,  
Phoenix, Ariz. 85018  
Filed Oct. 27, 1966, Ser. No. 589,924  
1 Claim. (Cl. 72—391)



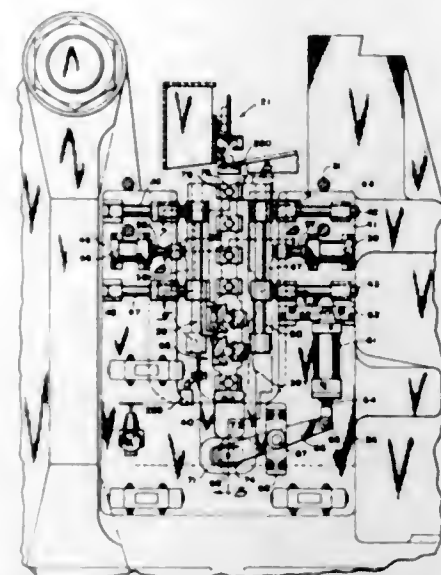
1. A rivet installation tool, particularly adapted for inserting and upsetting self-drilling, pull-type blind rivets, said rivet installation tool comprising:

- (a) a housing having an upper end and a lower end with a central aperture located within the lower end;
- (b) means for stabilizing said housing against rotation;
- (c) an internal annular cam-rise surface proximate the lower end of said housing;
- (d) a chuck assembly disposed within said housing and adapted for rotational and longitudinal movement therein, said chuck assembly comprising:
  - a coaxial tubular casing having an upper end and a lower end;
  - spring-actuated gripping jaws carried by the lower end of said casing; and
  - a cam-follower carried by said tubular casing, said cam-follower adapted for intermittent operative engagement with the cam-rise surface located within said housing;
- (e) means for rotating said chuck assembly, said means adapted to permit limited longitudinal movement of said assembly while rotating; and
- (f) spring means urging said rotatable chuck assembly downwardly within said housing.

**3,412,595**  
**STOCK TRANSFER MECHANISM**  
Albert R. Kull, Beachwood, and Warner C. Logan, Timberlake, Ohio, assignors to The Ajax Manufacturing Company, Euclid, Ohio, a corporation of Ohio  
Filed Oct. 21, 1965, Ser. No. 499,758  
14 Claims. (Cl. 72—405)

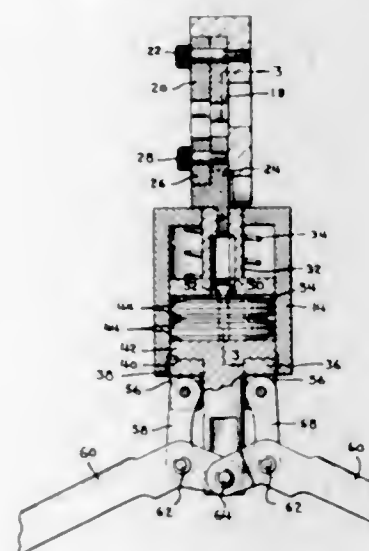
A stock transfer mechanism for forging machines including opposed vertically movable slides each mounted on opposed horizontally movable slides, each horizontally movable slide being driven by a piston-cylinder assembly

through a pressure differential device, the transfer mechanism including turn-grip segments journaled for



rotation substantially about the center of the stock with pawl means being operative to rotate the segments as the supporting slide moves up and down.

**3,412,596**  
**COMPRESSING TOOL**  
William Curtis Burns, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.  
Filed Dec. 30, 1965, Ser. No. 517,582  
9 Claims. (Cl. 72—441)

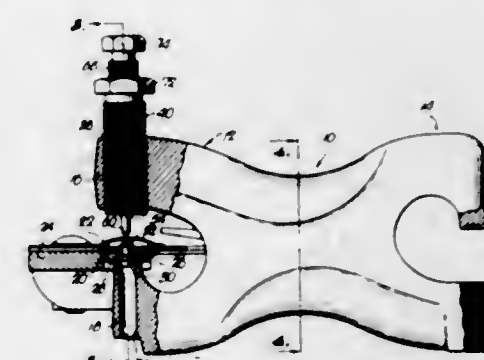


A tool is provided having a pair of dies for compressing an article disposed between the dies. The drive train includes resilient force imposing means having a non-uniform spring rate. During the final stages of compression of an article the spring rate of the force imposing means is approximately zero thereby permitting a constant force output from the tool despite variance in size of the article due to manufacturing tolerances or the like. The tool is adjustable to permit a wide range of articles to be compressed without requiring substitution of the compressing dies.

**3,412,597**  
**TOOL FOR RIVETS**  
Gilbert Rains, Hutchinson, Kans., assignor to Rains Manufacturing Company, Inc., Hutchinson, Kans., a corporation of Kansas  
Filed Aug. 12, 1966, Ser. No. 572,023  
5 Claims. (Cl. 72—454)

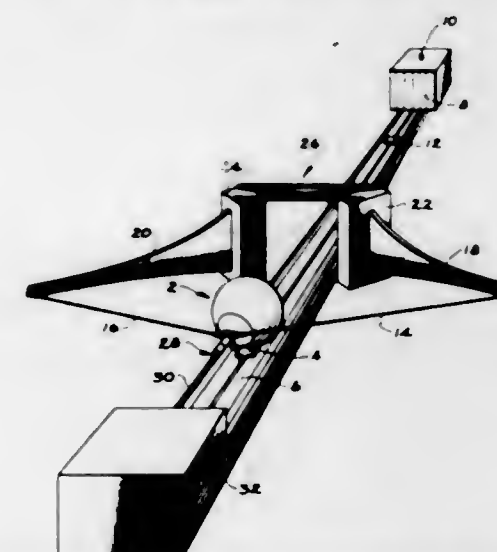
1. A hand tool for removing a malleable rivet connecting the knife section and mounting strip of a sickle while the sickle is in the cutter bar of a mowing machine, the rivet having opposed headed ends and a shank

passing through the section and strip, said tool comprising: a handle having a C-shaped body at one end thereof, presenting a boss and a dolly, the boss and the dolly being spaced apart for receiving the strip and the section therebetween, the dolly having a rest for supporting the sickle, said dolly having a rivet-receiving hole extending from said rest, there being a tapped opening in the boss aligned with the hole; a jaw threaded in said opening and movable toward and away from the rest for clamping the section to the strip against the rest, said jaw having a bore therethrough aligned with said hole, the bore having a threaded portion, and a support portion between the rest and the threaded portion;



a punch reciprocally guided in said support portion for sliding movement toward and away from the rest; and a screw in said threaded portion and freely rotatable separately from said punch for movement toward and away from said punch, said screw having an extremity disposed in the jaw for engaging said punch upon rotation of the screw in a direction to move the latter toward said punch, whereby upon further rotation of said screw in said direction, said punch is moved toward said rest, said punch having a terminus disposed exteriorly of the jaw for engaging one headed end of the rivet upon movement of the punch by rotation of the screw in said direction for pressing the rivet from the sickle into said hole while the sickle is held clamped between the rest and the jaw.

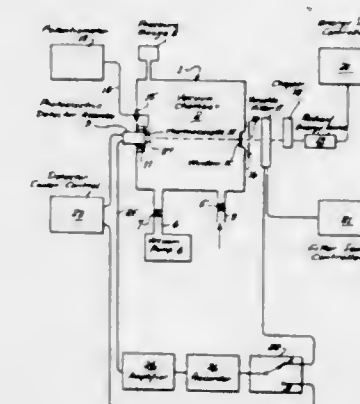
**3,412,598**  
**IMPACT TESTING MACHINE**  
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Carl Edward Johnson, Arlington, Va.  
Filed Dec. 23, 1965, Ser. No. 516,152  
1 Claim. (Cl. 73—12)



A pair of bow limbs are positioned on either side of a track and a bow line attached to the outer ends of the

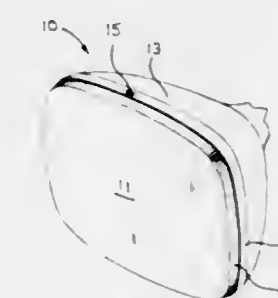
limbs is attached to a carriage which rides on the track for carrying a test package. A source of power draws the bow line against the bias of the bow limbs and a quick release mechanism release the power source from the bow so that the carriage and package are propelled at high velocity toward an impact receiving surface. A stop halts movement of the carriage short of the impact receiving surface and the package continues in free flight to impact the surface.

**3,412,599**  
**SPECTRAL ATTENUATION HYGROMETER**  
Carl A. Hammons, Raymond R. Smith, and David B. Witter, Pomona, Calif., assignors to General Dynamics Corporation, a corporation of Delaware  
Filed May 16, 1966, Ser. No. 550,211  
10 Claims. (Cl. 73—17)



A dewpoint measuring apparatus having a chamber, a radiant energy source for projecting energy into the chamber, a detector lens for detecting a change in energy and monitoring temperature, means to cool the lens and filter means to allow only energy in a desired wavelength to pass into the chamber.

**3,412,600**  
**CONTROLLING AND MEASURING THE TENSION IN THE BAND ON IMPLSION RESISTANT CATHODE RAY TUBES**  
Daryl E. Powell, Maumee, and Burton W. Spear, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio  
Filed Nov. 3, 1965, Ser. No. 506,169  
9 Claims. (Cl. 73—88)

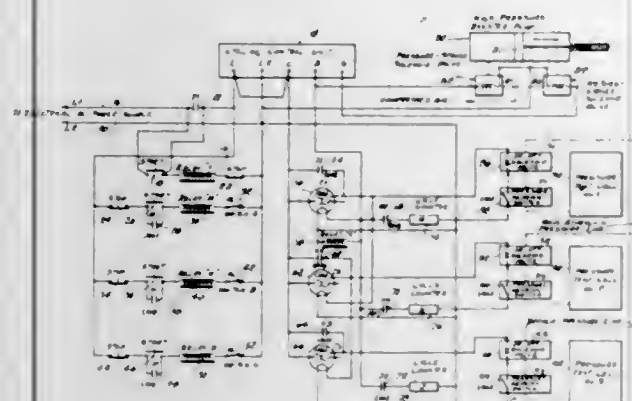


A cathode ray tube faceplate rendered implosion resistant by means of a tensionally stressed reinforcing band encompassing the periphery of the faceplate and having a dimensionally reduced region exhibiting characteristics of dimensional change in response to and accurately correlated with the extent of tensional stress in the reinforcing band, and providing in consequence thereof a means both for accurately determining the extent of tensional stress existing in the reinforcing band and for accurately controlling the extent of tensional stress in the reinforcing band.



3,412,601

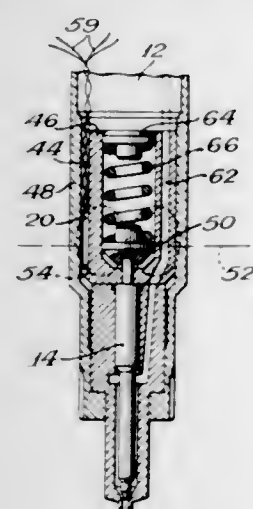
**MULTI-PRESSURE CYCLIC FATIGUE SYSTEM**  
Walter Hand, West Hempstead, and Maurice Silvergleit, Brooklyn, N.Y., assignors to the United States of America as represented by the Secretary of the Navy  
Filed Aug. 31, 1966, Ser. No. 576,787  
6 Claims. (Cl. 73-91)



A pressurizing system in which a plurality of individual test cells are connected to a common pressure source. Associated with each test cell is a different delay element, each of which acts to open the pressure discharge valve of its associated test cell. The electrical circuit configuration is such that at the end of a pressure cycle, the power is removed from the filament of a first thermostatic delay element which opens its contacts after cooling off and removes power from a solenoid, thereby opening the hydraulic line and allowing the pressure in the first test cell to discharge; the opening of the contacts of the first thermostatic delay elements removes power from the filament of a second thermostatic delay element which opens its contacts after cooling off and removes power from a solenoid, thereby opening the hydraulic line and allowing the pressure in the second test cell to discharge. This process is continued for as many test cells as are used in the apparatus.

3,412,602

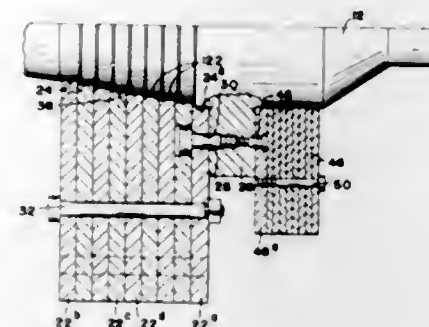
**TIMING NOZZLE FOR DIESEL ENGINE**  
Joseph H. Rush, Oak Brook, and Richard G. Marek, Carpentersville, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware  
Filed June 27, 1966, Ser. No. 560,687  
20 Claims. (Cl. 73-119)



Timing nozzle for a diesel engine, having an internally located Hall effect plate therein, which plate is electromagnetically sensitive to all movement of the nozzle fuel valve as it opens and closes in the nozzle, and the output of which plate is applied by an electronic instrument to appropriate utilization means such as a stroboscope timing lamp.

3,412,603

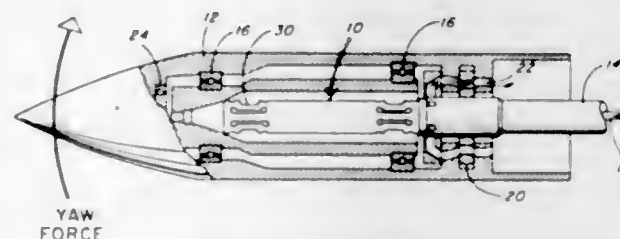
**BRAKE TESTING DYNAMOMETER**  
Richard W. Obarski, Stow, Ohio, assignor to Adamson United Company, Akron, Ohio, a corporation of Ohio  
Filed Dec. 16, 1966, Ser. No. 602,250  
7 Claims. (Cl. 73-121)



An apparatus for balancing and stabilizing the flywheel of a dynamometer for testing tires, wheels, brakes, and the like where a plurality of inertia discs or plates are secured to the flywheel in order to put proper load requirements on the tire, wheel, or brake which is connected to the rotating flywheel for test.

3,412,604

**WIND TUNNEL BALANCE**  
Joseph A. Iandolo, Rockville, Md., assignor to the United States of America as represented by the Secretary of the Navy  
Filed Apr. 12, 1966, Ser. No. 542,121  
4 Claims. (Cl. 73-147)



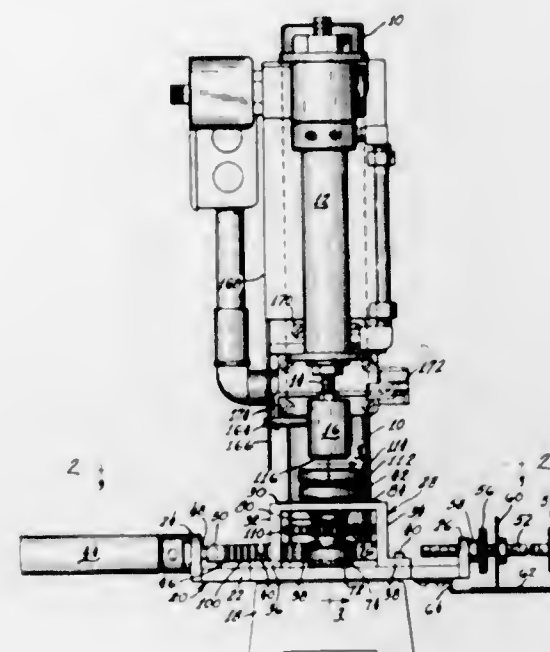
A wind tunnel strain gage balance having a pair of diametrically opposed eccentric columns and a central member, where the eccentric columns are each attached to a conical mandrel portion on one end and a generally cylindrical rearward portion on the other end by thin necked portions at either end which act like pin joints. As the balance is subjected to yaw loads, a secondary bending is induced in the eccentric columns due to the compressive end loads. The eccentric columns then act much like mechanical amplifiers permitting the measurement of small yaw loads without greatly sacrificing balance rigidity.

3,412,605

**METHOD AND APPARATUS FOR TESTING CERTAIN CHARACTERISTICS OF PAPER AND THE LIKE**  
Frank F. Oehme and Michael L. Swanson, Wisconsin Rapids, Wis., assignors to Consolidated Papers, Inc., Wisconsin Rapids, Wis., a corporation of Wisconsin  
Filed Nov. 30, 1966, Ser. No. 598,037  
13 Claims. (Cl. 73-150)

An improved method and apparatus for testing the piling propensity of paper or the like where a specimen of the paper to be tested is mounted on one of a pair of oppositely disposed anvil members and the two anvil mem-

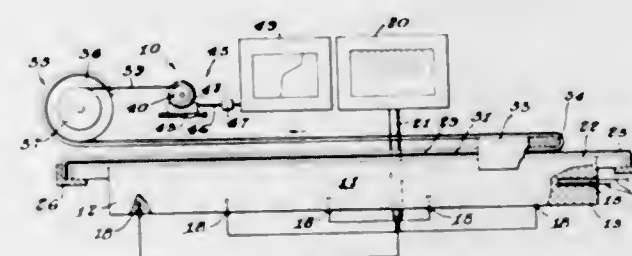
bers are moved into face-to-face engagement under pressure and one of the anvil members is then rotated about its longitudinal axis relative to the other anvil member, to permit a sample of formation fluids to collect in the chamber. Then the tester is closed and the tools elevated



after which one of the anvil members is suddenly moved axially away from the other anvil member, thereby subjecting the test specimen to both rubbing and pick forces in a predetermined timed sequence.

3,412,606

**ADHESION TESTING METHOD AND APPARATUS**  
Barry A. Cooper and Willard H. Wharton, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
Filed July 3, 1967, Ser. No. 650,924  
11 Claims. (Cl. 73-150)

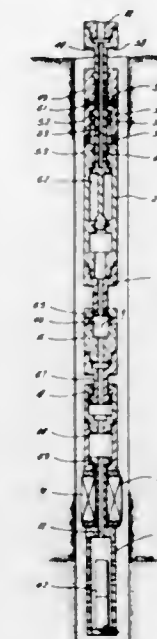


Adhesion between heat sealable materials is measured over a temperature range by placing samples to be evaluated on a temperature gradient bar. After the samples have reached the thermal equilibrium, one sample is stripped from the other and the force required to strip is plotted to determine the heat sealing range and relative degree of adhesion.

3,412,607

**METHOD AND APPARATUS FOR DRILL STEM TESTING**  
Lloyd I. Jensen, Calgary, Alberta, Canada, assignor, by mesne assignments, to Schlumberger Technology Corporation, New York, N.Y., a corporation of Texas  
Filed June 3, 1966, Ser. No. 555,099  
10 Claims. (Cl. 73-155)

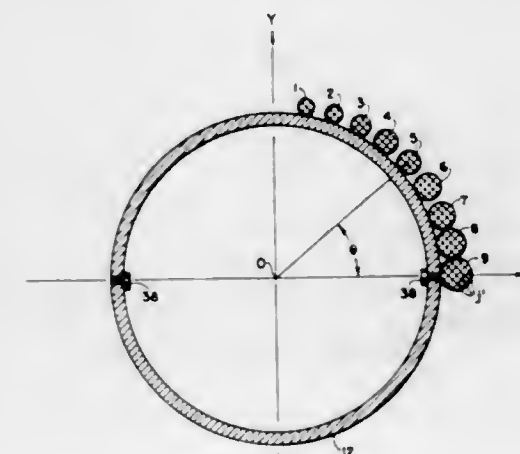
Methods and apparatus for drill stem testing including a packer, a tester and a closable chamber suspended in a well bore on a pipe string. With the packer set, the tester is opened and this occurrence can be detected at the surface, whereupon the upper end of the chamber is closed



to the surface where the sample trapped in the closed chamber can be removed safely and in secrecy.

3,412,608

**ELECTROMAGNETIC FLOWMETER**  
Alfred C. Haacke, Greece, N.Y., assignor to Taylor Instrument Companies, Rochester, N.Y., a corporation of New York  
Filed May 21, 1965, Ser. No. 457,733  
10 Claims. (Cl. 73-194)



The field windings of an electromagnetic flowmeter are provided in the form of a plurality of saddle-shaped coils, the sides of which are distributed about the periphery of the meter body parallel to the flow through the body, at spaced positions about the circumference of the meter body. The ampere turns of each winding vary with the cosines of the angles the coil sides make with respect to a line joining electrodes, the sides of the coil having the largest ampere turns lying over the electrodes. The sides of the coils form more or less cylindrical bundles which may lie on the cylindrical periphery of the meter body, or be supported thereon by annular forms running circumferentially of the body. While the winding needs no iron, it may be covered with a terminator of transformer steel to insure isolation of the homogeneous field within the meter body from Earth's magnetic field, or other possible exterior magnetic influence.

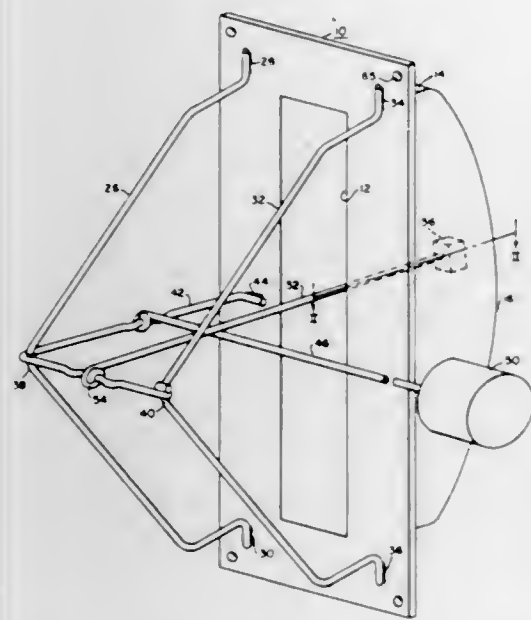


3,412,609

## LIQUID LEVEL INDICATION

Albert C. Kaletka, Sharon, Pa., John R. Martinec, Hubbard, Ohio, and Charles F. Kummer, Sharpsville, and Joseph F. Susic, Greenville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 19, 1967, Ser. No. 654,542  
8 Claims. (Cl. 73—308)



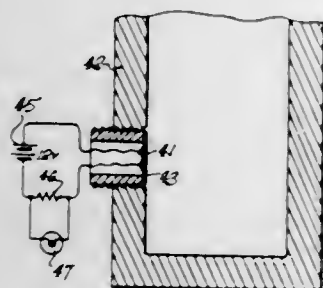
Apparatus for giving a continuous indication of the liquid level in a casing where a float-arm member is pivotally mounted to a plate member in the casing and will move an overlying arm having a permanent magnet attached thereto in response to liquid levels. A permanent magnet follower may also operate switch means provided therein to operate a warning signal when high or low liquid levels are reached.

3,412,610

## THERMAL SENSING CIRCUIT

Simon A. Prussin, Los Angeles, Calif., assignor to All-O-Matic Manufacturing Corporation, New Hyde Park, N.Y., a corporation of New York  
Continuation-in-part of application Ser. No. 377,223, June 23, 1964. This application Jan. 4, 1967, Ser. No. 607,300

5 Claims. (Cl. 73—362)



A bistable or multistable thermal sensing circuit is described, wherein the active element is a semiconductor having a positive temperature coefficient of resistivity below a predetermined peak resistivity temperature and a negative coefficient of resistivity above the peak resistivity temperature. When the combination of ambient temperature plus internal current heating exceeds the peak resistivity temperature, a thermal avalanche occurs and control means are actuated. One embodiment is particularly

adapted for sensing liquid level and liquid temperature in a container.

3,412,611

## METHOD AND APPARATUS FOR MAKING AN AEROFOIL-SHAPED BLADE

George Oswald Eccles, Skipton, and Joseph William Whitaker, Keighley, England, assignors to Rolls Royce Limited, Derby, England, a British company

Filed June 13, 1966, Ser. No. 557,270  
Claims priority, application Great Britain, July 22, 1965, 31,347/65

8 Claims. (Cl. 72—377)



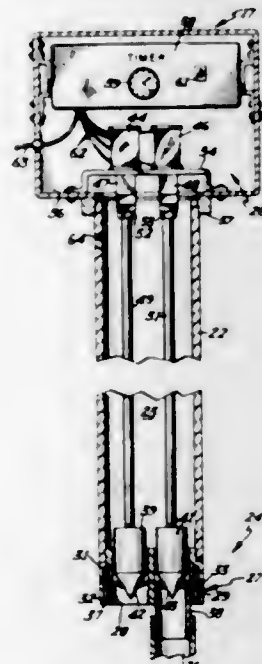
A method of making a clapper blade comprising producing a blade having its blade portion finished forged and its clapper portion roughly forged and thereafter finish forging the clapper portion without effecting further forging of the blade portion. This is effected by an apparatus comprising a split clamp, and a split die which is disposed in the clamp and capable of limited sliding movement in longitudinal and transverse directions of the blade. Limited sliding movement of the die parts effects the finish forging of the clapper portions.

3,412,612

## COMPOSITE SAMPLER

Roman R. Carr, 4125 Upton Ave. S., Minneapolis, Minn. 55410

Filed Oct. 24, 1966, Ser. No. 588,868  
13 Claims. (Cl. 73—421)



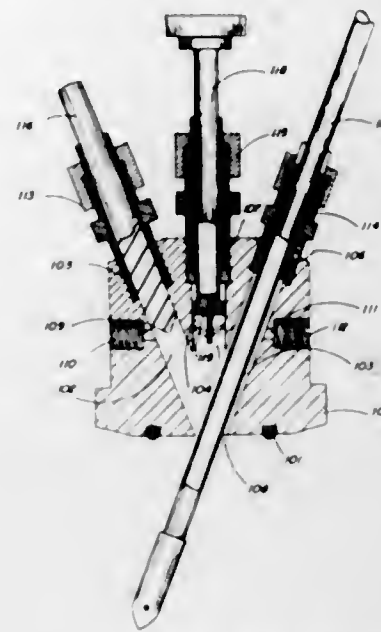
An automatic composite sampler attached to the upstream side of a proportional weir. The sampler has inlet and outlet valves selectively operable to collect, trap and discharge a sample of liquid. The valves are periodically and sequentially operated by separate solenoids controlled by a timer.

3,412,613

## DEVICE FOR TAKING FLUID SAMPLES FROM CLOSED SYSTEMS

Raymond E. Brown, Greenbelt, and Richard A. Hickerson, Wheaton, Md., assignors to the United States of America as represented by the Secretary of the Interior  
Filed Aug. 11, 1966, Ser. No. 572,169

2 Claims. (Cl. 73—425.2)



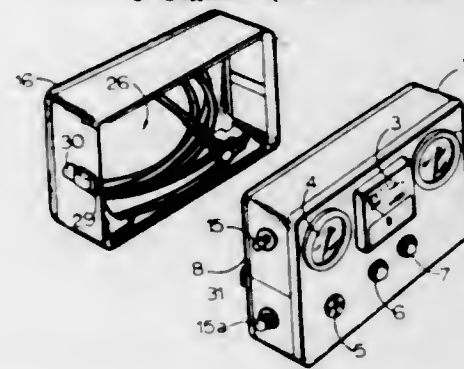
A device for extracting fluid samples from closed containers without contamination where a container is punctured through a block member placed sealingly thereon, a sample withdrawn from the container and the container resealed by a plug lowered into the puncture.

3,412,614

## TWO-PART HOUSING FOR TEST UNIT

Anatolijs Mazurkevics, Kalamazoo, Mich., assignor to Allen Electric and Equipment Company, Kalamazoo, Mich., a corporation of Michigan

Filed Sept. 1, 1966, Ser. No. 576,614  
5 Claims. (Cl. 73—431)



An assembly for housing and carrying an automotive test unit and accessory equipment therefor having a two part housing in which one part is for storing the accessory equipment and the other part contains the test equipment and indicators.

3,412,615

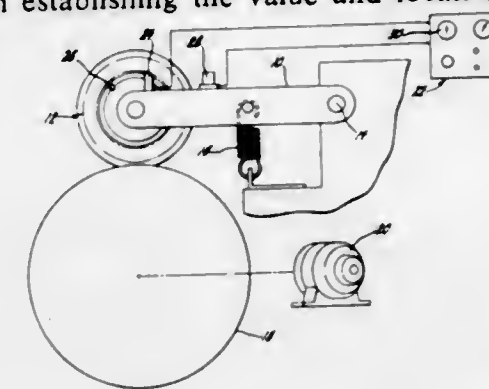
## METHOD OF CONTROLLING VIBRATIONS OF WHEEL AND TIRE ASSEMBLIES

Alva Lloyd Nedley, Troy, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 30, 1965, Ser. No. 491,642  
8 Claims. (Cl. 73—458)

Method and apparatus by which a vehicle wheel and tire assembly is maintained in engagement with a rotatable drum by a load that proximates that when the assembly is mounted on a vehicle. The drum is rotated at a speed which causes vibrations from runout of the assembly to occur at their resonant frequency. The amplitude

of these vibrations and their angular disposition relative to a reference point on the assembly are determined and utilized in establishing the value and location of an ap-



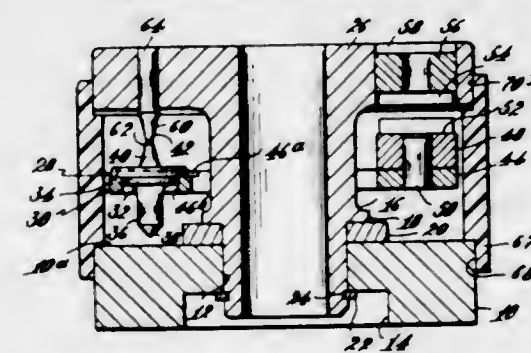
appropriate compensating weight or weights. The weight corrects for and nulls the loaded radial runout produced vibrations and also can correct for static unbalance if present.

3,412,616

## ACCELEROMETER

Barron C. Watson, Cambridge, Mass., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Feb. 23, 1966, Ser. No. 529,289  
8 Claims. (Cl. 73—492)



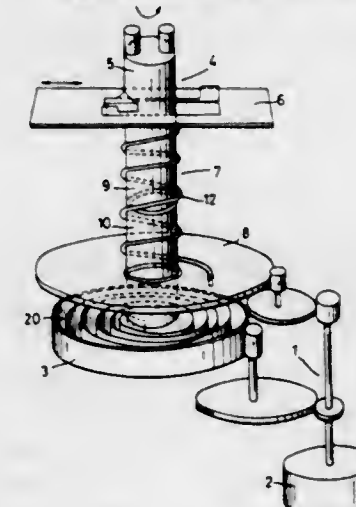
An accelerometer for industrial and military uses having a plurality of weights magnetically supported before impact and releasable by a predetermined change in energy to form dents in a deformable member to indicate final velocities. Means are provided to disable the accelerometer once it has been subjected to a shock sufficient to activate it.

3,412,617

## DRIVE DEVICE

Walter Holzer, Meersburg (Bodensee), Schutzenrain, Germany

Filed Mar. 22, 1966, Ser. No. 536,399  
Claims priority, application Germany, Apr. 8, 1965, H 55,800  
10 Claims. (Cl. 74—3.54)



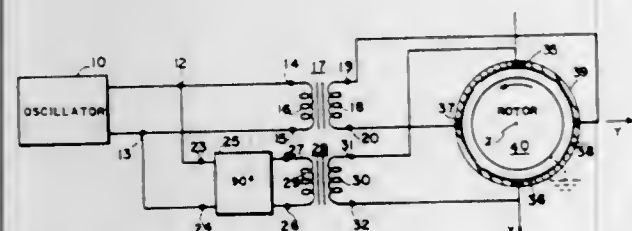
A drive device suitable for purposes such as program control of appliances. The device has a continuously



windable spring force storage means to which a continuous winding-up system is connected, this spring force storage means being coupled to a stepping mechanism which is acted upon by a run-down brake. This brake is controlled by the continuous winding-up system for the spring force storage means.

### 3,412,618 CONTROL APPARATUS FOR INERTIAL INSTRUMENTS

Robert C. Staats, Fridley, Minn., assignor to Honeywell Inc., a corporation of Delaware  
Filed Aug. 12, 1963, Ser. No. 301,326  
8 Claims. (Cl. 74-5.7)



1. In an inertial instrument:  
a housing defining a hollow, substantially spherically shaped cavity;  
three pairs of electrically isolated electrodes mounted on said housing and adjacent to said cavity, the two electrodes of each pair being positioned at diametrically opposite locations on said cavity and centered on one of three mutually perpendicular axes X, Y, and Z;  
electric field establishing means connected to said electrodes;  
an electrically conductive, substantially spherically shaped member positioned within said cavity and adapted for rotation about a spin axis at an angular rate  $\omega$ , said spin axis being substantially parallel to said Z axis;  
a speed control oscillator means providing an output signal whose frequency corresponds to a preferred angular rate of said member and is substantially equal to  $\omega$ ;  
a 90° phase network means having an input and an output;  
means connecting said oscillator to said two electrodes of said electrode pair along said X axis to apply said output signal of said oscillator between said two electrodes of said pair along said X axis;  
means connecting said output of said signal generating means to said input of said 90° phase network means and,  
means connecting said 90° phase network means to said electrodes of said electrode pair along said Y axis to apply between said two electrodes of said pair along said Y axis a signal equal to, but in 90° phase relation with, the signal between said electrodes along said X axis.

3,412,619

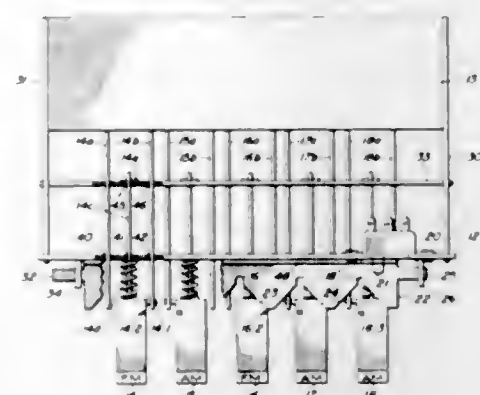
### RADIO RECEIVER PUSHBUTTON TUNER

Fernand F. Pelletier, Baltimore, Md., assignor to The Bendix Corporation, Baltimore, Md., a corporation of Delaware

Filed Mar. 1, 1967, Ser. No. 619,742  
5 Claims. (Cl. 74-10.33)

A radio receiver tuner with turnover pushbutton capable of being set up on two separate stations for each pushbutton, one of which stations may be on the AM broadcast band and the other station on the FM broadcast band. Dual tuning slides are associated with each pushbutton, one on each side of its pushbutton. A tab on

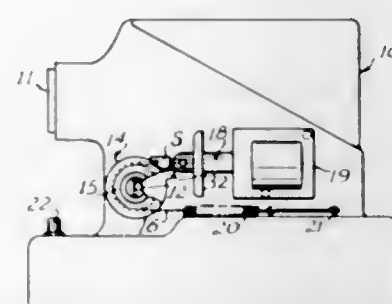
the pushbutton engages a slot in one or the other of the slides, depending on the rotational position of the



pushbutton, causing the slide so engaged to be activated when the pushbutton is depressed.

### 3,412,620 UNIDIRECTIONAL ROTATION TRANSMISSION DEVICE

Walter L. Bloom, Johnson's Ferry Road, Rte. 3, and William D. Tinsley, Jr., Steinhaur Road, Rte. 6, both of Marietta, Ga. 30060  
Continuation of application Ser. No. 419,412, Dec. 18, 1964. This application Apr. 14, 1967, Ser. No. 631,100  
1 Claim. (Cl. 74-141)



A transmission device for changing linear motion into unidirectional rotation of a shaft member such as the film drive shaft of a projector for advancing the film strip in frame-by-frame sequence and includes a release means that disconnects the transmission device from the drive shaft for selective alignment therewith so that the frame to be shown is properly centered for projection. The transmission means includes a first member that is freely and rotatably mounted on the film drive shaft and which is connected to a drive means; a check means that is positioned between the first member and the film drive shaft for selectively connecting the first member and the drive shaft in driving relation; and a release means that is carried by said shaft and is rotatable independently thereof to disconnect said shaft from said first member so that the frame to be shown may be centered for projection.

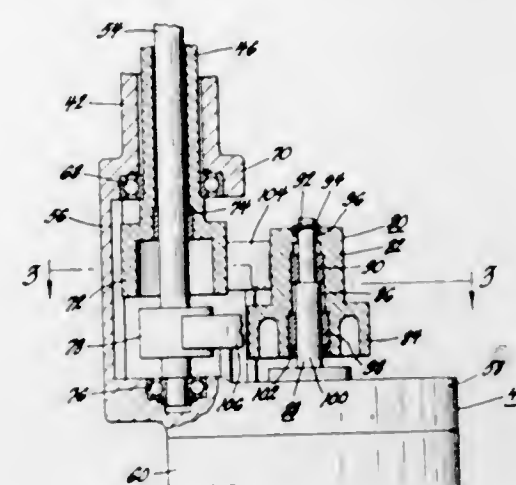
### 3,412,621 ROLLER DRIVE MECHANISM FOR DOMESTIC APPLIANCE

James W. Jacobs, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Original application Feb. 16, 1966, Ser. No. 527,931, now Patent No. 3,331,227, dated July 18, 1967. Divided and this application May 9, 1967, Ser. No. 637,305  
9 Claims. (Cl. 74-190)

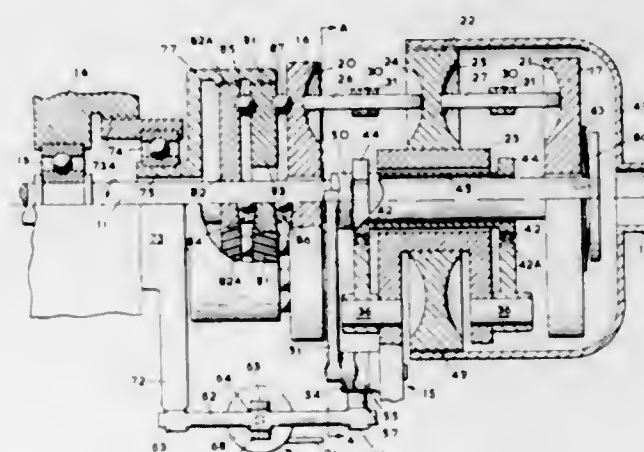
In preferred form, a friction roller drive mechanism for a washer or the like including a reversible electric motor having an output shaft, a driving pinion on said shaft, means including said driving pinion forming a fluid coupling between it and the shaft, and self-energizing

friction roller drive components engageable with the outer surface of the driving pinion for receiving power trans- by a continuous multiple strand chain. The clutches may be alternately engaged to produce a direct drive from



ferred from the output shaft through the fluid coupling to the driving pinion.

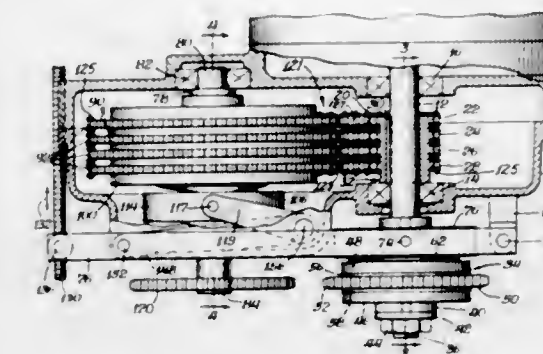
3,412,622  
VARIABLE-RATIO FRICTIONAL DRIVES  
Richard Nelson Rhodes and Clifford Raymond Schofield, Bradford, England, assignors to The English Electric Company Limited, London, England, a British company  
Filed Feb. 21, 1967, Ser. No. 617,688  
Claims priority, application Great Britain, Feb. 24, 1966, 8,296/66  
10 Claims. (Cl. 74-200)



This invention is concerned with a double-ended variable-ratio frictional drive gear having rollers running between toroidal discs and controlled as to their tangential positions by a member which moves in response to the torque reaction on the rollers and which transmits, via a mechanical thrust-amplifying device preferably including a cam, the necessary axial force urging the toroidal discs together. This invention enables the axial force to be exerted on the toroidal disc without the usual need for a heavy thrust bearing.

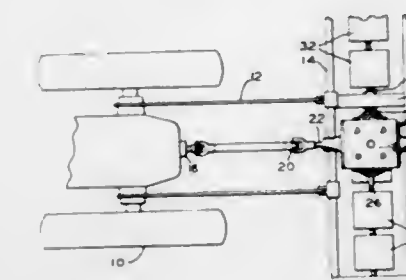
3,412,623  
MULTIPLE SPEED DRIVE  
William E. Gritt, Indianapolis, Ind., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey  
Filed Dec. 19, 1966, Ser. No. 602,624  
7 Claims. (Cl. 74-217)

A multiple speed drive includes a sprocket having multiple rows of teeth mounted on a drive shaft, on which is also mounted a clutch engaged sprocket. On a driven shaft is mounted a multiple disk sprocket clutch connected to the sprocket having multiple rows of teeth



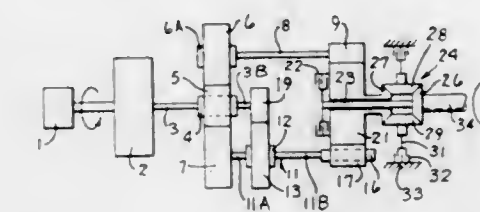
the driver shaft and a different speed drive from the driven shaft.

3,412,624  
GEARBOX  
Novell E. Wells, 927 Ranch Road, Boise, Idaho 83702  
Filed Aug. 9, 1966, Ser. No. 571,240  
13 Claims. (Cl. 74-325)



A universal gear box for tractor-driven implements enabling a powered implement to be driven at a constant speed from different tractor-mounted power sources transmitting rotary power at different predetermined speeds. A pair of input shafts of the gear box carry bevel gears which mesh with different bevel gears of an output shaft at different ratios selected so that the output shaft will have a constant rotary speed no matter whether one input shaft is connected to a first power source or the other input shaft is connected to the second power source.

3,412,625  
TRANSMISSION SYSTEM  
Sidney Oldberg, Birmingham, Donald J. Fergle, St. Clair Shores, and David P. Hass, Detroit, Mich., assignors to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio  
Filed May 19, 1966, Ser. No. 551,446  
17 Claims. (Cl. 74-368)



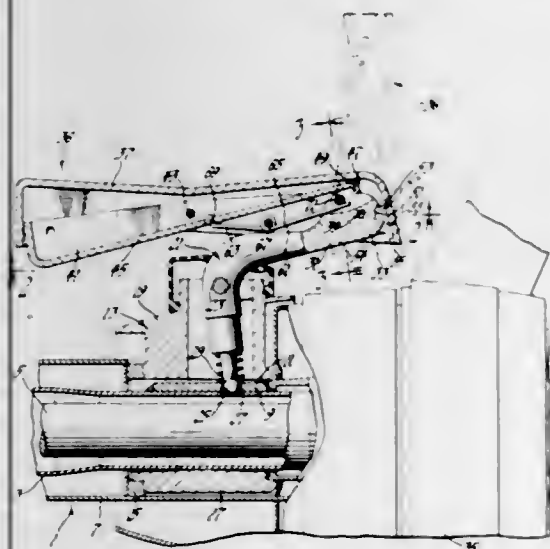
A drive train capable of providing a continuous flow of power during a shifting operation, such drive train being located between a driving device and a load to be driven thereby, said drive train having torque limiting means for transmitting torque of a value at and below a predetermined value for a preselected speed and not transmitting torque above said predetermined value and a transmission having a plurality of gears and selectable



clutch means so that the torque limiting means will permit adjustment of the speed relationship between the driving device and the load following the shifting operation without transmitting torque in excess of said predetermined value while the clutch means prevents disconnection of said driving device from the load during shifting.

### 3,412,626 FOLDABLE ACTUATING LEVER

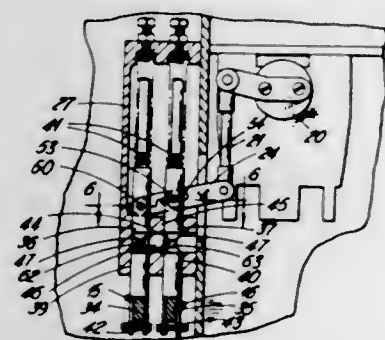
Philip B. Zeigler and Lawrence J. Mahalak, Saginaw, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Oct. 10, 1966, Ser. No. 585,506  
13 Claims. (Cl. 74-473)



Transmission control including an actuating lever pivoted to a torque transmitting lever and biased by a spring mechanism to a stored or folded position adjacent to the torque transmitting lever. The actuating lever can be manually turned from the stored position to a predetermined operating position so that the actuating lever and the torque transmitting lever can be easily manipulated as a unit for transmission control.

### 3,412,627 PEDAL CONTROL MECHANISMS

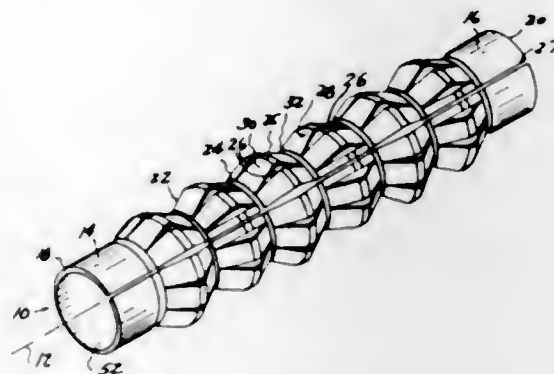
Ronald Goodacre, Basingstoke, England, assignor to Lansing Bagnall Limited, Basingstoke, England, a British company  
Filed Feb. 7, 1967, Ser. No. 614,425  
Claims priority, application Great Britain, Feb. 9, 1966, 5,730/66  
7 Claims. (Cl. 74-483)



A pedal control mechanism for a vehicle comprises two independently movable pedals and an interlock device which prevents both pedals being operated together. The pedals also operate a single lever connected to control means, e.g. direction and speed control means, on the vehicle.

### 3,412,628 SHOCK ABSORBING STRUCTURAL MEMBER

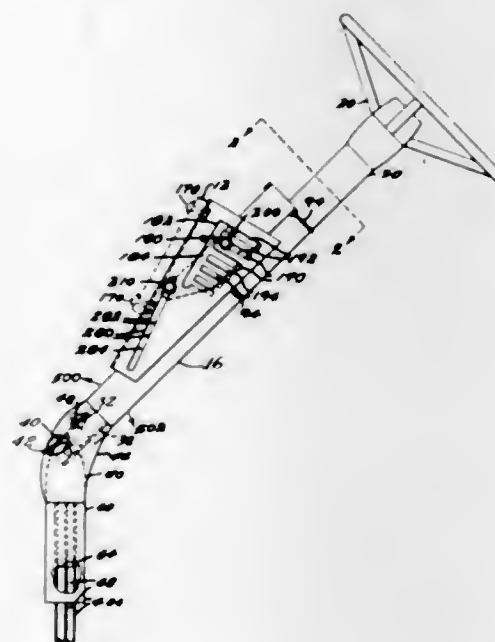
William J. De Gail, Detroit, Mich., assignor to Koppy Tool Corporation, Ferndale, Mich., a corporation of Michigan  
Filed July 14, 1966, Ser. No. 565,223  
10 Claims. (Cl. 74-492)



A structural member which is adapted to remain rigid when subjected to forces below a predetermined magnitude and to collapse and absorb energy when forces in excess of the predetermined magnitude are imposed on it, is formed of sheet steel and has an elongated tubular configuration. A series of regularly spaced radial rings of reduced thickness are disposed along the length of the tube and the tube is bent at the rings so that alternate rings are expanded to a larger diameter than the intermediate rings. Longitudinal slits or cut-outs extend across the outwardly expanded tube sections. The member is made by successively forming bends of decreased thicknesses at regular intervals along the tube; forming the slits, and outwardly expanding intermediate bands.

### 3,412,629 ADJUSTABLE ATTACHING UNIT FOR STEERING COLUMNS

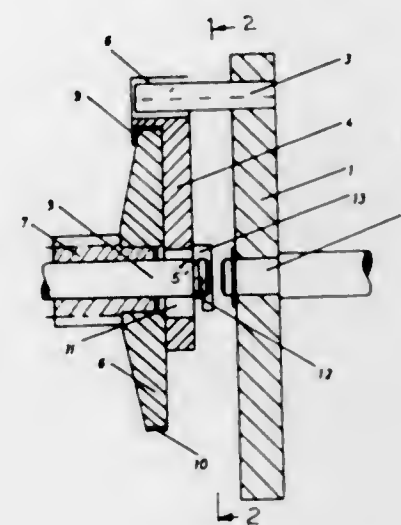
William B. Hill, R.R. 2, Mapleton, Minn. 56065  
Filed Jan. 21, 1966, Ser. No. 522,272  
4 Claims. (Cl. 74-493)



An adjustable attachment unit for the steering column of a motor vehicle has vehicle attached and column attached portions. Trackway elements and trackway following elements on said portions permit relative movement of said portions in directions for allowing the steering column to be adjusted both up and down and forward and rearward.

### 3,412,630 DRIVE PAWL FOR ELECTROMAGNETICALLY WOUND TIMEPIECES

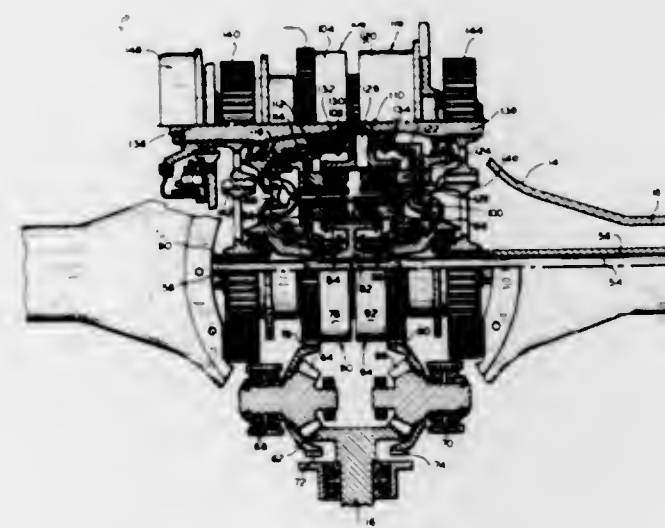
Ernst Glunz, Trossingen, Germany, assignor to Kienzle Uhrenfabriken G.m.b.H., Schwemmigen am Neckar, Germany, a limited-liability company of Germany  
Filed Apr. 24, 1967, Ser. No. 633,225  
Claims priority, application Germany, May 22, 1966, K 59,066  
4 Claims. (Cl. 74-577)



In an electrically wound spring powered timepiece a floating pawl is loosely carried on a ratchet toothed driver wheel of the work train for being "kicked" in the direction of slippage as the spring is wound and effecting coupling of the spring to the driver wheel as the spring unwinds in the opposite direction to power the train. The pawl has an arcuate portion having interior teeth meshing with those of the driver, which portion is urged radially inwardly by a bow spring against the driver wheel shaft. In the invention the conventional oscillatory disc carrying an end of the spring need not be axially aligned with the driver wheel, to give uniform urging of the pawl on the ratchet wheel.

### 3,412,631 CHANGE-SPEED AXLE

Barry L. Frost, Jackson, Mich., assignor to Clark Equipment Company, a corporation of Michigan  
Filed Sept. 19, 1966, Ser. No. 580,399  
10 Claims. (Cl. 74-695)

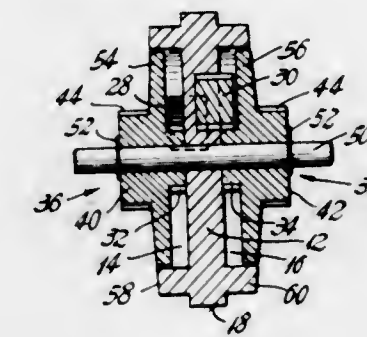


A change-speed drive axle having a pair of planetary gear sets, each with an input element and a reaction element. The input elements can be driven in either direction of rotation conjointly and the reaction elements are interconnected by a differential and can be driven in one direction.

tion of rotation, held from rotation or permitted to rotate in opposite directions.

### 3,412,632 DIFFERENTIAL MECHANISM

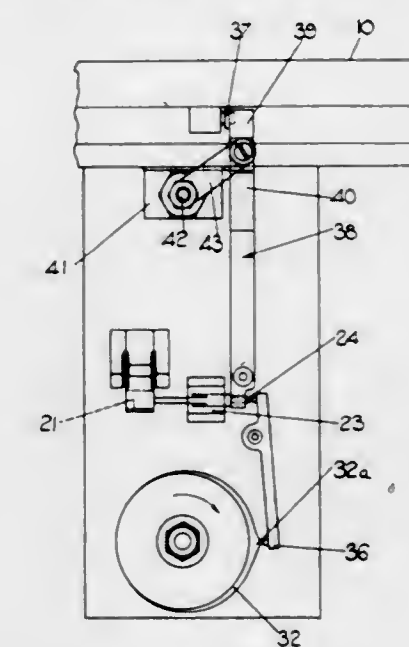
Robert B. McFiggans, Stamford, Conn., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware  
Filed Sept. 23, 1966, Ser. No. 581,562  
1 Claim. (Cl. 74-714)



A compact spur gear differential made up of five parts including a body member having recesses provided therein for carrying planet gears supported by their toothed extremities and radial flanges on the sun gears utilized to prevent axial movement of the planets within their respective recesses.

### 3,412,633 INDEXING MECHANISM

Eric John Huntley, Malvern Link, England, assignor to James Archdale and Company Limited, Blackpole, Worcester, England  
Filed Jan. 12, 1966, Ser. No. 520,194  
Claims priority, application Great Britain, Jan. 13, 1965, 1,482/65  
3 Claims. (Cl. 74-821)



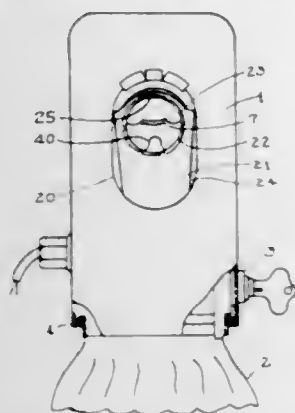
An indexing mechanism incorporates a variable speed drive for propelling an indexing table, a control element forming part of control means for said variable speed drive means, a rotatable cam which controls the acceleration and deceleration of the indexing table over the greater part of its movement by displacing said control element, and a lever engageable by stops on the indexing table to override the cam means in controlling the displacement of the control element to bring the table accurately to rest at a desired position.



### 3,412,634 METERED BOTTLE CAP REMOVER AND RETAINER

Frank J. Lucarelli, Middle River, Md., assignor of seven-  
teen and one-half percent to William F. Pinsak, Silver  
Spring, Md., and twelve and one-half percent to Jane S.  
Hogan

Filed Oct. 7, 1966, Ser. No. 585,059  
8 Claims. (Cl. 81—3.1)

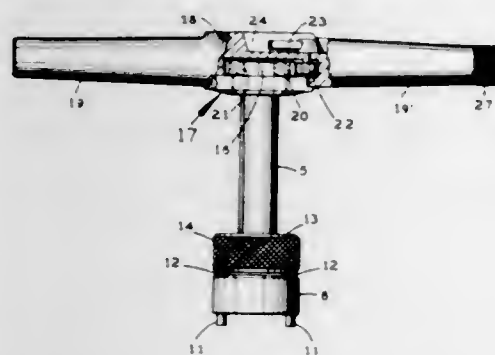


An enclosed bottle decapper and counting mechanism for ensuring an accurate count of bottles decapped. The enclosure is made such that once a bottle is inserted and a cap partially removed, the bottle cannot be extracted from the enclosure. The decapper is designed so that a bottle cannot be decapped without activating the counting mechanism, which is an integral part of the decapping device.

### 3,412,635 GOLF SHOE CALK WRENCH

Leo Chmielewski, Miami, Fla.  
(67 NW, Palmetto Expressway, Hialeah, Fla. 33012)  
Substituted for abandoned application Ser. No. 239,667,  
Nov. 23, 1962. This application Sept. 27, 1967, Ser. No.  
677,824

1 Claim. (Cl. 81—90)

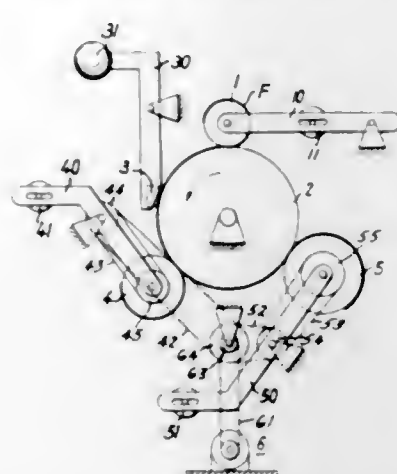


The calk wrench includes a stem having an integral cylindrical enlarged head at one end thereof and a threaded portion between the head and the shank of the stem. The other end of the stem is a non-round extension for engaging a handle. The bottom of the head is upwardly and inwardly recessed to form a conical surface serving as a guide, and the marginal edge of the conical surface is a concave face which conforms to an oval face of the calk so that the head seats on the calk. The top of the head is flat, and a pair of diametrically arranged apertures extend from the flat surface through the head and the concave surface. Pins extend through the apertures and project below the head, and the pins have flat head which engage the flat top of the stem's head. A clamping nut is screwed on the threaded stem portion into engagement with the pins to retain them, and the nut can be unscrewed to slide freely along the stem, thereby allowing replacement of the pins. A handle includes a ratchet having a non-round recess receiving the non-round extension of the stem and a pawl having a lever recessed into the handle for setting the direction of ratcheting. Another recess is provided for holding spare pins.

### 3,412,636 APPARATUS FOR CUTTING AND HANDLING VERY THIN FOILS

Werner Seiff, Berlin, Germany, assignor to Hydrowerk  
Aktiengesellschaft, Berlin, Germany  
Filed June 13, 1966, Ser. No. 556,925  
Claims priority, application Germany, June 16, 1965,  
H 56,316

6 Claims. (Cl. 83—107)

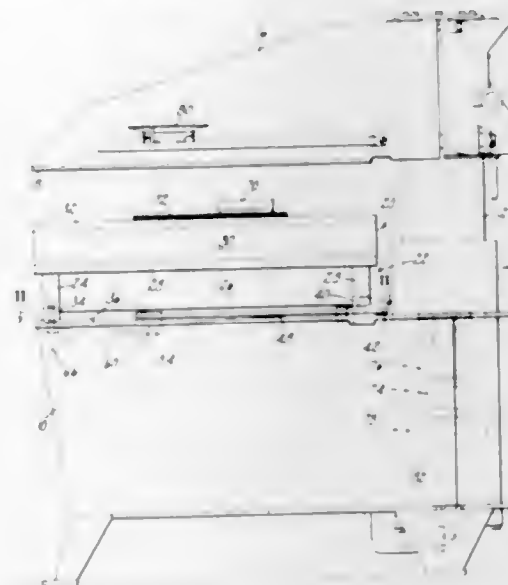


An apparatus for working very thin ribbon-shaped foil in which a supply roller and a take-up roller are mounted for rotation about axes parallel to the axis of a rotary drum and cause the foil to be looped about the drum. The rollers are pressed against the drum in such a way as to leave no free reach of foil between the rollers and the drum, so as to allow the foil to be cut while passing over and moving with the drum. According to one feature of the invention, the drum is constituted by a number of axially spaced-apart discs thereby forming inter-spaces that form one or more grooves which are axially aligned with respective cutting elements. According to another feature of the invention, there are two or more take-up rollers which take up respective strips into which the foil is cut, these take-up rollers being spaced circumferentially about the drum.

### 3,412,637 ADJUSTABLE WORK SUPPORTS FOR PRESSES

Richard W. Hitchcock, Beverly, Mass., assignor to United  
Shoe Machinery Corporation, Flemington, N.J., a cor-  
poration of New Jersey

Filed July 27, 1966, Ser. No. 568,205  
2 Claims. (Cl. 83—539)

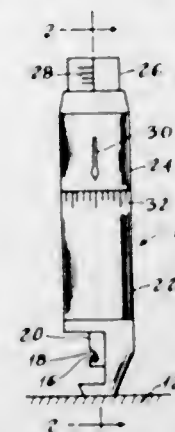


A cutting press of the clicker type is provided with a tilt-table cutting support the attitude of which is adjustable by manual operation of a readily accessible member in effecting translation of wedge means.

### 3,412,638 TUNER FOR STRINGED INSTRUMENTS

John W. Pease, Mamaroneck, N.Y.  
(1730 Winchester Drive, Winter Park, Fla. 32789)  
Continuation-in-part of application Ser. No. 472,597,  
July 16, 1965. This application June 16, 1966, Ser.  
No. 558,136

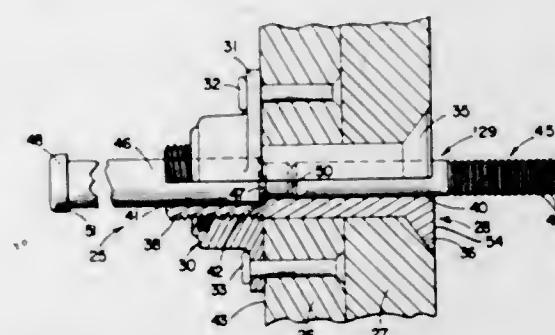
8 Claims. (Cl. 84—455)



The invention relates to a tuner for stringed instruments having magnetic elements and a force transmitting member arranged to provide an adjustable deflection to a string to be tuned in a direction away from the instrument and to provide a fixed releasable force to hold the string in deflection, characterized by a multiple threaded connection of elements to utilize scale markings spaced well apart, while at the same time retaining maximum sensitivity of adjustment, and characterized further by a C-shaped housing foot with projecting fin means to utilize an adjacent instrument string to hold the tuner in place on an instrument neck.

### 3,412,639 EXPANSIBLE THREADED FASTENER

Bobbie S. Sauter, Newport Beach, Calif.  
(126 Nottoway Drive, Box 385, Penlynn, Pa. 19458)  
Filed May 24, 1965, Ser. No. 458,288  
12 Claims. (Cl. 85—72)

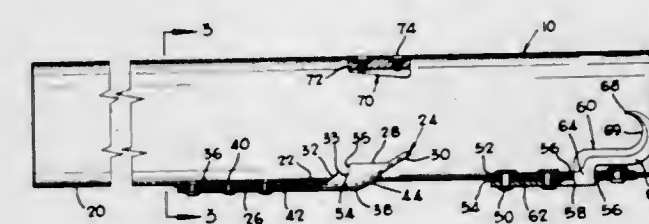


1. A fastener comprising:
  - a sleeve member having exterior threads adjacent one end thereof,
  - a head projecting radially outwardly from a location adjacent the opposite end of said sleeve member, said head including surface means for imparting rotational forces thereto,
  - said sleeve member having an axial bore there-through,
  - and an unthreaded expansion member,
  - said expansion member having a first portion of a relatively small diameter axially slidably fitting in said bore,
  - and a second portion of larger diameter, the diameter of said second portion being larger than the diameter of at least a portion of said bore,
  - said expansion member being axially movable relative to said sleeve member in response to an axial pull thereon, said second portion of said expansion member being adapted to be forced into said

portion of said bore upon said axial movement of said expansion member, whereby said second portion of said expansion member causes expansion of said sleeve member, said sleeve member and said expansion member having interengageable abutment means for limiting the movement of said second portion into said bore for thereby controlling the length of the sleeve member expanded by said second portion of said expansion member.

### 3,412,640 ROCKET LAUNCHER

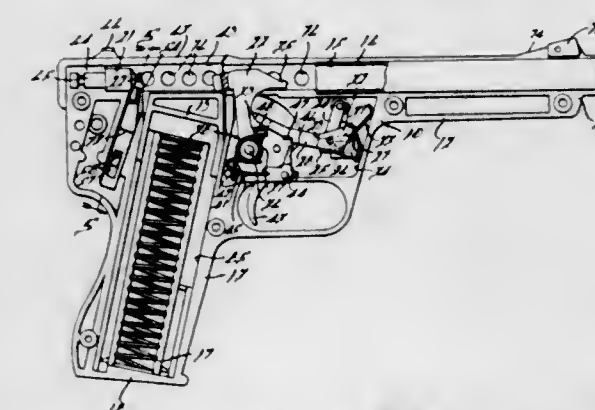
John J. Nash, Ferguson, Mo., assignor to Alasco, Inc., St. Louis, Mo., a corporation of Delaware  
Filed May 19, 1967, Ser. No. 639,735  
10 Claims. (Cl. 89—1.806)



A rocket launcher having a plurality of clustered launcher tubes which are adapted to receive rockets. Each rocket is provided at its rear end with a latching rim having a peripheral groove and spring-loaded stabilizing fins mounted thereon. The fins spring outwardly once the rocket is completely free of the tube. Each rocket tube is fitted at its rear end with a spring detent which is adapted to fit into the groove in the latching rim and thereby retainively engage the rocket. The spring detent includes a blade which projects inwardly beyond one of the nozzles of the rocket so that when the rocket ignites the blast issuing from the nozzle will impinge against the blade and force the spring detent out of engagement with the latching rim, thereby freeing the rocket for forward movement. Each tube is also provided with a hook-like somewhat resilient tail contact located to the rear of the spring detent. In order to avoid permanent distortion of the spring detent and tail contact resulting from careless loading procedures, each tube is fitted with a stop member for halting rearward movement of the rocket immediately after it has engaged the spring detent. The stop member further engages the rocket fins and cams the rockets into the correct angular positions within the tubes.

### 3,412,641 PISTOL FOR FIRING A MINIATURE BALLISTIC ROCKET

Arthur T. Biehl and Robert Mainhardt, Diablo, Calif., as-  
signors to MB Associates, a corporation of California  
Filed June 27, 1966, Ser. No. 560,739  
5 Claims. (Cl. 89—1.812)



This invention relates to a pistol which ignites and initially restrains a miniature ballistic rocket before



leaving the firing chamber in a slide at the rear end of the pistol having a fixed firing pin therein.

3,412,642

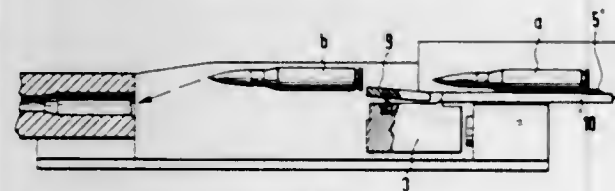
# **AUTOMATIC FIREARM HAVING A BREECH BLOCK WITH FRONT AND REAR CARTRIDGE DRIVING MEANS**

Hartmut Menneking, Dusseldorf, Germany, assignor to Rheinmetall G.m.b.H., Dusseldorf, Germany, a company of Germany

Filed Jan. 24, 1967, Ser. No. 611,393

Claims priority, application Germany, Jan. 29, 1966, R 42,517

3 Claims. (Cl. 89—33)



A pivotal automatic firearm, more especially a machine gun, comprising a trunnion bearing in the vicinity of the cartridge feed means which is provided at the rear end of the firearm housing so as to keep the pivot radius required behind the firearm from the trunnion to the rear edge of the firearm small, the breech block having at its front and rear ends drivers such that when the breech block advances the cartridge is brought into an intermediate position by the rear driver, from which position it is introduced into the cartridge chamber by the front driver on the next advance.

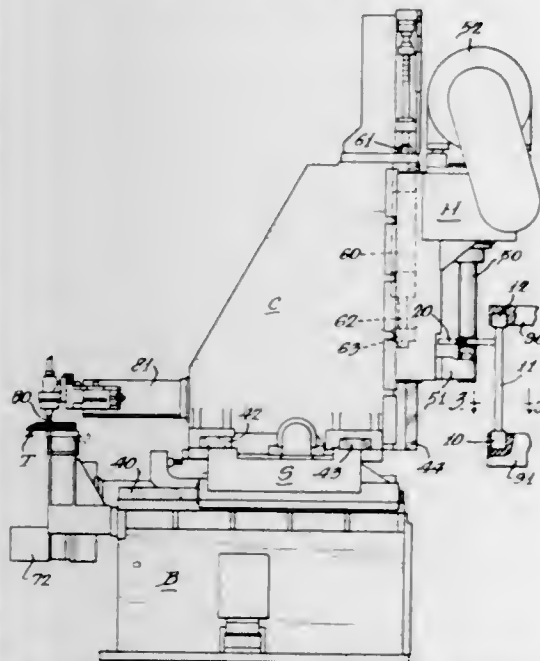
3,412,643

# **PROFILE MILLING METHOD**

Walter S. Swanson, Rockford, and Richard S. Shelden, Cherry Valley, Ill., assignors to Sundstrand Corporation, a corporation of Delaware

Filed Oct. 13, 1966, Ser. No. 586,548

6 Claims. (Cl. 90—13)



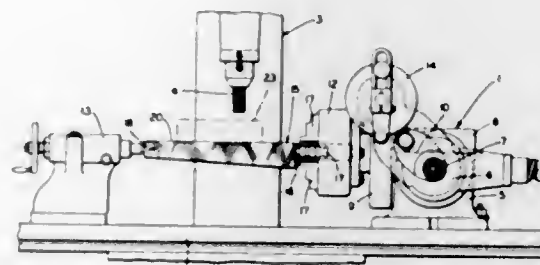
1. A method of machining the convex surface of a blade foil utilizing a rotary milling cutter rotatable about a spindle axis comprising the steps of machining a relatively narrow surface along the length of the foil at a slight angle to the longitudinal axis of the blade, said surface being a small fraction of the convex surface perimeter, machining a succeeding relatively narrow surface along the length of the foil at a slight angle to the longitudinal axis of the blade and substantially overlapping the previous cut, and repeating the machining step a series of times sufficient to remove material from the major part of the blade convex surface.

# **3,412,644 ANGLE TABLE CONSTRUCTION FOR MACHINE TOOLS**

Royal H. Poorman, 6055 Wilcliff Road NE., Canton, Ohio 44721

Filed Mar. 25, 1966, Ser. No. 537,430

5 Claims. (Cl. 90—58)



An angle table converter attachment for a machine tool indexing and dividing device having a spindle rotatable to indexed positions, about a first axis and rotatable from below horizontal to and beyond vertical indexed positions about a second axis at right angles to the first axis.

The angle table converter includes a table member having a flat work surface with means for mounting a workpiece thereon. Shank means extends longitudinally from one end of the table member, parallel to the flat work surface. The shank means is operatively connected to the spindle of the indexing and dividing device.

3,412,645

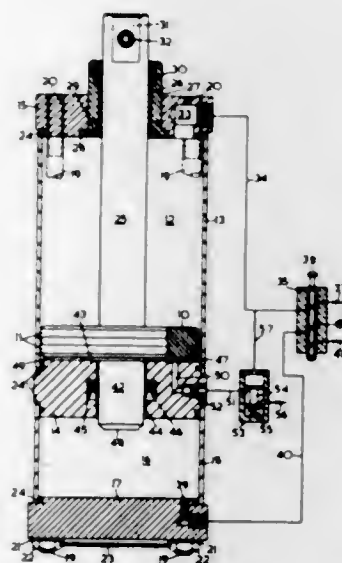
# **PNEUMATIC MOTOR OF THE RECIPROCATABLE TYPE**

Colin John Kirk, Twickenham, England, assignor to Martonair Limited, Twickenham, England

Filed Feb. 16, 1966, Ser. No. 527,811

Claims priority, application Great Britain, Feb. 20, 1965, 7,422/65

19 Claims. (Cl. 91—26)



A pneumatic motor has a main piston joined to a smaller coaxial secondary piston, both working in cylinders, the main piston draws the secondary piston out of its cylinder after moving a predetermined distance along its working stroke. Pressurized gas in a reservoir acts on one piston to start the working stroke which causes a reduction of pressure in the other cylinder until a seal between the pistons is broken after which gas pressure acts on both pistons. During the whole of a return stroke the cylinders are vented.

# **ERRATUM**

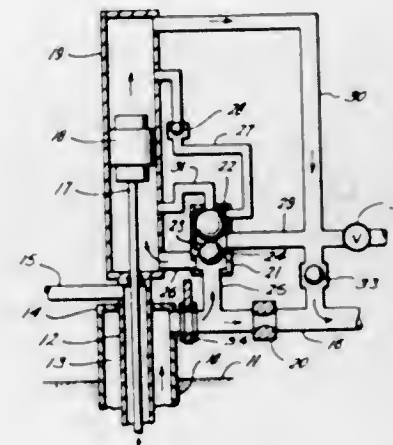
For Class 91—26 see:  
Patent No. 3,412,645

# **3,412,646 RECIPROCATING PISTON TYPE MOTOR SYSTEMS**

Rufus B. Johnston, 5837 E. University, Dallas, Tex. 75206

Filed June 28, 1965, Ser. No. 467,262

7 Claims. (Cl. 91—165)



In a motor system operating a reciprocating down-hole pump to lift the fluid within the tubing of a well from which gas is produced at the wellhead for delivery to a gathering station through a flowline having an adjustable choke, a cylinder mounted above the wellhead and having piston means reciprocal within it and a rod extending from the piston means through the cylinder and connected to the sucker rod of the pump. An input conduit connects the flowline upstream of the choke with a reversing valve, and an exhaust conduit connects the reversing valve with the flowline downstream of the choke. There is a means for shifting the valve between alternate positions in which the input conduit is connected with the cylinder on the lower side of the piston means to raise it within the cylinder, and in which the cylinder on the lower side of the piston means is connected with the exhaust conduit, when the piston means has been raised, so that the piston means may be moved downwardly to its lower position.

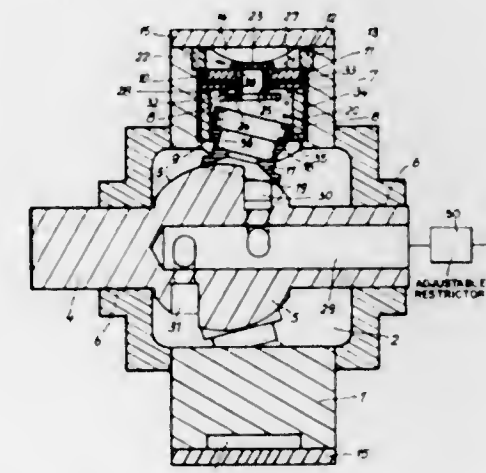
3,412,647

# **ROTARY PISTON TYPE FLUID MOTOR**

Hanns-Dieter Paschke, Olgaweg 6, Neckarsulm 2, Germany

Filed July 26, 1967, Ser. No. 656,191

14 Claims. (Cl. 91—183)



A rotary piston type fluid motor which includes an eccentric mounted on a shaft within a casing. A working chamber is in the casing and is open toward the eccentric. A seal element is positioned in the working chamber so as to be in sealing engagement with the eccentric and the wall of the chamber. A valve is positioned at the outer end of the working chamber and the eccentric has a control port which is periodically in cooperation with the working chamber. The valve is designed as an inlet valve

on which the pressure of the supplied fluid acts in the closing sense and the pressure of the fluid in the working chamber acts in the opening sense. The control port on the eccentric is designed as an outlet port which is arranged so that it comes out of communication with the working chamber before the eccentric reaches its top dead-center position with respect to the working chamber.

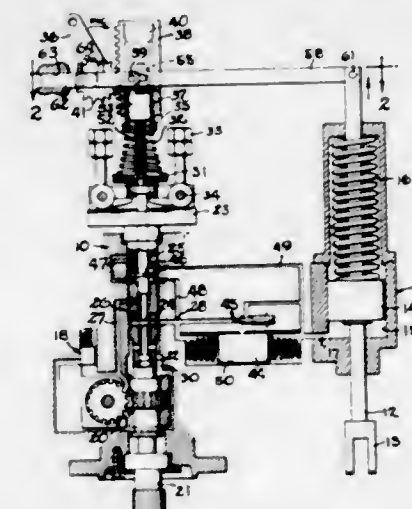
3,412,648

# **ISOCHRONOUS-DROOP GOVERNOR**

Fred W. Newburgh, Rockford, Ill., assignor to Woodward Governor Company, Rockford, Ill., a corporation of Illinois

Filed Feb. 10, 1966, Ser. No. 526,490

14 Claims. (Cl. 91—366)



A speed governor of conventional isochronous type controlling the position of a servo actuator with a pilot valve positioned by a centrifugal speed sensor and an opposing speeder spring, and including hydraulic compensating action for maintaining isochronous operation. A droop mechanism transmits motion of the servo actuator with a variable ratio to a speed setter to override the compensating mechanism and impart varying speed droop to the governor in a portion of its speed range, and is disabled by reduction of the ratio substantially to zero automatically in response to adjustment of the speed setter to a selected position.

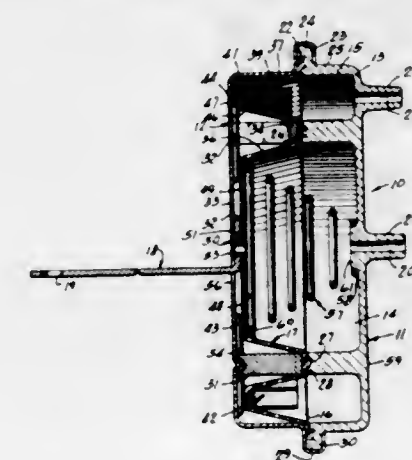
3,412,649

# **MULTI-POSITION VACUUM MOTOR**

Rudolph J. Franz, Arlington Heights, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois

Filed Aug. 5, 1966, Ser. No. 570,524

6 Claims. (Cl. 92—48)



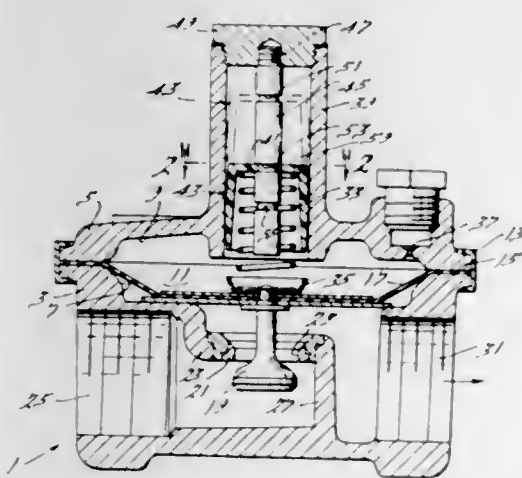
A multi-position vacuum motor in which a pair of vacuum chambers are arranged in concentric relation within a cylindrical housing. A single flexible diaphragm extends across and closes adjacent open ends of each of the cham-



bers and a pair of rigid disc members are affixed to the diaphragm on the portions thereof closing the chambers. The disc members are arranged in overlapping relation in a radial direction for movement into abutting engagement with one another and a work-output member is affixed to one of the disc members. A spring biases the disc members toward one another and vacuum connections communicate respectively with the vacuum chambers to independently vary the pressures within the chamber to provide multiple positioning of the working member.

3,412,650

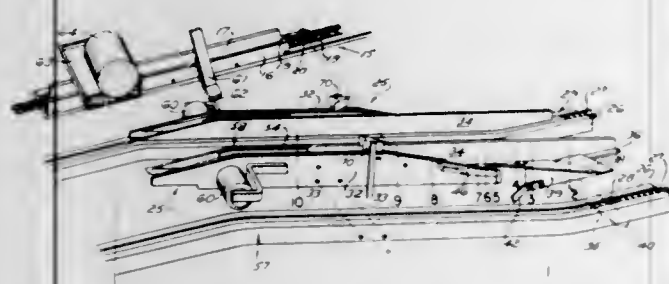
**SPRING RETAINER FOR PRESSURE REGULATOR**  
Charles Stang, Jr., Detroit Mich., assignor to Maxitrol Company, Southfield, Mich., a corporation of Michigan  
Filed Aug. 22, 1966, Ser. No. 573,934  
4 Claims. (Cl. 92—133)



1. In an automatic pressure regulating valve having a body containing a diaphragm and a two-ended coil spring with one end acting against the diaphragm, the combination of a spring retainer for acting against the other end of the spring, a support member for the retainer supported in the body, said retainer being telescoped in the body, said retainer being telescoped on the member, and connection means between the retainer and member operable by relative lateral movement between them for securing the retainer to the member at different positions thereon.

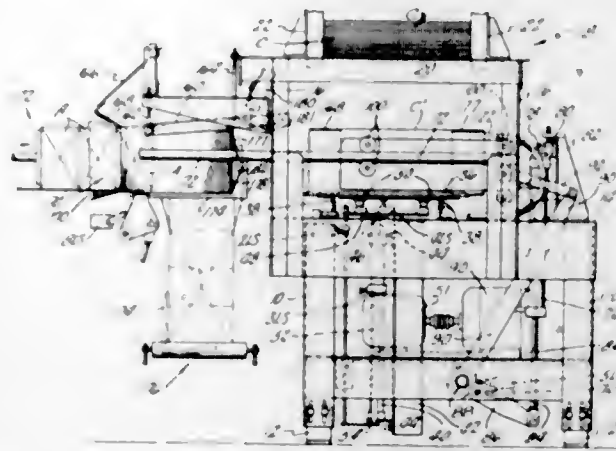
3,412,651

**METHOD OF INSERTING HANDLES INTO CARDBOARD BOXES**  
George E. Thibault, Somerset, Mass., assignor to Slater Paper Box, Inc., a corporation of Massachusetts  
Continuation-in-part of application Ser. No. 521,040, Jan. 17, 1966. This application Dec. 11, 1967, Ser. No. 691,112  
5 Claims. (Cl. 93—36)



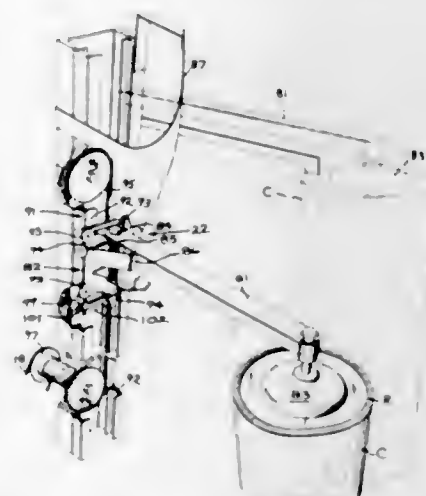
A method and means for inserting cardboard handles into walls of cardboard boxes in which the ends of the handle are inserted into preformed slits in a cardboard box blank.

3,412,652  
**MACHINE FOR ERECTING CASES AND POSITIONING THEM FOR LOADING**  
Daniel McIntyre, Portland, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Delaware  
Filed Feb. 13, 1967, Ser. No. 615,778  
18 Claims. (Cl. 93—53)



A machine having a magazine for storing cases in a flat folded condition, and having reciprocable means for drawing the lowermost case downwardly from said magazine and erecting the case on a platform. A carriage has means for closing two of the rear end flaps of the erected case and transferring the case from the platform to a packing funnel where the remaining rear end flaps are closed and the case is loaded. As the carriage leaves the platform with an erected case, a second case is drawn downwardly, and erected, so that two cases are handled simultaneously in the machine. The packer has a conventional drop-off arm which is operated in timed relation with the machine so that each packed case is automatically lowered onto a take-away conveyor before the next case is transferred to the funnel.

3,412,653  
**APPARATUS FOR FORMING DRUM-LIKE CONTAINERS**  
William McCandless, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio  
Filed Apr. 18, 1966, Ser. No. 543,407  
9 Claims. (Cl. 93—55.1)



This application discloses a machine for successively mechanically forming drum-like containers from fibre-board sleeves and end panels. Each container has a liquid tight end seam which is formed by adhesively bonding the outer circumferential rim of the circular end panel to the inside of the infolded marginal portion of the cylindrical sleeve. The end seam is enhanced by providing the infolded marginal portion with a circular series of radial undulations, and an elastically mounted serrated crimping

wheel is provided at a forming station of the machine to form the undulations by compressing the infolded portion against a support mandrel. The adhesive bond between the infolded portion of the sleeve and the end panel is obtained by providing the marginal portions of the sleeves with a pre-applied heat and moisture-activatable adhesive and by providing means to direct streams of steam and warm air against the marginal portion of each sleeve as it approaches the bonding position. A machine according to this invention has three container-forming mandrels mounted equidistant from the center of a common rotating platform which is rotated in one-third rotation increments to successively position each mandrel at loading, forming and unloading stations. A vertically reciprocable extractor device with a suction head is positioned adjacent the unloading station to mechanically remove a completed container from the mandrel which is in the unloading position.

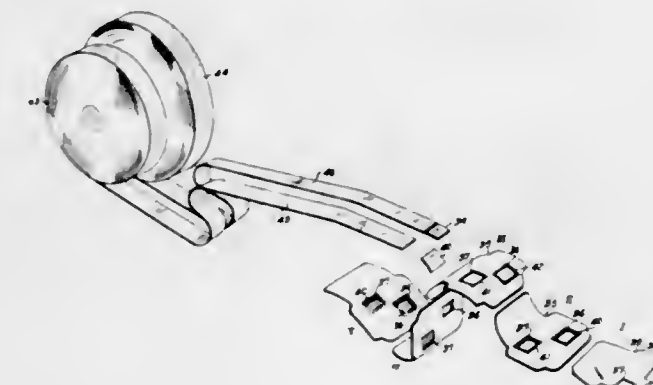
3,412,654  
**APPARATUS FOR FORMING DRUM-LIKE CONTAINERS**  
William McCandless, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio  
Filed Apr. 18, 1966, Ser. No. 543,302  
7 Claims. (Cl. 93—55.1)



This application discloses a machine for successively mechanically forming drum-like containers from fibre-board sleeves and end panels. Each container has a liquid tight end seam which is formed by adhesively bonding the outer circumferential rim of the circular end panel to the inside of the infolded marginal portion of the cylindrical sleeve. The end seam is enhanced by providing the infolded marginal portion with a circular series of radial undulations, and an elastically mounted serrated crimping wheel is provided at a forming station of the machine to form the undulations by compressing the infolded portion against a support mandrel. The adhesive bond between the infolded portion of the sleeve and the end panel is obtained by providing the marginal portions of the sleeves with a pre-applied heat and moisture-activatable adhesive and by providing means to direct streams of steam and warm air against the marginal portion of each sleeve as it approaches the bonding position. A machine according to this invention has three container-forming mandrels mounted equidistant from the center of a common rotating platform which is rotated in one-third rotation increments to successively position each mandrel at loading, forming and unloading stations. A vertically reciprocable extractor device with a suction head is positioned adjacent the unloading station to

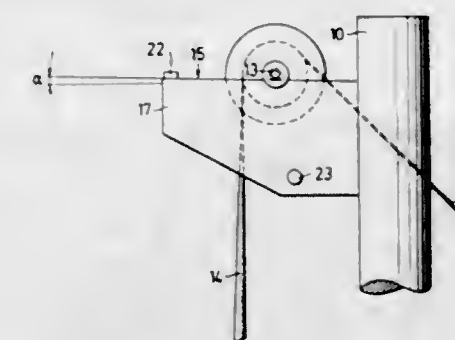
mechanically remove a completed container from the mandrel when it is in the unloading position.

3,412,655  
**APPARATUS FOR CUTTING AND APPLYING ENVELOPE PATCHES**  
Richard Kranz, Shawnee Mission, Kans., assignor to Tension Envelope Corporation, Kansas City, Mo., a corporation of Delaware  
Filed Apr. 18, 1966, Ser. No. 543,105  
5 Claims. (Cl. 93—61)



Patches are applied in laterally staggered relation to envelope blanks in a rotary envelope machine by supporting separate rolls of patch material in lateral relation, separately withdrawing the webs of material from the rolls, at different speeds if desired to alter patch length, and providing a rotary projecting cutter for each web on a common shaft, the cutters being mounted in circumferentially staggered relation.

3,412,656  
**GUIDE ROLLER DEVICE IN A MACHINE FOR TRANSFORMING A FLAT WEB OF MATERIAL INTO TUBE SHAPE**  
Henry Cornelius Corneliusson, Smalandsvagen 15, Lund, and Ola Thorn, Rydbergsvagen 22, Staffanstorp, Sweden  
Filed Mar. 23, 1966, Ser. No. 536,763  
Claims priority, application Sweden, Apr. 5, 1965, 4,329/65  
3 Claims. (Cl. 93—82)



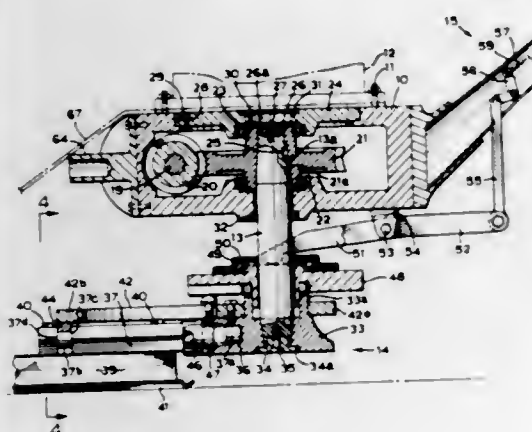
A web of material used for forming packages is drawn from a supply roll upward and over a guide roller and then downward through a forming device which converts the flat web into tubular form. The guide roller is carried by cylindrical stub shafts at its end and is capable of rotating about the axis of the stub shafts as the web is pulled over the surface of the roller. The stub shafts, in turn, are free to roll upon a surface preferably inclined upwardly in the direction of the web pull-off side of the guide roller thus permitting the axis of the rotating roller to shift back and forth along the inclined surface to accommodate changes in the forces which act upon the web.



3,412,657

## SURFACING MACHINES

Vincent Patrick Colizza, Burlington, Ontario, and Francesco Giovanni Zochil, Hamilton, Ontario, Canada; said Zochil assignor to Hamilton Float & Trowel Limited, Hamilton, Ontario, Canada  
Filed June 3, 1966, Ser. No. 555,133  
12 Claims. (Cl. 94-45)

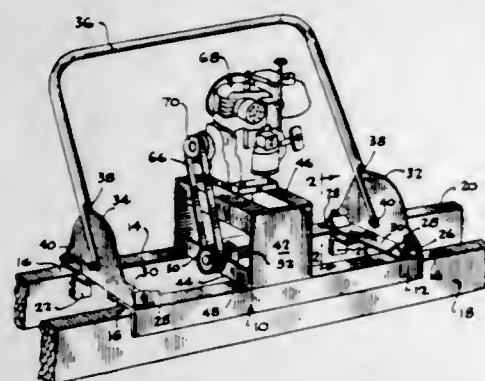


In a motor-driven rotary surfacing machine, such as a trowelling machine, a rotatable hub has hub bearings carrying a plurality of radially-extending tiltably rotatable shafts supporting the surfacing elements; a spider member attached to the hub provides radially-extending arms, each of which extends over a respective shaft and carries a respective "outboard" bearing that engages its shaft above the operational area of the respective surfacing element; the spider member interconnects the outboard bearings to stabilize and improve the surfacing action. The hub, a tilting mechanism for the surfacing elements, the shaft on which the hub is mounted and a driving pinion for the shaft are so mounted and constructed that they can be completely disassembled upon removal of single axial bolts. The centre portion of the operator's handle is unobstructed and is concave to fit closely against the operator's body for better control of the machine.

3,412,658

## ROAD SURFACING DEVICE

John E. Griffin, 225 N. Lucas St.,  
Iowa City, Iowa 52240  
Filed Nov. 14, 1966, Ser. No. 594,020  
4 Claims. (Cl. 94-45)

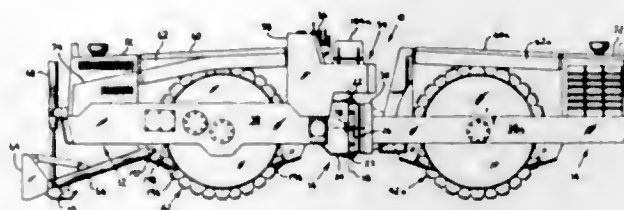


A power float having a screed frame restable directly upon a pair of screeds with attachment structure for attaching the frame to the screeds without forming any openings in the screeds and with power structure for automatically moving the float along a surface including a power driven winch with cable means wound around the winch in opposite directions and with the free ends of the cable being attached at a remote location.

3,412,659

## SELF-PROPELLED COMPACTOR VEHICLE

Harland C. Harbke and Donald D. Kronholm, Portland, Oreg., assignors to Hyster Company, Portland, Oreg., a corporation of Nevada  
Filed July 18, 1966, Ser. No. 565,918  
29 Claims. (Cl. 94-50)

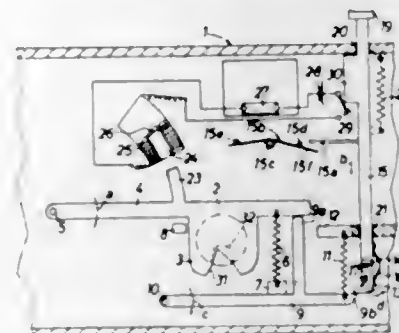


An earth compactor including tandem rollers supporting separate frames, with each roller being independently powered by its own internal combustion engine, fluid transmission and drive train carried by its associated frame. The compactor is steered hydraulically at an articulated connection between frames. Dual remote steering and driving controls in a driver's compartment above the connection between frames are operated from one of two driver's seats facing inwardly at opposite sides of the compartment.

3,412,660

## EXPOSURE CONTROL DEVICE FOR PHOTOGRAPHIC CAMERAS

Erwin von Wasielewski, Munich, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany  
Filed Mar. 4, 1966, Ser. No. 531,835  
Claims priority, application Germany, Mar. 13, 1965, A 48,628  
22 Claims. (Cl. 95-10)



1. In a camera, means defining a diaphragm opening; a shutter comprising at least one sector movable between a closed position and an open position in which said sector respectively conceals and exposes at least a portion of said opening; an impeller movable from a cocked position toward a position of rest and arranged to thereby transmit to said sector an impetus in a direction to move the sector from said closed position; and an exposure control device including electromagnetic means for regulating the speed and extent of movement of said sector from closed position.

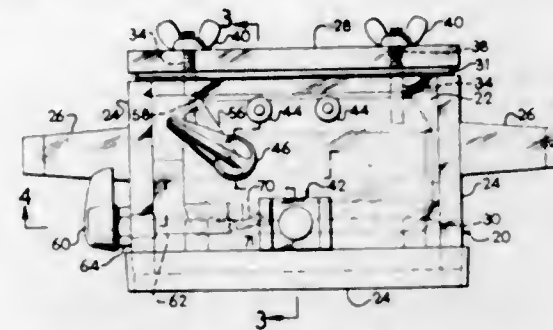
3,412,661

## PHOTOGRAPHY APPARATUS

Charles F. Soumar, Marathon, Fla., assignor to Underwater Photographic Service, Inc., Marathon, Fla., a corporation of Florida  
Filed Nov. 15, 1965, Ser. No. 507,889  
4 Claims. (Cl. 95-11)

1. A camera housing for underwater photography comprising, in combination, a water-tight housing including top, bottom, and side walls, a rear opening surrounded by a sealing surface, a removable rear wall including a second sealing surface, and a transparent front wall; camera actuating means including mounting means extending in sealed relationship through one of said walls

and provided with a bore, an actuating rod movably disposed in sealed relationship in said bore and including an outer portion provided with a handle and an inner deformable portion whereby said inner deformable por-

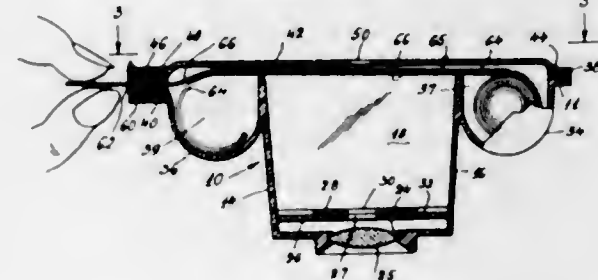


tion can be positioned to various actuating locations by selective bending of said inner portion; a resilient seal between said sealing surfaces; and means for compressing said seal between said sealing surfaces.

3,412,662

## MINIATURE DISPOSABLE CAMERAS

Christodoulis Balalis, 5809 20th Ave.,  
Brooklyn, N.Y. 11204  
Filed Mar. 1, 1966, Ser. No. 530,955  
5 Claims. (Cl. 95-11)

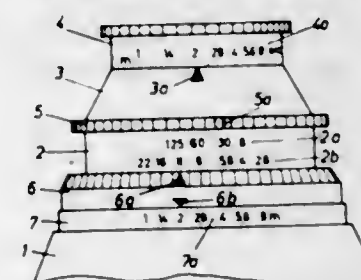


A disposable camera having a base member with an open end therein, an exposure device, auxiliary chambers for holding exposed and unexposed film respectively, and a detachable platen for enclosing the open end of the base member. A film exposing area is formed between the base member and the closure platen intermediate the auxiliary chambers. The camera utilizes a photosensitive film having a backing strip of light protective paper whereby the film may be manually advanced. A device for stripping the protective paper from the photosensitive film is provided adjacent to the chamber which holds the film after exposure.

3,412,663

## CAMERA WITH SEMI-AUTOMATIC DIAPHRAGM OPERATION FOR PHOTOFLASH EXPOSURES

Waldemar T. Rentschler, Calmbach, Black Forest, Germany, assignor to Prontor-Werk Alfred Gauthier, G.m.b.H., Calmbach, Black Forest, Germany, a corporation of Germany  
Filed July 22, 1966, Ser. No. 567,229  
Claims priority, application Germany, July 23, 1965, P 37,308  
10 Claims. (Cl. 95-11)



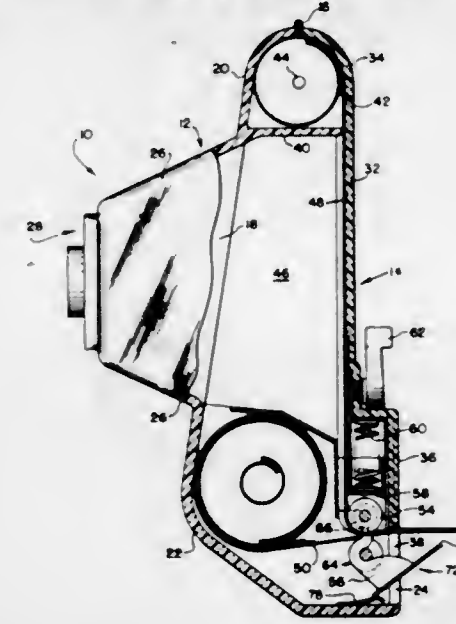
1. A camera comprising: a housing; a lens; a focusing control; a main focusing scale to indicate the focal set-

ting of said lens; a movable setting member; an auxiliary focusing scale associated with said setting member; automatic means connected to said setting member to govern the setting thereof according to film sensitivity; a diaphragm setting control; and means to set said diaphragm setting control at a position with respect to said auxiliary focusing scale corresponding to the focal setting on said main focusing scale.

3,412,664

## PHOTOGRAPHIC APPARATUS FOR EXPOSING AND PROCESSING SHEET MATERIAL

Vaito K. Eloranta, Needham, and Richard R. Wareham, Marblehead, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware  
Filed Jan. 3, 1966, Ser. No. 518,082  
13 Claims. (Cl. 95-13)

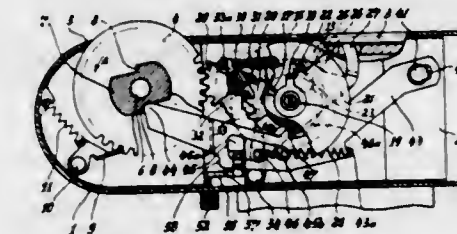


A camera having a pair of pressure-applying members for superposing successive exposed areas of a photosensitive image-recording sheet with a second sheet and distributing a liquid between the sheets to form a sandwich. The camera has an opening adjacent the pressure-applying members through which successive lengths of the sandwich are withdrawn and a cutting device for severing each length of the sandwich from the remainder thereof. The camera has an arresting member for engaging successive spaced portions of one of the sheets to arrest further movement of the sandwich. The arresting member can be manually or automatically moved out of engagement with the sheets to permit further operation of the camera.

3,412,665

## FILM METERING AND COUNTING MECHANISM WITH SHUTTER INTERLOCKS

Paul Greger, Braunschweig, and Herbert Weidner, Volkmarode, Germany, assignors to Voigtlander A.G., Braunschweig, Germany, a corporation of Germany  
Filed Nov. 22, 1965, Ser. No. 509,142  
Claims priority, application Germany, Nov. 25, 1964, V 27,234  
14 Claims. (Cl. 95-31)



A film metering and exposure counting mechanism for a camera including a double exposure prevention interlock and another interlock which prevents the film from



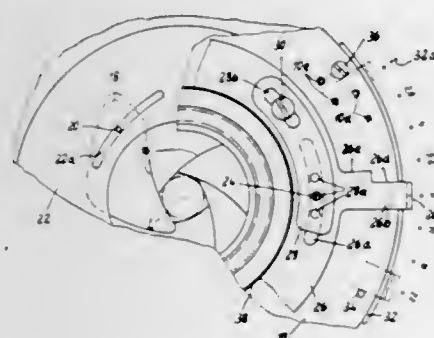
being advanced before the preceding exposure has been made. The counting and metering mechanism is mounted on a moveable carriage. When the camera is open the carriage is displaced and the counter can be returned to the starting position. The counting and metering is accomplished by a tooth wheel which moves one tooth per frame. A blocking pawl which prevents undesired return of the counter is mounted so as to cooperate with the toothed wheel and the moveable carriage.

**3,412,666**  
**DIAPHRAGM ARRANGEMENT FOR PHOTOGRAPHIC EQUIPMENT**

Franz Singer, Munich, Germany, assignor to Compur-Werk Gesellschaft mit beschränkter Haftung & Co., Munich, Germany

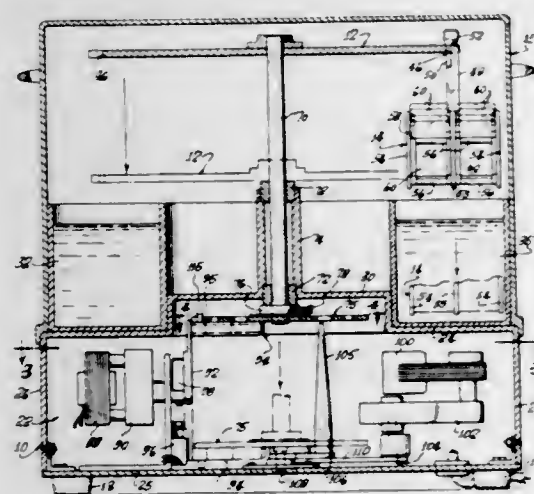
Filed Sept. 20, 1965, Ser. No. 488,533  
Claims priority, application Germany, Nov. 6, 1964, C 34,303

6 Claims. (Cl. 95—64)



A diaphragm arrangement for photographic equipment includes diaphragm elements arranged in a housing and movable by a control ring to form different apertures. A setting ring includes an indicator cooperating with a scale, and a releasable coupling device clamps the two rings together in adjustably different relative positions for common movement.

**3,412,667**  
**FILM DEVELOPING APPARATUS**  
Charles J. Hunt, 6655 Palomino Circle, Yorba Linda, Calif. 92686  
Filed Oct. 20, 1965, Ser. No. 498,244  
9 Claims. (Cl. 95—93)

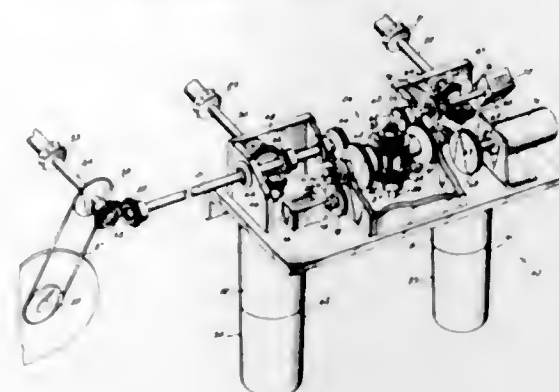


A photographic processor having a series of processing tanks containing the various processing solutions arranged in a circular manner, and a film transferring device for sequentially transferring the film being processed from one processing tank to another. The film transfer device consists of a rotatable turntable and a vertically slidable device shaft. The film is placed in a film holder and then mounted on the periphery of the turntable to be processed.

A motor driven crank periodically lifts and rotates the drive shaft to cause the film holders to dip into the successive solutions.

**3,412,668**  
**STRIP TRANSPORT SYSTEM**

Robert O. Buckingham, Arlington Heights, Ill., assignor to Chicago Aerial Industries Incorporated  
Filed Feb. 21, 1966, Ser. No. 528,979  
24 Claims. (Cl. 95—94)

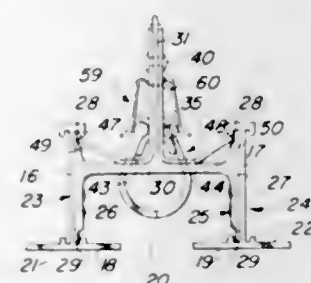


An aerial camera exposes a continuous strip of film which is immediately run through a developing bath. The film pulled from the bath is scanned by a television camera, and the resulting picture signals are transmitted to the ground. In order to insure a proper development cycle, independent drive means insert the film into and pull it out of the developer bath. A tachometer attached to the drive means generates an electrical control signal and a differential gearing between the drive means precisely regulates the length of film in the developer.

**3,412,669**  
**SLOT DIFFUSER WITH CLIP-IN PATTERN CONTROLLER**

Eugene F. Averill, Waterloo, Iowa, assignor to Titus Manufacturing Corporation, Waterloo, Iowa, a corporation of Iowa

Filed Sept. 28, 1966, Ser. No. 582,751  
8 Claims. (Cl. 98—40)



Slot diffusers with clips mounting air pattern control vanes on spacer members such as H-hangers and spring arms holding pivotable vanes in grooves of vane mounting member.

**3,412,670**  
**ROOF VENTILATOR**

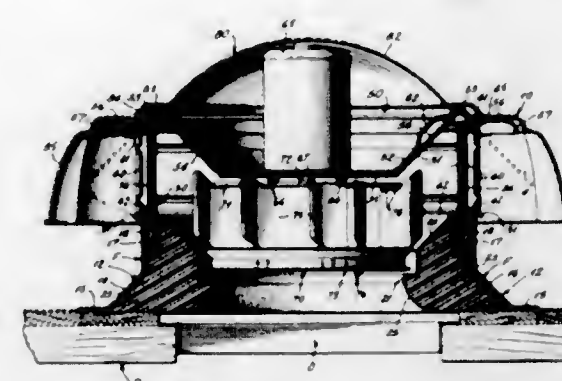
Louis J. Jenn and James W. Schwier, Indianapolis, Ind., assignors to Jenn-Air Corporation, Indianapolis, Ind., a corporation of Indiana

Continuation-in-part of application Ser. No. 424,627, Jan. 11, 1965. This application Dec. 20, 1966, Ser. No. 624,104

18 Claims. (Cl. 98—43)

The construction of roof ventilators for exhausting fumes, air, etc. from a building is disclosed, the ventilator embodiments being specifically developed to provide a low height or profile and maximum air flow for the particular ventilator size. A particular relationship for a fan impeller nested in a cavity within the load carrying base

member for the ventilator is described where the air drawn through the roof opening is discharged from the impeller upwardly and outwardly or generally obliquely relative to the vertical axis of the ventilator. Embodiments

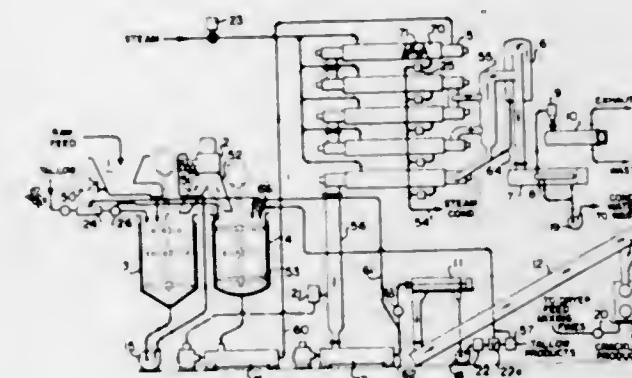


for the ventilator wherein the load carrying and supporting element is an integral curb member or is a formed sheet base member to overlie a preconstructed curb are disclosed.

**3,412,671**  
**RENDERING APPARATUS**

Ira Merlis, deceased, late of Whittemarsh, Pa., by Morris C. Solomon, executor, Melrose Park, Pa., assignor to Acme Process Equipment Company, Oreland, Pa., a corporation of Pennsylvania

Filed June 13, 1966, Ser. No. 557,315  
11 Claims. (Cl. 99—234)

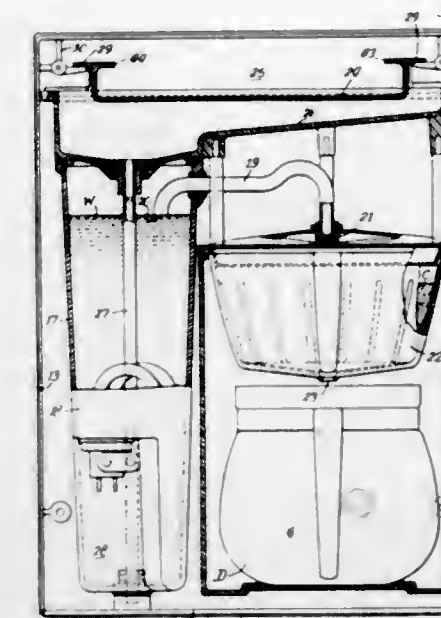


This disclosure is directed to apparatus for the continuous dry-rendering of organic materials and more specifically to apparatus for continuously dry-rendering organic materials comprising offal and the like. The organic materials to be rendered in the apparatus include solid oil-containing materials comprising, for example, animal bone, meat, fat, fish, oil-bearing vegetable materials, butcher scraps, etc. The apparatus comprises a disintegrator for reducing the organic materials to a required particle size, a high-speed film-forming combined evaporator-cooker for rendering the organic material and removing volatiles, a separator for the solids and liquids discharged from the evaporator-cooker, and means associated with the separator for conducting the liquid portion of the rendered material to a moisture-responsive valve with the latter valve having means for recycling any liquid having an excess of 0.5% by weight of water back to the feed of the evaporator-cooker and the substantially dehydrated liquid to storage.

**3,412,672**  
**SPLASH-PROOF INLET DRAWER FOR WATER HEATER**

Franz L. Herbsthofer, Evanston, Ill., assignor to Cory Corporation, a corporation of Delaware  
Filed May 26, 1967, Ser. No. 641,520  
10 Claims. (Cl. 99—300)

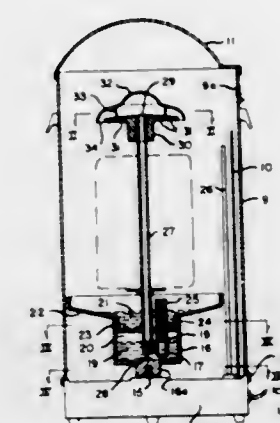
Apparatus for conducting poured water to an inlet receiver of a hot water heating tank. The apparatus is



defined by a shallow drawer having an intumed flange extending partially about the periphery thereof for effectively preventing undesirable outward splashing of the poured water. The hot water heater may be used in a coffee brewing apparatus.

**3,412,673**  
**AUTOMATIC CULINARY SPRINKLER APPARATUS**

Peter H. Landis, 142 Gulf Bldg., Pittsburgh, Pa. 15219  
Filed Oct. 22, 1965, Ser. No. 501,788  
5 Claims. (Cl. 99—346)



A culinary sprinkling apparatus is provided having a closed receptacle receiving liquid from a vessel in which it is placed, level control valve means in said receptacle admitting fluid into the interior thereof from said vessel to a fixed level, a liquid discharge tube delivering fluid from the receptacle to a point spaced above said receptacle and a fluid dispersing member on the top of said tube distributing fluid radially outwardly and downwardly.

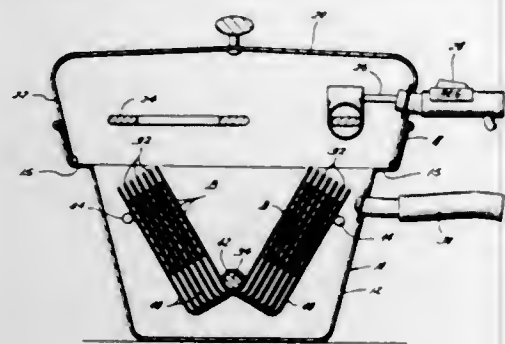
**3,412,674**  
**BROILER**

Arthur P. Ruth, 5025 Jensen Drive, Houston, Tex. 77026  
Filed Aug. 11, 1966, Ser. No. 571,876  
6 Claims. (Cl. 99—402)

Cooking apparatus particularly useful for broiling strip-like articles of food and having a pan in which a plurality of leaf-like elements are rotatably supported on a removable shaft disposed parallel to and above the



bottom of the pan for swinging movement into and out of superposed relation to hold the food between them. The

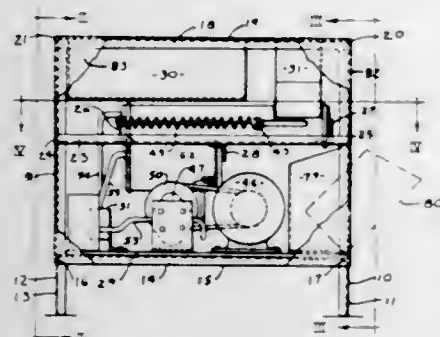


invention includes a cover for the pan in which heating means is supported to heat the food from above.

3,412,675

**METAL CAN CRUSHING DEVICE**

John W. Killough and James H. Killough, both of Rte. 5, Box 103D, Wichita, Kans. 67207  
Filed Aug. 3, 1966, Ser. No. 570,094  
2 Claims. (Cl. 100—215)



This metal can crushing device includes a tray for receiving empty cans with a cradle and a cylinder beneath the tray and a passage through the bottom of the tray into the cradle through which empty cans can be fed into the cradle preparatory to entering a power driven ram that is operable in the cradle for can crushing purposes and means for discharging the crushed cans from the cylinder into a receiving element for carry out and emptying purposes.

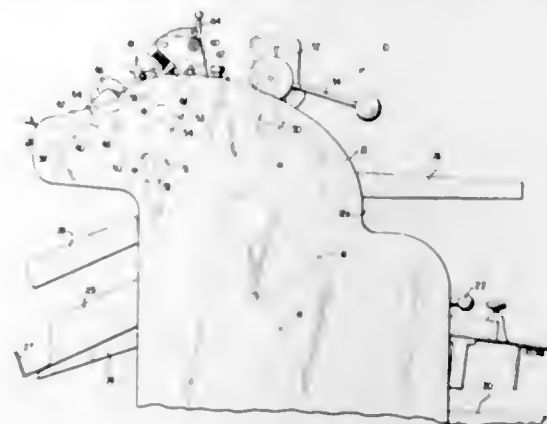
3,412,676

**AUTOMATED CONTROL SYSTEM AND APPARATUS FOR OFFSET DUPLICATING MACHINE**

Kenneth J. Tonkin, Glenview, and John P. Gallagher, Chicago, Ill., assignors to A. B. Dick Company, Chicago, Ill., a corporation of Illinois  
Filed July 7, 1965, Ser. No. 470,078  
42 Claims. (Cl. 101—144)

1. In a duplicating machine having a rotatable master cylinder for receiving a master, duplicating means for operation during a duplicating cycle of said machine to reproduce an image from said master upon individual copy sheets passing through said machine, and postduplicating means for operation after said duplicating cycle to prepare said machine for a subsequent duplicating operation, a programming unit comprising a single mechanical counter for controlling both the duplicating and postduplicating cycles of said machine, means causing said counter to register the number of sheets passing through said machine during the duplicating cycle thereof, duplicating control means responsive to the sheet count registered by said counter to control said duplicating means, said duplicating control means operating upon the registration by said counter of a predetermined sheet count to cause said counter to discontinue registration of said sheet count and to activate means to cause said counter to subsequently continue counting until the registration of a second pre-

determined count, and postduplicating control means responsive to the number of counts registered by said counter

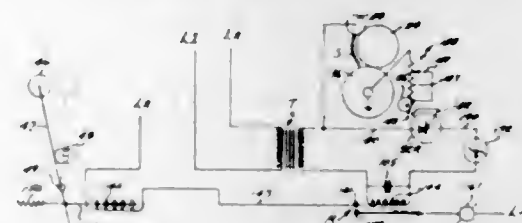


after the termination of said sheet count, said postduplicating control means operating to control said postduplicating means.

3,412,677

**DAMPENING CONTROL MEANS FOR PHOTO-OFFSET LITHOGRAPHY PRESS**

Paul R. Kantor, Cleveland, Ohio, assignor to Kantor Press Controls, Inc., Cleveland, Ohio, a corporation of Ohio  
Filed Sept. 17, 1965, Ser. No. 488,030  
5 Claims. (Cl. 101—148)

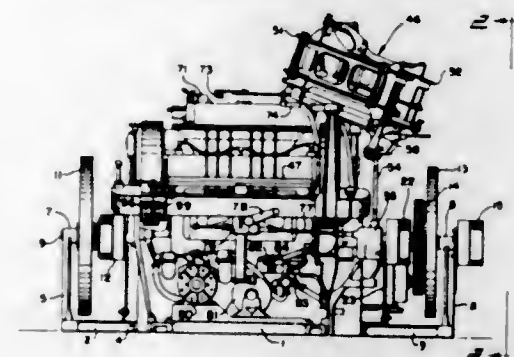


A dampener control system for a photo-offset lithographic printing press which is operative to sense and monitor the presence of dampening solution in the dampener for the press as said solution is transferred to the printing plate. The control system is capable of detecting the dampening solution and to provide a control signal which is related to the quantity of solution detected and which signal changes in accordance with a change in the solution whereby the source of the dampener solution may be variably regulated to provide the proper amount of dampener solution so as to maintain the optimum ink-to-dampener solution balance for the press.

3,412,678

**BED AND PLATEN IMPRESSION PRESS WITH ADJUSTABLE DWELL CONTROL MEANS**

Edward C. Biron, Pittsfield, Mass., assignor to The Chandler & Price Company, Cleveland, Ohio, a corporation of Ohio  
Filed Jan. 19, 1967, Ser. No. 610,415  
9 Claims. (Cl. 101—287)



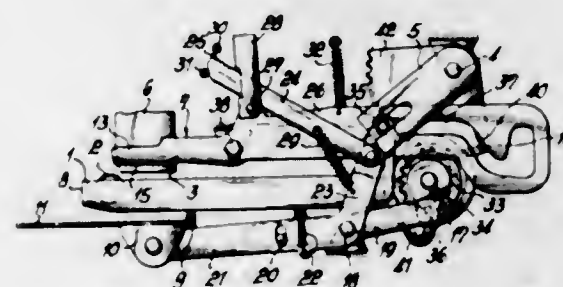
A press for embossing, hot roll leafing, printing, etc., having a disconnect drive for holding the press on im-

pression for a predetermined length of time and incorporating improved work holding and handling mechanisms operating in synchronism with the press.

3,412,679

**FRANKING MACHINES**

Hans Nirenberg, Frankfurt am Main, Germany, assignor to Telefonbau und Normalzeit G.m.b.H., Frankfurt am Main, Germany, a German joint-stock company  
Filed Jan. 28, 1966, Ser. No. 523,739  
Claims priority, application Germany, Aug. 31, 1965, T 29,310  
2 Claims. (Cl. 101—314)

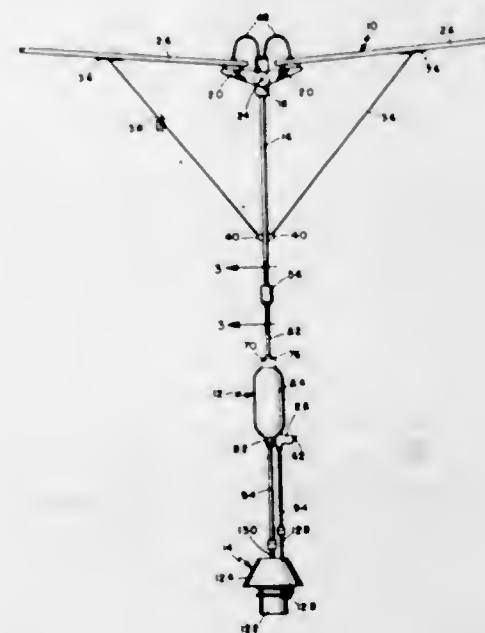


A franking machine is described wherein a blocking member is provided for preventing unauthorized printing by means of a value stamp to frank an article to be posted after the value stamp has been inked by an inking roller of the machine and before authorized printing has been effected and the inking roller returned in a position in which the inking roller prevents unauthorized printing.

3,412,680

**ROTOR SUPPORTED FLARE**

Peter F. Girard, La Mesa, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.  
Filed Mar. 6, 1967, Ser. No. 620,883  
8 Claims. (Cl. 102—35.4)



A conventional pyrotechnic flare is suspended from a simple, foldable rotor which is self-deploying on release to an auto-rotating position and supports the flare at a slow initial rate of descent; at a pre-set altitude an aneroid operated valve releases a stored liquid at a con-

trolled rate to a boiler surrounding the flare, the heat of the flare vaporizing the liquid and the vapor being conducted to the rotor tips to drive the rotor by jet reaction and maintain a hovering position until the flare is exhausted.

3,412,681

**CARTRIDGE AND A FIREARM FOR SUCH A CARTRIDGE**  
Hans-Ludwig Schirneker, 4771 Vellinghausen (Möhne), Engelsli 10, Germany  
Filed June 2, 1966, Ser. No. 554,770  
Claims priority, application Switzerland, June 11, 1965, 8,147  
6 Claims. (Cl. 102—38)

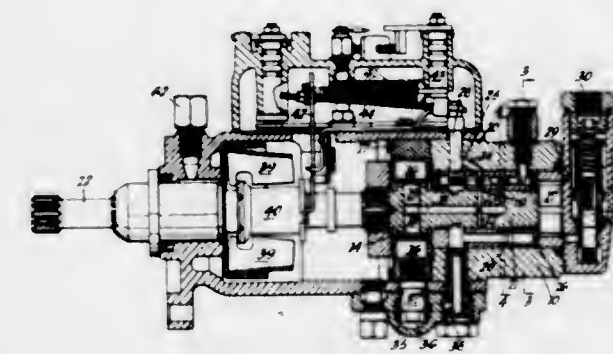


A cartridge comprising a case provided with an ignition cap and containing a plurality of bullets and an ignitable propellant charge, the bullets being detachably connected together, end-to-end to form a row with the lead bullet forming a closure cap for the case. The bullets are constructed and arranged so that, upon ignition, the propulsive force of the charge acts mainly upon the lead bullet thereby to provide a traction effect on the succeeding bullets, whereby all of the bullets are discharged at a uniform, initial velocity. The bullets are connected together in a manner such that they separate into individual bullets upon discharge from the barrel of the firearm.

3,412,682

**LIQUID FUEL PUMPS**

Kenneth Albert Walters Kemp, London, England, assignor to C.A.V. Limited, London, England  
Filed Mar. 26, 1965, Ser. No. 443,027  
Claims priority, application Great Britain, Mar. 31, 1964, 13,099/64  
3 Claims. (Cl. 103—2)



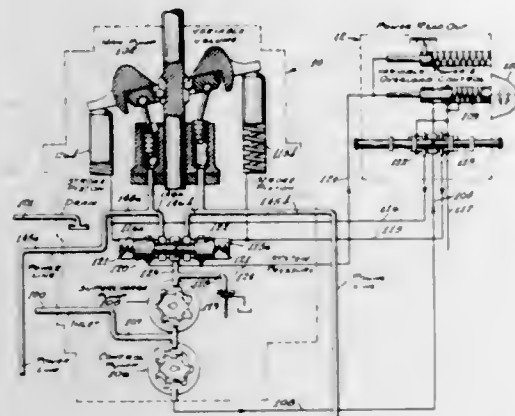
The invention relates to liquid fuel pumps for supplying fuel to an internal combustion engine and of the kind comprising a body part, an injection pump mounted within the body part and operable in timed relationship to an engine with which the pump is associated, and a passage within the body part through which fuel can be supplied to the injection pump during each filling stroke thereof, said passage being in communication with a source of fuel the pressure of which is dependent upon the speed of rotation of the engine.



3,412,683

**HYDRAULIC SYSTEM CONTROL**

Arthur F. Anderson, Elmhurst, Ill., assignor, by mesne assignments, to Ulrich Manufacturing Co., Roanoke, Ill., a corporation of Delaware  
Filed Aug. 25, 1966, Ser. No. 575,015  
9 Claims. (Cl. 103—38)

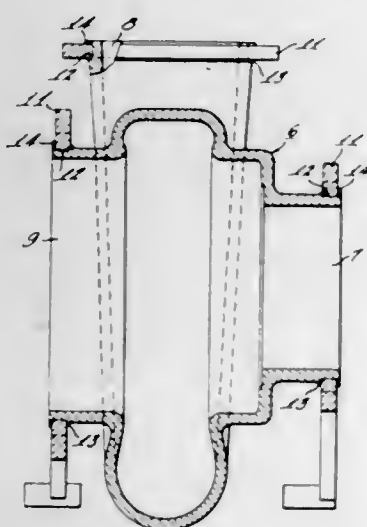


Control means for hydraulic circuits including system pressure circuit means and control pressure circuit means, comprising a body having a system pressure inlet, a control pressure inlet and a vent outlet, a pair of valves in the body controlling communication between the control pressure inlet and the outlet, both valves being biased to a normal position sealing the control pressure inlet from the outlet, one of the valves being operable by system pressure when system pressure exceeds a first value, the other valve comprising a safety valve and being operated by system pressure when system pressure exceeds a second value and by control pressure when control pressure exceeds a predetermined value; both valves venting the control circuit rather than the system circuit.

3,412,684

**PUMP CASING**

Bruce R. Lipe, Cincinnati, and Earle E. Schroeder, New Richmond, Ohio, assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.  
Filed July 27, 1967, Ser. No. 656,572  
2 Claims. (Cl. 103—114)

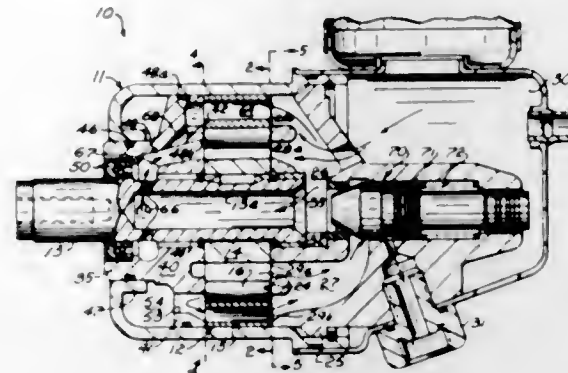


A pump casing including a portion cast of a corrosive resistant material with the end flanges made of a non-corrosive resistant material. The end flanges are welded to the casing and a corrosive resistant gasket surface is welded to the flange surface.

3,412,685

**PUMP**

La Vern R. Connelly, Marshall, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio  
Filed Sept. 16, 1966, Ser. No. 580,090  
7 Claims. (Cl. 103—136)

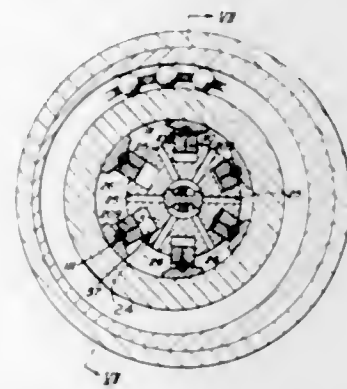


An improved fluid pump includes a shaft, a pumping means having a first inlet port on one side and a second inlet port on an opposite side with a flow passage means formed in the shaft for conducting fluid from the one side of the pumping means to the opposite side of the pumping means. A bypass valve is positioned in such a manner as to direct bypassed fluid into the passage means in the shaft.

3,412,686

**MEANS FOR SEALING SLOT SPACES AND DIVIDED VANES IN FLUID HANDLING DEVICES**

Karl Eickmann, 2420 Isshiki, Hayama-machi, Kanagawa-ken, Japan  
Continuation-in-part of application Ser. No. 328,395, Dec. 5, 1963. This application May 22, 1967, Ser. No. 640,139  
11 Claims. (Cl. 103—136)



In fluid handling devices gases or liquid flows through working chambers which are formed between an enclosure body, a slotted rotor body and end walls thereof and which are divided into individual intervane spaces by vanes or vane assemblies composed of two vane ports which are located and moving in slots in the slotted body and end walls thereof. The slots in the body and the end walls thereof form chambers, which are sealed by divided vanes against the adjacent individual intervane spacer, so that no fluid can escape from slots into intervane spaces or vice versa.

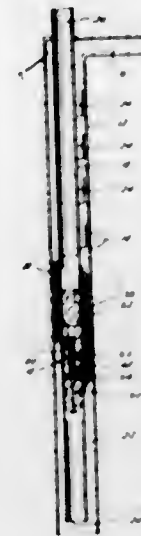
3,412,687

**RETRIEVABLE BOTTOM HOLE SEPARATOR VALVE**

Howard H. Moore, Jr., Houston, Tex., assignor to Camco, Incorporated, Houston, Tex., a corporation of Texas  
Filed May 4, 1967, Ser. No. 636,108  
3 Claims. (Cl. 103—232)

A retrievable bottom hole separator valve for positioning in a tubing which is positioned in a well bore casing

for transmitting water in the annulus between the tubing and the casing upwardly through the tubing, which valve is responsive to gas pressure in the annulus, fluid pres-

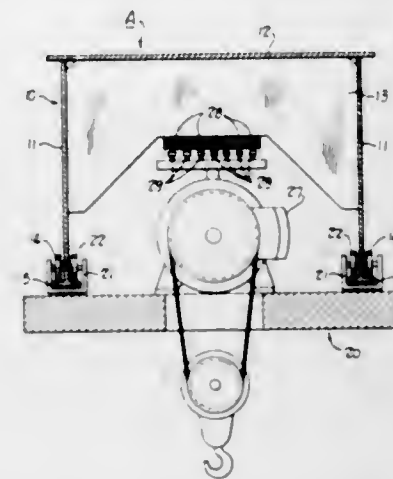


sure in the tubing and annulus, and a bias spring thereby preventing gas perforations in the casing from being flooded by water in the annulus.

3,412,688

**COMPOUND BEAM-RAIL**

Karl A. Pamer, Chagrin Falls, Ohio, assignor to McNeil Corporation, Akron, Ohio, a corporation of Ohio  
Filed Feb. 20, 1967, Ser. No. 617,199  
Claims priority, application Luxembourg, Mar. 11, 1966, Patent 50,628  
6 Claims. (Cl. 104—98)



A compound beam-rail for overhead, underslung traveling or movable carriers of a material handling apparatus, for example hoists, cranes and the like, in which can be housed associated electrical distribution systems and other mechanisms.

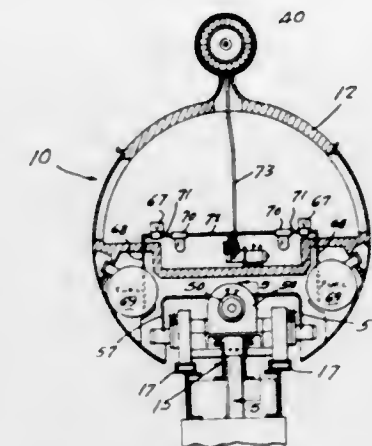
3,412,689

**MONORAIL TRAIN**

Alan B. Hawes, 8504 Seaview Ave., Wildwood Crest, N.J. 08260  
Filed Feb. 11, 1966, Ser. No. 526,864  
4 Claims. (Cl. 104—118)

A train for use on a monorail including a coach carrying a truck having drive wheels in rolling engagement with the monorail, electric power means on said monorail, means drivably connecting the drive wheels to said electric power means and including an electric motor, a pump connected to said motor, a hydraulic motor operatively connected to said pump, and a clutch operatively connected to said electric motor, said hydraulic motor and to said drive wheels, jet propulsion power

means mounted on said coach, magnetic brake means carried by said truck and adapted to engage the monorail, a first selective control means operatively connected to said electric power means and electrically connected to said clutch for propelling the coach by electric power, a second selective control means operatively connected to

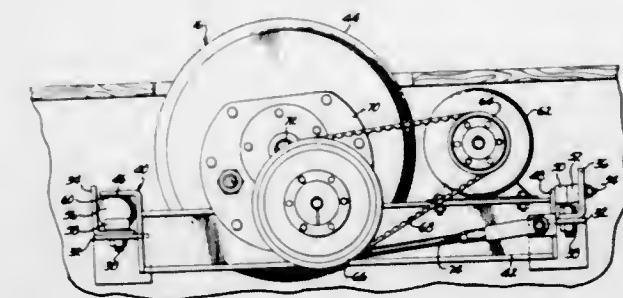
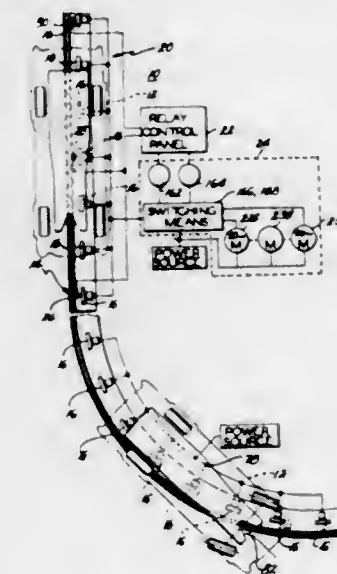


said jet propulsion means for propelling said coach by jet power, and a third selective control means operatively connected to said brake means for reducing the rate of propulsion of said coach to a point which will enable actuation of said first control means and propulsion of said coach by electric power.

3,412,690

**PASSENGER MOVING APPARATUS**

Roger E. Broggie, Burbank, and Robert H. Gurr, Costa Mesa, Calif., assignors to WED Enterprises, Inc., Glendale, Calif., a corporation of California  
Continuation-in-part of application Ser. No. 510,335, Nov. 29, 1965, which is a division of application Ser. No. 270,592, Apr. 4, 1963, Patent No. 3,249,065. This application May 22, 1967, Ser. No. 657,434  
7 Claims. (Cl. 104—168)



A passenger-carrying car or train of cars that is moved along a track. The car or cars are self-steered by a steering mechanism interposed between the car wheels and a steering surface coextensive with the track. Propulsion is

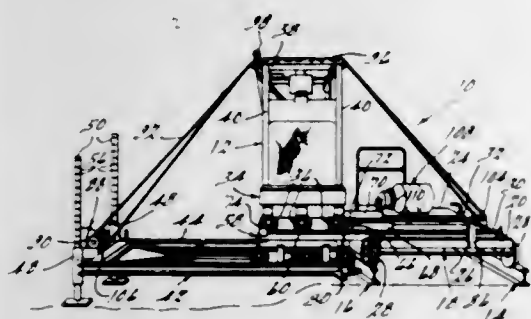


afforded by a plurality of propulsion units spaced along the track and including a vertically extending motor-driven drive wheel that engages a platen secured to the underside of the car. The spacing of the drive wheels is such that the platen is always simultaneously engaged with a plurality of drive wheels to thereby afford a smooth jerk-free ride.

3,412,691

**WELDING TRANSPORTER**

John W. Mueller, Jackson, and Allan S. McRae, Dearborn, Mich., assignors to The New York Central Railroad Company, New York, N.Y., a corporation of Delaware  
Filed July 20, 1966, Ser. No. 566,536  
14 Claims. (Cl. 105-177)

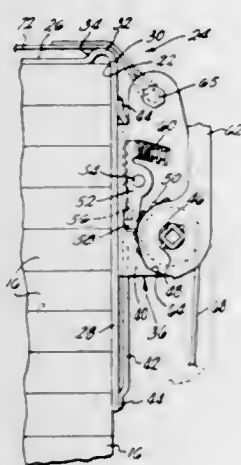


A device for conveying portable apparatus and the like from place to place along a railroad right-of-way and comprising a pair of pivotably connected frames; wheels on one of the frames whereby the same may be movably supported on spaced rails; means carried by the other of the frames whereby the latter may be supported in a position laterally adjacent the rails and when in said position support said wheeled frame, and means for varying the angular relation between the frames including cable winding and unwinding means and cable means extending between the frames and operatively connected to the cable winding and unwinding means, whereby actuation of the cable winding and unwinding means effects pivotal movement of the one of the frames relative to the other of the frames.

3,412,692

**CARGO TIE-DOWN APPARATUS**

Bryce B. Evans, Jackson, Mich., assignor to Aeroquip Corporation, Jackson, Mich.  
Filed Dec. 1, 1966, Ser. No. 598,474  
8 Claims. (Cl. 105-369)

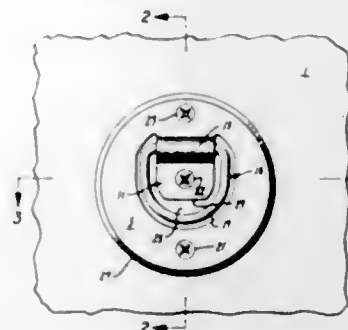


The present invention relates to a cargo control tie-down system especially usable with cargo of uniform size. Angle brackets are applied to the corners of the cargo and include adjustable and slideable take-up devices for tensioning the tie-down webbing.

3,412,693

**CARGO ANCHORING DEVICE**

Dean F. Lewis, Lafayette, Calif.  
(4444 Piedmont Ave., Oakland, Calif. 94611)  
Filed May 31, 1967, Ser. No. 642,391  
4 Claims. (Cl. 105-369)

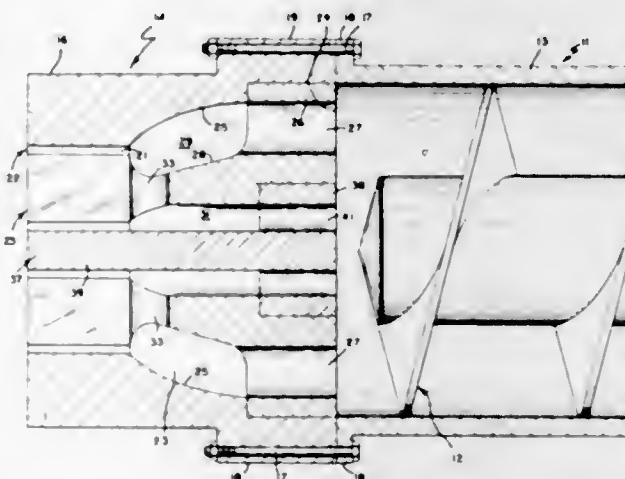


A cargo anchoring device consisting of a housing having a flange encircling and partially covering a recess in a wall of a cargo vehicle, a tongue projecting radially inwardly from the flange formed with a U-shaped portion in which pivots a tie member.

3,412,694

**EXTRUSION DIE-HEAD**

James Hewett, Buffalo, and Robert N. Bateson, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware  
Filed Oct. 4, 1966, Ser. No. 584,138  
1 Claim. (Cl. 107-14)

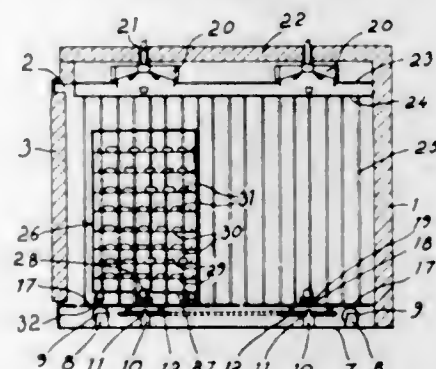


An extrusion die for producing shaped food products. The die contains shaped chambers which lead to a shaped extrusion opening to insure uniform flow of product from an extrusion barrel through the chambers to the face of the die.

3,412,695

**BAKING OVENS**

Tore S. Andersson, Guldbrandsgatan 27, Boras, Sweden  
Filed Sept. 20, 1965, Ser. No. 488,819  
1 Claim. (Cl. 107-55)



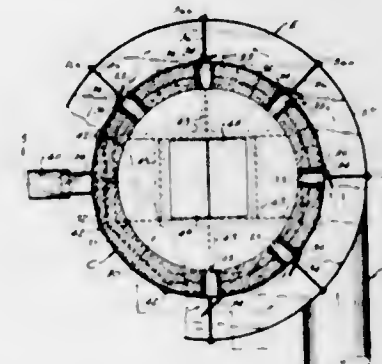
The present baking oven has means for supporting material to be baked which includes at least one wheeled truck having baking trays and capable of being wheeled

into and out of the oven and when in the oven, supported on a rotatably driven bearing number for rotating the truck thereon.

3,412,696

**INCINERATOR**

Wesley S. Ehrenzeller, Hanover, and Donald H. Call, West Roxbury, Mass., assignors to American Design and Constructor Corporation, North Abington, Mass.  
Filed Mar. 25, 1965, Ser. No. 447,593  
4 Claims. (Cl. 110-8)

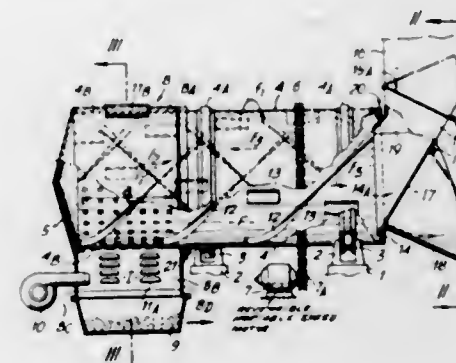


1. In an incinerator mechanism including a substantially vertical stack, a combustion area adjacent to the bottom thereof, a chute for controlled charging of said incinerator above said combustion area, and means at the bottom of said stack for removing molten incombustible products, the improvement comprising: a wind-box surrounding the outside of the lower area of the combustion area, means for supplying combustion-supporting air from a forced fan mechanism into said wind-box in the direction tangential to said wind-box, a tuyere assembly into which combustion supporting air is supplied from said wind-box into said stack under super-atmospheric pressure, said tuyere assembly having horizontal rows of vertically and horizontally spaced tuyeres for passing said air into the combustion area of said stack, said tuyeres each having regulatable valves situated thereon in the wind-box for controlling the air flow to said combustion area of said stack from said wind-box.

3,412,697

**TRASH INCINERATOR ROTARY FURNACE**

Silvano Matteini, Via Bellosguardo 2, Florence, Italy  
Filed Feb. 2, 1967, Ser. No. 613,647  
Claims priority, application Italy, Feb. 7, 1966, 2,787/66  
6 Claims. (Cl. 110-14)

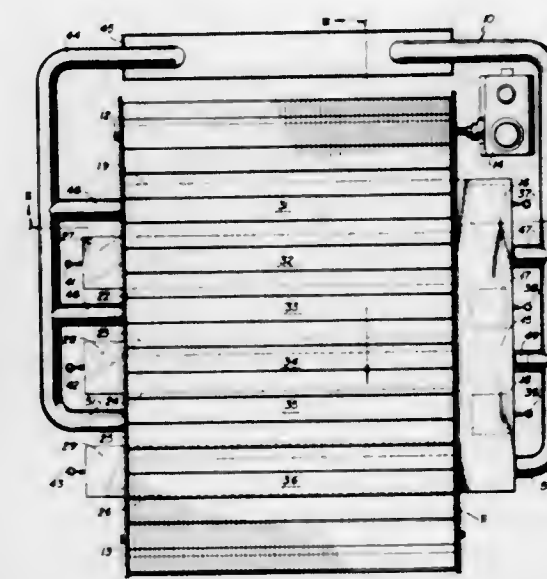


A trash incinerator has a tubular body rotatable about a fixed axis and disposed adjacent a stationary end member having an opening therein. A section of the tubular body remote from the end member is perforated to form a grate and is surrounded by a shell which also forms an ash collecting box therebelow. A burner for igniting the trash extends into the box. In addition the tubular body is provided with internal helical fins which distribute the trash inside the body when the body rotates.

3,412,698

**STOKER**

Russell C. Rivers, Boylston, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts  
Filed Mar. 30, 1967, Ser. No. 627,030  
6 Claims. (Cl. 110-40)

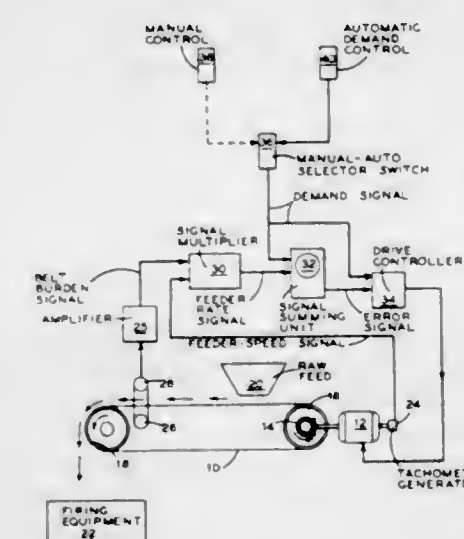


This invention relates to a stoker and, more particularly, to apparatus for burning solid fuel in an incinerator or the like, wherein the space under the grate is divided into compartments and each compartment carries an inclined trough there being water sprays to carry siftings into a disposal system.

3,412,699

**FUEL FEEDING APPARATUS**

Samuel K. Culp, Barberton, and Robert R. Piepho, Wadsworth, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey  
Filed Mar. 22, 1966, Ser. No. 536,470  
11 Claims. (Cl. 110-101)



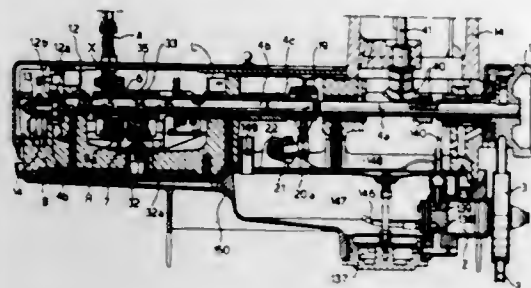
This invention is a fuel feeding arrangement utilizing a nuclear radiation and detection scheme for continuously sensing the combustible quality of fuel being conveyed to a fuel burner and adjusting the speed of delivery thereof in response to a continuous measurement representative of the desired rate of delivery. It is a further feature of the invention to utilize a microwave radiation and detection scheme for sensing the moisture content of the fuel while it is being delivered and adjusting the speed of delivery thereof on the basis of the dry fuel equivalent of the fuel being delivered.



3,412,700

**AMPLITUDE ADJUSTMENT FOR A ZIG-ZAG SEWING MACHINE**

Nerino Marforio, Milan, Italy, assignor to S.p.A. Virginio Rimoldi & C., Milan, Italy  
Filed Dec. 29, 1965, Ser. No. 517,209  
Claims priority, application Italy, Nov. 5, 1965, 481/65  
1 Claim. (Cl. 112—158)

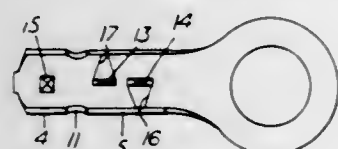


A zig-zag sewing machine having a bed plate with a working table thereon. A standard is disposed between the bed-plate and carries the end of an arm which extends above the bed-plate. A needle bar support is arranged within the free end of the arm for a reciprocating needle bar. A transmission imparts lateral displacements to the needle bar support and comprises a bushing slidable on an oscillating lever and a connecting rod articulated at one end to the bushing and at the other end to the needle bar support. Means are provided for adjusting the width of the lateral displacements the needle bar support comprising a link having a lower forked end articulated to the bushing and a transverse shaft and an arm thereon articulated to the other end of said link. One end of the transverse shaft extends outwardly from the last-mentioned arm and means are provided for adjusting the lateral displacements of the needle bar support secured to the last-mentioned arm.

3,412,701

**INSULATION-PIERCING ELECTRICAL CONNECTORS**

Wilhelm Cornelis Johannes Esser, Tilburg, Netherlands, assignor to AMP Incorporated, Harrisburg, Pa.  
Original application Jan. 6, 1964, Ser. No. 335,763, now Patent No. 3,259,874, dated July 5, 1966. Divided and this application Apr. 13, 1966, Ser. No. 542,298  
5 Claims. (Cl. 113—119)



1. A method of making an electrical connector comprising the steps of forming the electrical connector to define a tongue portion and ferrule portion, providing insulation-piercing lance means in said ferrule portion, pushing a pyramid-tipped-punch into the ferrule portion to push up the metal into a pyramid-shaped protuberance and penetrate the metal thickness sufficiently to break the metal along the edges of the pyramid around the apex to define at least three points around an aperture without piercing the metal thickness, and rolling the ferrule portion to move the three points closer together.

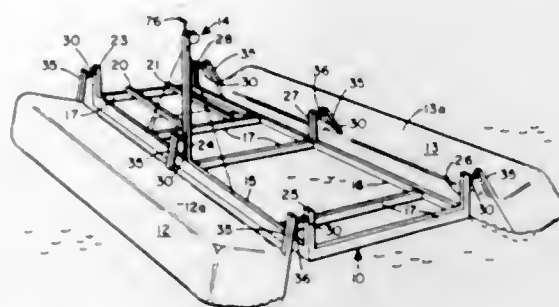
3,412,702

**FLOATING DRY DOCK FOR SMALL BOATS**

James M. Mann, 617 N. Florida Ave., Tarpon Springs, Fla. 33589  
Filed July 5, 1966, Ser. No. 562,902  
1 Claim. (Cl. 114—46)

A floating dry dock for small boats comprises an elongated cradle adapted to support a boat thereon. Two

elongated floats or pontoons extend along opposite sides of the cradle and are flexibly connected with the cradle by laterally projecting arms attached thereto and spaced therealong, the arms being pivotally connected to the cradle at the outer ends thereof so that when the pontoons rotate about their longitudinal axes towards one another the arms are swung to lower the cradle into the

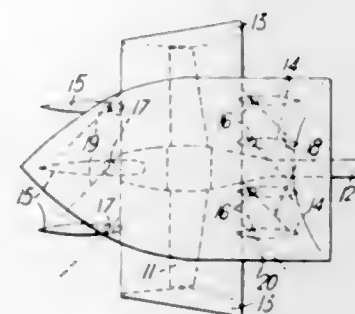


water and when the pontoons rotate about their axes outwardly from one another the arms swing in an upright position to raise the cradle from the water. The pontoons rotate about their axes when they are drawn towards one another and about the pivotal connection between the arms and the cradle by a drum and cable arrangement which also controls spreading of the pontoons from one another which causes lowering the cradle into the water.

3,412,703

**STEERING OF VESSELS FITTED WITH PROPULSIVE NOZZLES**

Ronald Clark and Ewan Christian Brew Corlett, Basingstoke, England, assignors to Hydroconic Limited, London, England, a British company  
Continuation-in-part of application Ser. No. 597,283, Nov. 28, 1966. This application Jan. 19, 1967, Ser. No. 610,404  
Claims priority, application Great Britain, Jan. 20, 1966, 2,710/66  
5 Claims. (Cl. 114—163)



A propulsion and steering assembly for a marine vessel, comprising a propeller operating within a fixed propulsion nozzle and having a forward set of multiple rudders or vertical shutters working at the nozzle entry and a second set of multiple rudders or vertical shutters at the nozzle exit, and wherein the two sets of rudders are linked together so that when the trailing edges of the aft rudders are put to port the leading edges of the forward rudders are simultaneously put to starboard and vice versa.

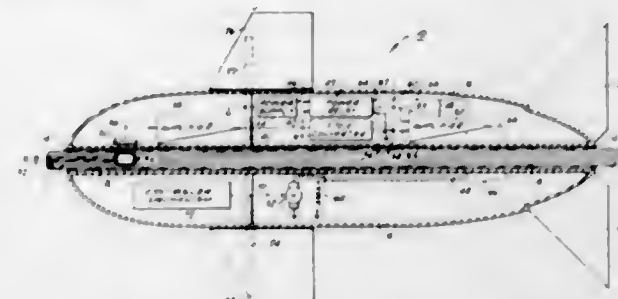
3,412,704

**CABLE DEPTH CONTROLLER**

Paul L. Buller and William L. Chapman, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware  
Filed Nov. 6, 1967, Ser. No. 680,752  
13 Claims. (Cl. 114—235)

Apparatus for remotely adjustable cable depth control wherein one or more paravanes employed to maintain a cable or seismic streamer at a predetermined depth

are adjustable by means of a remotely energized transmission linkage. A paravane having adjustable diving planes connected for positive or negative attack angles, and wherein a remotely generated signal transmission is

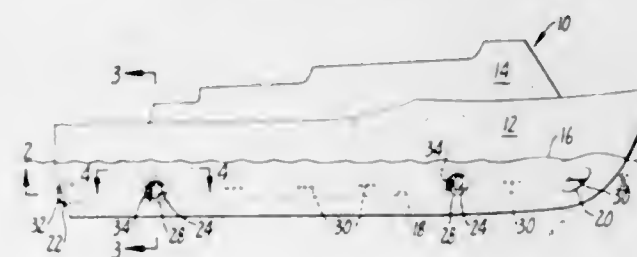


detected at the paravane and the detected signal is employed to energize and to operate depth adjusting structure which will respond to a different, predetermined ambient water pressure to maintain the paravane at a different desired depth.

3,412,705

**NAVIGATIONAL SYSTEM**

Jean J. Nesson, 3155 Broderick St., San Francisco, Calif. 94123  
Filed June 27, 1967, Ser. No. 649,237  
2 Claims. (Cl. 115—12)

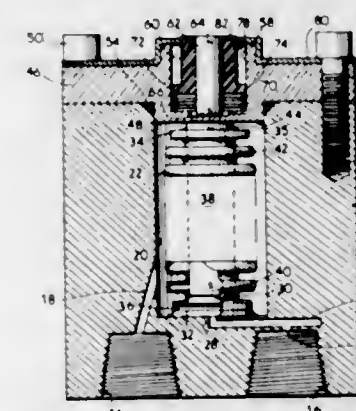


A navigational system for vessels is provided with a plurality of first ducts extending the length of the vessel below the water line of the hull. A plurality of second ducts extends the width of the vessel below the water line of the hull. Propellers are disposed at the intersections of the ducts. The propellers are provided with means of orientation to preselected positions.

3,412,706

**DIFFERENTIAL PRESSURE INDICATOR**

George J. Topol, Hamilton, Ontario, Canada, and Barry A. Hinkle, Cookeville, Tenn., assignors to Bowser, Inc., Cookeville, Tenn., a corporation of Indiana  
Filed Apr. 9, 1965, Ser. No. 446,975  
4 Claims. (Cl. 116—70)



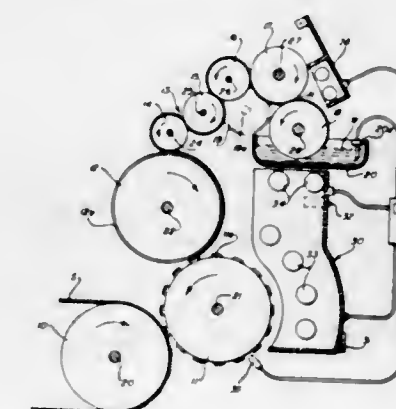
A device for measuring and indicating the pressure drop across a filter in a fluid line having a bellows enclosingly housing a first magnet in a housing with the exterior of the bellows being in communication with the upstream side of the filter and the interior of the bellows being in communication with the downstream side there-

of so that the bellows expands and contracts responsive to a decrease and an increase in pressure drop as occasioned by the condition of the filter and a second magnet movably mounted in the housing in adjacency to a free moving end of the bellows and carrying an indicator with a spring bias means acting on the second magnet to move it from a non-indicating position where it is retained under the magnetic attraction forces between the magnets to an indicating position when the magnetic forces are lessened by the movement of the first magnet away from the second magnet a predetermined distance as the bellows contracts in reaction to an increase in the pressure drop.

3,412,707

**APPARATUS FOR HOT WAX CARBON PRINTING**

Lloyd L. West, Athens, Ohio, assignor, by mesne assignments, to Litton Business Systems, Inc., a corporation of New York  
Original application Feb. 1, 1962, Ser. No. 170,328, now Patent No. 3,230,106, dated Jan. 18, 1966. Divided and this application Aug. 19, 1965, Ser. No. 494,999  
4 Claims. (Cl. 118—5)



1. In a hot wax carbon printing machine, the combination comprising:  
a wax fountain;  
first heating means to maintain the wax in said fountain at a first elevated temperature to render it flowable but of relatively high viscosity;  
a rotatable dip roller mounted to dip wax from said fountain;  
a doctor roller rotatably mounted adjacent said dip roller to receive wax therefrom;  
a rotatable blanket roller;  
a roller train associated with said doctor and blanket rollers to transfer wax from the former to the latter;  
a plate roller rotatably mounted adjacent said blanket roller and adapted to engage it;  
second heating means for heating the wax film carried by said plate roller to a second temperature higher than said first temperature to render said wax highly fluid and of relatively lower viscosity; and  
an impression roller rotatably mounted adjacent said plate roller and adapted to support a sheet of paper to be printed by said plate roller.

3,412,708

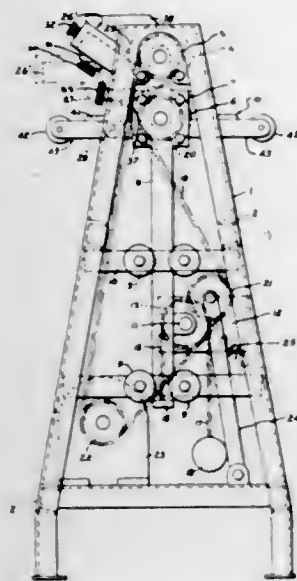
**MACHINES FOR COATING SHEET MATERIAL WITH ADHESIVE OR THE LIKE**

Donald Martin, "Ros Nuala," Brookfield Lawn, The Lough, Cork, Ireland  
Filed Dec. 5, 1966, Ser. No. 599,164  
Claims priority, application Ireland, Dec. 7, 1965, 1,279/65; Feb. 18, 1966, 171/66  
3 Claims. (Cl. 118—261)

Coating equipment comprises a pair of upper and lower



rolls and a doctor blade adjacent the upper roll. The lower roll is vertically movable and is continuously urged up-

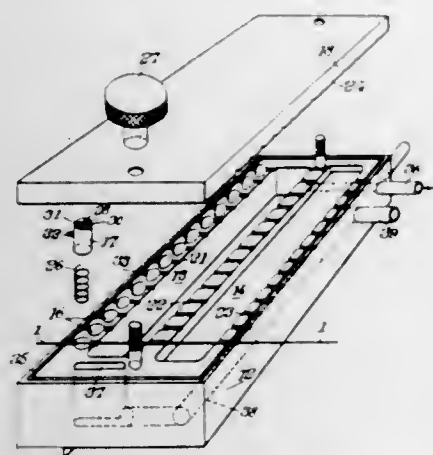


wardly by a counterweight suspended from chains that are reeved over sprockets.

3,412,709

**DEVICES FOR COATING WIRES AND IN PARTICULAR FOR ENAMELLING ELECTRIC WIRES**  
Roland A. Goyffon, Macon, France, assignor to Manufacture de Fils Isoles Taurus (Maft), Macon, France, a society of France

Filed Dec. 21, 1966, Ser. No. 603,512  
Claims priority, application France, Jan. 7, 1966, 45,190  
8 Claims. (Cl. 118-405)



Wires 1 to be enamelled are passed through an apparatus including a body 12 provided, on the one hand, with a tank 13 through which enamel under pressure is made to circulate continuously and, on the other hand, with housings 16 intended to accommodate die-blocks 17 provided with notches 31 for the passage of the wires therethrough, said body 12 being further provided with a chamber 14 containing felt elements 15. The die blocks 17 are positioned, against the action of springs 16 by a cover 18. Enamel flows continuously through tank 13. The wires 1 to be enamelled pass transversely to tank 13 and to chamber 14 through grooves 21, 22, 23 provided in said body 12. The enamel leaks are collected through a groove 35. The cross section of the die block notches 31 is U-shaped, the lower cross section of the U being semi-circular and of a diameter just a little greater than that of the wire, the height of the U being substantially equal to said first mentioned diameter.

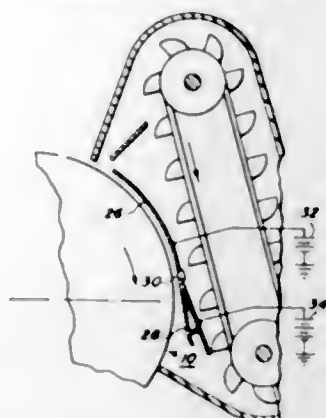
The present invention relates to devices for coating wires with a suitable substance and in particular for enamelling electric wires.

3,412,710

**CLEANUP ELECTRODE**

Bruce R. Robinson, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Oct. 11, 1966, Ser. No. 585,921  
3 Claims. (Cl. 118-637)



A high potential electrode for minimizing uncontrolled powder cloud development in a xerographic two-component cascade development system. The electrode is positioned adjacent the space where cascading developer falls away from the photoconductive surface under the influence of gravity. The electrode has a shape to substantially conform with the path of flow of the falling carrier granules. It is electrically biased so as to attract free toner particles back into the path of flow of carrier granules falling into the sump for minimizing powder cloud development in this area.

3,412,711

**SOW'S FARROW BOX**

Bror Nils Martensson, Daddhorva, Gunnebobruk, Sweden, and Torsten Gunnar Nelson, Helgerum, Skaffet, Sweden

Filed July 25, 1966, Ser. No. 567,651  
4 Claims. (Cl. 119-20)



A sow's farrow box including a plurality of superimposed tubes arranged in substantial parallelism providing two sides with the tubes of one side being fixed to front and rear posts and the tubes of the other side being connected together at both ends by vertical cross pieces. The front piece is articulated on the front post and the rear piece removably fixed to the rear post with a detachable gate arranged between the front posts. The sides are connected by transverse tubes on the top tube and a rear transverse tube on the lowest tube with the transverse tube being adjustable according to the position of the side that can be opened.

3,412,712

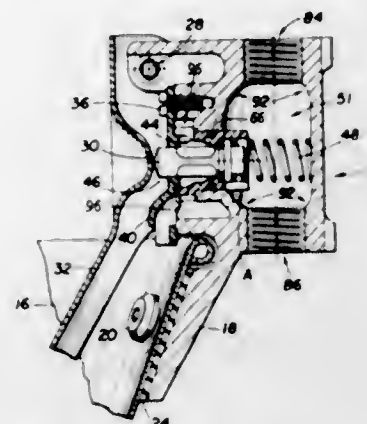
**ANIMAL WATERING PAN**

Ronald William Taylor, Guelph, Ontario, Canada, assignor to General Steel Wares Limited, Toronto, Ontario, Canada

Filed July 1, 1966, Ser. No. 562,161  
6 Claims. (Cl. 119-75)

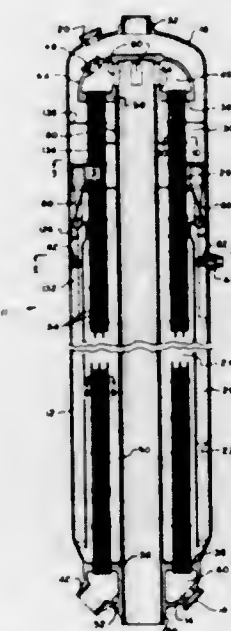
A valve assembly, particularly adapted for use in an animal watering pan wherein the animal actuates the flow of water by pressing a plate with its nose, having a valve

stem and sleeve arrangement whereby the stem moves axially within the sleeve and opens and closes a slot at the inner end of the sleeve to permit water to flow from the interior of the valve body and past the valve stem



3,412,713  
**STEAM GENERATOR INCORPORATING FLOATING TUBE SHEET**  
Nicholas D. Romanos, Chattanooga, Tenn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Sept. 28, 1966, Ser. No. 582,599  
23 Claims. (Cl. 122-34)



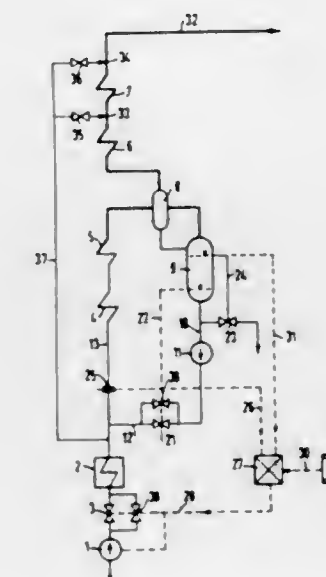
A shell and tube type vapor generator having provisions for evaporating and superheating within the same vessel. The arrangement includes annular vapor-liquid separator apparatus disposed about the inner surface of the vessel and in surrounding relation to the bundle of tubes therein intermediate the evaporation and superheating portions of the generator and arranged to occupy a minimum amount of vapor space. The tube bundle is of the "floating tube sheet" type and employs an enlarged central conduit, coextensive with the tube bundle, for supplying the tubes with heating fluid. The conduit is provided with means for supporting the tube sheets intermediate their peripheral edges in order to reduce the amount of tube sheet thickness required for withstanding stresses to which the tube sheets are subjected.

3,412,714

**CONTROL SYSTEM FOR ONCE-THROUGH TYPE BOILER**

Rupprecht Michel, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany  
Continuation of application Ser. No. 435,316, Feb. 25, 1965. This application Apr. 20, 1967, Ser. No. 632,446  
Claims priority, application Germany, Feb. 28, 1964, S 89,737

5 Claims. (Cl. 122-406)



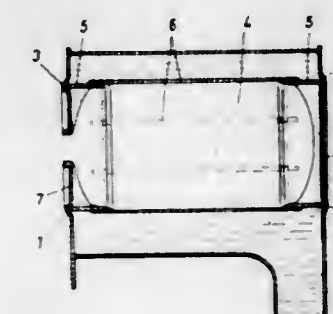
Once-through boiler includes sensors which sense quantity of water supplied to evaporation stage and level of separated water received in a container from a steam trap. A circulation conduit connects the container to a point between a feed pump and the evaporator stage. A regulator responsive to the sensors regulates the feed water supplied to the evaporator stage so that the combined feed water and separated water supplied during start-up, shut-down and partial-load operation to the evaporator stage is at a constant value substantially 40% of the water supplied during full-load operation to the evaporator stage.

3,412,715

**ARRANGEMENT FOR SUPPORTING WATER-STORAGE TANKS**

Hans Vliessmann, Im Hain, Battenberg (Eder), Germany  
Filed Feb. 13, 1967, Ser. No. 615,550  
Claims priority, application Germany, Feb. 16, 1966, V 30,404

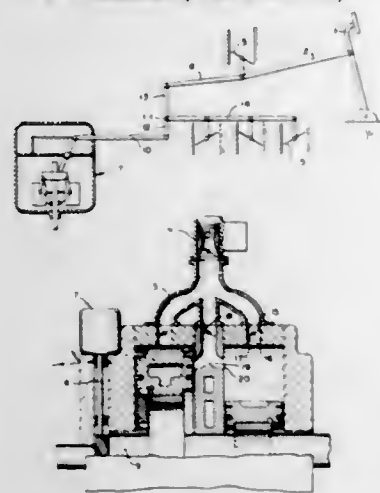
3 Claims. (Cl. 122-510)



A water storage tank is supported in a boiler housing by support elements, such as support rings and/or straps spaced about the periphery of the tank, whose ends extend into apertures in corrugations in the end walls of the housing which are adjacent to respective end walls of the tank. The support element ends are welded into the apertures.

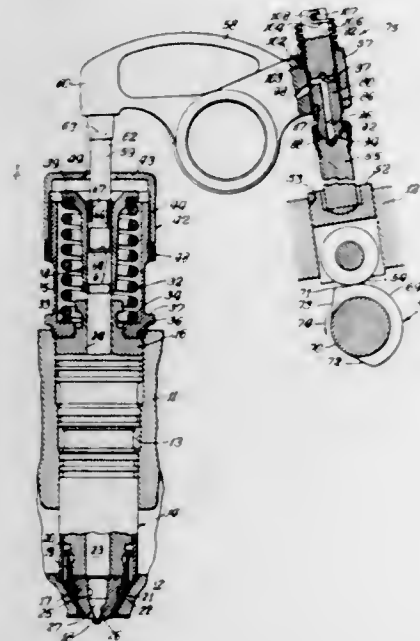


**3,412,716**  
**FUEL-SUPPLY CONTROL SYSTEM FOR ROTARY-PISTON INTERNAL COMBUSTION ENGINES**  
 Winfried Tausch, Zwickau, and Werner Wolf, Wilkau-Hasslau, Saxony, Germany, assignors to Veb Sachsenring Automobilwerke Zwickau, Zwickau, Germany  
 Filed Dec. 6, 1966, Ser. No. 599,424  
 6 Claims. (Cl. 123—8)



Controls for rotary-piston internal combustion engines. A piston of the engine rotates in a housing thereof which is provided with peripheral and lateral passages communicating with the combustion chamber. A pair of valve means respectively coact with these passages, and a control means is connected to the pair of valve means to control the later depending upon the speed of rotation of the piston and the load on the engine. This control means is operatively connected with the pair of valve means to provide for closing movement of one of the valve means while simultaneously providing opening movement of the other of the valve means, so that the pair of valve means are activated in opposition to each other.

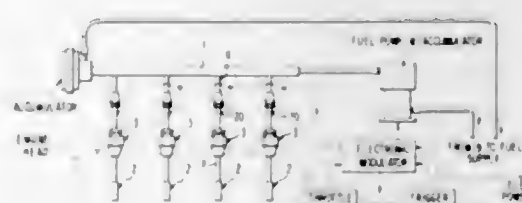
**3,412,717**  
**FUEL INJECTION MECHANISM**  
 Alfred W. Carey, Jr., and Julius P. Perr, Columbus, Ind., assignors to Cummins Engine Company, Inc., Columbus, Ind., a corporation of Indiana  
 Filed Sept. 2, 1966, Ser. No. 577,045  
 7 Claims. (Cl. 123—32)



A fuel injecting mechanism for injecting fuel into the cylinder of an internal combustion engine, including a fuel injector having a plunger reciprocally mounted therein, a cam for effecting cyclic movement of the plunger, linkage interconnecting the cam and injector plunger, and a spring engaging the injector plunger and causing the

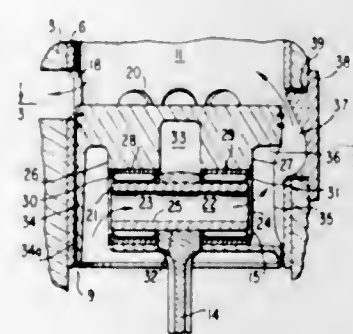
plunger to follow the movement of the cam. The mechanism also includes adjusting means for automatically decreasing the length of the linkage when the linkage is loaded due to the force of the spring and the reaction force caused by engagement of the plunger with the injector body at the completion of the injection stroke thereof. The adjusting means also automatically increases the length of the linkage to compensate for any decrease in length due to the force of the spring, or other causes, and is rendered operable to increase the length of the linkage when the linkage is unloaded upon engagement of the plunger with a stop on the injector.

**3,412,718**  
**PRECISION FUEL METERING SYSTEM**  
 Emile David Long, Elmira, N.Y., assignor to Gillett Tool Co., Inc., Buffalo, N.Y.  
 Filed June 13, 1967, Ser. No. 650,563  
 8 Claims. (Cl. 123—32)



A plurality of fuel metering transducers are employed for simultaneously delivering measured amounts of fuel to the cylinders of an internal combustion engine, once per engine cycle, and in response to an electronic modulator which senses various engine operational and environmental parameters, such as, engine manifold air temperature and vacuum, engine temperature, engine speed, throttle position and barometric pressure. Each of the fuel metering transducers is mounted entirely within the engine air manifold and adjustably positioned adjacent the respective inlet valve for each cylinder, the fuel fed to each transducer being at constant pressure, whereby the measured amount of fuel being admitted to each cylinder depends upon the length of time the transducer is held in open position.

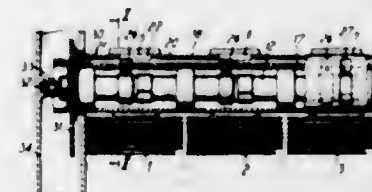
**3,412,719**  
**ENGINE STRUCTURE**  
 Benjamin L. Sheaffer, Palos Verdes, and John H. Brooks, Encino, Calif., assignors to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin  
 Filed Dec. 6, 1966, Ser. No. 599,579  
 10 Claims. (Cl. 123—73)



A pivot connection between a piston and a connecting rod having a flow path and means for inducing a flow of coolant through the flow path.

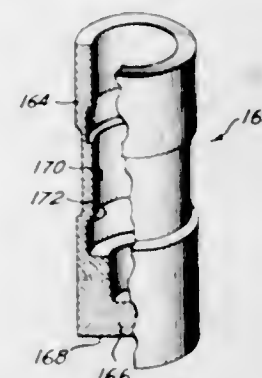
A method of prolonging the life of such a pivot connection by flowing a flow of coolant therethrough.

**3,412,720**  
**OVERHEAD CAMSHAFT ASSEMBLY FOR INTERNAL COMBUSTION ENGINES**  
 Robert Binder, Schwieberdingen, Germany, assignor to Firma Dr.-Ing. h.c. F. Porsche K.G., Stuttgart-Zuffenhausen, Germany  
 Filed June 27, 1967, Ser. No. 649,346  
 Claims priority, application Germany, July 7, 1966, P 39,889  
 10 Claims. (Cl. 123—90)



The present disclosure relates to an internal combustion engine, particularly air-cooled, having cylinders arranged in one or more rows, wherein the cylinder heads of one row of cylinders are separate and interconnected by means of a tubular support member or pipe that is preferably made of a single piece extending over the entire length of the cylinder row to serve as a housing and support for the camshaft. Aligned bores are provided in the corresponding cylinder heads for receiving therein the pipe. The internal surface of the pipe is disposed eccentrically with respect to the outer surface to provide room for a lubricating duct in the wall having the largest thickness.

**3,412,721**  
**COMPOSITE CASTING**  
 Earl A. Thompson, Bloomfield Hills, Mich., assignor to Earl A. Thompson Manufacturing Co., a corporation of Michigan  
 Continuation of application Ser. No. 184,476, Apr. 2, 1962. This application Mar. 2, 1966, Ser. No. 534,563  
 19 Claims. (Cl. 123—90)



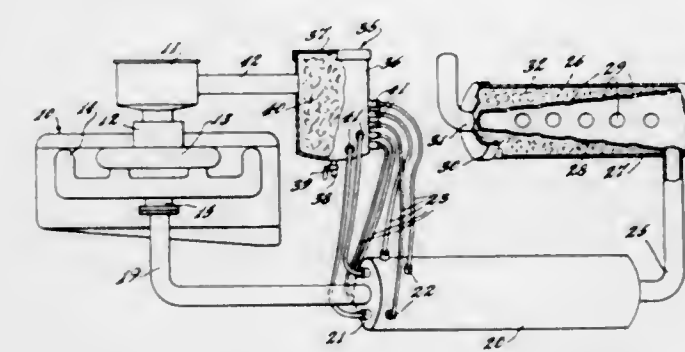
7. A body of a tappet for an internal combustion engine comprising in combination an integral structure including a tubular portion and a cam follower portion closing one end of the tubular portion, the tubular portion being cast of a first metal having a first combination of properties and the cam follower being cast of a second metal having a second combination of properties, the cam follower and tubular portion being autogenously united by a cast bond of a third metal which has a progressive blend of properties from the first combination of properties to the second combination of properties.

9. A composite cast article comprising a first part of one metal, a second part of another metal and a juncture zone autogenously connecting first and second parts, the juncture zone being composed of metal having the properties

of a juncture zone which has been formed by partly filling a mold with first molten metal having first properties, then cooling the exposed surface of the first metal to a temperature about the solidus of the first metal while maintaining molten metal below the surface so that there is now on the surface of molten first metal a non-liquid barrier which prevents the flow of molten metal therethrough, then pouring onto the barrier second molten metal having second and different properties so that there is now a non-liquid barrier between two bodies of molten metal, then melting the barrier to form a single mass of molten metal having portions of different properties while mixing the two molten metals in the space occupied by the barrier and then solidifying said single body of molten metal.

12. The method of controlling the bonding zone between two different metals in a composite casting having portions composed of different metals autogenously united which includes partly filling a mold with first molten metal having first properties, then cooling the exposed surface of the first metal to about the solidus for the first metal while maintaining molten metal below the surface so that there is now on the surface of molten first metal a non-liquid barrier which prevents the flow of molten metal therethrough, then pouring onto the barrier second molten metal having second and different properties so that there is now a non-liquid barrier between two bodies of molten metal, then melting the barrier to form a single mass of molten metal having portions of different properties while mixing the two molten metals in the space occupied by the barrier and solidifying said single body of molten metal.

**3,412,722**  
**EXHAUST-TREATMENT SYSTEM FOR INTERNAL-COMBUSTION ENGINES**  
 Joseph Epifanio, Sr., Box 70, Paulsboro, N.J. 08066  
 Filed Mar. 24, 1967, Ser. No. 625,713  
 7 Claims. (Cl. 123—119)



The instant invention discloses a unique combination and arrangement of structure for use with an internal-combustion engine wherein the engine exhaust communicates with a pair of series-connected mufflers, and a condensation chamber communicates between the air intake of the engine and an upstream region of the upstream muffler.

**3,412,723**  
**IGNITION SYSTEM**  
 Gerald O. Huntzinger, Anderson, Ind., and Ralph E. Tarter, Richardson, Tex., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
 Original application Oct. 17, 1963, Ser. No. 316,815, now Patent No. 3,320,939, dated May 23, 1967. Divided and this application May 2, 1967, Ser. No. 635,438  
 7 Claims. (Cl. 123—148)

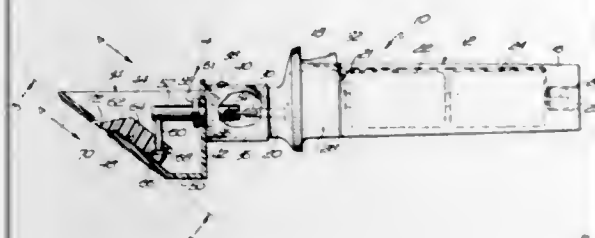
In a preferred form, an ignition system including a semiconductor controlled rectifier switch for discharging current through an ignition coil is provided with a circuit connected to the controlled rectifier control electrode which includes a transformer having a primary winding connected in series with a pair of breaker contacts and







power for oscillating said shaft, a disposable head member releasably mounted on said handle and including a shaft that is releasably coupled to said oscillating shaft for oscillation thereby, said head member further including a blade carrier that is interconnected to the shaft of the



head member for reciprocation thereby, and a blade mounted on said carrier for reciprocating movement therewith and in a direction that is transverse to the axis of said head member and handle, wherein a cutting action is produced during the skin grafting procedure.

3,412,733

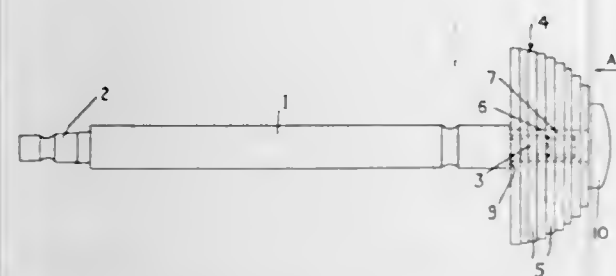
**ACETABULUM REAMER**

Donald S. Ross, Glasgow, Scotland, assignor of one-half to Zimmer Orthopaedic Limited, Bridgend, Glamorgan, Wales, a British company

Filed July 1, 1966, Ser. No. 562,232

Claims priority, application Great Britain, July 8, 1965, 28,918/65

2 Claims. (Cl. 128—305)



1. An acetabulum reamer comprising a head portion and a drive member, said head portion removably secured to one end face of said drive member, said head portion comprising a plurality of concentrically disposed discs each of different diameter, each of said discs formed circumferentially with a plurality of cutting teeth, said discs stacked in face to face relation to form a head portion substantially of arcuate form in profile and means for clamping said stack of discs on said end face of said drive member.

3,412,734

**BINDING AND LOCKING DEVICE FOR HOLDING SHEETS OF MATERIAL**

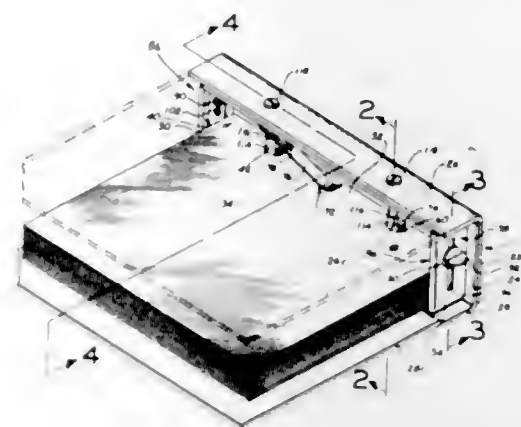
Max Schwartz, 1210 N. Rowan Ave., Los Angeles, Calif. 90063

Filed Nov. 18, 1966, Ser. No. 595,452

3 Claims. (Cl. 129—18)

The specification discloses a binding and locking device adapted to hold similar rear edges of a plurality of thin sheets of material in a manner simulating the binding of a book and to do so in a quick engageable, positive locking and yet easily disengageable manner, and further provided with vertically spring biased keeper means adapted to hold the rear edges of the thin sheets of material in firm abutment with each other even though less than the full normal amount adapted to be mounted is carried by the binding and locking device. Additionally, the spring biased keeper aids in the positive locking of the rear edges of the thin

sheets of material in the binding and locking device and, in one form of the invention, provides the major means for accomplishing this and, in another form of the inven-



tion, is arranged to be operated by additional locking means so as to be effectively moved out of engagement with the rear edges of the sheets of material when the locking means is unlocked, and vice versa.

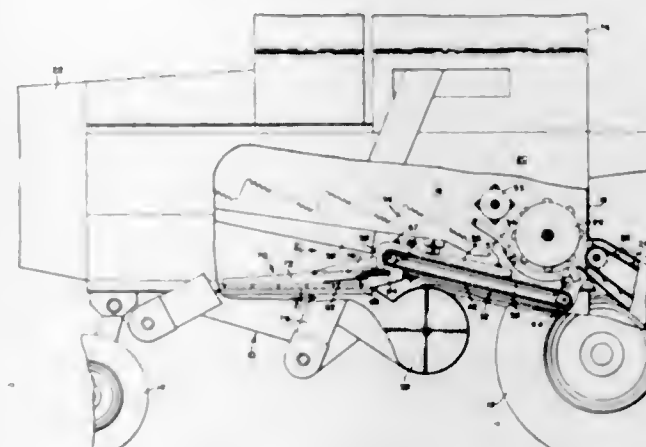
3,412,735

**DIVIDERS FOR A COMBINE SEPARATOR**

Darwin C. Bichel, East Moline, Ill., Larry R. Barquist, Bettendorf, Iowa, and Benedict A. Zmuda, East Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware

Filed Oct. 20, 1965, Ser. No. 498,788

10 Claims. (Cl. 130—21)



A self-propelled combine has an upwardly and rearwardly inclined chain and slat type conveyor for moving the grain falling from the concave and straw walkers rearwardly to a stationary pan which deflects the grain onto the chaffer and sieve. A plurality of fixed upright fore-and-aft dividers above the conveyor limit lateral shifting of the grain thereon. Upright fore-and-aft dividers are also provided on the pan and the top chaffer or sieve to limit lateral shifting of grain thereon.

3,412,736

**FARM PRODUCT SEPARATOR**

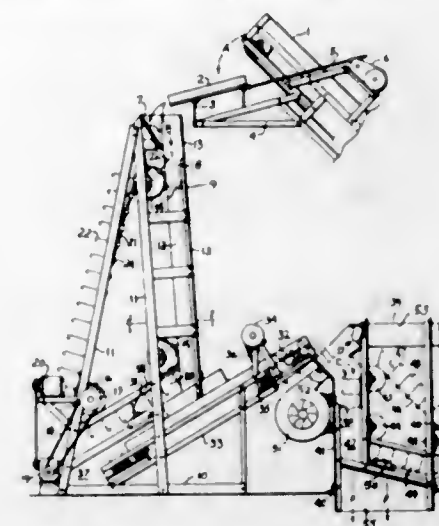
George J. Olney, Westernville, N.Y. 13486

Filed Jan. 10, 1966, Ser. No. 519,756

8 Claims. (Cl. 130—30)

1. Apparatus for separating and trimming clusters of beans or the like from their stems comprising upright frame members defining a separating zone, rods extending into said zone and movable downwardly through said zone, said rods catching bean clusters by their stems as they fall in a tortuous path through said zone, and for carrying the caught clusters to a trimming zone, feed means for dispersing beans into said separating zone,

trimming means arranged below said rods for cutting the beans from the stems, retrieval conveyor means below said trimming means for retrieving single and cut beans,



said rods being adapted to discharge the stems away from said conveyor means, and a source of power for said means.

3,412,737

**SMOKE FILTER**

Karoly G. Pinter, 26 Madison Ave., Morristown, N.J. 07960, and Edward J. Calhoun, 578 Hunt Lane, Manhasset, N.Y. 11030

No Drawing. Filed Jan. 17, 1966, Ser. No. 520,892

12 Claims. (Cl. 131—267)

In a tobacco smoking article, a filtering element, disposed so that objectionable constituents are removed from tobacco smoke passing therethrough, is provided comprising a matrix of a velvet-like sheet of glass microfibers. Such velvet-like sheet of glass microfibers is of the type generally employed in the chromatographic separation of organic materials.

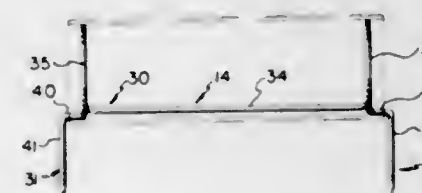
3,412,738

**HAIR CURLING DEVICE**

Irene B. Hensley, 3274 Canterbury Road, Westlake, Ohio 44145

Filed Sept. 3, 1965, Ser. No. 484,831

5 Claims. (Cl. 132—40)



A hair curler, adapted for use on a wig mount comprising a tubular body having relatively minute protrusions projecting outwardly from the curler to engage the hair, and a spring means within the curler providing a prong means at the ends of the spring means so that the curler may be secured to the wig mount by insertion of the prongs into the wig mount.

3,412,739

**HAIR BARRETTE**

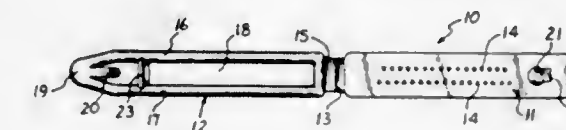
Lewis E. Thatcher, Chicago, Ill., assignor to Gaylord Products, Incorporated, Chicago, Ill., a corporation of Illinois

Filed June 1, 1966, Ser. No. 554,523

3 Claims. (Cl. 132—48)

A barrette comprising a single elongated piece of plastic material forming two integrally connected halves defined by a base member, a clamping member and an inte-

gral medial member, the inner face of the base member including a plurality of rows of teeth formed integral therewith and extending longitudinally thereof and normal thereto, said medial member extending normally between said base and clamping members and being inte-



grally and flexibly hinged to the clamping member, said clamping member being formed with a longitudinally extending slot adapted to embrace the teeth when the clamping member is pivoted thereover, and interlocking means disposed between the free end portions of said base and clamping members.

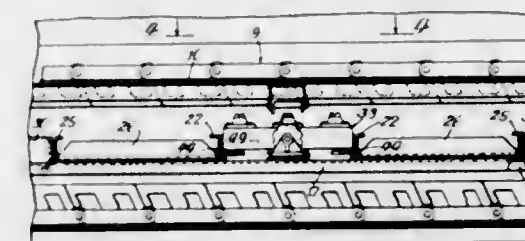
3,412,740

**SPRAY BOX MOUNTING AND RETAINING MEANS**

Chester J. Binks, La Grange, Ill., assignor to G. S. Blakeslee & Co., Cicero, Ill., a corporation of Delaware

Filed Nov. 16, 1966, Ser. No. 594,786

4 Claims. (Cl. 134—198)



1. In spray box mounting and retaining means for dishwashing machines, a housing having a rear wall and a front door opening, a spray box frame in said housing extending transversely thereof from said door opening, a spray box slidably mounted in said frame and having an inner end wall spaced inwardly from said rear wall of said housing and an outer end wall opposite and spaced inwardly from said door opening, a riser at the outer face of said rear wall of said housing, an adaptor extending between said rear wall of said housing and said inner end wall of said spray box for connecting the latter to said riser, a sealing gasket on said adaptor restrained against outward movement thereon and seating against said inner end wall of said spray box, means for exerting endwise pressure on said outer end wall of said spray box effective for holding said inner end wall thereof in pressure contact with said gasket, and cooperating means on said frame and said spray box effective for restraining the outer end thereof against upward movement incident to the application of endwise pressure on said outer end wall of said spray box.

3,412,741

**METHOD AND APPARATUS FOR TREATING LIQUIDS WITH GAS**

Edward T. Mills, Millbrae, Calif., assignor to New Water Co., Inc., a corporation of California

Filed Apr. 11, 1966, Ser. No. 541,812

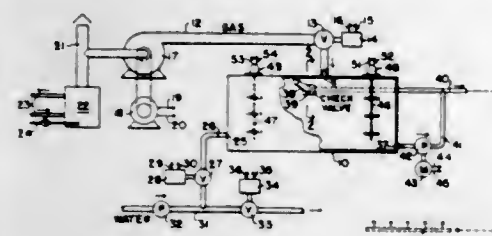
13 Claims. (Cl. 137—1)

11. The method of treating a liquid with a gas which comprises the steps of:

- (a) supplying said gas to a closed mixing chamber which is initially substantially filled with said liquid while discharging said liquid from a lower part of the chamber to a discharge conduit,
- (b) thereafter supplying said liquid to said chamber while displacing the gas upwards within the cham-



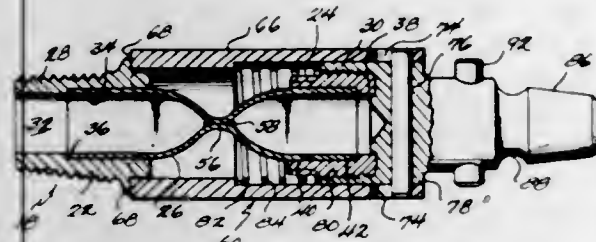
ber and discharging said gas from an upper part of the chamber to said discharge conduit, and



(c) repeating steps (a) and (b) in alternation.

3,412,742

**SQUEEZE TYPE CORPORATION STOP**  
John J. Smith, Decatur, Ill., assignor to Mueller Co.,  
Decatur, Ill., a corporation of Illinois  
Filed Mar. 25, 1964, Ser. No. 354,639  
15 Claims. (Cl. 137-68)



1. A corporation stop for use in making a service connection between a fluid main under pressure and a service pipe comprising: a rigid inlet member adapted to be operatively connected to the fluid main under pressure, said inlet member having a through bore; a rigid outlet member adapted to be connected to the service pipe, said outlet member having a through bore; a tube made of a malleable and ductile metal and pinched so that its inner walls are constricted into fluid tight contacting relationship, means rigidly connecting the ends of said tube in sealing engagement in the bores of said inlet and outlet members respectively; means to maintain the inner walls of said tube in fluid tight contacting relationship until the corporation stop is connected to the fluid main and the service pipe; and means detachably coupling said inlet member to said outlet member exteriorly of said tube whereby torque applied to one of said inlet and outlet members is transferred to the other of said inlet and outlet members while by-passing said tube.

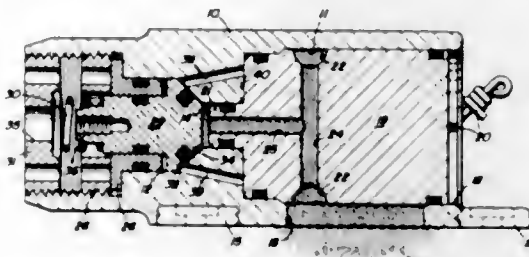
3,412,743  
**RELIEF VALVE**

Timothy J. O'Connor, Rockville, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Aug. 30, 1963, Ser. No. 305,891  
7 Claims. (Cl. 137-70)

1. A pilot operated relief valve comprising:  
a hollow housing having inlet and outlet ports formed therein,  
a substantially solid valve plug slidably disposed entirely within the chamber of said housing and normally precluding fluid communication between said inlet and outlet ports, and  
a normally closed spring-biased pilot valve mounted in said housing and responsive to a preselected inlet fluid pressure to move to an open position, said valve plug having surface means responsive to inlet fluid pressure when said pilot valve is open to urge said valve plug to an open position, said valve plug further having ports which enable application of inlet fluid pressure to said pilot valve to urge said pilot valve to an open position, and

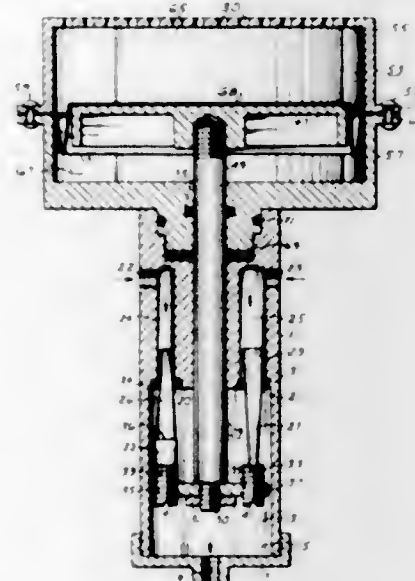
said housing being provided with porting normally closed by said pilot valve such that upon opening of said pilot valve the inlet fluid pressure is applied to



said valve plug to move said valve plug whereby said inlet and outlet ports are placed in fluid communication.

3,412,744

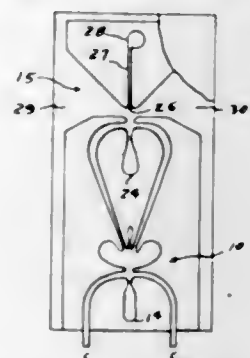
**MIXED GAS REGULATOR**  
Wilbur J. Batzloff, San Diego, Calif., assignor to The Regents of the University of California  
Filed Sept. 17, 1965, Ser. No. 488,087  
3 Claims. (Cl. 137-81)



A pressure responsive valve, responsive to variation in an ambient fluid, such as variation in water pressures encountered by divers. The valve employs two movable control valves which are responsive to variation in pressure in a closed chamber having a flexible wall which is subjected to the ambient fluid. The control valves vary the ratio of flow of two fluids.

3,412,745

**FLUID SUPERHETERODYNE DETECTOR CIRCUIT**  
Lonny R. Kelley, Ballston Lake, N.Y., assignor to the United States of America as represented by the Secretary of the Air Force  
Filed June 23, 1966, Ser. No. 560,928  
1 Claim. (Cl. 137-81.5)

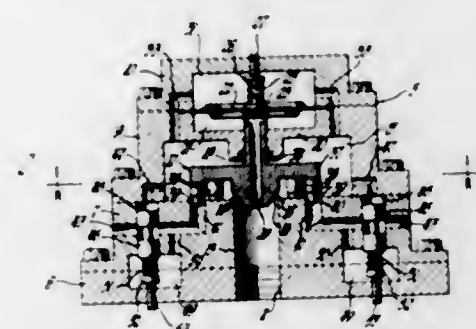


A fluid detector device in which a fluid proportional mixer amplifier that drives a rectifier and L-C filter is

used to provide a usable low frequency signal from the signals of two high frequency sensing elements.

3,412,746

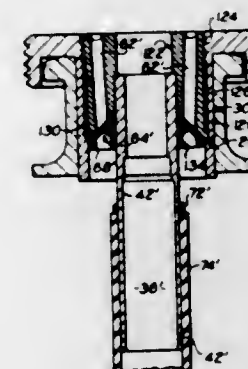
**FLOW BALANCER**  
Robert A. Latta, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Sept. 12, 1966, Ser. No. 578,539  
10 Claims. (Cl. 137-118)



1. A flow balancing device comprising, in combination, means defining a common fluid flow path means defining a plural number of branch fluid flow paths each connected to the common path a first variable throttling means in each branch path means responsive to flow in the common path operative to vary the said first throttling means concurrently so that the resistances to flow of the first throttling means decrease with increase in flow in the common path second variable throttling means in each branch path connected in series with the first throttling means therein and means responsive to the pressure drop across the first throttling means in each path connected to vary the second throttling means in the same path so as to maintain a substantially constant pressure drop across the first throttling means.

3,412,747

**BEER KEG FITTING WITH ANNULAR CHECK VALVE FOR AIR**  
Joseph E. Sichler, Short Hills, N.J., assignor to P. Ballantine & Sons, Newark, N.J., a corporation of New Jersey  
Filed May 2, 1966, Ser. No. 546,713  
8 Claims. (Cl. 137-212)

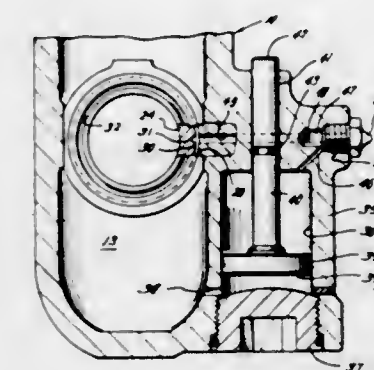


This specification discloses a beer keg fitting for connecting with a customer's fitting which projects into the beer keg fitting far enough to open a check valve. A gas passage opens through the keg fitting for admitting gas under pressure into the keg and there is a check valve element for the gas passage made of a flexible membrane

which opens to admit gas with very little pressure differential. The membrane is strengthened by a resilient bead around its circumference to protect the membrane from being drawn into the gas passage while leaving the membrane thin over most of its radial width. For greater flexibility a frusto-conical face for the membrane produces an advantageous direction of force application for sealing without extruding the membrane in the gas passage.

3,412,748

**AUTOMATIC SEALANT SEALED VALVE WITH SEALING GROOVE PURGING MEANS**  
Alexander S. Volpin, 10200 W. Broadview Drive, Miami Beach, Fla. 33154  
Filed Apr. 11, 1966, Ser. No. 541,655  
11 Claims. (Cl. 137-239)



1. In an automatic sealant sealed valve including a housing having flow ports defining a flowway there-through, a closure chamber intersecting said flowway, and a closure member in the chamber movable between positions opening and closing said flowway, annular seat members slidably disposed about the inner ends of said flow ports for movement into engagement with opposed faces of said closure member, an annular sealing groove disposed about said flowway between the inner end of each of said seat members and said closure member, a single sealant reservoir carried by the housing, a sealant-displacing barrier member slidably disposed in said reservoir, means communicating said closure chamber with said reservoir on one side of said barrier member, passage means communicating the reservoir on the opposite side of said barrier member with both sealing grooves when the closure member is in the flowway-closing position, and means for introducing sealant into said reservoir between said other side of said barrier member and said passage means, said barrier member having an area on said one side exposed to line pressure in said closure chamber, and having first and second areas on said other side exposed, respectively, to said sealing grooves and to atmospheric pressure exteriorly of said housing, whereby to increase the differential pressure force acting on said sealant.

3,412,749

**CAPILLARY FLOW VALVES**  
Don R. McAdams and Rano J. Harris, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware  
Filed Apr. 8, 1966, Ser. No. 541,363  
10 Claims. (Cl. 137-240)

A capillary flow valve, useful alone and in various combinations, for initiating, controlling, and interrupting the flow of fluid to and from analytical instruments, e.g., gas chromatographs or mass spectrometers. A capillary chamber is provided with lateral openings for connection with conduits for supplying fluid to the chamber. The chamber can be opened or closed to the conduits by movement of a plunger which is mounted within the chamber, and a

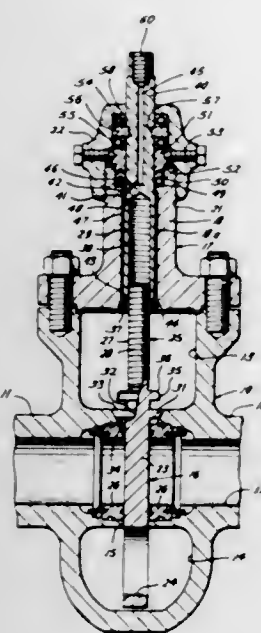


frusto conic opening at the forward end of the chamber can be opened or closed to the flow of fluid therethrough by movement of the plunger to seat and unseat the terminal end thereof which mates with the frusto conic opening. Preferably, the plunger is of relatively small diameter, and volumetric difference between the external diameter of the said plunger and the capillary chamber is such as



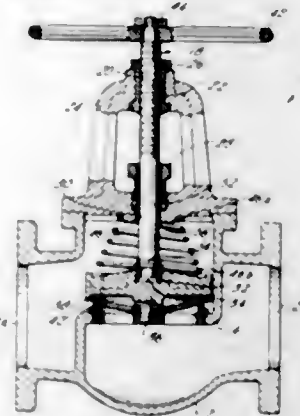
to provide an effective flow area substantially equal to that through the frusto conic opening. The inner sections of the conduits connecting to the lateral openings and the chamber are abutted together and housed within blocks. The block housing at the forward lateral opening also contains a separate member or capillary which provides the frusto conic opening.

**3,412,750**  
**BACK SEALING ARRANGEMENT FOR GATE VALVE STEMS**  
Alexander S. Volpin, 10200 W. Broadview Drive, Miami Beach, Fla. 33154  
Filed Oct. 25, 1966, Ser. No. 589,293  
10 Claims. (Cl. 137—315)



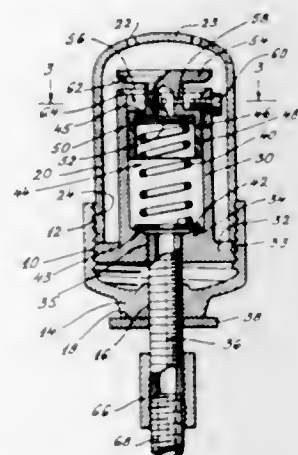
Stem and bonnet construction for non-rising stem gate valves enabling re-packing of such valves in both the open and closed positions while under line pressure.

**3,412,751**  
**STEM AND DISC ASSEMBLY FOR GLOBE AND ANGLE VALVES**  
James S. Hanson, Binghamton, and Alexander F. Walluk, Johnson City, N.Y., assignors to The Fairbanks Company, Binghamton, N.Y., a corporation of New York  
Filed May 3, 1966, Ser. No. 547,210  
6 Claims. (Cl. 137—331)



1. In a valve comprising a body having a fluid passage-way therethrough, a stem extending through a portion of said body and mounted for longitudinal movement therein, a disc rotatably mounted on one end of said stem and responsive to fluid flow to rotate relative to said stem, a seat engageable by said disc in the closed position of said valve to arrest fluid flow, said seat and said body portion defining a space of a given length therebetween along which said disc can be moved by the longitudinal movement of said stem; the improvement which comprises a flexible member disposed between said body portion and a portion of said disc, said flexible member being secured at one of its ends to one of said portions and having a length such that its other end engages the other of said portions within said space when said disc is a selected distance from said closed position and is spaced from said other portion as said disc approaches the closed position whereby said disc is prevented from rotating when said other portion is engaged by said member and is free to rotate as it approaches said closed position.

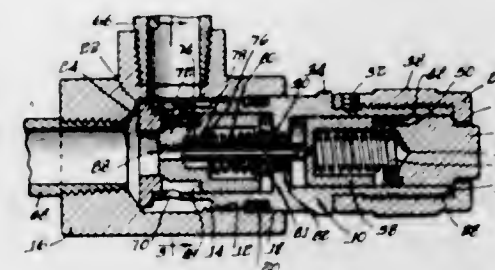
**3,412,752**  
**AIR ADMISSION REGULATOR VALVE FOR INTERNAL COMBUSTION ENGINE**  
Harry C. Gordon, P.O. Box 542, New York, N.Y. 10036, and Frederick E. Kort, 216 Eastern Way, Rutherford, N.J. 07070  
Filed Apr. 27, 1967, Ser. No. 634,369  
10 Claims. (Cl. 137—480)



The disclosure describes a valve which regulates admission of air into the air intake manifold of an internal combustion engine. The valve has an outer casing through

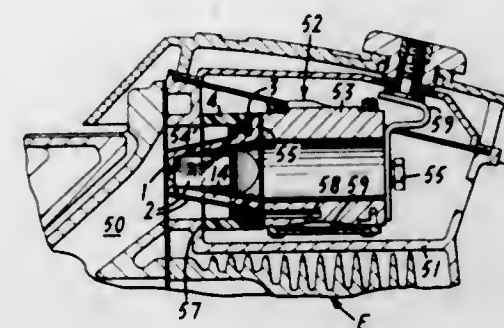
which holes are provided through which air enters the valve. Inside the casing is a valve cylinder with a slidable spring biased piston head. The piston head is normally open except when suction is sufficient in the valve cylinder to permit the piston head to close the valve cylinder by externally applied air pressure.

**3,412,753**  
**RELIEF VALVE CARTRIDGE**  
Stephen C. Baker, Hinsdale, Ill. (% Ste-Art Co., 1611 S. Newberry Ave., Chicago, Ill. 60608)  
Filed Oct. 23, 1965, Ser. No. 503,161  
6 Claims. (Cl. 137—490)



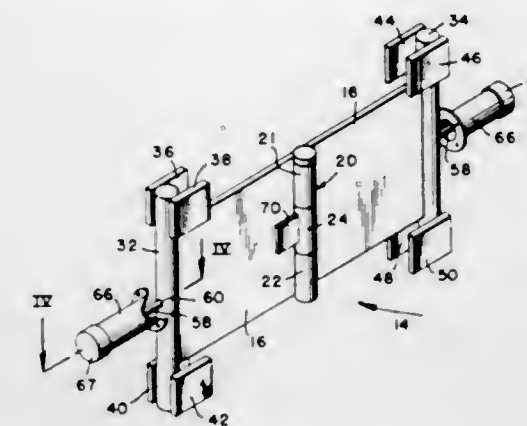
A relief valve in cartridge form consisting of a first stage and a second stage relief valve. The first stage relief valve and the second stage relief valve, as well as the cartridge body, are all substantially centered on the same longitudinal axis. The first stage relief valve operates when a predetermined pressure is exceeded at the inlet pipe. Operation of the first stage relief valve results in the interior of a poppet valve of the second stage being at the same pressure as in the discharge pipe. This results in a pressure differential across the poppet valve, and if this pressure differential is sufficient to overcome the force of a biasing spring, the second stage relief valve will open thereby permitting high pressure fluid to flow freely from the inlet pipe to the discharge pipe until excess pressure at the inlet has been sufficiently dissipated. At this time the second stage relief valve will close, followed by closing of the first stage relief valve.

**3,412,754**  
**PYRAMID REED VALVE**  
Chris Schou, Greenwich, Conn., and Thomas F. Pelagalli, Mamaroneck, N.Y., assignors to Textron, Inc., Providence, R.I., a corporation of Rhode Island  
Filed Mar. 15, 1966, Ser. No. 534,484  
12 Claims. (Cl. 137—512.1)



A reed valve for an internal combustion engine comprises a truncated pyramidal valve seat member of molded plastic with valve openings in flat side walls. Resilient reeds overlying the valve openings have base portions engaging cooperating portion of the valve seat member to position the reeds accurately and are held in place by a retaining collar of elastomeric material.

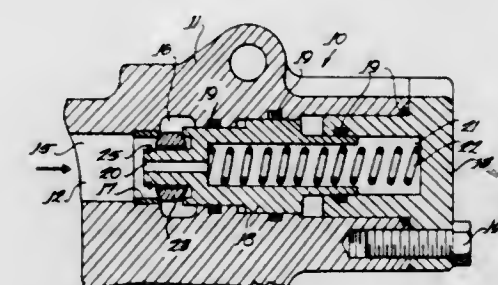
**3,412,755**  
**PRESSURE ACTUATED VALVE**  
Harry L. Mason, Lexington, Ky., assignor to the United States of America as represented by the Secretary of the Navy  
Filed May 24, 1966, Ser. No. 552,644  
9 Claims. (Cl. 137—517)



2. A valve for a fluid conduit wherein the valve is actuable by an upstream high pressure fluid condition comprising:

a pair of closure elements for closing said conduit; said closure elements having ends which are pivotally connected; means for supporting opposite ends of the closure elements to said conduit so that closure elements are pivotable from an open upstream folded position which opens said conduit to a closed conduit engaging downstream folded position which closes said conduit; means for engaging the closure elements and stopping their pivotable movement in a slightly upstream folded position; and means for biasing said closure elements toward their pivotal connection so that when the closure elements are in the slightly upstream folded position they are retained by an upstream biasing force component until the pressure condition overcomes said force component at which time the biasing means exerts a downstream force component on the closure elements to snap them closed against the fluid conduit.

**3,412,756**  
**POPPET VALVE HAVING OPPOSITELY DIRECTED SPHERICAL SEATING SURFACES**  
Daniel B. Shore, Niles, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware  
Filed Aug. 6, 1965, Ser. No. 477,724  
1 Claim. (Cl. 137—540)

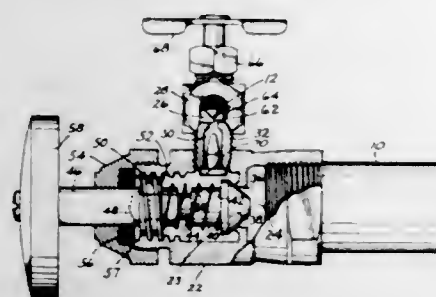


A poppet valve incorporating a valve stem carrying a floating portion having longitudinally spaced spherical surfaces. One spherical surface seals with a valve seat while the other surface seals with a shoulder on the valve stem.



3,412,757

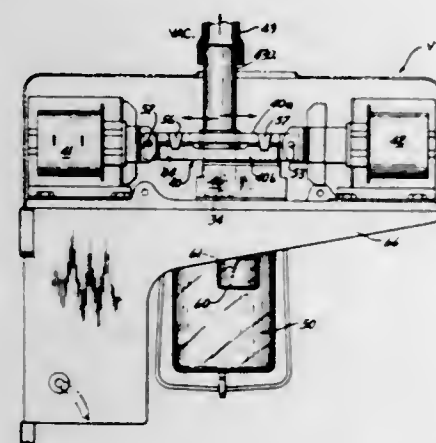
**MIXING VALVE FOR COLD AND HOT LIQUIDS**  
James B. Watts, Portland, Oreg., assignor, by mesne assignments, to McElligott Enterprises, Anchorage, Alaska  
Filed June 28, 1965, Ser. No. 467,464  
2 Claims. (Cl. 137-606)



A hollow one-piece valve body has a central mixing chamber with which communicates hot and cold water inlet ports and an exhaust port. An adjustable cold water check valve in the chamber seats resiliently against an internal seat in the cold water inlet port. A connecting nipple secured removably to the body at the hot water inlet port has an external seat for an adjustable needle valve and an internal seat for a reverse flow check valve in the mixing chamber confined movably between the latter seat and the cold water check valve.

3,412,758

**FLUID CONVEYING APPARATUS HAVING TWO-PIECE SLIDE VALVE**  
Lloyd F. Bender, Hayward, Wis. 54843  
Original application June 17, 1965, Ser. No. 464,628, now Patent No. 3,273,514, dated Sept. 20, 1966. Divided and this application May 23, 1966, Ser. No. 552,275  
2 Claims. (Cl. 137-625.65)



Fluid conveying apparatus having a fluid vessel for alternately accumulating and releasing fluid, including a solenoid operated, two pieces slide valve which can be shifted smoothly and positively without binding or leakage thereof.

3,412,759

**PIPE STOPPER**

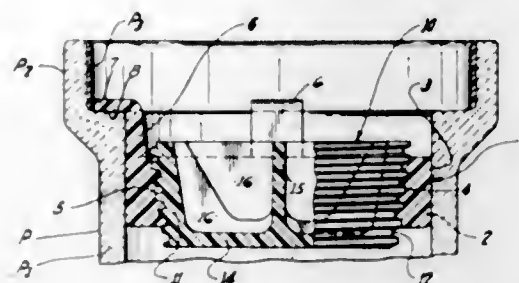
Charles Potter, Lakewood, and Paul Henley, Chagrin Falls, Ohio, assignors to American Vitrified Products Company, Cleveland, Ohio, a corporation of New Jersey

Filed May 6, 1966, Ser. No. 548,179  
9 Claims. (Cl. 138-89)

A pipe stopper for conventional vitrified sewer pipe of the bell and spigot type. The stopper comprises a gasket having an annular sealing portion of which the outer wall engages the inner wall of the pipe in spaced relation, endwise of the pipe, to the associated bell.

Gauging means are provided on the gasket so as to

limit the insertion of the sealing portion into the barrel of the pipe to a proper position. The sealing portion of the gasket has a tapered internal thread with which an externally threaded, relatively stiff, expanding plug cooperates to expand the sealing portion as the plug is screwed inwardly axially of the gasket. The gauging portion of

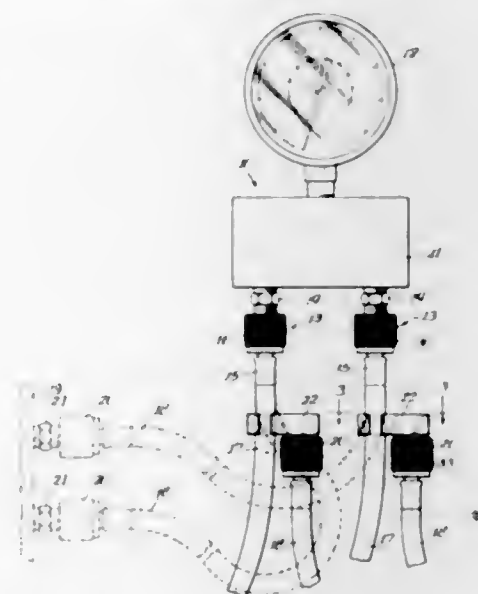


the gasket is more readily yieldable radially than the annular sealing portion so that substantially all of the expanding force of the plug is applied to the annular sealing portion. The axial length of the assembled plug and gasket are less than the external diameter of the sealing portion of the gasket. The plug has a tool engaging means by which it may be engaged and screwed into the gasket.

3,412,760

**HOSE ASSEMBLY**

George E. Franck, Morton Grove, Ill., assignor to Imperial-Eastman Corporation, a corporation of Illinois  
Filed Jan. 10, 1966, Ser. No. 519,566  
1 Claim. (Cl. 138-96)



A hose assembly including a flexible hose having a threaded free end and a rigid block provided with an open-sided slot and a threaded closure integral therewith adapted to have the threaded hose end attached thereto for closing the free end of the hose and maintaining the hose of a looped configuration.

3,412,761

**INSULATING BOOM AND METHOD OF MANUFACTURE**

Curtis W. Verrell and Alan T. Valentine, Fairview Park, Ohio, assignors to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey  
Application Sept. 28, 1964, Ser. No. 399,437, which is a continuation-in-part of application Ser. No. 195,155, May 16, 1962. Divided and this application June 9, 1966, Ser. No. 569,779  
6 Claims. (Cl. 138-153)

This invention relates to an article of manufacture which is a composite boom structure formed from resin

bonded glass fiber mat, resin impregnated woven glass type having control arms biased by coil springs for exerting fiber roving wound transversely to the axis of the booming pressure on the binder and which include means for

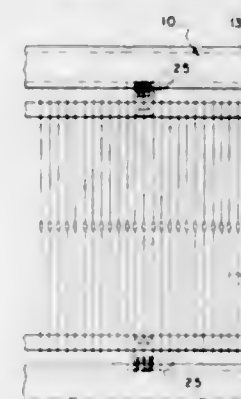


and containing longitudinally disposed woven glass fiber tapes to increase the strength of the boom.

3,412,762

**HEDDLE FRAME ASSEMBLY HAVING AN IMPROVED HEDDLE ROD SUPPORT**

Robert M. Goodman, Jr., Kennesaw Road, and Robert N. Suhr, 101 Chestnut Drive, both of Marietta, Ga. 30060  
Filed Nov. 21, 1966, Ser. No. 595,959  
11 Claims. (Cl. 139-92)

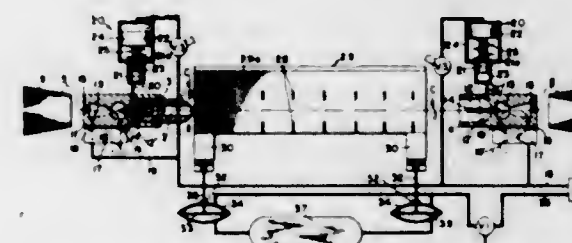


A heddle frame assembly including a rail, a heddle rod, said rod being supported by said rail through a securing means.

3,412,763

**PNEUMATIC LOOM**

Karl W. Wueger, Spencer, Mass., assignor to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts  
Filed June 7, 1966, Ser. No. 555,895  
8 Claims. (Cl. 139-126)



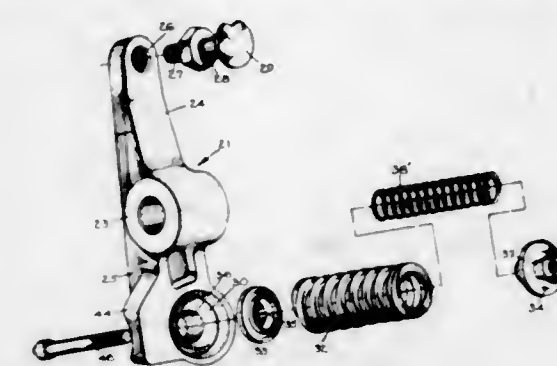
A loom in which filling is inserted alternately from each side of the loom from outside filling supply packages by shuttles which have grippers located centrally in a longitudinal bore. The shuttles are pneumatically threaded and launched to and from launching and receiving chambers located on both sides of the loom.

3,412,764

**BINDER CONTROL MECHANISM**

Gordon S. Robinson, North Smithfield, R.I., assignors, by mesne assignments, to John Donald Marshall and Horace L. Bomar, as trustees of the Carolina Patent Development Trust  
Filed Sept. 27, 1967, Ser. No. 671,043  
6 Claims. (Cl. 139-187)

A binder control mechanism for looms of the fly shuttle

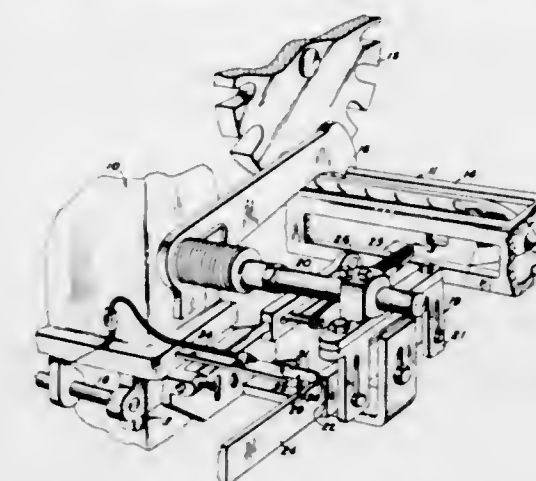


compressing said springs and releasing the tension applied thereto for facilitating the assembly and removal thereof.

3,412,765

**FILLING YARN CUTTER MECHANISM**

Robert Joseph Black, Box 577, Clarkesville, Ga. 30523  
Filed Dec. 12, 1966, Ser. No. 600,847  
7 Claims. (Cl. 139-263)

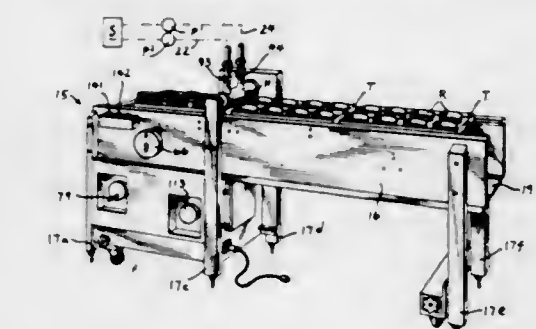


The invention disclosed herein is directed to a filling yarn cutter mechanism for a replenishing loom having an oscillating lay beam. The cutter mechanism is operated independently of the replenishing mechanism of the loom by engagement directly with the lay beam as it oscillates rather than through a mechanical linkage with the replenishing mechanism.

3,412,766

**FILLING MACHINE**

Ralph F. Anderson, 332 Calvin Park Blvd., Rockford, Ill. 61107, and John H. Herbert, Rockford, Ill.; said Herbert assignor to said Anderson  
Filed Mar. 4, 1966, Ser. No. 531,804  
11 Claims. (Cl. 141-161)



1. A filling machine including: a frame, discharge means for dispensing a material onto receiver means, means associated with the discharge means for supplying the material thereto, first conveyor means on the frame for

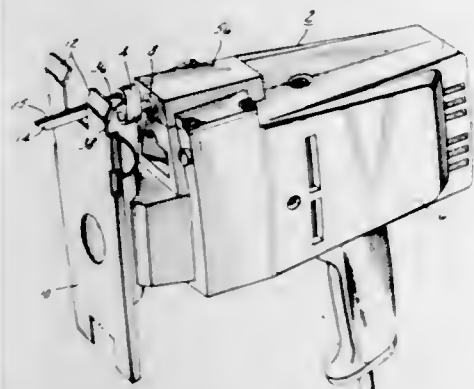


advancing one receiver means having one size past the discharge means, second conveyor means on the frame for advancing another receiver means having another size past the discharge means, conveyor drive means operatively connected to the first and second conveyor means for driving the same, means operatively connected to the conveyor means for selectively moving one conveyor means to an operative position and for moving the other conveyor means to an inoperative position, and means for operating the discharge means correlative to the conveyor means which is in operative position.

3,412,767

**SABRE SAW CHUCK**

James Green, Jr., Spencerport, N.Y., assignor to General Electric Company, a corporation of New York  
Filed June 30, 1966, Ser. No. 561,967  
4 Claims. (Cl. 143—68)

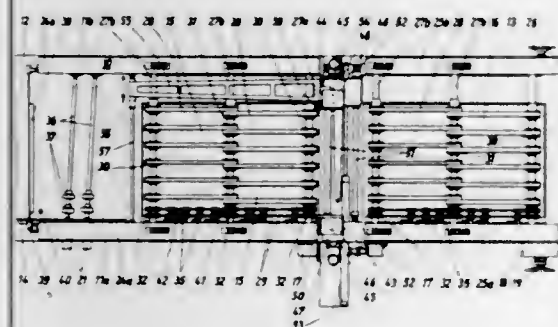


This invention discloses a sabre saw with a chuck of unique and simple construction that permits dual positioning of a saw blade in an offset arrangement for cutting close to a vertical surface.

3,412,768

**DEVICE FOR MACHINING THE LONGITUDINAL EDGES OF PLATE-SHAPED WORKPIECES OF DIFFERENT WIDTHS**

Helmut Torwegge, 18 Koblenzer Strasse, Bad Oeynhausen, Germany  
Filed Dec. 29, 1965, Ser. No. 517,358  
10 Claims. (Cl. 144—114)

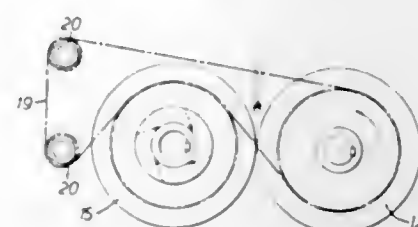


A device including a transversely movable tool for machining the longitudinal edges of plate-shaped workpieces of different widths including in combination a transversely movable optical means that automatically senses the width of a workpiece being fitted into the machining device. The machining device further includes means operably connecting the sensing device to the movable tool for the purpose of moving the tool in synchronism with the sensing device as it moves transversely of the workpiece feeding direction. In this way, the position of the tool is automatically adjusted to the narrowest width of the workpiece being machined.

3,412,769

**ROLLING EQUIPMENT**

George William Howard, Kirkella, England, assignor to Rose, Downs & Thompson Limited, Kingston-upon-Hull, Yorkshire, England, a British company  
Filed Apr. 12, 1965, Ser. No. 447,399  
3 Claims. (Cl. 146—1)

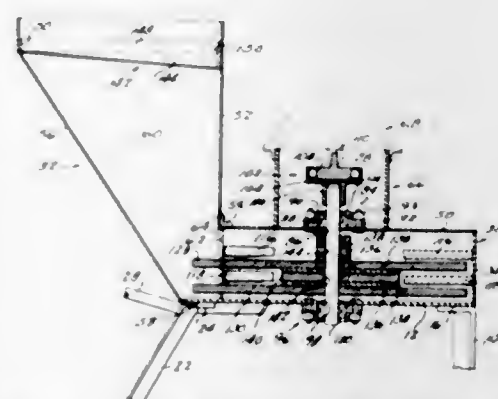


Rolling equipment for crushing or flaking vegetable or other matter consists of a pair of cylindrical rolls rotating in opposite directions with a narrow gap between the roll surfaces through which the matter is forced. One roll is driven faster than the other roll with a free-wheeling device in the roll drive means to prevent abnormal rolling pressures from developing.

3,412,770

**PORTABLE PULVERIZER**

Hursel F. Johnson, 307 Artesia Lane, Long Beach, Calif. 90805  
Filed Dec. 7, 1966, Ser. No. 599,797  
10 Claims. (Cl. 146—192)



1. A device of the character described, comprising a horizontal rotor housing, said housing having top and bottom walls, and a side wall extending between said top and bottom walls, said side wall being circular for a major portion of its length, said side wall being formed with tangential portions, said tangential portions having end portions extending beyond said bottom wall and defining a discharge chute, a vertical axis rotor disposed within said housing and concentric with the circular part of said side wall, said rotor comprising crossed and intersecting blade assemblies, each of said assemblies comprising vertically spaced plates, said plates having ends running close to said side wall, and vertically spaced horizontal fixed blades on the said side wall and extending inwardly therefrom, said fixed blades being interdigitated with the plates of the blade assemblies, means journalling the rotor in the housing, and means for rotating the rotor in a direction toward said chute.

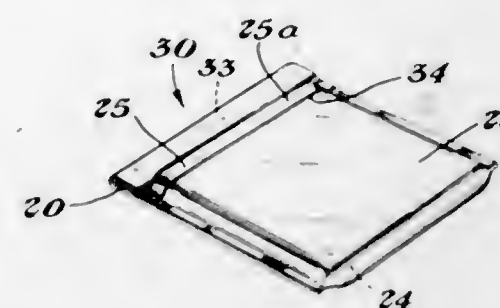
3,412,771

**POUCH AND METHOD FOR THE PREPARATION THEREOF**

Donald J. Ralph, Strongsville, Ohio, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
Filed June 26, 1967, Ser. No. 648,616  
6 Claims. (Cl. 150—7)

A pouch is prepared from a flexible sheet, the sheet

having a first surface and a second surface, at least the first surface being heat sealable to itself to provide a high



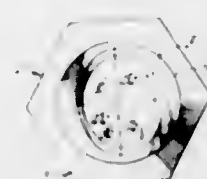
has a recess space between adjacent threads thereof which is larger in an axial plane than that defined by the triangle between adjacent threads of the locking thread convolution to freely accommodate metal swaged due to the thread flank interference. The locking thread convolution is preferably embodied in a lock nut and formed so as to provide a continuation of a plurality of free running threads in the lock nut.

strength bond, and the second surface being heat sealable to the first surface to give a low strength bond.

3,412,772

**PREVAILING TORQUE LOCK NUT**

Herbert J. Meyfarth and William E. Kalt, Cleveland, Ohio, assignors to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey  
Filed July 21, 1966, Ser. No. 566,797  
3 Claims. (Cl. 151—21)

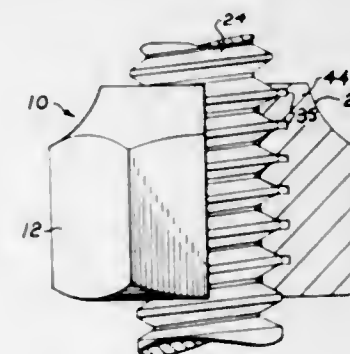


A self-locking fastener including a blank having a tapped bore the threads of which are of substantially equal depth. A crown on the blank is provided with a top end face having a circular outer edge and an irregularly shaped inner edge. Variations in the radial thickness of the end face provides inwardly hinged thread portions adjacent the thicker portions of end face.

3,412,773

**LOCK NUT**

Arthur R. Breed, Euclid, Ohio, assignor to The Lamson & Sessions Co., Cleveland, Ohio, a corporation of Ohio  
Filed Feb. 16, 1966, Ser. No. 527,965  
11 Claims. (Cl. 151—22)

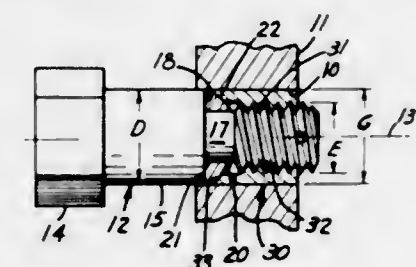


A locking thread convolution for a thread having a theoretical basic thread form. The locking thread convolution has a thread angle and pitch which is the same as that for a standard thread of the same basic thread form and a metal flank thickness which is wider than the maximum metal flank thickness of a standard thread of the basic thread form to provide for uniform thread interference along the flanks of the locking thread convolution when the latter is applied to a mating standard thread. The locking thread convolution also

3,412,774

**SAFETY BOLT**

Michael M. Schuster, Inglewood, Calif., assignor to Hi-Shear Corporation, Torrance, Calif., a corporation of California  
Filed July 29, 1966, Ser. No. 568,511  
1 Claim. (Cl. 151—69)

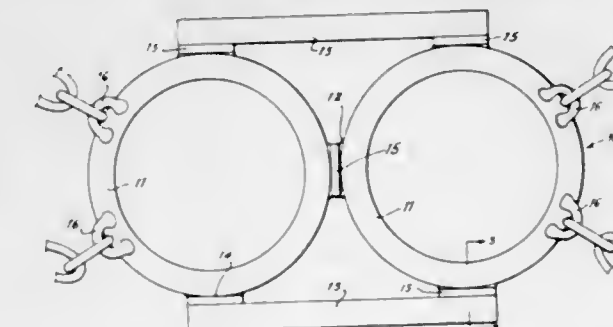


This invention relates to a safety bolt of the class which has an expansible spring washer, together with means carried by a bolt member for compressing the same in order that the said means and the snap ring may both pass freely through a workpiece, the snap ring being released by said means so as to maintain the bolt in its installed condition.

3,412,775

**PLATFORM-TYPE TRACTION STRUCTURE ASSEMBLY**

Roger L. Gower, P.O. Box 65, Canaan, Maine 04924  
Filed Sept. 13, 1966, Ser. No. 579,071  
7 Claims. (Cl. 152—229)



This invention relates to traction devices for motor-driven vehicles used in moving heavy loads over difficult terrain, and consists of a series of elements comprising multiple rings, tangentially connected to each other and to parallel bars, and having at said points of connection projecting lugs; said elements being so arranged that the parallel bars are disposed transversely with respect to the plane of the wheel when said traction assembly is mounted thereon.

3,412,776

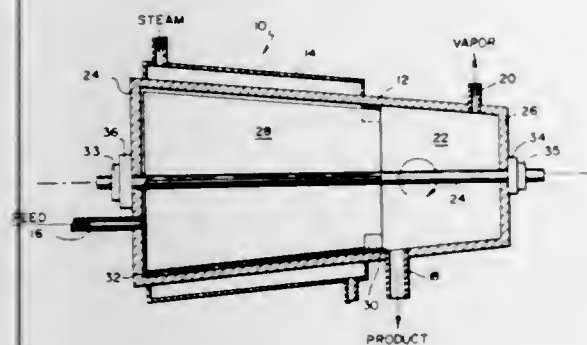
**ROTARY WIPED-FILM EVAPORATOR**

James Donovan, Cambridge, Mass., assignor to Artisan Industries, Inc., Waltham, Mass., a corporation of Massachusetts  
Filed Apr. 24, 1967, Ser. No. 633,203  
8 Claims. (Cl. 159—6)

A tapered horizontally-axial thin-film evaporator having projections at the peripheral edges of the rotor blades just before or adjacent the product outlet which project



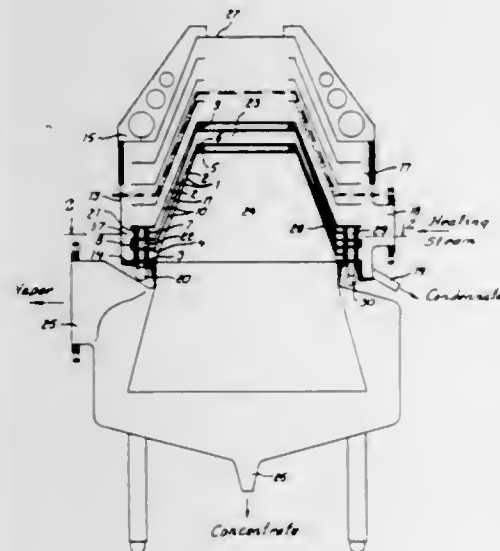
tions generate a hydraulic weir. The weir creates a thicker film just before the product outlet, which film enables the feed material being processed to be carried by the blades to the top of the evaporator and there replenish



the material being evaporated. The feed material without force is introduced at the feed end, at or slightly below the rotor shaft to form a liquid head which overcomes the frictional loss across the evaporator to the product outlet caused by the tapered floor.

### 3,412,777 FRUSTO-CONICAL FILM TYPE EVAPORATOR

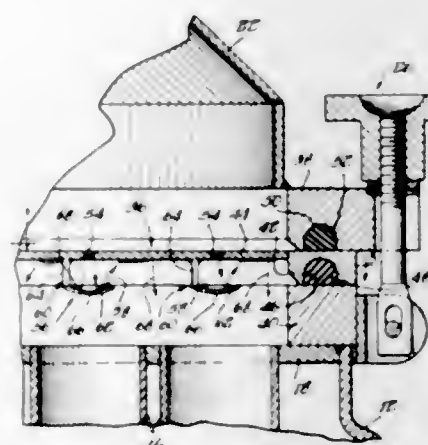
Rolf Axel Dönnell, Lund, and Björn-Olov Johansson, Lomma, Sweden, assignors to Alfa-Laval AB, Tumba, Sweden, a corporation of Sweden  
Filed July 13, 1966, Ser. No. 564,887  
7 Claims. (Cl. 159-13)



concentrate and released vapor passing through the inner unobstructed peripheries of said alternate channels to the central space within the inner peripheries, said conical plates being of two kinds alternating with each other, the plates of one kind having such a conicity relative to the conicity of the plates of the other kind that the distance between a pair of plates forming a said alternate channel increases in the direction from the outer to the inner diameters of the plates, while the distance between a pair of plates forming a said other channel decreases in said direction.

### 3,412,778 LIQUID DISTRIBUTOR FOR TUBULAR INTERNAL FALLING FILM EVAPORATOR

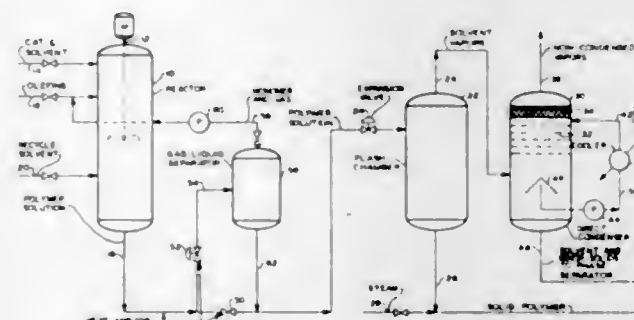
Chester J. Witt, Deerfield, Sigmund P. Skoli, Elmwood Park, and Harry G. Mojonner, River Forest, Ill., assignors to Mojonner Bros. Co., Chicago, Ill., a corporation of Illinois  
Filed Oct. 24, 1966, Ser. No. 589,070  
7 Claims. (Cl. 159-13)



A liquid feed distributor for an internal falling film tubular evaporator comprises a horizontal perforate plate located above the upper inlet ends of the vertical tubes. Liquid reflecting surface elements are pendantly supported from the plate below its perforations so that the issuing streams are reflected back to the underside of the horizontal plate for distribution before falling into the vertical tubes as films.

### 3,412,779 SOLVENT AND POLYMER RECOVERY IN A SOLUTION POLYMERIZATION PROCESS

Paul H. Wagner and Martin R. Reber, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware  
Filed Dec. 5, 1966, Ser. No. 599,206  
9 Claims. (Cl. 159-48)



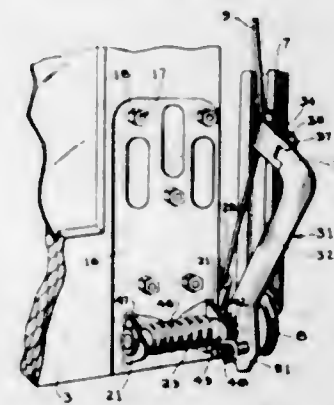
1. Apparatus for evaporating liquids, which comprises a series of frusto-conical plates nested together to form fluid-conveying channels between the plates and a central space within their inner peripheries, alternate channels serving for passage of a liquid to be evaporated, the other channels serving for passage of a vaporous heating medium, spacers of a first group located at the outer peripheries of the alternate channels and circumferentially sealing their peripheries, spacers of a second group located at the outer peripheries of said other channels and leaving free openings along said outer peripheries of said other channels between said last mentioned spacers for the passage therinto of said vaporous heating medium, inner spacers located at the inner peripheries of the plates and circumferentially sealing said other heating medium channels, said conical plates and spacers at the outer peripheries of the plates being axially ported to form an inlet duct for the liquid to be evaporated and communicating with said alternate channels, the

In recovering polymer from a pressurized solution polymerization process, solution is flashed in a flash chamber to precipitate solid polymer and vaporize solvent, a small concentration of powdered polymer appear-

ing in the vapor stream being recovered by passing said stream through a condenser equipped with vapor-liquid contacting means and contacting said stream therein with cooled condensate from the bottom of said condenser.

### 3,412,780 SLACK CABLE TAKE-UP

Charles C. Moler, Hartford City, Ind., assignor to Overhead Door Corporation, Hartford City, Ind., a corporation of Indiana  
Filed Aug. 2, 1966, Ser. No. 569,621  
3 Claims. (Cl. 160-191)



An upwardly acting door construction includes a door, track means by which the door is supported for a movement between open and closed positions, a cable connected to the lower end of said door and spring-biased take-up means connected to the cable and located above the door. A spring-biased arm is pivotally supported on the lower end of the door and engages the cable near its lower end whereby said cable is maintained in a taut condition at all times.

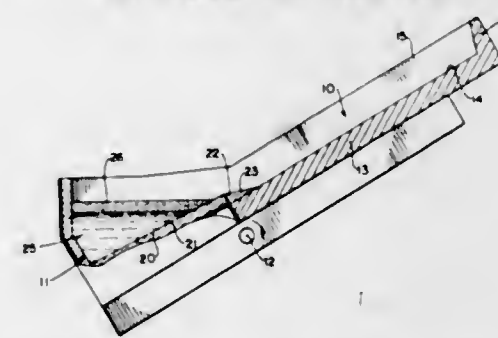
### 3,412,781 PROCESS OF USING A LOW CARBON STEEL COMPOSITION IN A CONTINUOUS CASTING PROCESS

John H. Richards, Penn Hills Township, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of Delaware  
No Drawing. Filed Sept. 21, 1965, Ser. No. 489,060  
8 Claims. (Cl. 164-76)

A process of using a low carbon steel composition in a method for the continuous casting of steel which comprises introducing to a casting mold a steel whose composition is adjusted to contain 0.01 to 0.08% carbon, 0.20 to 0.60% manganese, 0.03 to 0.08% silicon, not over 0.015% aluminum, and the balance essentially iron and incidental impurities and continuously casting same.

### 3,412,782 PROCESS OF PRODUCING CLAD SLABS

Howard A. Fromson, Rogues Ridge Road, Weston, Conn. 06880  
Continuation-in-part of application Ser. No. 412,448, Nov. 19, 1964. This application July 12, 1967, Ser. No. 652,871  
10 Claims. (Cl. 164-98)

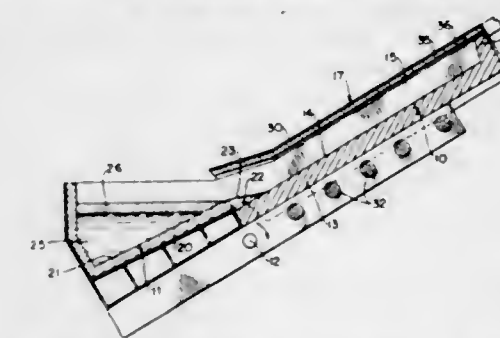


The invention resides in a process of casting a clad slab in a tiltable unit comprising a mold and a reservoir, con-

nected together and turntable about an axis from an elevated position through an angle of 90° or less, to a horizontal casting position. The mold has a mold cavity with an effective length greater than its effective depth. The basic material for forming the basic slab is teemed in the reservoir, while the unit is in initial elevated position, with the reservoir on the bottom and the mold above it. The unit is then turned about an axis to a casting position in which the mold is horizontal, the base material being transferred to the mold during this turning operation. The base material is permitted to solidify in the mold while the unit is in casting position to produce the clad slab. The unit is then turned about its axis back into elevated position, the reservoir is filled with fused clad material and the unit is returned to casting position. During this last operation the clad material is transferred from the reservoir to the mold and forms a layer on the base slab, which is solidified to form a lining on said slab.

### 3,412,783 ART OF CASTING FUSIBLE MATERIALS

Howard A. Fromson, Rogues Ridge Road, Weston, Conn. 06880  
Continuation-in-part of application Ser. No. 412,448, Nov. 19, 1964. This application July 3, 1967, Ser. No. 650,740  
6 Claims. (Cl. 164-122)



The disclosure relates to casting a body of fusible material in a unit having a mold and a reservoir connected together and tiltable about an axis of 90° or less. The mold has a mold cavity with an effective length greater than its effective depth, and the unit is turntable about an axis from an initial position with the mold elevated and the reservoir located below said mold. The material to be cast is teemed in the reservoir while the unit is in the initial position indicated and is turned about said axis through an angle of 90°, or less into casting position, in which the effective length of the mold extends substantially horizontal and its depth extends downward. During this turning operation, the material to be cast is transferred from the reservoir to the mold. During solidification, of the material in casting position of the unit, a heat shield is applied over the mold to inhibit and control heat radiation from the top surface of the body of material being cast, and is removed before the top of the body of material being cast is completely solidified.

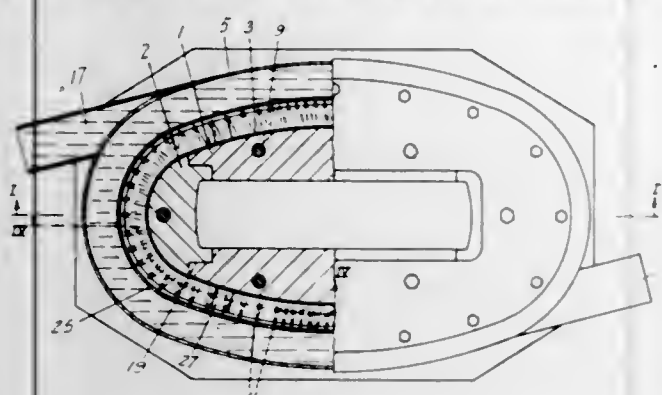
### 3,412,784 A MOLD FOR CONTINUOUS CASTING OF FLAT BARS HAVING AN OVAL GRAPHICAL INSERT SURROUNDED BY A COOLED RECTANGULAR JACKET

Hans Wieland, Ulm (Danube), Germany, assignor to Wieland-Werke Aktiengesellschaft, Ulm (Danube), Germany  
Filed Jan. 19, 1966, Ser. No. 521,649  
Claims priority, application Germany, June 18, 1965, W 39,370  
14 Claims. (Cl. 164-283)

A mold for continuously casting flat bars or plates of metal of rectangular cross-section having a ratio between the transverse length and width greater than 1:1, com-



prising a graphite insert having open opposite ends and a substantially oval outer peripheral surface and surrounding and defining a mold cavity of an oblong cross-section and a cooled metallic jacket surrounding said



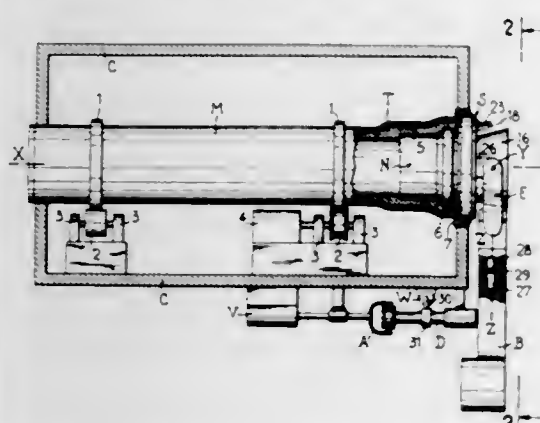
graphite insert and engaging therewith under tangential tension so as to exert compressive forces in radial directions upon said graphite insert at all points of its peripheral surface.

3,412,785

#### CORE SUPPORT FOR A CENTRIFUGAL CASTING Mould FOR CASTING PIPES HAVING A SOCKET, AND Mould PROVIDED WITH SAID SUPPORT

Pierre Edouard Lorange, Nancy, France, assignor to Centre de Recherches de Pont-a-Mousson, Pont-a-Mousson, France, a French body corporate  
Filed July 18, 1966, Ser. No. 566,114  
Claims priority, application France, July 26, 1965, 25,962

9 Claims. (Cl. 164—292)



1. A core support for a centrifugal casting mould for casting a pipe having a socket, said support comprising in combination: a cup for supporting and centering the core and having an annular recess and extended by an outwardly divergent deflecting cone; a locking ring inserted with clearance in the recess in the cup coaxially of the latter; compressed air blowing means for blowing air between the locking ring and the inner end face of the recess in the cup, a handling stirrup mounted at its ends on the locking ring to be pivotable about an axis intersecting the axis of rotation of the mould, and a handling arm on the end of which the stirrup is mounted to be slightly pivotable about an axis perpendicular to the pivot axis of the stirrup on the locking ring.

3,412,786

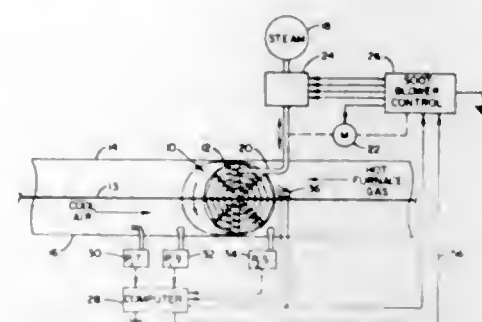
#### FOULING DEGREE COMPUTER FOR HEAT EXCHANGER CLEANER

Herbert E. Taylor, Longmeadow, Mass., assignor to The Air Preheater Company, Inc., Wellsville, N.Y., a corporation of Delaware

Filed Nov. 15, 1966, Ser. No. 594,420  
5 Claims. (Cl. 165—5)

Apparatus for controlling the operation of soot blowers associated with heat exchanger structure wherein the de-

gree of heat exchanger fouling is computed from signals commensurate with the sensed system parameters of upstream and downstream static pressure and upstream total pressure. Upon the computation of a signal indicative



of a predetermined degree of fouling, a cleaning cycle initiation signal will be generated and the computer will be deenergized until a complete cleaning cycle has been accomplished.

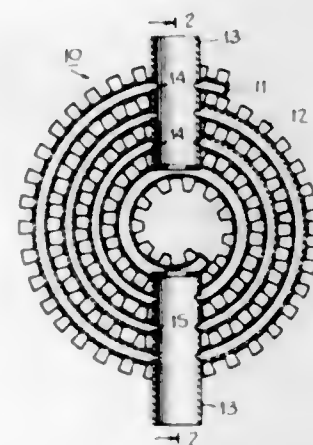
3,412,787

#### HEAT EXCHANGER

John D. Milligan, 650 Prospect Ave., Little Silver, N.J. 07739

Continuation-in-part of application Ser. No. 569,405, Aug. 1, 1966. This application Aug. 8, 1967, Ser. No. 677,811

22 Claims. (Cl. 165—153)



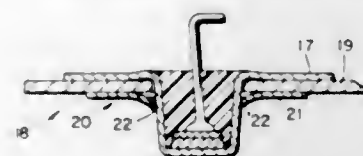
The components of the heat exchanger are wound in a spiral manner in a contiguous manner. One component is hollow to form a single continuous chamber for passage of a heated medium therethrough, the other allows flow of a coolant transversely through the heat exchanger over the walls of the chamber to cool the heated medium. The heated medium is introduced simultaneously into a number of convolutions of the first component.

3,412,788

#### SEMICONDUCTOR DEVICE PACKAGE

Daniel I. Pomerantz, Lexington, Mass., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed Mar. 11, 1966, Ser. No. 533,646  
10 Claims. (Cl. 165—185)



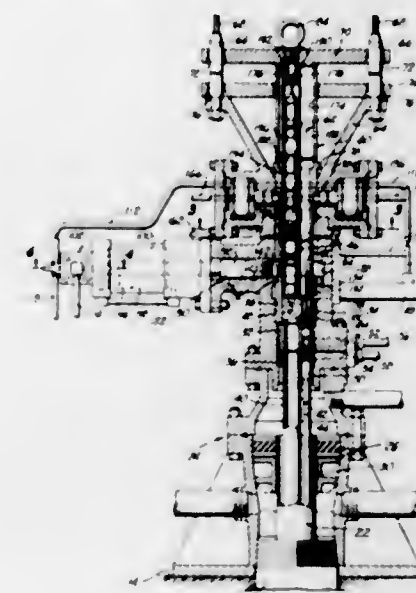
The combination of semiconductor means including a substantially threadless housing means and snap-on heat sink means which substantially locks with the threadless housing thereby retaining the semiconductor means and heat sink means in intimate cooperative relationship.

3,412,789

#### METHOD OF AND APPARATUS FOR RUNNING EQUIPMENT INTO AND OUT OF OFFSHORE WELLS

Russell G. Ralph, San Gabriel, and Clarence J. Coberly, San Marino, Calif., assignors to Kobe, Inc., Huntington Park, Calif., a corporation of California

Filed Apr. 12, 1965, Ser. No. 447,493  
7 Claims. (Cl. 166—6)



A method of running a free-fluid operated pump into and out of a submerged, offshore well, which involves transporting the pump between the surface of the water and the well head in a carrier capable of being connected to the well head so that the pump may be transferred from the carrier to the well, and vice versa. An apparatus for running the pump into and out of such a well which includes a movable carrier capable of containing and completely enclosing the pump and connectible to the well head in communication with the well, a system for guiding the carrier between the surface of the water and the well head, mechanism for connecting the carrier to the well head in communication with the well and for disconnecting it from the well head, and mechanism for transferring the pump between the carrier and the well.

3,412,790

#### WELL PACKER AND METHOD OF MANIPULATING SAME IN A WELL BORE

Cicero C. Brown, 8490 Katy Road, Houston, Tex. 77024

Filed Dec. 16, 1965, Ser. No. 514,211  
5 Claims. (Cl. 166—4)



A well packer and method of using same in a well casing to detect casing leaks, which method includes the steps of lowering the well packer into the casing on a

tubing string, rendering the well packer active, setting and releasing the well packer at different levels in the well casing responsive to longitudinal movement of the tubing string and pressure testing the casing for leakage with the well packer set at each level, and which well packer includes an operative connection with an active position and an inactive position together with means for preventing inadvertent movement between said active and inactive positions. This abstract is neither intended to define the invention of the application, which, of course, is measured by the claims, nor is it intended to be limiting as to the scope of the invention in any way.

3,412,791

#### VISCOSITY CONTROL BY REGULATED WATER CONTENT IN SOLUBLE OIL FLOODING

William B. Gogarty, Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

No Drawing. Filed May 25, 1967, Ser. No. 641,109  
18 Claims. (Cl. 166—9)

The leading and trailing edges of a bank of micellar dispersion used in secondary-type oil recovery is of a reduced viscosity and water content if these edges of the bank are to contact water which will be taken up by the injected micellar dispersion. When water combines with these edges of the bank, the viscosity of the edges is increased to about that of the adjacent micellar dispersion so that mobility can be improved.

3,412,792

#### OIL RECOVERY PROCESS

Harry W. Parker and Robert R. Harvey, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed June 5, 1967, Ser. No. 643,362  
3 Claims. (Cl. 166—9)

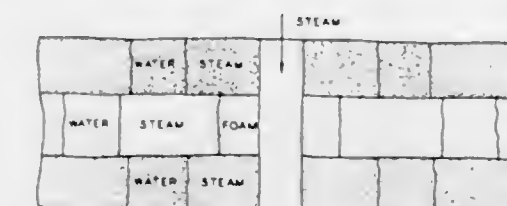
A method of producing oil utilizing an aqueous slug of an oil-displacing surfactant, a dispersing surfactant and minute solids, such as carbon black, which have been modified to increase the degree to which the particles are hydrophilic.

3,412,793

#### PLUGGING HIGH PERMEABILITY EARTH STRATA

Riley B. Needham, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Jan. 11, 1966, Ser. No. 519,907  
5 Claims. (Cl. 166—11)



A highly permeable formation is temporarily plugged with a foam by introduction of steam and a foaming agent into the formation whereby a foam having steam as its gaseous phase is formed and upon condensation of the steam due to loss of heat the foam collapses.

3,412,794

#### PRODUCTION OF OIL BY STEAM FLOOD

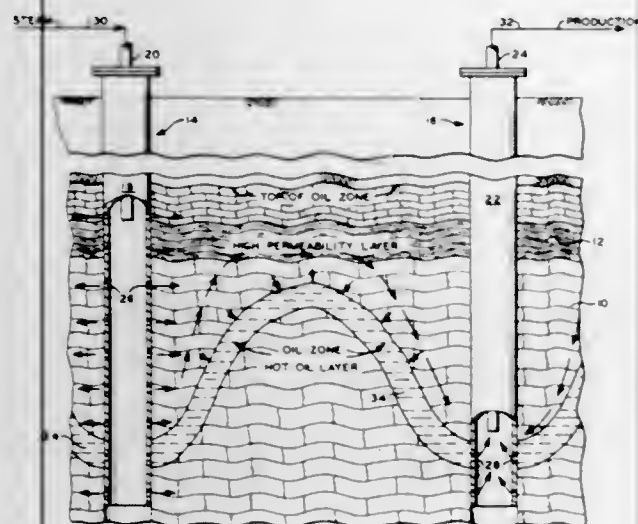
Emery M. Craighead, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 23, 1966, Ser. No. 596,559  
7 Claims. (Cl. 166—11)

Oil is produced from an oil stratum containing an upper level high permeability zone and penetrated by an

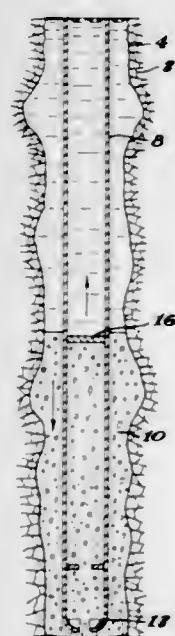


injection well and a production well by injecting steam thru said injection well into said stratum while restricting flow into said production well to a lower level of the stratum to force steam and oil thru the stratum below the high permeability zone. A noncondensable gas such as



natural gas, carbon dioxide, combustion gas and the like may be injected with, or sequential to, the steam, the noncombustible gas being caused to enter the high permeability zone to lower the zone's thermal conductivity, thereby reducing heat loss from this zone.

**3,412,795**  
**METHOD OF CEMENTING WITH REVERSAL OF FLOW OF THE SLURRY**  
Louis Lyman Terry, Great Bend, Kans., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
Filed Feb. 13, 1967, Ser. No. 615,676  
5 Claims. (Cl. 166—21)



An improved method of emplacing an aqueous hydraulic cement slurry in a space between confining walls, particularly when at least one thereof is the face of an earthen formation, which comprises injecting the slurry in a turbulent state in a surging action, attained by forcing the slurry beyond its ultimate place of emplacement and then reversing its flow back in the direction of ultimate emplacement. The forward and reverse direction of flow may be repeated if desired.

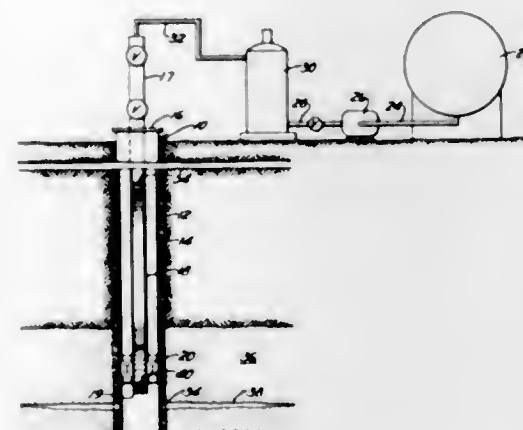
**3,412,796**  
**CONSOLIDATION OF SUBTERRANEAN FORMATIONS**

Henri G. G. Dekking, Cuyahoga Falls, Ohio, assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California  
No Drawing. Filed Aug. 17, 1966, Ser. No. 572,902  
22 Claims. (Cl. 166—33)

A method of consolidating loose, incompetent earth particles in a subterranean formation in which a liquid comprising a resin-forming material polymerizable to a hardened vinyl-type polymer and a minor proportion of a polymerization promoting free radical type catalyst is injected into the formation through an injection well, and thereafter polymerization of the resin-forming material is initiated by injecting a cocatalyst through said well and into said formation.

**3,412,797**  
**METHOD OF CLEANING FRACTURES AND APPARATUS THEREFOR**

Jimmie L. Huitt, Glenshaw, Bruce B. McGlothlin, O'Hara Township, Allegheny County, and Robert P. Trump, Middlesex Township, Butler County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware  
Filed Oct. 3, 1966, Ser. No. 583,592  
10 Claims. (Cl. 166—42)

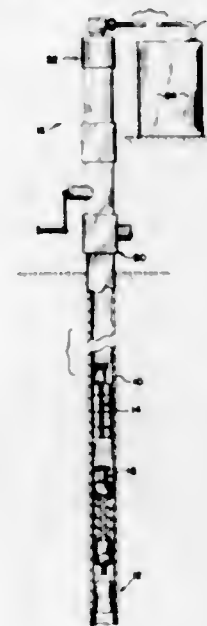


A method for fracturing and propping open fractures in subsurface formations penetrated by a well in which a liquid having a propping agent suspended therein is displaced down the well and into the formation by a compressed gas. After the liquid and propping agent are displaced into the fracture, the gas is held in the fracture for a period allowing dissipation of pressure within the fracture. Thereafter the gas is discharged from the well into the fracture at a rate controlled to avoid displacement of propping agent in the fracture and pressure on the well is reduced to cause the gas to flow from the formation to clean the fracture and formation. The apparatus includes a plug for placement between the gas and the liquid. The plug has a passage therethrough limiting the rate of flow of gas. The passage is closed by means which can be released to allow flow of the gas into the fracture at the desired time.

**3,412,798**  
**METHOD AND APPARATUS FOR TREATING GAS LIFT WELLS**  
Jerry K. Gregston, 3609 Brentwood, Odessa, Tex. 79760  
Filed July 10, 1967, Ser. No. 652,107  
7 Claims. (Cl. 166—68)

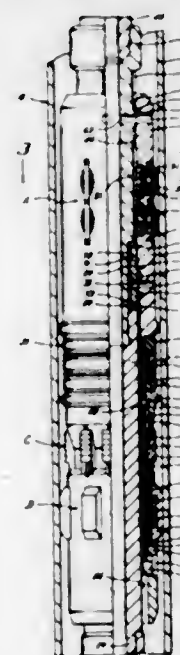
A chemical injection means associated with the lubricator and free plunger of a gas lift well, wherein the traveling plunger includes a cavity associated with valve means which cooperates with an injection means provided

in the lubricator in a manner to charge the traveling plunger with a quantity of chemical each cycle thereof. The traveling plunger falls to the bottom of the well where it strikes a bumper pad. Upon striking the bumper pad, a valve means associated with the plunger opens to thereby permit chemical to flow or intermingle with the fluid con-



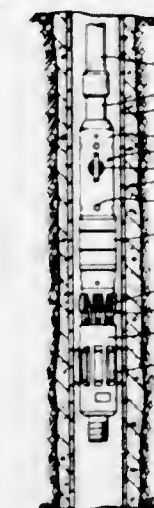
tained with the bottom of the well. Upon the traveling plunger striking the bumper pad associated with the lubricator, chemical is injected into the traveling plunger. Accordingly, each reciprocation, or cycle, of the plunger within the well tubing carries a specific quantity of chemical to the bottom of the well.

**3,412,799**  
**HYDRAULIC HOLD-DOWN RELEASE**  
Billy J. Ellis, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas  
Filed Aug. 3, 1966, Ser. 570,055  
10 Claims. (Cl. 166—120)



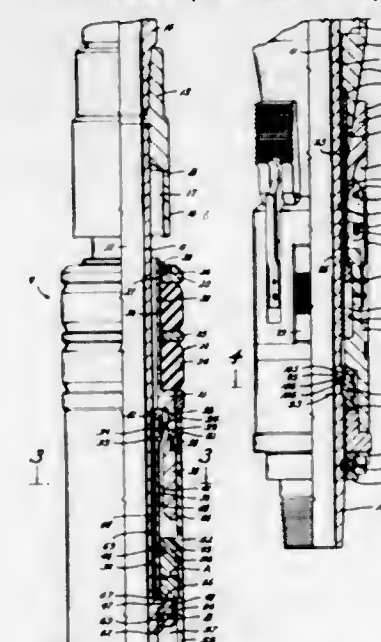
A well packer apparatus having support and hold-down expanding anchors and including a fluid passageway having an upper portion in communication with said hold-down anchors and a lower portion in communication with the well bore below the packer, and valve means for selectively preventing or permitting fluid communication between said passageway portions, as well as fluid communication between said upper passageway portion and the well bore above the packer.

**3,412,800**  
**WELL PACKER APPARATUS WITH HYDRAULIC HOLD-DOWN**  
James W. Kisling III, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas  
Filed Aug. 3, 1966, Ser. No. 570,080  
7 Claims. (Cl. 166—120)



Well packer apparatus having support and hold-down expanding anchors, and including a body member carrying hydraulically operable gripping means, a mandrel movable in said body member between upper and lower positions, bypass means for passing fluids through the packer, fluid passage means for communicating said gripping means with the interior of said mandrel, and valve means operable in the upper position of said mandrel to open said bypass means while closing said passage means, and operable in the lower position of said mandrel to close said bypass mean while opening said passage means.

**3,412,801**  
**RETRIEVABLE WELL PACKER APPARATUS**  
David E. Young, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas  
Filed Nov. 8, 1966, Ser. No. 592,803  
25 Claims. (Cl. 166—120)



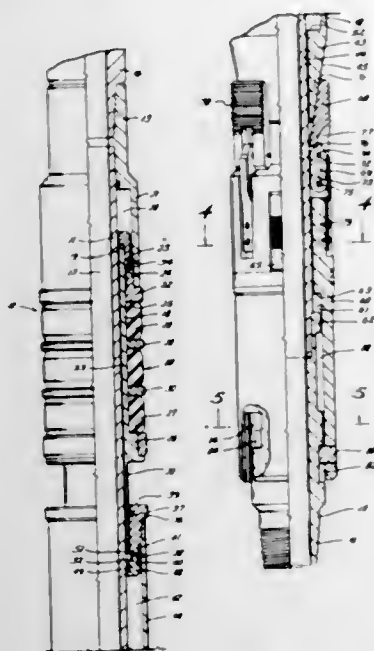
Well packer apparatus for use in a well bore including a body member, slip and expander means for anchoring against movement and expansible packing means for sealing off the well bore, a closable bypass passage extending between said body member and said packing means, and hydraulically operable means connected to said expander means and responsive to differences in fluid pressures above and below said packing means for exerting downwardly directed force on said expander means.



3,412,802

**RETRIEVABLE WELL PACKER APPARATUS**  
James W. Kisling III, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Nov. 8, 1966, Ser. No. 592,804  
20 Claims. (Cl. 166—120)



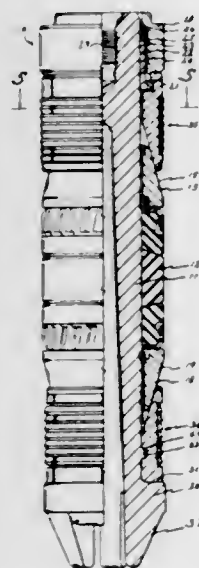
A retrievable well packer apparatus including a body member, expansible anchor and packing means for respectively anchoring against movement in a well conduit and packing off the well bore, said anchor and packing means being expansible in response to movement of said body member in one direction, said body member and packing being movable in the opposite direction without retracting said packing means, hydraulic means coupled to said expander means and exposed to fluid pressure on opposite sides of said packing means for holding said anchor means expanded during said movement in said opposite direction, and means for limiting movement of said body member and packing means in said opposite direction.

3,412,803

**WELL TOOL ANCHORS**

John E. Stachowiak, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Sept. 27, 1966, Ser. No. 582,394  
6 Claims. (Cl. 166—134)



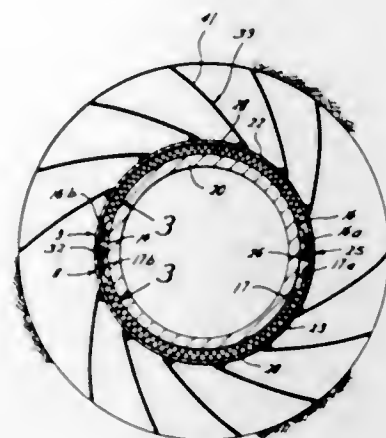
Apparatus for anchoring a well tool in a well bore, including a body member and an expander cone on said body member, a segmental or breakable support member

which can be shifted outwardly of said body member by said expander cone, and a plurality of expansible slip bands encircling and engaging said support member whereby outward shifting of said support member by said expander cone can expand said slip bands into gripping engagement with a well bore wall.

3,412,804

**MEANS FOR CLEANING THE OUTER SURFACE OF PIPE IN A WELL BORE PRIOR TO CEMENTING**

Charles W. Turbyfill, P.O. Box 490,  
Marshall, Tex. 75670  
Filed Oct. 14, 1966, Ser. No. 586,860  
1 Claim. (Cl. 166—173)

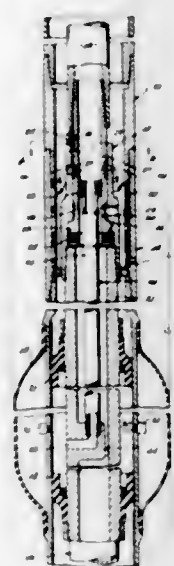


The present invention relates to a device for cleaning the outer surface of pipe of mud and debris when the pipe is in the well bore and prior to cementing operations in order to obtain a better bond between the cement and pipe surface.

3,412,805

**FLOW CONTROL VALVE**

Franklin P. Gribbin, 312 Garnsey Ave., Bakersfield, Calif. 93303, and Harold A. Glover, Bakersfield, Calif.; said Glover assignor to said Gribbin.  
Filed Aug. 14, 1967, Ser. No. 660,489  
7 Claims. (Cl. 166—184)



A versatile oil well tool having a flow valve provides for fluid flow into and out of a string of pipe, as well as the capacity to stop fluid flow, and permits either normal or reverse fluid circulation during various types of operations, such as inflating packers, cementing, gravel packing, and the like.

3,412,806

**MULTIPLE SAFETY VALVE INSTALLATION FOR WELLS**

John V. Fredd, Turner G. Garwood, and Phillip S. Sizer,  
Dallas, Tex., assignors to Otis Engineering Corporation,  
Dallas, Tex., a corporation of Delaware  
Filed July 14, 1965, Ser. No. 471,995  
61 Claims. (Cl. 166—72)

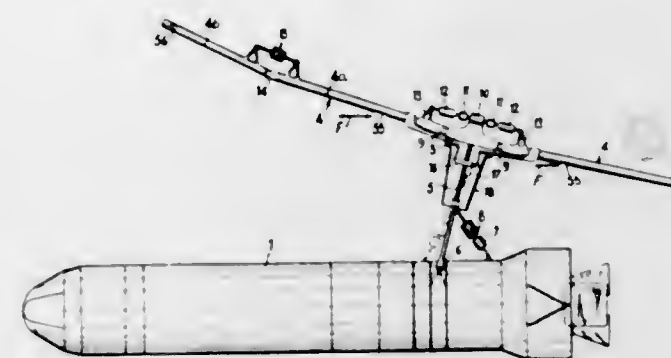


A subsurface flow control system for multiple zone wells, and the valves used in such system for controlling flow through a plurality of flow conduits in such multiple zone wells.

3,412,807

**DEVICE FOR ENSURING THE RE-ENTRY INTO THE ATMOSPHERE AND THE RECOVERY OF SPACE VEHICLES**

Marcel Kretz, Paris, France, assignor to Societe Giravions Dorand, Paris, France, a body corporate of France  
Filed Dec. 13, 1965, Ser. No. 513,377  
Claims priority, application France, Dec. 15, 1964, 998,633  
14 Claims. (Cl. 170—160.26)



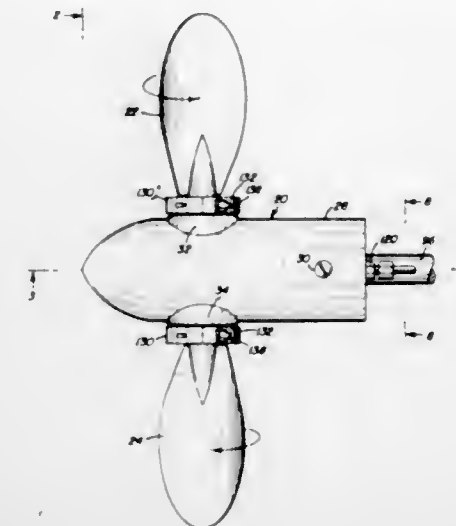
1. An aerospace vehicle having a body, a hub rotatably attached to the body and a rotating wing system supported by the body and comprising a plurality of blades hingedly connected to the hub and adapted for flapping motion with respect thereto, means associated with said hub for controlling the position of the mean plane of rotation of the blade-tips relative to the body of the vehicle and individual damping means associated with each blade and with the hub respectively and operative to individually damp the flapping motion of the blades in a direction at right angles to said mean plane of rotation at hypersonic and trans-sonic speeds of flight, whereby the plane containing the tips of the blades is maintained at a selected angle relative to the direction of the air flow and whereby

the heat generated at the stagnation point is evenly distributed over the whole surface of the blades.

3,412,808

**VARIABLE PITCH PROPELLER FOR BOAT**

Edward L. Parr, El Cajon, Calif., assignor to Wendell L. Thompson, Burbank, Calif.  
Continuation-in-part of application Ser. No. 618,766, Feb. 27, 1967. This application Oct. 6, 1967, Ser. No. 677,830  
7 Claims. (Cl. 170—160.31)

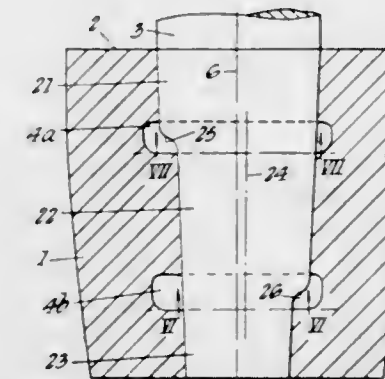


Mechanism for imparting a variable pitch to two propellers, employing a fluid actuated, reciprocating piston which when moved in either direction causes spiral and positive and simultaneous counter movements of equal value to be imparted to the two axially aligned propellers; one of the propellers having a bore for receiving and forming a bearing for the shank of the other propeller to thus provide bearings for one another.

3,412,809

**MARINE PROPELLERS**

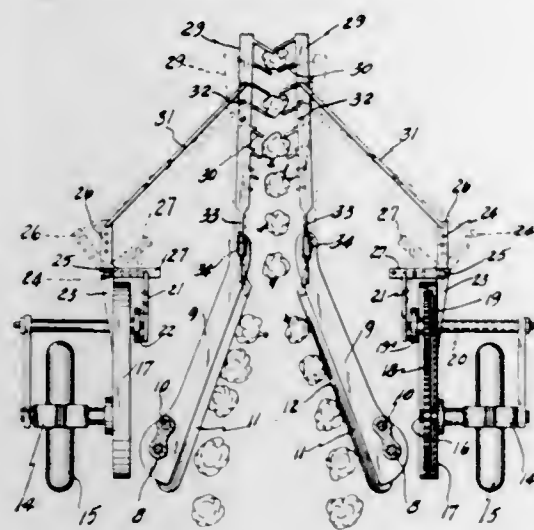
Edmund Stanley Shiret, Catford, England, assignor to Stone Manganese Marine Limited, London, England, a British company  
Filed May 10, 1967, Ser. No. 637,484  
Claims priority, application Great Britain, May 17, 1966, 21,790/66  
1 Claim. (Cl. 170—173)



A keyless marine propeller assembly comprising a driving shaft within a boss of the propeller, characterised in that the shaft is tapered but composed of three radially or angularly relatively offset portions, of which the fore and aft portions have their axes aligned with the axis of the main portion of the shaft and the centre portion is offset. Transitional zones between the portions lie in lightening chambers in the boss.

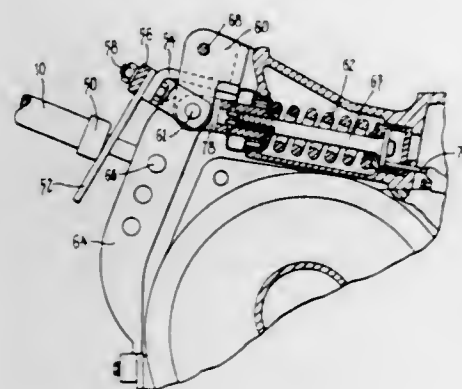


**3,412,810**  
**AGITATING MECHANISM FOR**  
**BEAN HARVESTERS**  
 Bernard Lemanski, 308 Silver St.,  
 Bad Axe, Mich. 48413  
 Filed Oct. 7, 1965, Ser. No. 493,681  
 6 Claims. (Cl. 171-83)



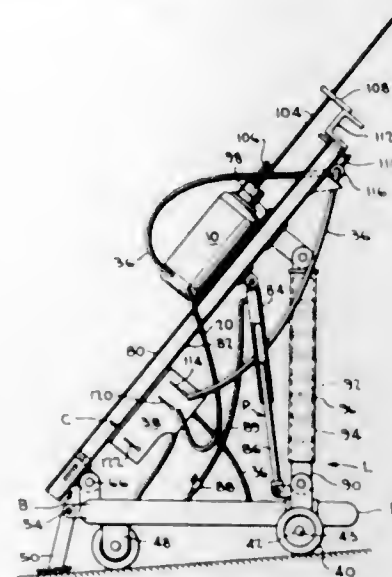
The present invention relates to agitating and actuating mechanism for bean harvesters, and more particularly to a mechanism which agitates and loosens the plants to shake the dirt and foreign matter from the roots.

**3,412,811**  
**DRAFT CONTROL FOR TRACTOR**  
 Howard G. Thompson, Livonia, Mich., assignor to  
 Massey-Ferguson Inc., Detroit, Mich.  
 Filed May 23, 1966, Ser. No. 552,189  
 7 Claims. (Cl. 172-7)



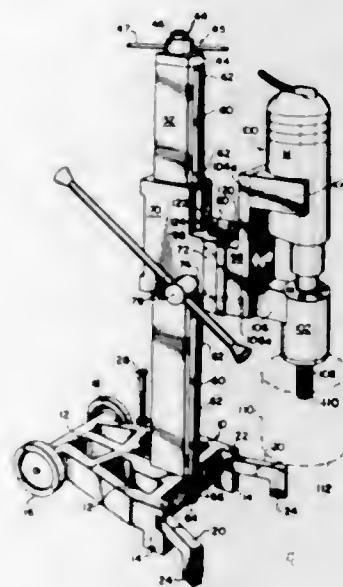
1. In a tractor having an implement draft linkage controlled by a hydraulic lift system, first spring means, first force transmitting means connecting said linkage to said first spring means to cause the same to deflect in accordance with draft loads in the linkage, control means responsive to the deflection of said first spring means by said linkage for controlling the raising and lowering of the linkage by the lift system, second force transmitting means including second spring means connecting said linkage with said first spring means and effective to vary the draft load in the linkage required to cause a predetermined deflection in said first spring, and means carried by said linkage to vary the deflection of said second spring means in accordance with changes in the angular relationship between the linkage and the tractor so that said control means is operated in accordance with changes in draft loads as well as changes in the angular relationship between the links and the tractor.

**3,412,812**  
**PORTABLE ADJUSTABLE MINE**  
**DRILLING DEVICE**  
 Henry Kindsfater, Lead, S. Dak. 57754  
 Filed Oct. 6, 1966, Ser. No. 584,729  
 1 Claim. (Cl. 173-23)



A portable, adjustable mining device which includes a track and a drilling machine. A mounting bracket adjustably supports the drilling machine on the track and means are provided to advance the mounting bracket along the track. The drilling machine has a fluid actuated drive motor and a safety shut-off valve operably connected thereto. The track is mounted on a portable frame which also supports means for supplying actuating fluid to the fluid actuated drive motor and an air reservoir which supplies air to feeder control devices and other operable means.

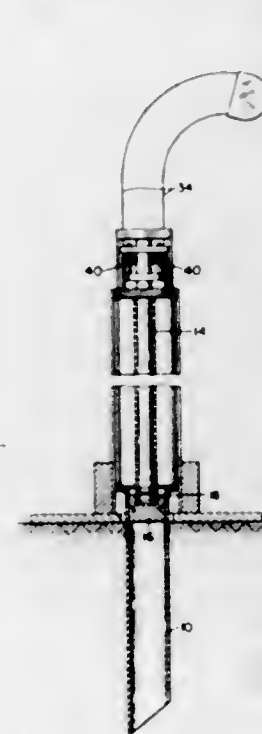
**3,412,813**  
**CORE DRILL STAND**  
 Bert E. Johnson, 4423 N. Sheridan Road,  
 Chicago, Ill. 60640  
 Filed June 15, 1967, Ser. No. 646,218  
 7 Claims. (Cl. 173-141)



A core drill stand for operating upon concrete and similar hard materials. A wheeled base has a hollow tubular standard rigidly secured thereto and reinforced by internal struts. A vertically shiftable carriage detachably receives a motor and spindle unit and is provided with a coarse feed and a fine feed adjustment which are selectively operable. An outrigger device maintains the stand against undue tilting and such device also is used to steady the rotating core drill until the latter finds a center in the

work being drilled. A self-tightening connection is provided between the carriage and the motor and spindle unit.

**3,412,814**  
**HYDROSTATIC CORER**  
 Andre M. Rosfelder, La Jolla, Calif., assignor, by mesne  
 assignments, to the United States of America  
 Filed June 28, 1967, Ser. No. 650,164  
 10 Claims. (Cl. 175-6)

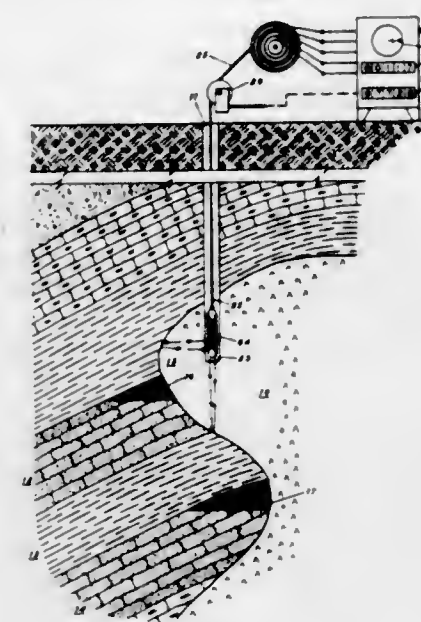


The present invention relates to a hydrostatic corer which may be used for obtaining core samples from the bottom of a body of water such as the ocean. The corer includes a coring barrel which at a selected time is powered by hydrostatic pressure within the body of water. The hydrostatic motive force is obtained by providing a vacuum chamber within the coring barrel, this vacuum chamber normally being at atmospheric pressure. A pair of pistons seal the top and bottom of the vacuum chamber, the top piston being adapted to drive the coring barrel into the water bottom and the bottom piston being adapted to remain stationary on the water bottom and undergoing piston action within the coring barrel during the barrel's penetration. Stability of the hydrostatic corer is accomplished by a skirt at the bottom of the corer which is subjected to a vacuum to draw it tight against the water bottom prior to penetration of the coring barrel.

**3,412,815**  
**ELECTROMAGNETIC RADIATION METHOD FOR**  
**GUIDING THE DRILLING OF OIL WELLS AFTER**  
**THE BOREHOLE HAS ENTERED A MASSIVE**  
**EARTH FORMATION OF CHEMICALLY DEPOSITED**  
**MATERIAL, BY A MISTAKE, ACCIDENT,**  
**OR THE LIKE**  
 William T. Holser, La Habra, Robert R. Unterberger,  
 Fullerton, and Stanley B. Jones, Whittier, Calif., as-  
 signors to Chevron Research Company, San Francisco,  
 Calif., a corporation of Delaware  
 Continuation-in-part of application Ser. No. 253,339,  
 Jan. 23, 1963. This application Nov. 14, 1966, Ser.  
 No. 594,077

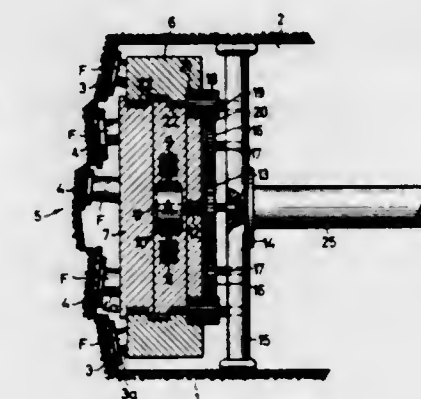
13 Claims. (Cl. 175-41)  
 A method for aiding a driller-operator to redirect a borehole that has, by mistake, accident, or the like, entered a first massive rock formation of chemically deposited materials, such as a salt dome, into contact with a second earth formation having oil reservoirs in loca-

tional association with the interface formed between the first and second formations. The first-mentioned formation is irradiated with electromagnetic energy from an electromagnetic generator in the borehole. By measuring the two-way travel time of the irradiated energy with re-



spect to the time of reception of reflected energy from the interface, the distance to the interface from the borehole is determined, whether the interface lies below or at a lateral distance from the borehole. With this knowledge, the operator redirects the well bore to encounter the second earth formation and its associated oil reservoirs.

**3,412,816**  
**TUNNEL BORING HEAD HAVING RELATIVELY**  
**ROTATING CONCENTRIC SECTIONS**  
 Hermann Lautsch, 190 Feldhauserstrasse,  
 435 Gladbeck, Germany  
 Filed July 1, 1966, Ser. No. 562,331  
 Claims priority, application Germany, July 26, 1965,  
 L 51,221  
 4 Claims. (Cl. 175-106)



A boring machine for boring underground tunnels having two carrier bodies, each of which is adapted to carry on its forward face a plurality of cutting tools. The carrier bodies are concentrically mounted, one within the other for mutually independent rotation about a common axis. For rotating the carrier bodies, there is a drive motor having a rotor and a stator. The rotor is rigidly connected to the first carrier body for rotation with it in one direction of rotation, and the stator is mounted for rotation about the common axis. The stator has a coaxial shaft which has bearing in a support member, and on this shaft fixed for rotation is a sun wheel. On the respective carrier bodies and facing each other

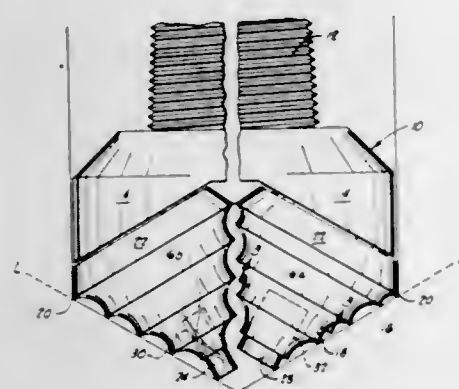


are external and internal gear teeth, with which a pinion fixed for rotation to the support member, meshes. A planetary drive including the sun wheel and at least one planet wheel fixed for rotation to the support member, meshes with said pinion thereby to drive from the stator the second carrier body in a direction of rotation opposite to that of the first carrier body. The support member has a shaft disposed along the common axis of rotation of the carrier bodies, and which is mounted on a body portion of the machine.

3,412,817

**ROLLER CONE DRILL BIT**

Donald R. Reichmuth, Austin, Tex., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware  
Filed Nov. 10, 1965, Ser. No. 507,172  
9 Claims. (Cl. 175—341)

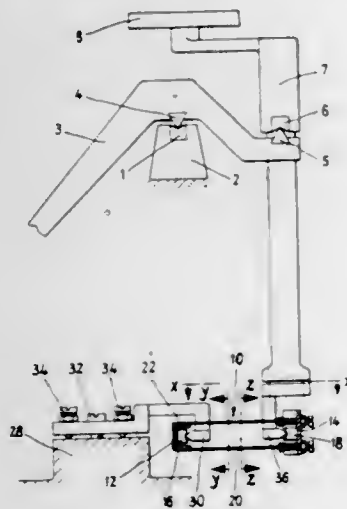


A roller cone rock bit having a cylindrical extension positioned at the apex of one or more of the roller cones, which cylindrical extension protrudes into the gap between the apices of the several roller cones and mills and fractures the small cone of material which tends to form in the center of a hole during drilling.

3,412,818

**PRECISION BALANCE WITH PARALLEL MOTION LINKAGE**

Ludwig Weickhardt, Göttingen, Germany, assignor to Sartorius-Werke GmbH (und vormals Goettinger) Präzisionswaagenfabrik GmbH, a German company  
Filed Nov. 15, 1966, Ser. No. 594,608  
Claims priority, application Germany, Feb. 18, 1966, S 102,104  
8 Claims. (Cl. 177—255)



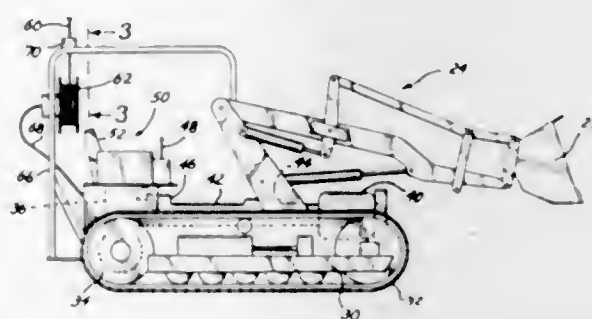
1. A precision balance, which comprises a frame, a balance beam, a pan carrier, a fulcrum joint connecting said balance beam to said frame for a pivotal movement in a pre-determined plane, an outer joint pivotally connecting said pan carrier to said beam, first and second knife edges provided on said frame and said pan carrier,

respectively, and a parallel motion linkage for a vertical guidance of said pan carrier, said linkage comprising first and second V-bearings engaging said first and second knife edges, respectively, first and second mountings carrying said first and second V-bearings, respectively, and spaced apart, parallel tension elements connecting said first and second mountings and extending substantially in a plane which is parallel to said predetermined plane, said pan carrier carrying a pan which is disposed above said beam and laterally with respect to said pan carrier so that said linkage is stressed in tension.

3,412,819

**TRANSPORTATION SYSTEM INCLUDING ELECTRIC VEHICLE**

Le Roy W. Kruckman, Rte. 1, Box 42, Newberg, Oreg. 97132  
Filed Oct. 14, 1966, Ser. No. 586,734  
2 Claims. (Cl. 180—2)

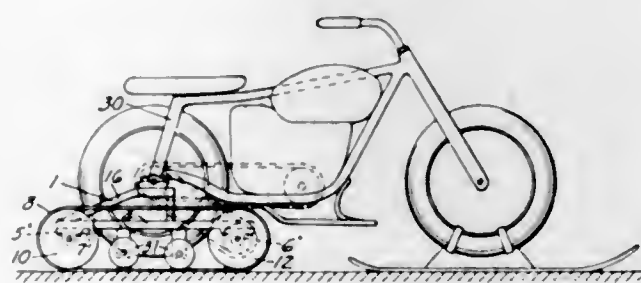


A transportation system comprising an electrically powered dirigible vehicle which includes an electric motor and a power train connecting the motor to ground-traveling devices on either side of the vehicle. The power train includes a shuttle clutch disposed between the electric motor and steering clutches for the two ground-traveling devices, which is adjustable to produce forward and reverse operation of the vehicle. Electric power for the motor is derived from a flexible conductor anchored at an elevated point and extending in a suspended reach downwardly to the vehicle, with such reach suspended over the surface which supports the vehicle.

3,412,820

**ENDLESS TRACK ATTACHMENT FOR MOTORCYCLES**

Glen L. Wachholz, 1283 Osceola, Ave., St. Paul, Minn. 55105  
Filed July 26, 1966, Ser. No. 567,873  
4 Claims. (Cl. 180—5)



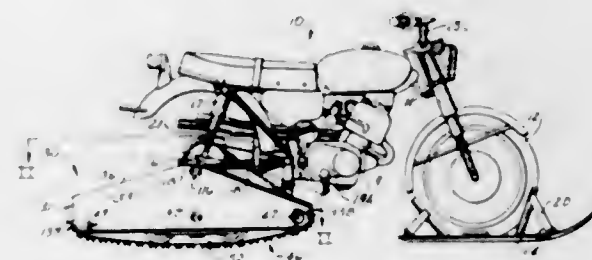
1. A motor driven wheeled vehicle having a rear axle, a single rear wheel on said axle, and a vehicle frame supported by said rear axle on each side of said rear wheel, in combination with a rear propulsion attachment to adapt said vehicle for winter use without removal of said vehicle's rear wheel, said rear propulsion attachment comprising a generally horizontally disposed propulsion attachment frame, continuous track assemblies mounted outwardly of said vehicle frame on opposite sides of said propulsion attachment frame, means for simultaneously

driving each of said continuous track assemblies from said vehicle, and detachable means providing rotatable attachment of said propulsion attachment frame about the end portions of said vehicle's rear axle and being positioned sufficiently above the lowermost portions of said continuous track assemblies to elevate said vehicle rear wheel above said lowermost portions.

3,412,821

**TRACK FOR MOTORCYCLE**

Alfred H. Humphrey, Kalamazoo, Mich., assignor to General Gas Light Company, Kalamazoo, Mich., a corporation of Michigan  
Filed Sept. 9, 1966, Ser. No. 578,360  
11 Claims. (Cl. 180—5)

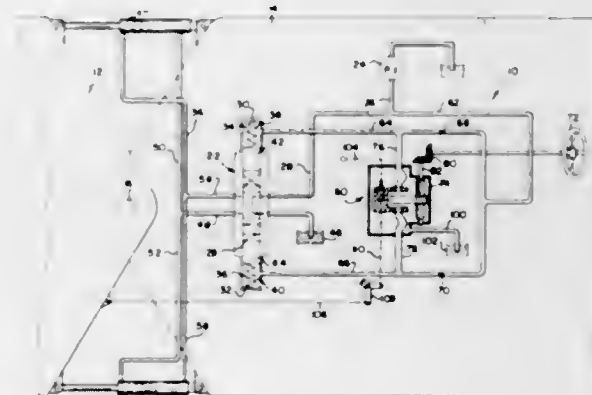


A track conversion unit for a motorcycle which, upon removal of the rear wheel of the vehicle, may be fastened to the frame of the motorcycle for driving same by means of an endless track. The conversion unit is affixed to a pair of rearwardly extending frame members of the motorcycle by means of a bracket member extending laterally thereacross. The conversion unit contains a carriage having a plurality of rollers mounted thereon in rolling engagement with the inner periphery of the track. Resilient means coact between the carriage and the motorcycle housing for allowing relative transverse tilting therebetween.

3,412,822

**VEHICLE POWER STEERING SYSTEM**

Michael H. Canning, Libertyville, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware  
Filed Aug. 15, 1967, Ser. No. 660,816  
7 Claims. (Cl. 180—79.2)

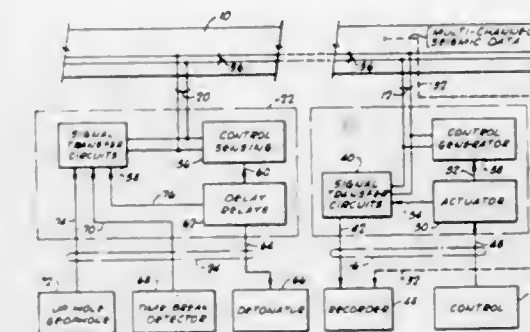


A power steering system for a vehicle having a pilot operated steering control valve operated under influence of a flapper type pilot control valve producing pilot control pressures responsive to steering signals initiated by the operator. The system provides selective follow-up action by displacing elements of the pilot control valve relative to the flapper responsive to steering movements of the vehicle. When a fast steering mode is desired the follow-up function may be quickly deactivated.

3,412,823

**SEISMIC SURVEY INTERCONNECTION SYSTEM**

Lawrence R. De Bell, Oklahoma City, Okla., assignor to Centronics Inc., Oklahoma City, Okla., a corporation of Oklahoma  
Filed Aug. 7, 1967, Ser. No. 658,680  
14 Claims. (Cl. 181—5)

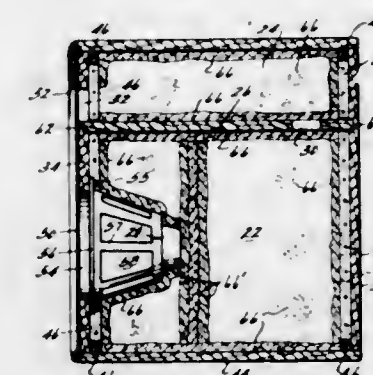


Apparatus for use in geophysical prospecting systems wherein a single wire pair is utilized for non-interfering transmission of voice communication, shot firing signal, time break information, and uphole information. A single wire pair is utilized to transmit a constant frequency control signal which serves to pre-condition the circuitry prior to shot firing, and voice communication between the energy source and field recording positions can also take place during this pre-shot period; the control signal is then varied to detonate or initiate seismic energy generation and, thereafter, the time break information and uphole information are transmitted successively in non-interfering relationship over the same wire pair.

3,412,824

**SPEAKER CABINET ENCLOSURE**

James C. Armstrong, Colerain Township, Hamilton County, Ohio (4017 Springrock Drive, Cincinnati, Ohio 45239)  
Filed Feb. 17, 1967, Ser. No. 616,891  
13 Claims. (Cl. 181—31)



A speaker cabinet enclosure having a main resonating chamber, a speaker unit mounted therein and having its cone directed towards an opening in a wall of such enclosure, an auxiliary resonating chamber, such chambers being separated by a baffle plate, and a pair of tuning ports, each adjustable relative to the other by increasing or decreasing their respective spacial areas. The smaller of such ports is disposed in the baffle plate in distant relation to the speaker unit. The relative sizes of these tuning ports and adjustment in sizes thereof relative to each other control the efficiency and/or degree of perfection of reproduction of sound through operation of the enclosure. The size of each tuning port can be described in theoretical terms as having a plurality of "long lines" parallel to its major (or longest) axis and a plurality of "short lines" parallel to its minor axis, and is more fully and is completely described in an understandable manner in the following specification. Briefly, higher frequencies of sound resonate along the "longer lines" of a tuning port and lower frequencies of sound resonate along



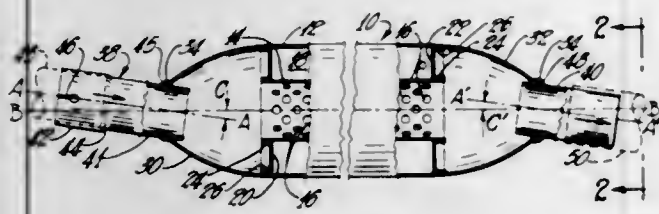
the "shorter lines" of a tuning port. Insulation such as fiberglass is mounted about the interior of the enclosure in accordance with description thereof in the specification. The cabinet is airtight in its formation of walls and baffle plate, ensuring proper wave propagation within the speaker enclosure resulting in faithful reproduction of sound.

3,412,825

# SILENCER OR MUFFLER AND METHOD OF PRODUCING SAME

James R. Hall, Toledo, Ohio, assignor to Oldberg Manufacturing Company, Grand Haven, Mich., a corporation of Michigan

Filed Aug. 11, 1967, Ser. No. 660,049  
7 Claims. (Cl. 181-61)



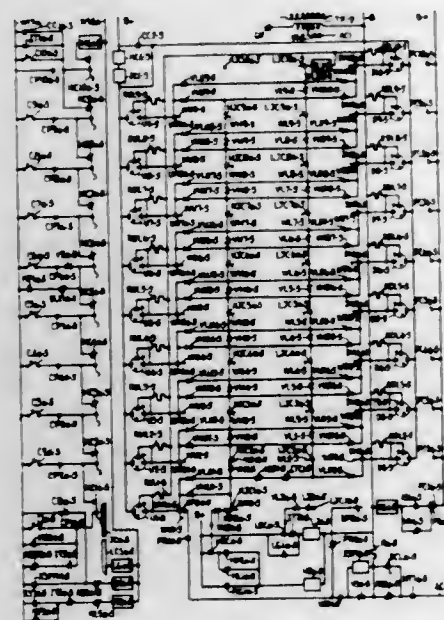
This invention relates to sound attenuation apparatus and more especially to a silencer or muffler and method of producing same for attenuating sound waves of an exhaust gas stream of an internal combustion engine of an automotive vehicle and embraces a one-piece tubular muffler shell with dome-shaped smoothly-curved end regions in combination with tubular bushings or nipples fitted into openings at the ends of the muffler shell in a manner whereby the bushings or nipples are adjustable to various angularities and the bushings or nipples in adjusted position welded to the ends of the muffler shell.

3,412,826

# ELEVATOR CONTROL SYSTEM

William Frank Glaser, Eastchester, N.Y., assignor to Otis Elevator Company, New York, N.Y., a corporation of New Jersey

Continuation of application Ser. No. 304,163, Aug. 13, 1952. This application Jan. 3, 1963, Ser. No. 249,977  
32 Claims. (Cl. 187-29)



1. A control system for a plurality of elevator cars serving a plurality of landings including terminal landings comprising: call registering means for each of said landings; means for registering traffic conditions; means responsive to said traffic conditions registering means under intermittent traffic conditions for causing operation of one or more of the cars on an intermittent basis;

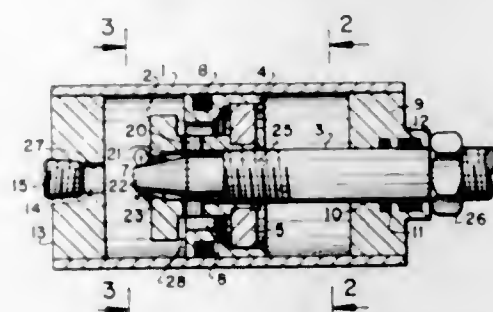
dispatching mechanism for the cars; and means responsive to said traffic conditions registering means under greater traffic conditions for changing over the operation to cause the cars to be dispatched by the dispatching mechanism from at least one of the terminal landings on a time basis.

3,412,827

# PISTON ROD ACTUATED INTERNAL METERING FLOW CONTROL MECHANISM

Alan C. Brooks, New York, N.Y.  
(Box 747, Union, N.J. 07083)

Filed Nov. 30, 1964, Ser. No. 414,917  
8 Claims. (Cl. 188-96)



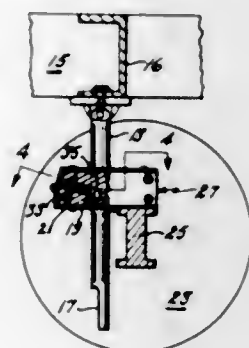
This invention pertains to an arrangement of commonly used mechanical parts in a closed cylinder containing a piston rod attached to a piston and substantially filled with fluid in such a manner as to permit displacement of fluid from one side of the piston to the other internally when the piston is moved in either direction by the piston rod. Further, this arrangement utilizes the piston rod to function as a means of infinitely varying the flow rate and to actuate a poppet valve mechanism housed within the piston permanently so that when the rod moves linearly in one direction the valve is closed causing fluid flow to be metered through the piston and when the rod moves in the opposite direction the valve opens allowing free flow through the piston and rapid return of the poppet and piston metering mechanism.

3,412,828

# NONREVERSIBLE SHOCK STRUT

Charles J. Daniels, Wilmington, Del., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Feb. 6, 1967, Ser. No. 614,778  
2 Claims. (Cl. 188-129)



An energy absorbing system for safely dissipating load energy forces generated by a falling body by forcing an elongated tubular member, fixedly attached to one part of the body, through a block having interference means positioned therein attached to another part of the body, the two parts of the body being movable relative to each other causing the load energy to be absorbed and dissipated while the tubular member is deformed after the first part of the falling body contacts the ground and stops moving and the other part continues to move toward the stopped part.

3,412,829

# RETARDERS

Kenneth A. Browne, Lakewood, and Thomas H. Engle, Cleveland, Ohio, assignors to The Chesapeake and Ohio Railway Company, Cleveland, Ohio, a corporation of Virginia

Filed Feb. 26, 1964, Ser. No. 347,458  
13 Claims. (Cl. 188-180)



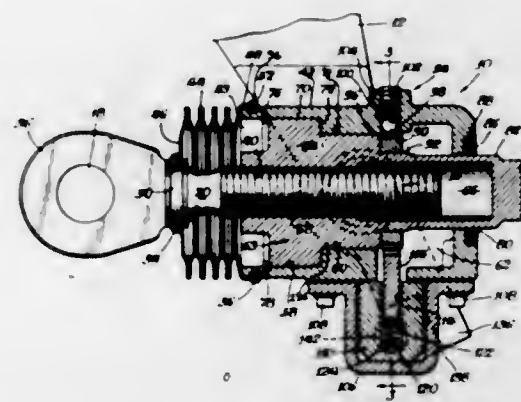
10. A self-contained track apparatus for braking a car or the like moving along a pair of spaced running rails mounted on conventional ties and roadbed structure comprising brake elements for applying a braking force to the wheels of the car or the like, means for supporting said apparatus between the running rails of an existing track structure entirely within the rails and above the ties, and speed sensing means controlling operation of said brake elements as a function of the speed of the car or the like, thus continuously monitoring the movement of a car or the like through said apparatus.

3,412,830

# AUTOMATIC BRAKE SLACK ADJUSTER

Eldon Wayne Bushnell, Lansing, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey

Filed Dec. 2, 1966, Ser. No. 598,656  
4 Claims. (Cl. 188-203)



A slack adjuster for railway brake rigging interconnects a brake lever and a brake shoe. The slack adjuster is automatically adjusted by interaction of a cam surface on the lever and a pawl ratchet assembly mounted on a movable carrier that contacts the cam. The adjuster may also be manually adjusted by a wrench when the brake rigging is in a released position.

3,412,831

# SECTOR TYPE BRAKE DISC

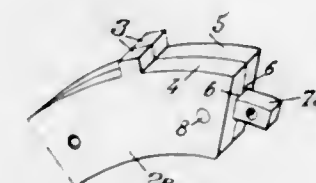
Claude Louis Edouard Marcheron, Montrouge, France, assignor to Societe Hispano-Suiza-Lallemand, Bois-Colombes, France

Filed Apr. 28, 1967, Ser. No. 634,663  
Claims priority, application France, June 17, 1966, 65,954

11 Claims. (Cl. 188-218)

Improved friction disc brake wherein at least one of the annular friction discs is formed by a plurality of sectors arranged circumferentially about the disc axis,

the sectors being interconnected by a mechanism which allows circumferential movement of the sectors relative to each other. The mechanism includes a groove formed in each sector and extending circumferentially about the



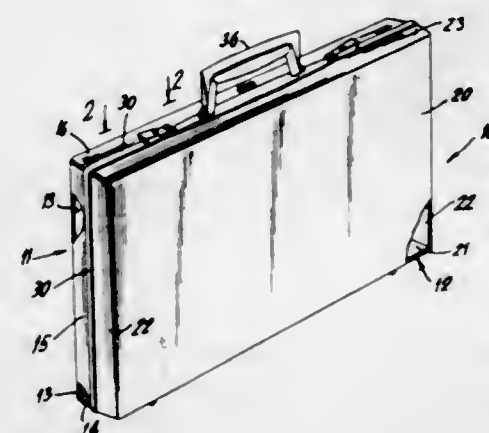
disc axis and either a continuous or a plurality of discontinuous annular elements passing through the grooves for interconnecting the sectors to allow the circumferential relative movement of the sectors.

3,412,832

# CARRYING CASE COMPRISING HINGED TOGETHER SECTIONS AND MEANS FOR RETAINING SAME IN LOCKED CONDITION

Harry Jamison, Beechhurst, and Ralph M. Verni, Baldwin, N.Y., assignors to The Jamison Plastic Corporation, North Bellmore, N.Y., a corporation of New York

Filed Feb. 8, 1968, Ser. No. 703,919  
14 Claims. (Cl. 190-49)



The carrying case comprises a pair of hinged together case sections. A bezel attached to one case section at its edge, has means overlapping the edge of the other case section when the case is closed. Said sections, adjacent their edges, have slots. A member hinged transversely to the bezel, has a pair of parallel tongues that move through said slots when said member is swung in one direction, to hold said sections in closed position. A key actuated slider on said member engages a keeper on the bezel to lock said member and retain said sections in closed condition. When said key actuated slider is in unlocked condition said slider has a releasable snap latching engagement with said keeper, to permit unsnapping said member to open position with said tongues out of said slots, so that the case sections can then be swung apart.

3,412,833

# BAND CLUTCH CONSTRUCTIONS

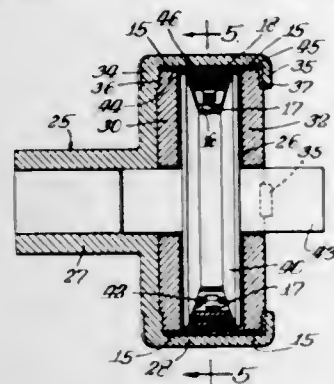
Ernest U. Lang, Niles, Mich., assignor to National Standard Company, Niles, Mich., a corporation of Delaware

Filed June 20, 1966, Ser. No. 558,818  
8 Claims. (Cl. 192-81)

An overrunning band clutch embodying a plurality of interfitting overlapping tapered bands anchored at their wide ends in a first clutch member, in which the narrower ends of the bands extend into a V-groove of a second

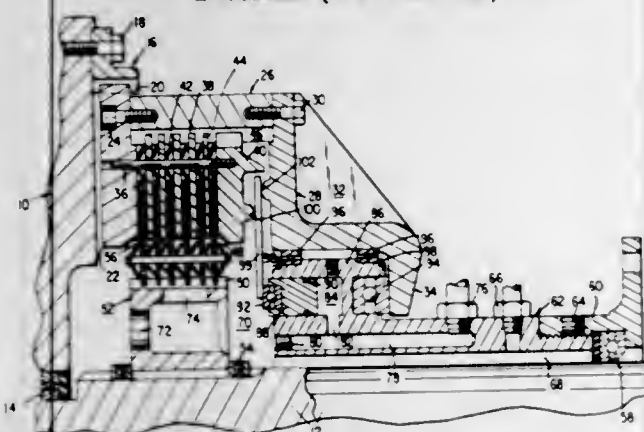


clutch member for engaging the side edges of such narrower ends with the side edges of the V-groove, and in which the bands at the narrower ends thereof have radially outwardly extending projections for engaging a portion of



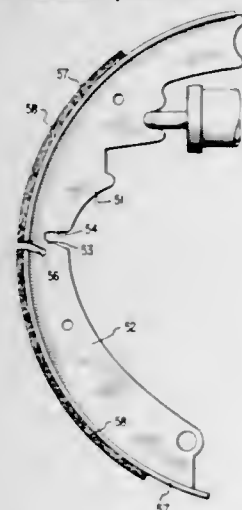
the inner surface of an overlapping band. A tapered spiral clutch band having laterally extending ears at its wide end for anchoring the clutch band in a clutch drive member.

**3,412,834**  
**PRESSURE BALANCED HYDRAULIC CLUTCH**  
Robert S. Root, 312 Westvale Road,  
Syracuse, N.Y. 13219  
Filed July 26, 1966, Ser. No. 568,025  
1 Claim. (Cl. 192—85)



A self-contained, hydraulically operating clutch release mechanism which functions to eliminate the transmission of release thrust to the engine flywheel and crankshaft. The clutch housing is splined to the flywheel so as to be freely movable relative thereto.

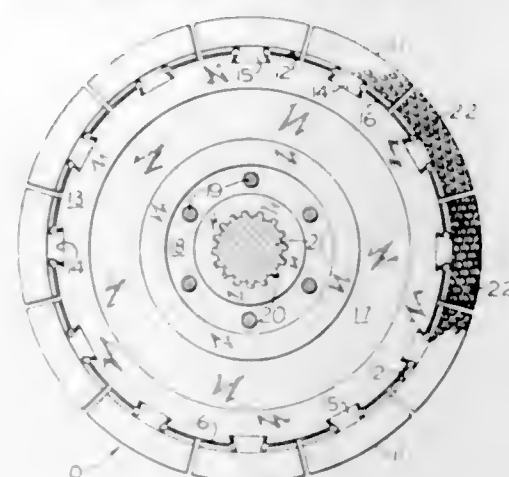
**3,412,835**  
**FLEXIBLE FRICTION SHOE**  
Charles Morley Goldberg, 6 S. Penn St.,  
Wheeling, W. Va. 26003  
Filed Sept. 14, 1966, Ser. No. 579,292  
7 Claims. (Cl. 192—107)



A brake or clutch friction unit assembly having separate arcuate shoe sections resiliently interconnected in longitudinal end to end relation by a spring portion which

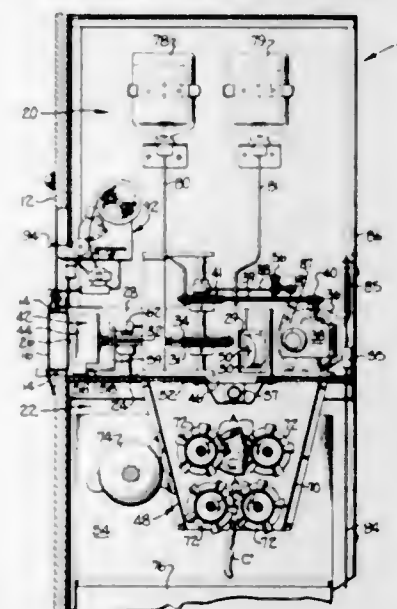
extends diagonally at an acute angle to the adjoining ends of the shoe sections so that the shoe sections may move relative to one another and assume a curvature substantially corresponding to the arc of curvature of an associated brake or clutch drum as the assembly is moved into frictional engagement therewith.

**3,412,836**  
**FRICTION DISC OF SEGMENTED ELEMENTS**  
Rudolph G. Wilmer, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California  
Filed Mar. 6, 1967, Ser. No. 620,752  
5 Claims. (Cl. 192—107)



A friction disc formed from a plurality of independent, friction-faced segments individually keyed circumferentially about the periphery of a circular member in axial slots so that the movement of each segment is independent of any other segment and loads are interchanged between the segment and the circular member via the key connection between them. The key connection prevents the segments from radially separating from the circular member.

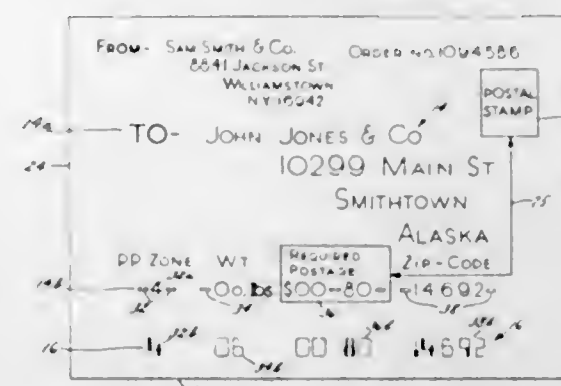
**3,412,837**  
**PROCESS AND APPARATUS FOR COLLECTION OF METAL CONTAINERS**  
Joseph D. Myers, P.O. Box 384,  
Hickory, N.C. 28201  
Filed July 25, 1967, Ser. No. 655,789  
15 Claims. (Cl. 194—4)



A process and apparatus for collecting and storing used metallic containers and automatically dispensing tokens for containers collected, wherein a plurality of collected containers are moved along a generally horizontal trackway, nonmagnetic containers therein gravitationally separated from the trackway, crushed, and stored while a token is automatically dispensed for each nonmagnetic

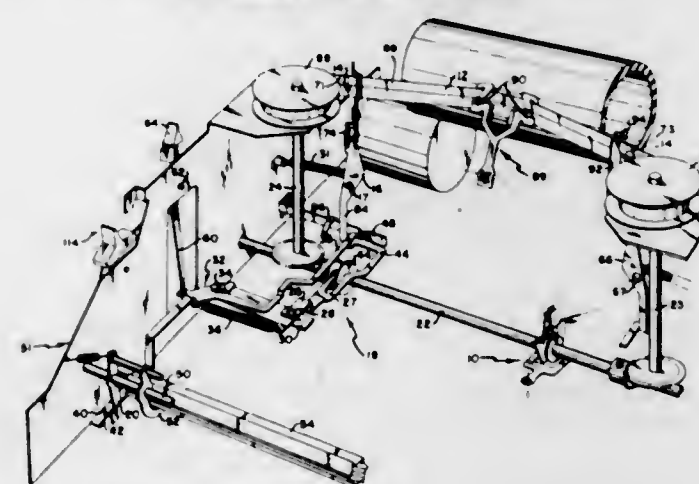
metallic container stored, and wherein magnetic containers remaining on the trackway are thereafter separately stored in a suitable receptacle of the apparatus.

**3,412,838**  
**PRINTING MEANS FOR SORTING AND ROUTING SYSTEM**  
Arthur Jovis, New York, N.Y.  
(1501 Undercliff Ave., Bronx, N.Y. 10453)  
Filed Nov. 29, 1966, Ser. No. 597,588  
1 Claim. (Cl. 197—1)



1. A writing machine comprising: first means to print a line of information in normal type; a second means to print simultaneously a line of corresponding information in magnetic ink type; said machine having a platen, first ribbon, and a second ribbon carrying ink with magnetic particles therein; said first means having a first set of type positioned to strike said first ribbon; said second means having a second set of type positioned to strike said second ribbon; said first and second ribbons being spaced from each other; said first and second means being operable to print either a character from said first set of type or both a character from said first set and said second set of type by actuation of a single key of a key means consisting of only two keys; a first key to move an individual type in the first set of type independent of said second means to print, said first key having a projection; and a second key to move an individual type in the second set of type, said second key having a member which is uni-directionally engageable with said projection; whereby said second key actuates said first key, thereby producing a shipping label with a visible address and a scannable address for mail processing.

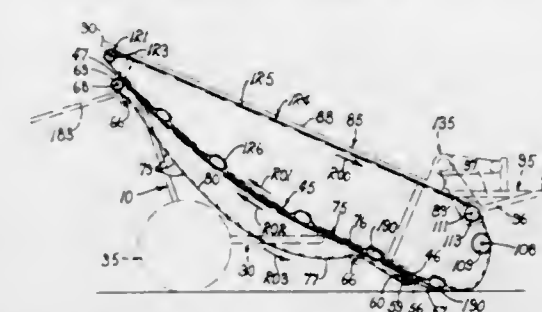
**3,412,839**  
**MULTI-COLORED RIBBON SYSTEM**  
David H. Smith, Cortland, and Samuel D. Cappotto, Syracuse, N.Y., assignors to SCM Corporation, New York, N.Y., a corporation of New York  
Filed Apr. 26, 1966, Ser. No. 545,490  
5 Claims. (Cl. 197—165)



A ribbon system for a typewriter including a four color ribbon having on each half of its length a different color combination and having a ribbon reverse abutment at-

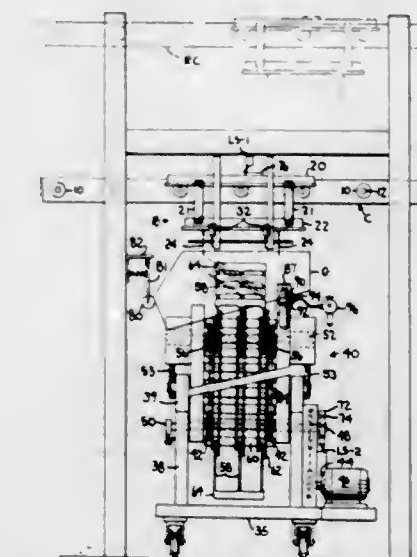
tached to the ribbon at the point where the two color combinations meet and including a ribbon reverse lever adjacent each spool having a pivotal arm and a ribbon carrier having channel shaped forms therein to allow the abutment to bypass the reverse levers and ribbon carrier when changing from one color combination of the ribbon at the print point to the other color combination. The ribbon system further includes a key controllable motor driven belt for power driving the ribbon reverse abutment through the reverse levers and ribbon carrier.

**3,412,840**  
**APPARATUS FOR PICKING UP BUNDLES**  
John P. Laikam, 8692 E. South Ave.,  
Fowler, Calif. 93625  
Filed July 29, 1966, Ser. No. 568,969  
9 Claims. (Cl. 198—8)



Apparatus including a wheeled vehicle having an inclined frame carrying inclined fingers at the forward end thereof and supporting a pair of endless conveyors, one superimposed on the other and having a lower run engaging the upper run of the other and extending forwardly thereof ahead of the inclined fingers for engaging bundles on a supporting surface and holding them for retrieval and eventual conveying between the conveyors which are driven at the same speed as the travel of the vehicle over the supporting surface.

**3,412,841**  
**TRANSFERRING SHEETS**  
Paul Couch, New Washington, and Richard N. Pytel, Crestline, Ohio, assignors to PPG Industries, Inc., a corporation of Pennsylvania  
Filed Jan. 27, 1967, Ser. No. 612,177  
5 Claims. (Cl. 198—21)

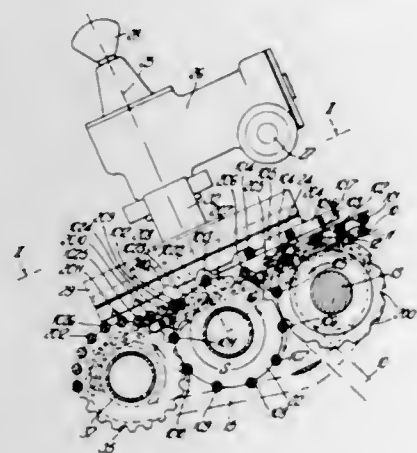


Transferring rigid sheets of non-rectangular outline having opposite edge portions angularly disposed relative to one another from an upper conveyor supporting the sheet with its lower edge portion disposed obliquely to a lower conveyor that supports the sheet with its lower edge portion disposed horizontally in a manner that balances the sheet against falling off the lower conveyor when the sheet is dropped from the upper conveyor to the lower conveyor at a transfer station.



3,412,842

**APPARATUS FOR TIP TURNING CIGARETTES**  
Desmond Walter Molins and Eryk Stefan Doerman, Deptford, England, assignors to Molins Machine Company Limited, London, England, a corporation of Great Britain  
Continuation-in-part of application Ser. No. 550,474, May 16, 1966. This application May 11, 1967, Ser. No. 637,667  
Claims priority, application Great Britain, May 20, 1965, 21,405/65; Feb. 15, 1967, 7,162/67  
21 Claims. (Cl. 198—32)

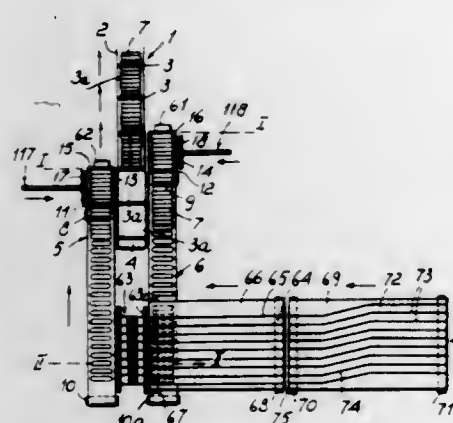


Tipped cigarettes travelling sideways in a first row are transferred by a conveyor, which reverses their direction of travel, to a rotating disc which swings them through 180°, thus again reversing their direction of travel and also turning them end for end, and delivers them to a second row. The disc extends across both rows, above or below them, and at the receiving and delivery positions moves in the same direction as the cigarettes it receives, and as the second row to which it delivers the cigarettes.

3,412,843

# FEEDING APPARATUS FOR A PACKAGING MACHINE

Maurizio Maulini, % Azionaria Costruzioni Macchine Automatiche A.C.M.A. - S.p.A., Via Fioravanti 27, Bologna, Italy  
Filed Feb. 10, 1967, Ser. No. 615,249  
Claims priority, application Italy, Feb. 12, 1966, 3,048/66, Patent 759,670  
8 Claims. (Cl. 198—35)

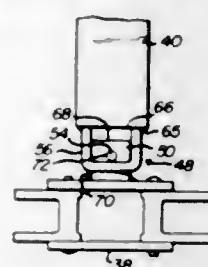


This disclosure relates to apparatus for feeding groups of articles to a packaging machine. Each group of articles comprises a plurality of superimposed layers of articles. The apparatus essentially comprises a central conveyor means arranged to feed the packaging machine, and a plurality of side conveyor means arranged in side-by-side relationship with said central conveyor means and at different levels thereto. Pusher means are arranged to transfer articles from said side conveyor means into feed pockets carried by said central conveyor means.

3,412,844

# STRAND ATTACHMENT MEANS FOR PUSHER FLIGHT

John H. Girvan, Plymouth, Mich., assignor to Cleveland Equipment Division, Detroit Engineering & Machine Company, Garden City, Mich., a corporation of Michigan  
Filed May 31, 1967, Ser. No. 642,554  
4 Claims. (Cl. 198—175)

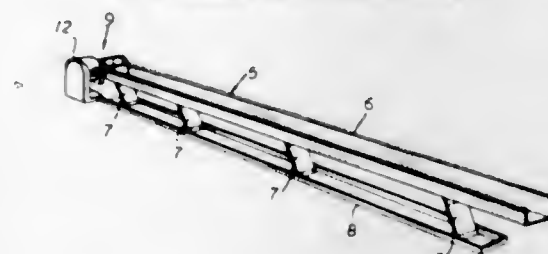


A conveyor for a road surfacing machine is arranged with spaced apart conveyor link chains which are connected together by flight bars transversely between the link chains and having a novel locking connection at each end of the flight bars with the connections being secured to the flight bars and opposed links on the spaced apart link chains.

3,412,845

# CONVEYING APPARATUS

Maurice J. Erisman, Oak Park, Ill., assignor to FMC Corporation, a corporation of Delaware  
Filed Dec. 2, 1966, Ser. No. 598,777  
9 Claims. (Cl. 198—220)

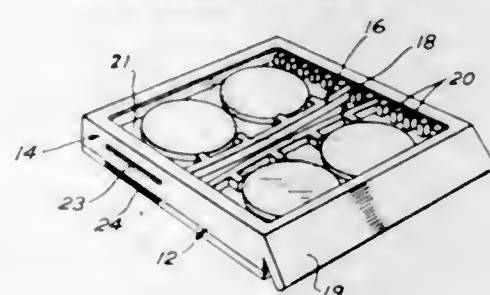


A motor driven oscillating conveyor employing an electrical control circuit for automatically assisting in starting the conveyor and having a reversing switch arranged to energize the motor in a forward direction and responsive to any initial stalling of the motor to effect the reversal thereof, and responsive to any initial stalling of the motor in the reverse direction to deenergize the motor.

3,412,846

# COIN HOLDER

Giorgio I. Spadaro, 1322 Greenwood, Evanston, Ill. 60201  
Filed Oct. 5, 1966, Ser. No. 584,392  
5 Claims. (Cl. 206—83)



A coin display case for holding a plurality of coins of different sizes. Opposing side walls of the case are notched at intervals, the notches receiving the ends of flexible transverse ribs which span the distance between the side walls. Spaced-apart projections are affixed to each rib, the projections extending toward the coin holding area of the case. These projections engage with and retain the

3,412,849

# YARN PACKAGE

M. Dominique Delerue, 189 Blvd. Descat, Tourcoing, Nord, France  
Original application Oct. 1, 1964, Ser. No. 400,845, now Patent No. 3,337,144, dated Aug. 22, 1967. Divided and this application July 7, 1967, Ser. No. 664,579  
1 Claim. (Cl. 206—59)

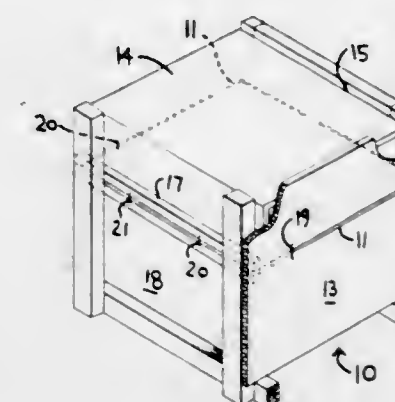


A rocket-shaped annular package of helical windings of synthetic filaments crossing each other at a rate of 1.5 to 3 rotations of a winding spindle whereon the package is wound per one axial movement in a single direction of a guide leading the filaments to the spindle, and a liquid permeable wrapper completely enveloping the package. The diameter of the central cavity of the cylindrical package portion is between 75% and 90% of the outer diameter of this portion, and its thickness is between 5% and 12.5% of the diameter. The angle of the conical end portion of the package varies between 10° and 40°.

3,412,850

# PACKAGING DEVICE FOR SHEET MATERIAL

William J. Hay, Jr., Cheswick, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania  
Continuation of application Ser. No. 453,373, May 5, 1965. This application June 15, 1967, Ser. No. 646,430  
3 Claims. (Cl. 206—62)



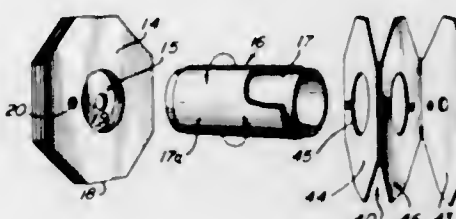
A package for holding sheet material, three perpendicular walls are mounted on a base platform, the sheet material is compressed against one of the walls by a bar under tension. The bar is positioned by a metal strap which is inserted through walls of the package.

3,412,851

# SURGICAL GLOVE WRAPPER

Raymond F. Coulombe, Milford, Conn., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware  
Filed July 6, 1967, Ser. No. 651,596  
3 Claims. (Cl. 206—63.2)

A sterile inner wrapper for surgeon's gloves folded

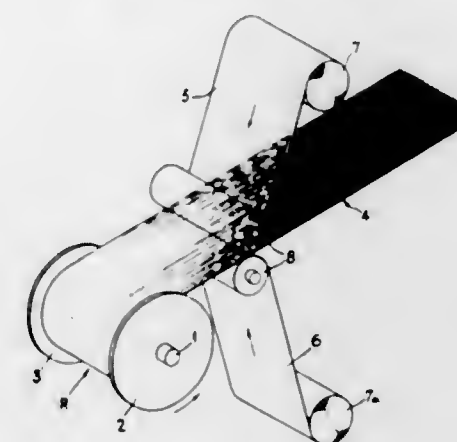


A container for storing and permitting ease in the dispensing of a substantial length of relatively heavy flexible strip material such as television transmission line wire or the like. The container having an outer carton and a material carrying spool assembly mounted therein. The spool assembly including a pair of flange or end members with a hub arrangement positioned therebetween. The hub assembly including an inner sleeve substantially non-rotatably engaged with the flange members, and an outer sleeve telescoped over and supported by the inner sleeve, said outer sleeve being freely rotatable with respect to both said inner sleeve and said flange members. The outer sleeve being adapted to receive and store a quantity of flexible strip material such that said sleeve may be rotated relative to the remainder of the container to permit dispensing of said material.

3,412,848

# REEL CARRYING ELONGATED WIRE ELEMENTS

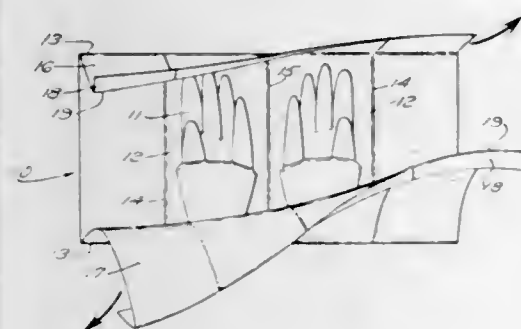
Frans Ryckebosch, Zwevegem, Belgium, assignor to Treffleries Leon Bekaert, P.V.B.A., a corporation of Belgium  
Filed Oct. 12, 1966, Ser. No. 586,164  
Claims priority, application Great Britain, Oct. 14, 1965, 43,619/65  
15 Claims. (Cl. 206—59)



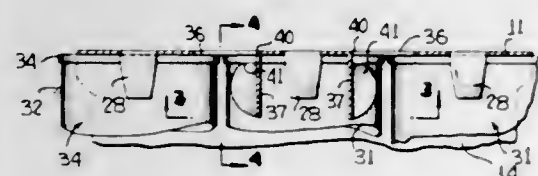
A storage reel carrying a large number of elongated elements such as wires and/or strands of wires in a side by side relation for use in reinforcing flexible sheet material, each element wound on itself and parallel with all of the other elements, a thin sheet of flexible material wound on the reel together with the elements for separating successive layers of elements from each other and for keeping the elements separated and spaced apart from one another.



so that it will not "pop" open, and having finger engageable tabs for manipulating the wrapper so that the

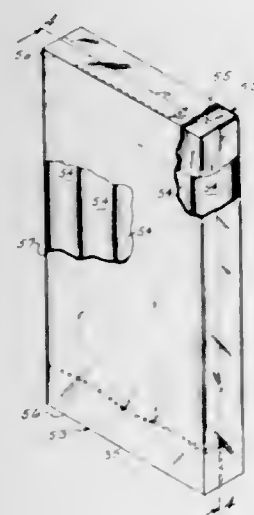


**3,412,852**  
**CARTON WITH INTERLOCKING CHIME ENGAGING AND CARRYING MEANS**  
Frederick E. Naumann, Jr., Old Tappan, N.J., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York  
Filed Feb. 12, 1965, Ser. No. 432,335  
5 Claims. (Cl. 206—65)



This disclosure relates to a carton of the wrap-around type intended to receive two rows of cans. A panel which is disposed uppermost in the carton has finger receiving openings each located between four adjacent cans and the material removed in the formation of the openings defining a flap which interlocks with a pair of transversely adjacent cans whereby a direct lifting force is applied to at least two of the cans during the lifting of the package.

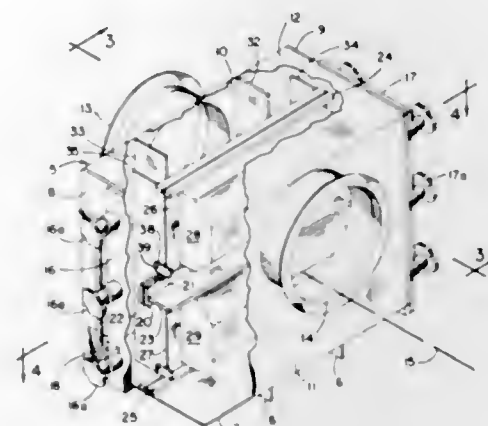
**3,412,853**  
**PACKAGE AND BLANKS THEREFOR**  
Sylvester L. Bayer, Appleton, Wis., assignor to The Tuttle Press Company, Appleton, Wis., a corporation of Wisconsin  
Filed Dec. 21, 1967, Ser. No. 692,577  
14 Claims. (Cl. 206—65)



Packages of the class having two end cap members overlying the ends of a row of articles, the two outer

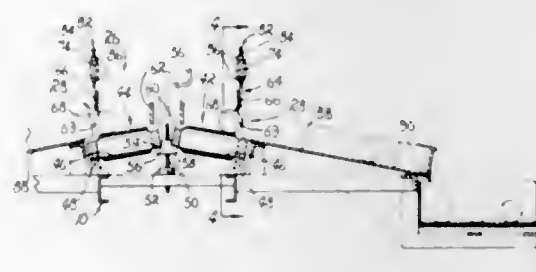
articles having hollow end portions and the cap members having bottom wall panels from which extend two tongues at the ends thereof which interfit with the hollow end portions of the two outer articles.

**3,412,854**  
**APPARATUS FOR SEPARATION OF MAGNETIZABLE MATERIAL FROM STOCK SUSPENSIONS**  
Paul J. Klein, Menasha, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware  
Filed Mar. 21, 1966, Ser. No. 535,840  
4 Claims. (Cl. 209—39)



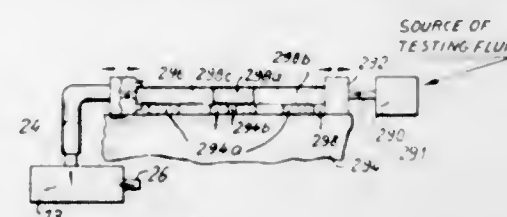
Apparatus in the form of a magnetic trap suitable for the removal of magnetizable material from a flowing fluid suspension of a stock which is susceptible to air entrainment. The structural arrangement provides a circuitous flow between inlet and outlet in a magnetic field while confining the flow so that air bubble build-up and air entrainment in the trap is inhibited.

**3,412,855**  
**ARTICLE SIZING APPARATUS**  
Walter E. Nilmeier and Ralph S. Nilmeier, both of 8509 E. Central, Del Rey, Calif. 93616  
Filed Aug. 15, 1966, Ser. No. 572,594  
4 Claims. (Cl. 209—73)



An article sizing apparatus providing a pair of elongated endless conveyors disposed in closely spaced substantially parallel relation individually including upper runs transversely outwardly and downwardly extended from each other for receiving and conveying articles of varying sizes longitudinally therealong for gravitational movement transversely of the conveyors and rolling engagement along sizing gate means disposed longitudinally of the conveyors and therewith defining sizing openings for discharge of the articles at longitudinally spaced locations along the conveyors depending upon the size of the individual articles, and including adjusting means simultaneously and equally to adjust said transverse outward and downward extension of the conveyors to insure substantially uniform sizing of the articles.

**3,412,856**  
**METHOD AND APPARATUS FOR TESTING CIGARETTES AND THE LIKE**  
Albert Esenwein, Hamburg-Lohbrügge, Germany, assignor to Hauni Werke Koerber & Co. KG., Hamburg-Bergedorf, Germany  
Filed Feb. 9, 1965, Ser. No. 431,355  
Claims priority, application Great Britain, Feb. 11, 1964, 5,640/64  
41 Claims. (Cl. 209—74)



33. A method of testing the integrity of cigarettes and similar discrete rod-shaped articles, comprising conveying the articles sideways in a predetermined path through and past a testing station and holding the articles against axial movement during travel through said testing station; testing the articles at said station by a conveying therethrough a testing fluid whose characteristics are indicative of the quality of tested articles; generating a signal in response to each such change in the characteristics of testing fluid which is outside of a predetermined range indicative of satisfactory articles; delaying the signal until an article trailing the tested defective article enters said station; and utilizing the thus delayed signal to eject the defective article from said path.

**3,412,857**  
**DEVICE AND METHOD FOR SORTING IN SIZE AGRICULTURAL OR HORTICULTURAL PRODUCTS**  
Jan A. de Greef, De Hoekenburg 2, Tricht, Netherlands  
Filed Nov. 8, 1966, Ser. No. 592,816  
Claims priority, application Netherlands, Dec. 20, 1965, 6516611  
10 Claims. (Cl. 209—105)

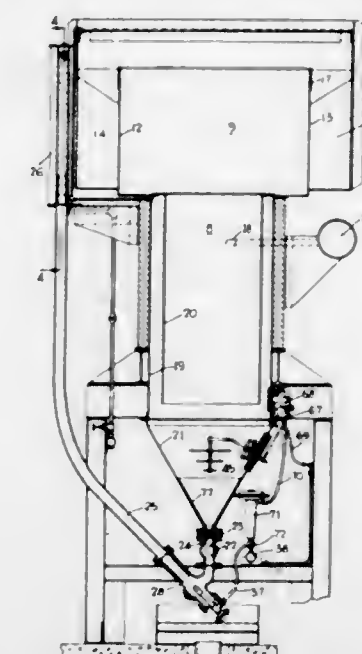


The method and apparatus for sorting rollable articles wherein the articles are passed along a chute defined by a driven conveying member and a driven measuring bar. The conveyor and bar are driven in the same direction, but the bar is driven at a slower speed than that of the conveyor.

**3,412,858**  
**HYDRAULIC CLASSIFIER HAVING AUTOMATIC UNDERFLOW DISCHARGE CONTROL**  
Spencer A. Stone, Fort Wayne, Ind., assignor to The Deister Concentrator Company, Inc., Fort Wayne, Ind., a corporation of Indiana  
Filed June 16, 1965, Ser. No. 464,313  
13 Claims. (Cl. 209—159)

Hydraulic classifier of the teeter column type having, in the quiescent zone where the solid particles settle as a

bed, a sensor which responds to changes in the depth of the bed to control discharge from the classifier. The discharge from the classifier is normally open, but flow



through it is regulated by a hydrostatic head acting counter to that imposed by the contents of the classifier, and by a fluid ejector.

**3,412,859**  
**CANE JOUNCING MEANS**  
Samuel A. Thornton, Jeanerette, La., assignor to Samuel A. Thornton, Jr., Alexandria, La.  
Filed Dec. 9, 1965, Ser. No. 512,721  
6 Claims. (Cl. 209—329)



Agitator bars are provided extending lengthwise of a feeder table in substantially parallel spaced relation and projecting above the top of the table. The bars are arranged in two groups with those of one group alternating with those of the other group. Pivoted linkage means pivotally connected to one end of the bars restrain them against appreciable endwise movement while accommodating vertical movement thereof for one of two selected modes of operation, wherein the bars of each group are reciprocated vertically and in opposite relation to the bars of the other group. In the other mode of operation, the bars of each group are reciprocated toward the discharge end of the feeder table during upward movement and toward the receiving end of the feeder table during downward movement and in opposite relation to the bars of the other group. The bars are driven from two rockably mounted shafts which are actuated by eccentric means on a first countershaft driven from a second countershaft by a chain and sprocket drive. The second countershaft is driven by a power source. Means for optionally rocking a third shaft suitably connected to the bars comprises a third countershaft, a sprocket rotatably mounted on the third shaft and driven by a sprocket and chain on the second countershaft, the sprocket having a single jaw clutch element, and a single jaw clutch member on the shaft and engageable with and disengageable from the sprocket element.



3,412,860

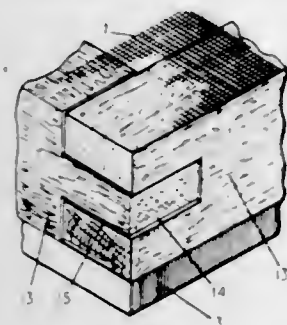
**SIEVE FRAMES**

John Dudley Bingham, Bramhall, and Ernest William Higgs, Chinley, via Stockport, England, assignors to Henry Simon Limited, Stockport, England, a British company

Filed Mar. 29, 1966, Ser. No. 538,329

Claims priority, application Great Britain, Mar. 31, 1965, 13,585/65

3 Claims. (Cl. 209—379)



A square or rectangular screen is mounted on the upper edges of a nonmetallic frame. The nonmetallic frame comprises self-aligning morticed joints. A rigid, cross-braced metallic frame, L-shaped in cross-section, fits into and supports the non-metallic frame from below so that the bending and twisting loads caused by the tensioning of the screen are transmitted by the nonmetallic frame members to the metal frame members.

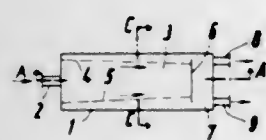
3,412,861

**PROCESS AND APPARATUS FOR SEPARATING LIQUIDS**

Wolfgang Rudbach, Griedel, Butzbach, and Eckart Müller and Horst Ludwig Reichhardt, Frankfurt am Main, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany

Filed Aug. 7, 1964, Ser. No. 388,123

3 Claims. (Cl. 210—65)



1. In a process for separating the phases of a liquid multiphase mixture by introducing the mixture in a separating chamber and removing the separated liquid phase from said chamber, the improvement comprising passing the mixture through the chamber in contact with a packing of sharp edged bodies contained in the chamber wherein each of the sharp edged bodies has a length at least three times as great as the width, and wherein the area of the upper surface of each sharp edged body is one square centimeter for each 10 to 25 centimeters of sharp edge of the body, and removing the resulting heavy and light phases.

3,412,862

**METHOD AND APPARATUS FOR CLEANING AREAS OVERLAIN BY A WATER BODY**

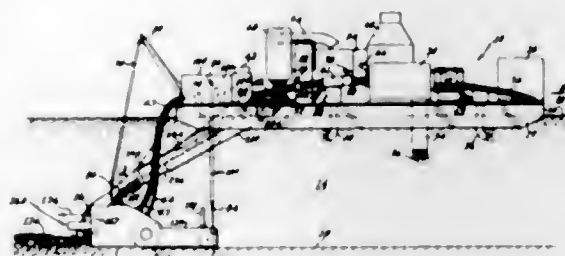
Merle P. Chaplin, 609 Driver Ave., Winter Park, Fla. 32789

Filed Sept. 7, 1967, Ser. No. 666,090

15 Claims. (Cl. 210—73)

A method and apparatus for cleaning a water covered sand bottom basin which has been polluted and contaminated by deposited materials lying on the bottom of the basin which includes the steps of moving a generally enclosed housing, containing a plurality of spaced fluid jets

directed generally downwardly and a baffle positioned above the jets, over the polluted and contaminated sand bottom of the basin by the use of a pair of powered wheels positioned within the housing; producing a suction on the bottom of the contaminated and polluted basin within the housing to laden the deposited materials and sand within water moving into the housing and upward from the bottom of the basin; penetrating the contaminated and polluted bottom of the basin by the use of the pressurized fluid jets such that additional deposited materials and sand become laden within the water and fluid mixture



moving upwardly from the bottom of the basin; changing the direction of flow and decreasing the rate of flow of the upwardly moving laden mixture by use of the baffle to permit the sand to become generally separated by settling on the bottom of the basin from the remainder of the laden mixture; removing the remainder of the laden mixture from the housing to the surface of the water by suction pumping; centrifugally separating the water and fluid from the remainder of the laden mixture; discharging the separated water and fluid back into the basin; and pumping the remainder of the laden mixture to a disposal area outwardly of the basin.

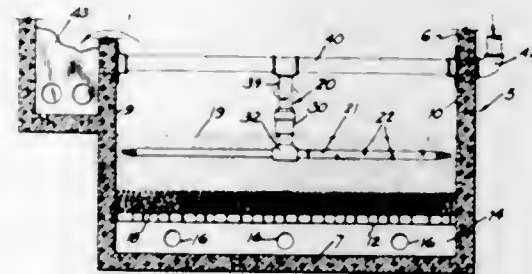
3,412,863

**FILTER BED AGITATOR AND METHOD**

Fred E. Stuart, Sr., 516 N. Charles St., Baltimore, Md. 21201

Filed June 11, 1963, Ser. No. 286,978

7 Claims. (Cl. 210—80)



1. Agitator mechanism for washing and cleaning the filter medium of a filter bed, said mechanism comprising a revolving tubular agitator arm equipped with nozzles which are spaced longitudinally of said arm, said agitator arm being mounted in a horizontal plane near the top of the filter bed, a source of wash water under pressure connected to said agitator arm to cause high velocity jets of water to discharge from said nozzles, alternate ones of said nozzles forming a first group thereof being arranged to deliver jets of wash water upwardly from a horizontal plane in said filter bed and at a small angle to the horizontal, and others of said nozzles between and adjacent the nozzles of said first group and forming a second group thereof being arranged to deliver jets of wash water downwardly from a horizontal plane in said bed at a small angle to the horizontal whereby a substantial depth of the filter bed is agitated and washed with high velocity jet streams of water directed at different angles with respect to a horizontal plane.

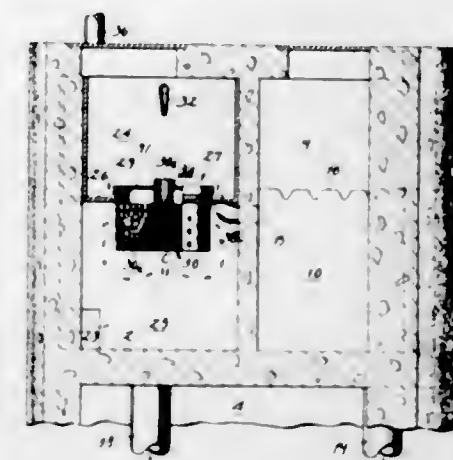
3,412,864

**SEWAGE TREATMENT PLANT**

Tamotsu Okada, 9 Umegae-cho 1, Gifu, Japan

Filed July 5, 1966, Ser. No. 562,730

6 Claims. (Cl. 210—151)



A sewage treatment plant is disclosed. The sewage treatment plant includes a novel aeration chamber comprising upper and lower rooms with a partition therebetween, the lower room having an inlet for receiving liquid sewage, the upper room having an outlet for treated sewage. A tubular body is provided in the partition between the upper and lower rooms having a portion thereof extending into the lower room, perforations being formed through the extending portion. A second tubular body is concentrically spaced inside the first tubular body and has a porous wall portion defining a space between the first and second tubular bodies which is filled with gravel. An overflow pipe is provided through a cover plate which hermetically seals the first tubular body, the overflow pipe extending into the second tubular body. Means are provided for injecting clear water through the overflow pipe into the lower room of the aeration chamber. The operation of the novel aeration chamber is such that liquid in the lower room thereof will be diluted, aerated and oxidized completely before being discharged from the upper room.

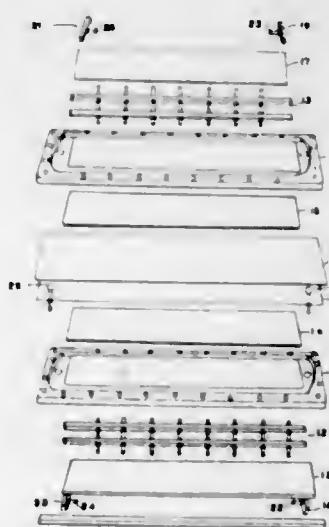
3,412,865

**ARTIFICIAL KIDNEY**

John F. Lontz, 515 Eskridge Drive, Wilmington, Del. 19809, and Herman L. Kumm, 2312 Walnut Lane, Arden, Wilmington, Del. 19803

Continuation-in-part of application Ser. No. 411,407, Nov. 16, 1964. This application Sept. 5, 1967, Ser. No. 665,544

2 Claims. (Cl. 210—321)



An artificial kidney device comprising an arrangement having parallel plates with interior spaces. A pair of

semipermeable membranes are mounted in parallel relation within the interior spaces, means to pass blood between the membranes, and means to pass dialyzing solution outside the membranes. The membranes are confined by the plate structure having interior grooved patterns. The pumping action is pulsating. A predetermined surface to volume ratio is maintained.

3,412,866

**SKI BOOT JACK**

Kenneth W. Binding, Winchester, Mass., assignor to Market Forge Company, Everett, Mass., a corporation of Massachusetts

Filed June 27, 1966, Ser. No. 560,612

10 Claims. (Cl. 211—37)



A ski boot jack having a free standing frame at the opposite sides of which there are pairs of clamps yieldably urged toward each other to engage the heel and toe ends of boots placed between them to support and hold the boots when not being worn.

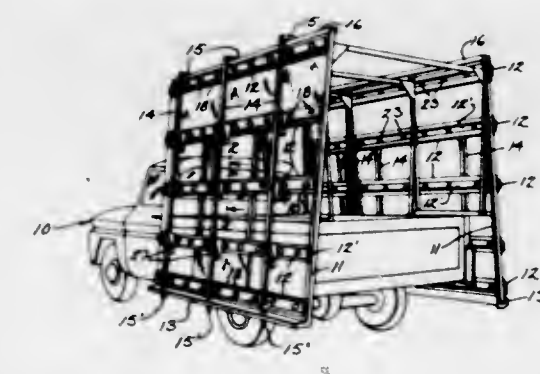
3,412,867

**GLASS RACK TRUCKS**

Alvin H. Barkow, Milwaukee, Wis., assignor to H. Barkow Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Sept. 13, 1966, Ser. No. 578,656

3 Claims. (Cl. 211—41)



In a glass rack truck having vertically-spaced horizontal slats, rubber-like pads secured in longitudinally-spaced relationship along each slat in a position to be engaged by glass lights which are being transported, each pad having a shallow central recess surrounded by a heavy rim and being formed of relatively hard rubber-like material to provide a light suction effect which is easily broken when the glass lights are removed.



3,412,868

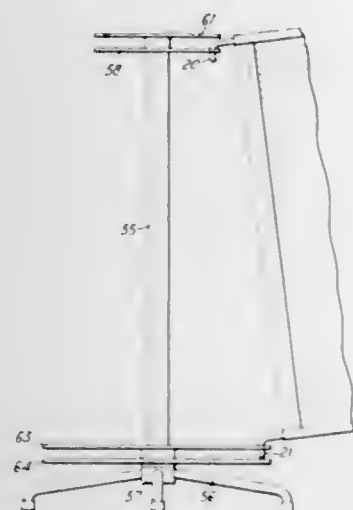
**INFORMATION DISPLAY EQUIPMENT**

Edward H. Carter, Surrey, England, assignor to The Shannon Limited, Surrey, England, a British company

Filed Apr. 25, 1966, Ser. No. 544,742

Claims priority, application Great Britain, Apr. 27, 1965, 17,698/65

9 Claims. (Cl. 211-163)



A panel and a supporting member therefor. The panel includes a rectangular panel piece having two border strips attached to its lateral edges and having two lengths of wire having down turned ends forming pivot pins and being attached, respectively, to the upper and lower ends of the panel piece and substantially free from engaging contact with the border strips. A support frame having upper and lower support members, a shroud above one of the support members and including narrow slots with which the wire must be aligned before the panel can be lifted from said one support member.

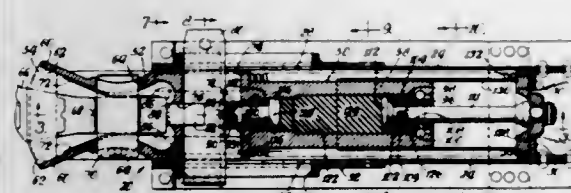
3,412,869

**CUSHIONING ASSEMBLY**

William D. Wallace and Robert L. Carlson, Chicago, Ill., and Giles A. Kendall, Burbank, Calif., assignors to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware

Filed Nov. 21, 1966, Ser. No. 595,992

17 Claims. (Cl. 213-8)



1. Damped spring means comprising an elongated casing section with a chamber therein, a piston rod extending into said chamber at one end thereof, means disposed concentrically about said piston rod and mounted in said one end of said chamber for sealing same, a piston on said piston rod within said chamber and presenting axial orifice means, a piston unit slidable in said casing section at the other end of said chamber, and a compressible solid filling said chamber or providing a damping and spring force on said piston as said piston rod moves into said chamber and reduces the volume of said solid and on said piston unit as the latter moves into said chamber and reduces the volume of said solid.

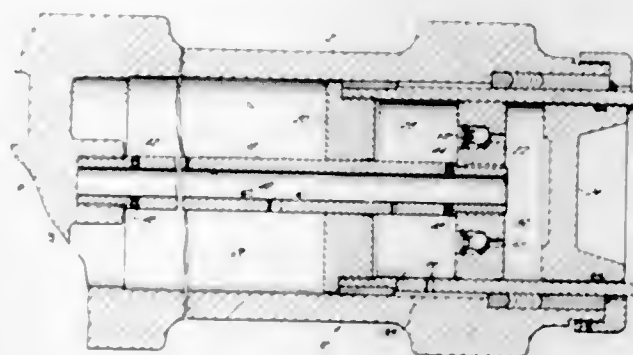
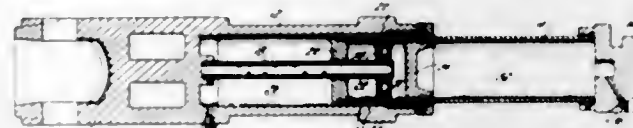
3,412,870

**END-OF-CAR HYDRAULIC BUFF AND DRAFT CUSHIONING**

Dallas W. Rollins, St. Charles, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed Jan. 24, 1967, Ser. No. 611,456

10 Claims. (Cl. 213-8)



A hydropneumatic shock absorber connected to each coupler of a railroad car has a piston positioned by a spring to an intermediate point of its travel to provide buff and draft cushioning. The shock absorber has an axial hollow perforated metering tube and check valves in a partition between two liquid chambers providing a very low speed of return after a compression or extension of the shock absorber. The metering tube includes pressure relief and check valves at both its ends which permit additional cushion travel and prevent overloading which might result from impacts occurring before the cushion has returned sufficiently.

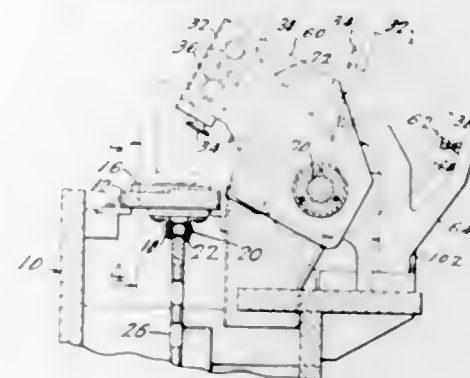
3,412,871

**APPARATUS FOR CHANGING THE SPACING OF A PLURALITY OF CONVEYED ARTICLES**

Edward B. Lohmeyer, Jr., Fraser, and John J. Konkall, Jr., Bloomfield Hills, Mich., assignors to Champion Spark Plug Company, Toledo, Ohio, a corporation of Delaware

Filed Oct. 21, 1965, Ser. No. 499,711

4 Claims. (Cl. 214-1)



An apparatus for changing the spacing of conveyed articles, such apparatus having a plurality of pick-up heads mounted on a frame. The frame rotates on an axle which is parallel to the path of the conveyed articles. The pick-up heads are movable between a first extreme position where they have the spacing of the conveyed articles and a second extreme position where they have the desired spacing. After a conveyed article is positioned under each of the pick-up heads, the conveyor stops, a vacuum cup in each head picks up an individual article

and the frame rotates to a work transfer station. The pick-up heads move to the desired spacing, and subsequently the vacuum is released dropping the properly spaced articles onto a platform.

3,412,872

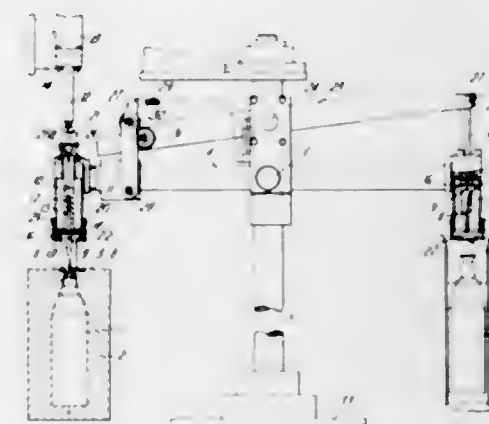
**MANUFACTURE OF SYNTHETIC THERMOPLASTIC BOTTLES**

Harold Cookson, Hayling Island, England, assignor to The Metal Box Company Limited, London, England, a British company

Filed Apr. 19, 1966, Ser. No. 543,574

Claims priority, application Great Britain, May 6, 1965, 19,209/65

11 Claims. (Cl. 214-1)



A device for removing bottles from separable blow moulds having an opening at one end comprises a rotatable arm each end of which carries a bottle engaging device insertable into a bottle in the mould to grip the bottle before the mould is opened. The bottle engaging device includes release means which when the bottle has been moved by the arm to a position remote from the mould engages the bottle and constrains it while the bottle engaging means is disengaged from the bottle.

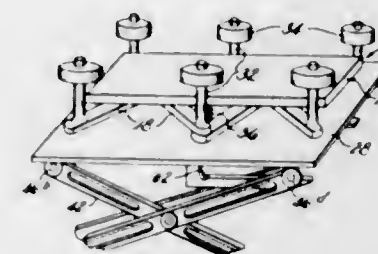
3,412,873

**CENTERING AND LIFTING MEANS FOR AN AUTOMATIC CASE LOADER**

Theodore L. Barker, Cuyaboga Falls, Ohio, assignor to Geo. J. Meyer Manufacturing Co., Racine, Wis.

Filed June 20, 1966, Ser. No. 558,978

7 Claims. (Cl. 214-1)



Apparatus for centering cases to be loaded with containers and including a support means, a tray mounted above the support means, and an expansible frame means which is substantially flat and is operatively positioned between the support means and the tray. Guide members are secured to the frame means and extend upwardly therefrom at the sides of and extending above the tray. Spring means bias portions of the frame means towards each other but adapt the post members to operatively engage a case on the tray and center it thereon. A pantographic lifting frame means secures the plate means to a

base and fluid actuated piston means engage the pantographic lifting frame means to control movement thereof.

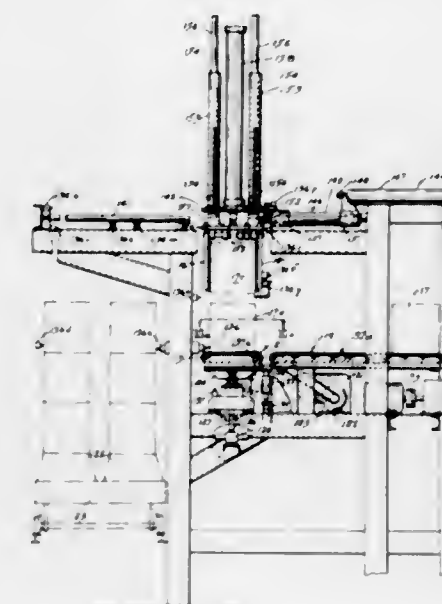
3,412,874

**AUTOMATED TILE HANDLING SYSTEM**

Stuart O. Shiffer, % Shiffer Industrial Equipment, Inc., 9900 Royalton Road, North Royalton, Ohio 44133

Original application Oct. 14, 1964, Ser. No. 403,714, now Patent No. 3,315,785, dated Apr. 25, 1967. Divided and this application Feb. 16, 1967, Ser. No. 616,615

9 Claims. (Cl. 214-6)



A system for automatically handling and transporting tile from a tile forming machine through a firing kiln to an unloading station. The system includes means to load the tile on saggars and means to load the saggars on a kiln car. The system also includes means to automatically remove the saggars from the kiln car and to remove the fired tile from the saggars. Automatically operated conveyor and transfers operate to move the tile and saggars in the desired manner.

3,412,875

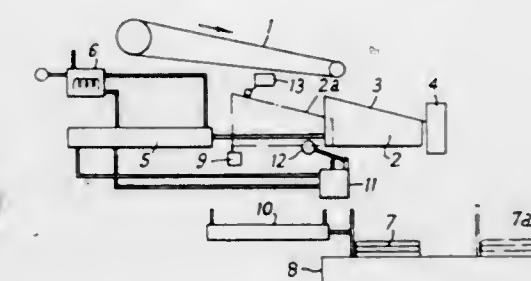
**LAUNDRY STACKER**

Henry John Weir, The Yetts, Sedbury, Chepstow, Monmouthshire, England

Filed Sept. 6, 1967, Ser. No. 665,776

Claims priority, application Great Britain, Sept. 6, 1966, 39,868/66

5 Claims. (Cl. 214-6)

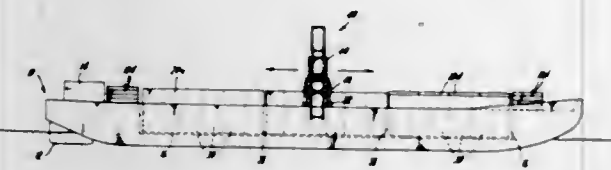


A stacker for stacking laundry articles when they have been folded after laundering comprising a table having a smooth upper surface inclined to the horizontal, on to which surface articles to be stacked are fed; a stop which abuts against the lower edge of the table; and means for withdrawing the table rapidly away from the stop to allow any article thereon to drop on to a stack beneath the table. For particularly rapid withdrawal of the table a two-way air ram may be employed in a pneumatic circuit which allows either side of the ram to be vented.



**3,412,876**  
**APPARATUS FOR THE LOADING AND UNLOADING OF PALLETIZED CARGO ON FLOATING VESSELS**

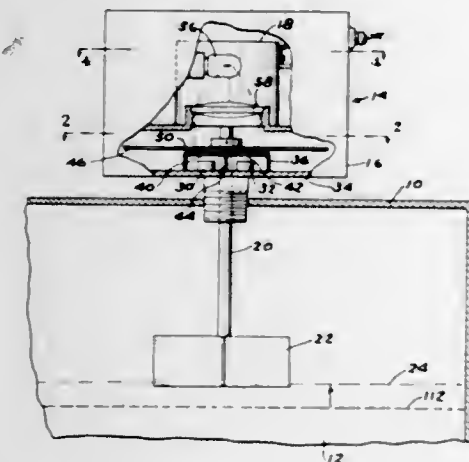
Frank Calabrese, 4828 194th St.,  
 Flushing, N.Y. 11365  
 Filed Mar. 9, 1966, Ser. No. 533,009  
 11 Claims. (Cl. 214-15)



Apparatus for transferring cargo mounted on pallets between the hold of a floating vessel and a pier or the like at which the vessel is docked. A gantry is mounted for movement longitudinally of the vessel and a fork lift truck is movable transversely along the gantry. The fork lift truck has an elongated frame carrying fork blades at the lower end thereof, which frame is of sufficient length to be lowered to the bottom of the cargo hold of the vessel and to the surface of said pier for transferring cargo carried by said fork blades between the hold and the pier. Electrical signal means are provided to inform an operator located in and operating the fork lift truck of the horizontal and vertical locations of the fork blades.

**3,412,877**  
**ELECTRICAL-OPTICAL MATERIAL LEVEL CONTROL**

Yee Lee, Lexington, and Robert W. Rauth, Port Huron, Mich., assignors to The Bin-Dicator Company, Detroit, Mich., a corporation of Michigan  
 Filed Apr. 8, 1966, Ser. No. 541,340  
 4 Claims. (Cl. 214-17)



Motion detection apparatus wherein the rotation of a motor shaft in a material level control causes sequential energization of a pair of photocell switches via a suitable light mask carried on the shaft and at a rate related to the velocity of the shaft. A first capacitor is connected to a power supply through one of the photocell switches and a second capacitor is connected to the first capacitor by the other photocell switch. The photocell switches progressively transfer electrical energy from a power supply to the first capacitor and then to the second capacitor which serves as the input for a silicon controlled rectifier controlling energization of the motor. When the motor shaft stops rotating or deviates from a predetermined rotational velocity, the progressive energy transfer ceases to thereby stop the motor.

**3,412,878**  
**APPARATUS FOR HANDLING AND CURING BUILDING BLOCKS**

William E. Todd, Cincinnati, Ohio, assignor to The E. W. Buschman Company, Inc., Cincinnati, Ohio, a corporation of Ohio  
 Filed July 28, 1966, Ser. No. 568,683  
 12 Claims. (Cl. 214-26)



The disclosure relates to an apparatus for handling concrete building blocks which are pressed from a moist concrete mixture in a block forming machine and cured in a series of autoclaves, each having pallet support rails located in planes one above the other. The handling apparatus essentially comprises a transfer mechanism having an accumulating conveyor extending from the block forming machine to receive the freshly formed blocks which are deposited upon individual pallets. The transfer mechanism, which is coextensive with the accumulating conveyor, is shiftable horizontally to several positions and includes a lift frame arranged to lift the pallets from the accumulating conveyor, the lift frame being arranged to carry two or more rows of pallets, one above the other, and also side-by-side, by a series of vertical and horizontal movements. A charging mechanism is arranged to shuttle between the transfer mechanism to a selected autoclave of the series and includes a longitudinally extensible ram which is also movable in a vertical plane. The charging mechanism is shifted laterally into alignment with a train of loaded pallets of the transfer mechanism, then its ram shifts longitudinally to a position underlying the loaded pallets, lifts the pallets, retracts, then shifts into alignment with a selected autoclave. At this point, the ram goes through the same combination of movements to deposit the loaded pallets upon the rails of the autoclave. After the blocks have been cured, they are retrieved from the autoclave by the ram of the charging mechanism which goes through the same vertical and horizontal movements to retrieve the blocks. Thereafter, the charging mechanism shuttles to a position in alignment with an exit mechanism, which is generally similar to the transfer mechanism and a lift frame to receive the pallets from the ram to be deposited upon an exit conveyor by a combination of horizontal and vertical movements of the ram.

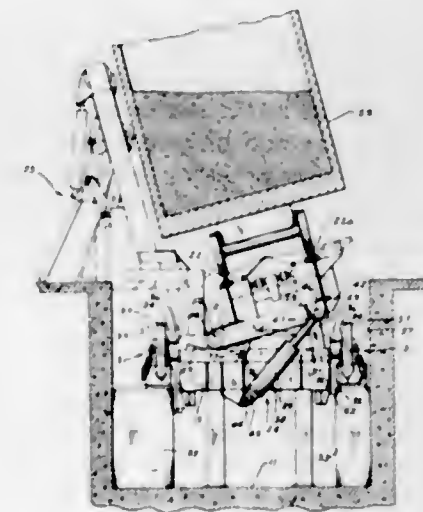
**3,412,879**  
**SIDE TILT STRUCTURE FOR A CAR UNLOADER APPARATUS**

Lyle A. Hansen, Des Moines, Iowa, assignor to Straight Engineering Company, Adel, Iowa, a corporation of Iowa  
 Filed Nov. 23, 1966, Ser. No. 596,560  
 12 Claims. (Cl. 214-52)

1. In a car unloader apparatus having a lower frame and an upper frame for carrying a car in a secured position thereon wherein said two frames are end tilted together and said upper frame is side tilted relative to said lower frame:

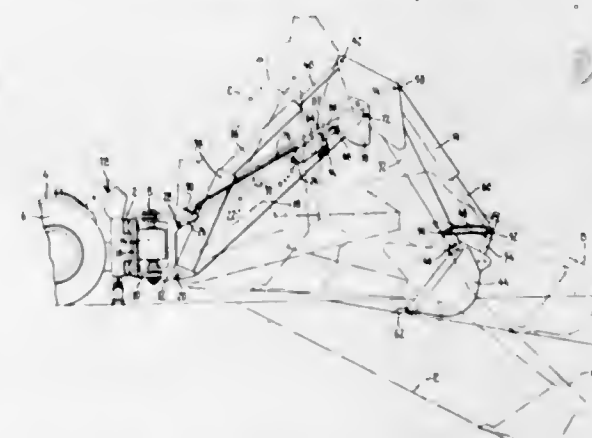
(a) means for side tilting said upper frame relative to said lower frame including,

- (b) a linearly extendible power means at each end of the lower frame inclined upwardly in a direction toward one side of the upper frame,
- (c) means pivotally supporting the lower end of each power means on said lower frame,
- (d) a lever arm corresponding to each power means having one end pivotally connected to the lower frame at the side thereof below the one side of said upper frame and reversely inclined relative to a corresponding power means,
- (e) first pivot means pivotally connecting the opposite ends of said lever arms to said upper frame,
- (f) second pivot means pivotally connecting the opposite ends of said power means to said upper frame at positions adjacent to said first pivot means,



- (g) a roller member corresponding to each power means rotatably mounted on the upper frame on the side opposite the one side thereof, and
- (h) a transversely extended track means of each roller member mounted on the lower frame, each roller member being in continuous engagement with a corresponding track means whereby on operation of said power means said upper frame is moved transversely of said lower frame concurrently with the pivotal raising and lowering of the one side thereof from a first position wherein said two frames are in a superposed parallel relation to a second position wherein said upper frame is tilted upwardly from said lower frame.

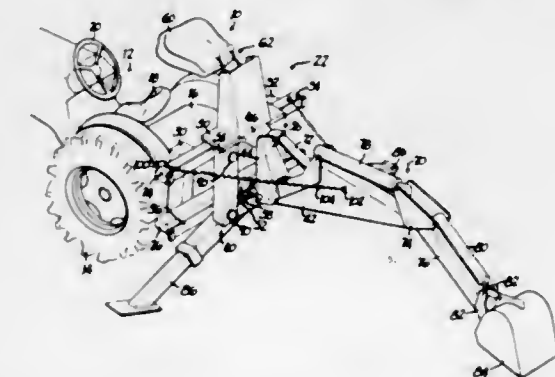
**3,412,880**  
**MATERIAL-HANDLING BOOM HAVING STRAIGHT LINE MOTION**  
 Ralph L. Tweedale, Southfield, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich.  
 Filed Nov. 8, 1966, Ser. No. 592,932  
 8 Claims. (Cl. 214-138)



The disclosure is concerned with material handling booms, and particularly with booms for excavators of the type commonly referred to as backhoes. A boom is mount-

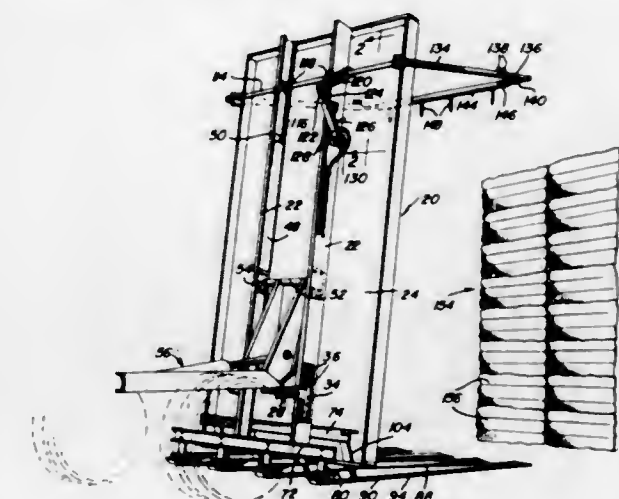
ed on a tractor mounted supporting frame in such a manner that it can move upwardly and downwardly as well as from side to side relative to the frame. Pivotally mounted on the free end of the boom is a dipper stick which carries at its free end an excavating bucket. The boom and dipper stick are foldable and unfoldable relative to each other such that the bucket can be extended away from and retracted toward the supporting frame for excavating. Operation of the boom, dipper stick and bucket is accomplished hydraulically. Compensating mechanism is incorporated into the boom assembly to cause the bucket to move in a straight line path.

**3,412,881**  
**SIDE SHIFTABLE BACKHOE**  
 Kenneth L. Magee, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin  
 Filed Dec. 28, 1966, Ser. No. 605,306  
 6 Claims. (Cl. 214-138)



A side shiftable excavating device, such as a backhoe, which is pivotally mounted on a frame slidably received on a support structure. Means are provided for removably connecting the excavating device to the support structure so that pivotal movement of the excavating device on the slidable frame will reposition the frame with respect to the support structure.

**3,412,882**  
**TILTABLE LOADING AND UNLOADING TRUCK BED CONSTRUCTION**  
 Elmer L. Stockwell, Greybull, Wyo., assignor to Stockwell Manufacturing Company, a corporation of Wyoming  
 Filed May 31, 1967, Ser. No. 642,499  
 13 Claims. (Cl. 214-501)

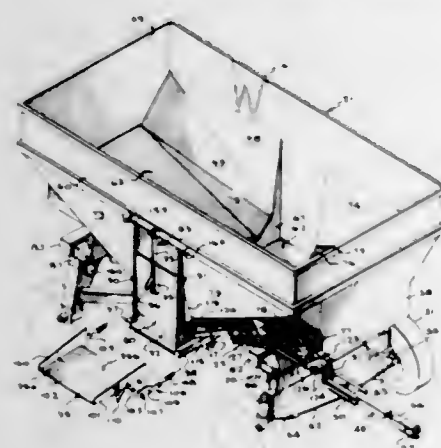


A vehicle frame including sprung wheeled rear running gear means and a load bed overlying the frame and pivotally secured to the latter for swinging movement between a first generally horizontally disposed load carrying position and a second upstanding position swung at least slightly past a vertical position with the forward end of the load bed swung upwardly and the rear end of the



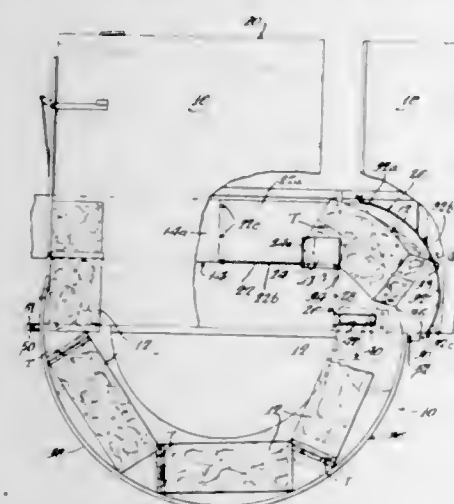
load bed swung downwardly rearwardly of the wheels of the running gear means, the load bed including upstanding, transversely spaced and at least slightly rearwardly displaced load retaining and lifting teeth which when the load bed is in the second vertical position and in an unladen condition, are slightly rearwardly and downwardly inclined with their rear ends disposed for engagement with the ground and their forward ends spaced slightly above the ground.

**3,412,883**  
**MATERIAL CARRIER APPARATUS**  
Bert A. Birdsall, Mondamin, Iowa 51557  
Filed Feb. 16, 1966, Ser. No. 527,947  
5 Claims. (Cl. 214-508)



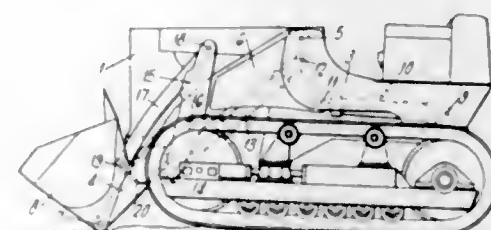
A material carrier movable over the ground and having structure for bottom or side discharge from a carrier box while the carrier is stationary or travelling over the ground with the carrier box constructed to provide free gravity flow of particulate material by a bottom wall constructed to be of increasing width and the avoidance of right-angled corners and a discharge conveyor having a discharge end which remains at a constant height regardless of the extent to which the carrier box is tipped to the side.

**3,412,884**  
**BALE TRANSFER AND ARRANGING MECHANISM**  
Raymond C. Fischer, Hinsdale, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware  
Filed Oct. 26, 1966, Ser. No. 589,554  
7 Claims. (Cl. 214-518)



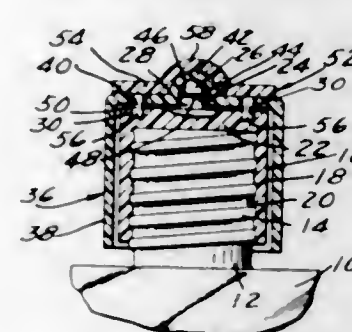
A bale transfer mechanism for use in combination with a baler, and comprising guide means situated adjacent the baler discharge and operative upon a bale received thereon to turn it 90° about its longitudinal axis, and a spiral ramp for directing the turned bales from the guide means to an associated platform elevationally and longitudinally displaced from the baler discharge.

**3,412,885**  
**VEHICLE LOADER LINKAGE**  
Pietro Pensa, Como, Italy, assignor to Massey-Ferguson Services N.V., Curacao, Netherlands Antilles  
Filed Nov. 3, 1966, Ser. No. 591,785  
Claims priority, application Italy, Nov. 11, 1965, 24,979/65  
4 Claims. (Cl. 214-776)



A vehicle loader having a hollow lift arm pivotally attached to the vehicle by paired side walls, the lift arms having a pivoted bucket at the outer end, a lever pivoted on the arm having a pivoted link connected to the bucket and a pivoted hydraulic cylinder inside the hollow lift arm connected to the vehicle, a hydraulic cylinder pivoted to the side walls and enclosed within the same and connected to operate the lift arm.

**3,412,886**  
**SAFETY CLOSURES FOR CONTAINERS**  
Alfred S. Colella, 1310 S. Glendora Ave., West Covina, Calif. 91790, and Milton J. Grossman, Whittier, Calif.; said Grossman assignor to said Colella  
Filed Oct. 6, 1966, Ser. No. 584,850  
3 Claims. (Cl. 215-9)

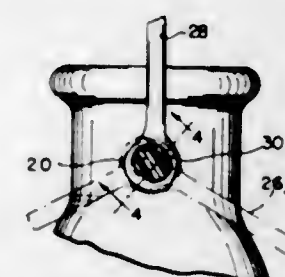


A safety closure device having an inner closure cap for threadable attachment to a threaded part of a container and an outer closure cap disposed over the inner closure cap, each cap having a cylindrical skirt and an end wall at one end, the other end being open. The caps are axially pivoted together, the outer cap being normally rotatable on the inner cap and there is an opening in the end wall of the outer cap and a recess in the end wall of the inner cap. There is an axial stem on the end wall of the inner cap with a button at the free end of said stem for snap reception in an inner socket in an upstanding external boss of the end wall of the outer cap. A tool removably attachable to the caps has a pin for reception in the opening in the end wall of the outer cap and in the recess of the end wall of the inner cap when brought into register. The tool has a dome shaped part of reception of the boss of the outer cap.

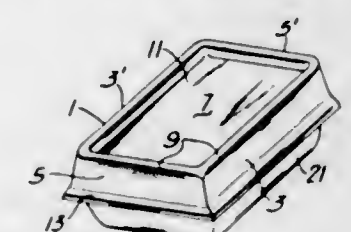
**3,412,887**  
**PLASTIC BOTTLE**  
Ira T. Swartwood, 548 Edinborough Drive, Bay Village, Ohio 44140, and Webb C. Jennings, 75 Kensington Oval, Rocky River, Ohio 44116  
Filed Feb. 7, 1967, Ser. No. 614,428  
18 Claims. (Cl. 215-100)

A plastic bottle having a body with an open top and having trunnions integral with the bottle and projecting

from opposite sides thereof. A handle is pivotally mounted on the bottle while means are provided for releasably holding the handle in downward position while allowing it to be released when it is lifted to a carrying position above the bottle.

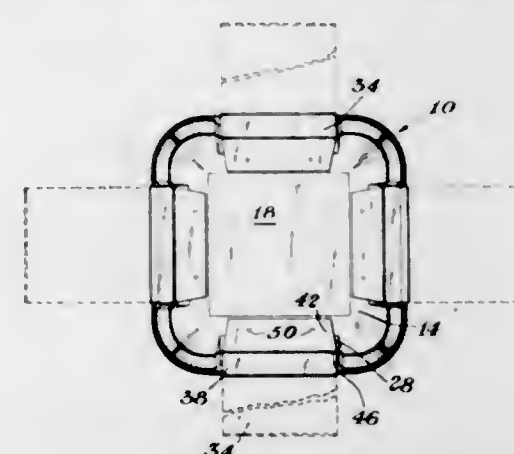


**3,412,888**  
**COMBINATION CONTAINER AND TRAY**  
James M. Andrews, James R. Patton, and Ted P. Martens, Pittsburgh, Pa., assignors to Sinclair-Koppers Company, a partnership of Delaware  
Filed Sept. 15, 1967, Ser. No. 667,989  
5 Claims. (Cl. 220-4)



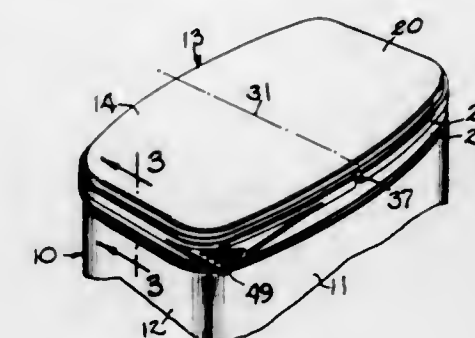
A compact plastic container is provided having a unitary top portion and a unitary receptacle portion of a configuration that allows the closed containers to be stacked one upon another and which, when disassembled and used as a tray, allows for the secure positioning of the receptacle portion into an inverted lid portion, conserving space and providing strength for the tray. The superimposed lid is frictionally secured to the receptacle portion to provide a seal and to insulate the contents of the container from the atmosphere.

**3,412,889**  
**CONTAINER FOR DAIRY PRODUCTS OR THE LIKE**  
Clara Virginia Eicholtz and Robert W. Van Sickle, Midland, and Bertrand N. Trombley, Bloomfield Hills, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
Filed Nov. 24, 1967, Ser. No. 685,522  
10 Claims. (Cl. 220-60)



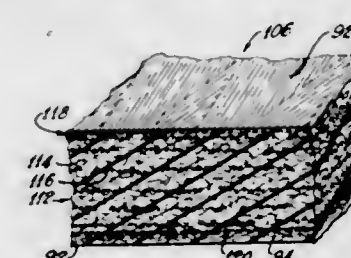
A table ready container for dairy products or the like, the tub of which can have plain (unprinted) side walls because the lid contains flaps which extend downwardly therefrom along the sides of the tub and lock

**3,412,890**  
**HINGED CONTAINER CLOSURE**  
Phillip J. Rich, Roscoe, Ill., assignor to J. L. Clark Manufacturing Co., Rockford, Ill., a corporation of Illinois  
Filed Dec. 22, 1967, Ser. No. 693,012  
14 Claims. (Cl. 220-30)



A plate-like cover of resilient plastic is formed with depending and laterally spaced peripheral skirts receiving the lip of a sheet metal container body and interlocked therewith. The cover is weakened along a transverse line which defines a hinge for upward swinging of one end portion of the cover while the other end portion remains secured to the body.

**3,412,891**  
**FLUID-HANDLING WALL STRUCTURE**  
Andrew L. Bastone, Granville, and Justin R. Boeker, Newark, Ohio, and Fred E. Klimpl, West Orange, N.J., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware  
Filed Aug. 6, 1964, Ser. No. 387,945  
11 Claims. (Cl. 220-83)



A fluid-handling wall structure, as for use in an underground storage tank for gasoline, comprising a resin rich inner surface; a predominately resinous body layer including chopped and randomly oriented, admixed reinforcement strand lengths; and importantly containing, during production, layers of woven stabilizing scrim material to keep the resin rich body stable until such time as it sets by polymerization; and as an overlay to such stabilized resin rich body, a plurality of strands of filament wound material forming an outer high strength shell; and including rib structures overlaid with parallel filament windings. Also, the invention relates to apparatus and method of producing the fluid-handling wall structure described.

**3,412,892**  
**INFANT'S TRAINING CUP**  
Alan S. Waksman and Ruth S. Waksman, both of 2 Stuyvesant Oval, New York, N.Y. 10009  
Filed Apr. 27, 1966, Ser. No. 551,833  
6 Claims. (Cl. 220-90.4)

A training cup includes a receptacle provided with a separable flat panel inclined downwardly from the upper

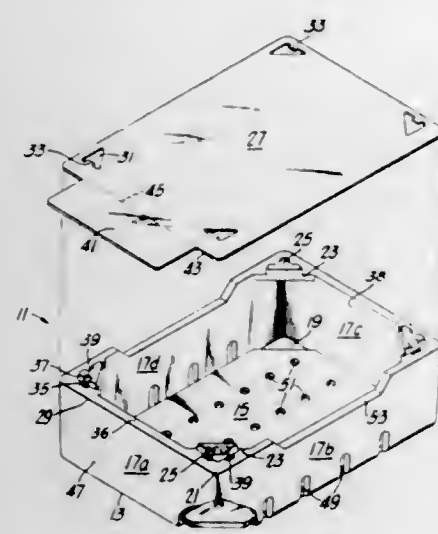


border of the cup to a diametrically opposite point. A triangular discharge opening is formed in the upper part



of the panel and a slidable valve plate is provided for adjusting the discharge opening. A vent opening is formed in the bottom border of the panel.

**3,412,893**  
**FOAM PLASTIC SHIPPING CONTAINER**  
Joseph Slapnik, Arcadia, Calif., assignor to Sinclair-Koppers Company, a partnership of Delaware  
Filed Mar. 21, 1967, Ser. No. 624,936  
4 Claims. (Cl. 220-97)

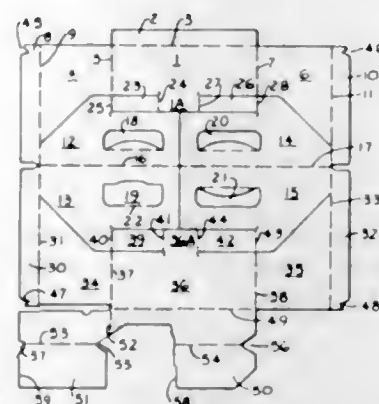


A shipping box for agricultural products is molded from foam plastic. The box has a gusset and post at each top corner which reinforces the container against breakage due to vertical and horizontal stresses during shipment. The box has a hole at each bottom corner adapted to receive the posts of a second tray when the trays are stacked. Optionally, a corrugated paper lid is provided for the box.

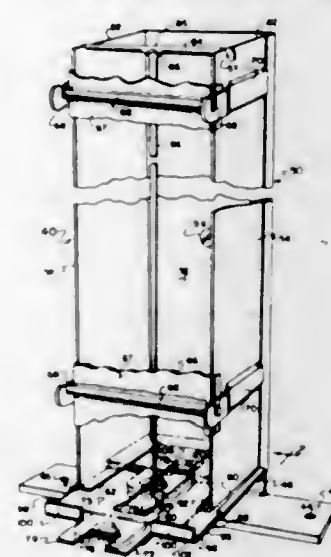
**3,412,894**  
**ARTICLE CARRIER**  
Prentice J. Wood, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio  
Filed June 29, 1967, Ser. No. 649,890  
6 Claims. (Cl. 220-113)

An article carrier having a medial handle partition, end panels foldably joined to the end edges of said handle partition, and side walls foldably joined along their end edges to the side edges of the end panels provided with a composite bottom panel. The composite bottom panel includes a main bottom panel foldably joined to the bottom edge of one of the side walls and a corner portion of the main bottom panel is cut away. A complementary

bottom panel is foldably joined along a side edge thereof to a side edge of the main bottom panel which is adjacent to the cutaway portion so that when the complementary panel is folded into flat face contacting relation with the main panel, a composite structure results. This arrange-



**3,412,895**  
**DISPENSER FOR CLOSURE DEVICE WITH PRICE TAG**  
Frank E. Hilton, Milwaukie, Oreg., assignor, by mesne assignments, to Kwik Lok Corp., Yakima, Wash., a corporation of Washington  
Filed Dec. 20, 1965, Ser. No. 514,923  
4 Claims. (Cl. 221-23)

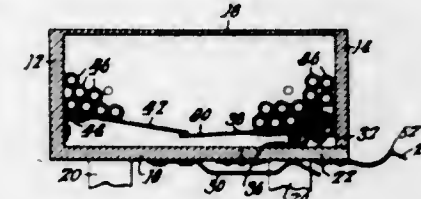


A tubular magazine for receiving a stack of cardboard tags equipped with flat plastic bag closures glued to bottom faces thereof, said stack gravitating onto a magazine bottom plate where said tags are successively partially withdrawn forwardly from the bottom of the stack by a lug successively engaging said closures, to a position where the closure of the tag thus withdrawn is exposed and supported for pressurally applying a bag neck thereto, means being provided for actuating said lug manually as part of the act of completing the withdrawal of the tag after applying a bag neck to the closure of said bag.

**3,412,896**  
**ARTICLE DISPENSER WITH AGITATOR MEANS**  
Albert H. Baller, 59 Beech St., Clinton, Mass. 01945  
Filed July 14, 1967, Ser. No. 653,377  
6 Claims. (Cl. 221-200)

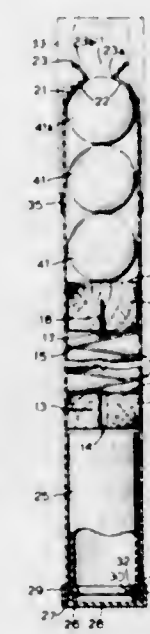
A dispenser for the releasing of single elongated articles from a container containing a quantity of such articles, wherein the bottom of the container includes a part which

is depressible and swings downwardly like a door to form a port through which the articles in one-by-one relationship may be dispensed at each actuation of said part. On this part at the interior of the container, there are provided



simple means which upon motion of the part to port-opening position, cooperate with other fixed parts at an interior wall of the container to divide off the entire pile of articles in the container from the single one which is being dispensed.

**3,412,897**  
**STORING AND DISPENSING DEVICE**  
Charles Raymond Slater, Toronto, Ontario, Canada, assignor, by direct and mesne assignments, to Random Consumer Products Limited, Toronto, Ontario, Canada  
Filed Sept. 6, 1966, Ser. No. 577,318  
Claims priority, application Canada, Dec. 3, 1965, 946,859  
2 Claims. (Cl. 221-226)



A device for retrieving, storing and dispensing articles, in which by manipulating the device an article may be centered before a restricted opening and passed there-through for storage and withdrawal. The device consists of an elongated housing having at one end expandable and outwardly flared fingers defining the opening.

**3,412,898**  
**POWDER FEEDER**  
Chester Waldemar Marynowski, Mountain View, Calif., assignor to British Titan Products Company Limited, Billingham, England, a corporation of the United Kingdom  
Filed Feb. 7, 1966, Ser. No. 525,670  
11 Claims. (Cl. 222-1)

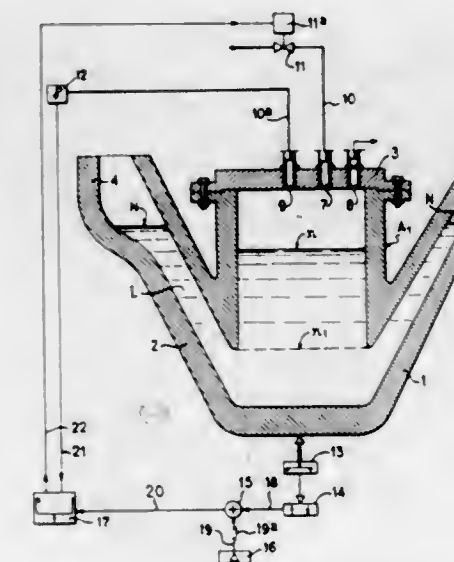
Apparatus for producing a lean suspension of solids has a chamber for supporting a bed of solids therein on an air permeable deck. Air passed through deck deagglomerates particles thereon and entrains solids to form a

suspension. Concentric conduits divide the suspension into two portions. Filter in annulus removes particles from one portion and at least part of gaseous effluent is combined



with remaining portion and discharged as desired suspension.

**3,412,899**  
**LIQUID POURING INSTALLATION**  
Jean Georges Sutter, Villers-les-Nancy, France, assignor to Centre de Recherches de Pont-a-Mousson, a French body corporate  
Filed Apr. 18, 1967, Ser. No. 631,763  
Claims priority, application France, Apr. 22, 1966, 58,602  
7 Claims. (Cl. 222-58)



A liquid pouring installation comprising a vessel for pouring liquid under the pressure of a fluid of the type having a pouring tube in which the liquid must rise above the level of said liquid so as to be formed into a container and a valve regulating the pressure of said fluid, said installation comprising a control device for controlling the pouring vessel and comprising, in combination with said valve, means for measuring the pressure of said fluid; a pressure regulator connected to said measuring means and to said valve for actuating said valve as a function of the pressure measures; vessel weighing



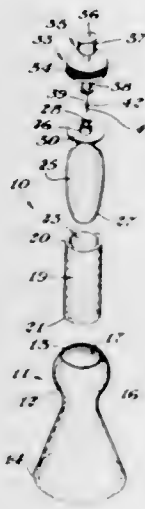
means, an exterior control device for increasing the pressure; an apparatus combining the weight measuring information and pressure increase information to which said weighing means and said exterior control device are connected, said combining apparatus being connected to said pressure regulating valve so that it controls the opening of the valve regulating the pressure of the fluid in accordance with the signals from said combining apparatus.

3,412,900

## DISPENSING CONTAINER

Delmar F. Macaulay, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed June 20, 1966, Ser. No. 558,814  
6 Claims. (Cl. 222-82)



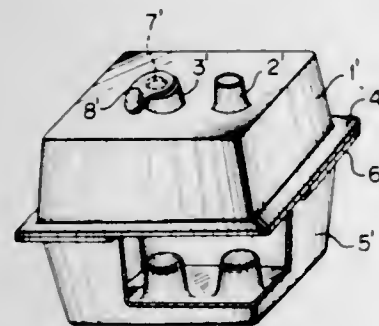
A pressurized dispensing container is provided by injecting a liquid into an elastomeric rubber tube, stretching the tube and sealing. The dispensing pressure is provided solely by the stretched rubber tube.

3,412,901

## CONTAINER FOR POURING IN LIQUID OR FLUID SUBSTANCES AND THE MANUFACTURING METHOD OF THE CONTAINER

Shinjiro Izumi, 1320 Ohaza Ryoke, Urawashi, Japan

Filed July 19, 1966, Ser. No. 566,353  
Claims priority, application Japan, July 28, 1965, 40/45,697; Oct. 9, 1965, 40/61,817  
5 Claims. (Cl. 222-143)



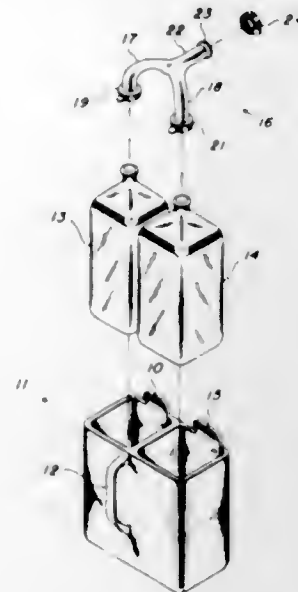
A container formed of upper and lower casing portions having abutting, outwardly extending, peripheral flanges, heat sealed together, the top portion having upwardly extending inpour and outpour spouts, the bottom portion having recesses to accommodate the spouts of a next lower container when stacked. Also the method of making such a container from continuous webs of heat sealable material and of filling and sealing the container.

3,412,902

## MILK BLENDING AND DISPENSING DEVICE

Louis B. Milner, San Diego, Kenneth C. Smith, Lemon Grove, and Harry Wright, San Diego, Calif., assignors to Economyx Division of Wright Industries, La Mesa, California

Filed May 29, 1967, Ser. No. 641,969  
1 Claim. (Cl. 222-143)



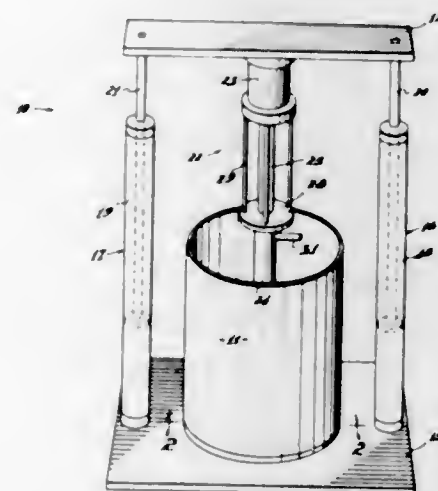
A milk blending and dispensing device consisting of a container dimensioned for snugly receiving two milk bottles in a combination with a blending spout having two channels, each of said channels coupled to the top of a different milk bottle, the two channels being blended or joined into one common spout for simultaneously blending and dispensing the contents of the two milk bottles.

3,412,903

## APPARATUS FOR HEATING AND DISPENSING VISCOUS MATERIALS

William P. Van Riper, Jr., and Thomas A. Stevens, Cincinnati, Ohio, assignors to Parkway Products, Inc., Cincinnati, Ohio, a corporation of Ohio

Filed June 20, 1967, Ser. No. 647,476  
3 Claims. (Cl. 222-146)



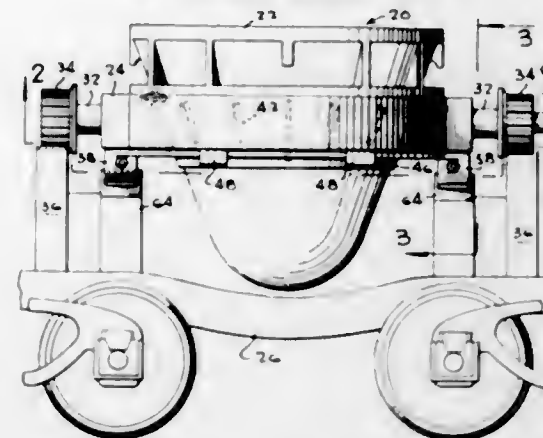
Apparatus for dispensing solid or viscous material from a shipping drum or container. The material is first heated to lower the viscosity and then supplied at a lower viscosity to a reservoir from whence the liquid may enter the inlet of a pump and be dispensed from the container.

3,412,904

## THIMBLE LADLE SUPPORT LOCK ASSEMBLY

August F. Chupka, 3516 Lewis St., Middletown, Ohio 45042

Filed July 21, 1967, Ser. No. 655,219  
10 Claims. (Cl. 222-166)



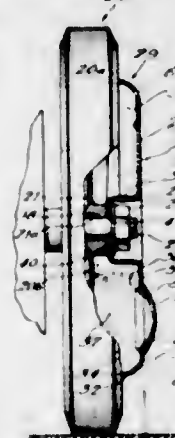
A ladle support ring having lock means automatically moving into locking engagement with a supported ladle upon tilting of the ring to prevent the ladle falling from the ring.

3,412,905

## MARKING ATTACHMENT FOR LAWN SPREADER

Arthur H. Eichholz, Polo, Ill., assignor to Central Quality Industries, Inc., a corporation of Illinois

Filed Nov. 9, 1965, Ser. No. 506,933  
2 Claims. (Cl. 222-169)



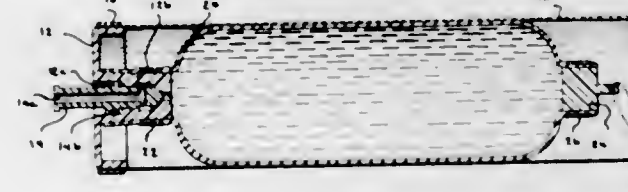
A marking attachment for a lawn spreader of the type having rotatable wheels supporting a body for the containment and dispensation of the particulate or granulated material, the attachment being generally in the shape of a wheel cover having a generally dished configuration and intended for securement to the wheel to form a chamber therewith for the reception of marking material which may be dispensed out through openings formed near the flanged area of the cover, characterized in that the cover has openings in general alignment with fastening element openings on the wheel, the cover openings being formed in inwardly offset surfaces so as to abut surfaces on the body of the wheel for mounting the cover to the wheel.

3,412,906

## PLASMA INFUSOR

Leon Joel Dinger, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed Dec. 5, 1966, Ser. No. 599,317  
1 Claim. (Cl. 222-183)



This invention relates to the art of plasma infusors and

more particularly to a new and novel device which facilitates emergency blood transfusions.

3,412,907

## PERFUME CONTAINER AND SPRAYER

William J. Faso, 602 SE. 6th Ave., Deerfield Beach, Fla. 33441

Filed Mar. 7, 1967, Ser. No. 621,328  
4 Claims. (Cl. 222-187)



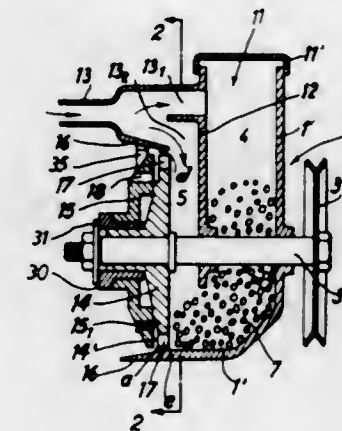
A container for a fluid perfume, cologne or other liquid, the container consisting of a disk-shaped, relatively flat hollow body having flexible side walls which can be compressed between the fingers. The body contains a perfume-saturated absorbent packing and one of the walls is formed with a depressed central opening through which the fragrance of the perfume can emerge. A mesh insert is disposed between said opening and the packing and a spray outlet is formed in one of the walls preferably but not necessarily near the peripheral edge of the container and through which the perfume can be sprayed by pressure imposed on the walls of the container by the fingers.

3,412,908

## SOWING MACHINE

Georges Ferrault, Montereau, France, assignor to Societe Anonyme: Nodet-Gougis, Montereau (Seine-et-Marne), France, a corporation of France

Filed Aug. 22, 1966, Ser. No. 574,158  
Claims priority, application France, Aug. 27, 1965, 29,728, Patent 1,457,515  
10 Claims. (Cl. 222-194)



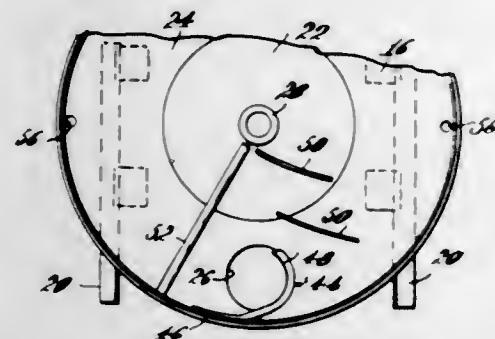
Seed distributing machines are disclosed herein including a seed storage and supply area, a rotatable distributor element and a non-rotatable distributor element. The rotatable distributor element is provided with slots suitable for accommodating a single seed during the rotation of the rotatable element and the non-rotatable distributor element is configured to allow the passage of seeds from the aforementioned slots to the exterior of the distributing machine during a sowing operation. Differential pressure is provided between the interior and exterior of the machine such that air flow past the two distributor elements aids in the dispensing of the seed.



### 3,412,909 ICE DISPENSING BIN

Robert H. Callen, Peabody, Mass., assignor to Market Forge Company, Everett, Mass., a corporation of Massachusetts

Filed July 18, 1967, Ser. No. 654,195  
15 Claims. (Cl. 222-410)

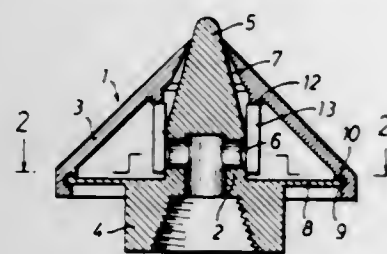


A storage bin for cracked ice having at its bottom a discharge opening and containing a rotor provided with radial vanes by means of which ice may be moved toward the discharge opening to effect discharge, including a dam at the bottom for deflecting ice through the discharge opening and fixed vanes at the bottom for replacing the discharged ice.

### 3,412,910 CLOSURE FOR TUBES OR THE LIKE

Wolfgang Hahn, Lemgo, Germany, assignor to Trans-Inden Etablissement, Vaduz, Liechtenstein

Filed Jan. 31, 1967, Ser. No. 613,005  
Claims priority, application Germany, Feb. 1, 1966, T 30,372  
5 Claims. (Cl. 222-494)

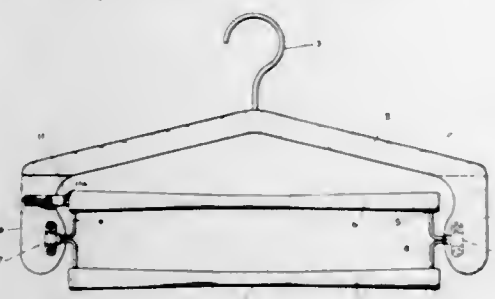


The disclosure in this application relates to a closure for a collapsible tube wherein pressure on the tube unseats the closure for the discharge of the contents of the tube, while release of pressure on the tube permits seating of the closure member to seal the tube against discharge.

### 3,412,911 GARMENT HANGER

Paul B. Eshelman, West Lampeter Township, Lancaster County, Pa (1925 Willow Street Pike, Lancaster, Pa. 17602)

Filed Oct. 7, 1965, Ser. No. 493,713  
2 Claims. (Cl. 223-95)



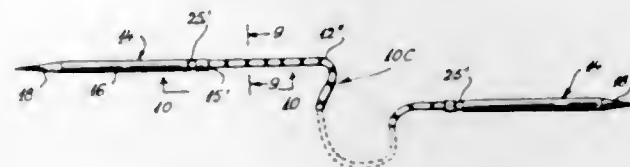
1. A garment hanger comprising a yoke, a hook in the center of said yoke to suspend the hanger, a pair of horizontal bars having free ends spaced inwardly of said yoke spanning the distance between the ends of said yoke,

frame means securing said pair of horizontal bars in vertically-aligned spaced relation to each other, means rotatably securing said frame means on said yoke and detent means on said yoke holding said frame means in position with respect to said yoke.

### 3,412,912 BASTING AND MARKING IMPLEMENT

Gloria Rosenberg, 549 Church Ave., Woodmere, N.Y. 11598

Filed Oct. 31, 1966, Ser. No. 590,745  
1 Claim. (Cl. 223-102)

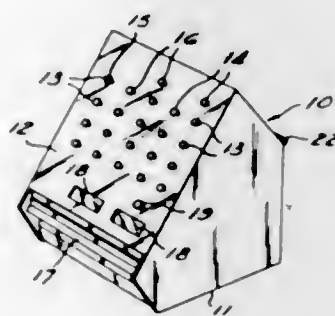


A sewing implement for basting operations which can be used over and over again, which can be easily broken at predetermined points and which can be used as a measuring device. The implement consists of an elongated thread with integral needles at the ends thereof, the thread and needles being formed of flexible plastic material, the thread having constrictions.

### 3,412,913 STAMP DISPENSER

Herman Palter, Cleveland, Ohio

(1571 E. 361st St., Eastlake, Ohio 44095)  
Filed Feb. 10, 1966, Ser. No. 526,502  
16 Claims. (Cl. 225-11)



1. A dispensing device comprising a supply of strip material, a power driven drive member, strip feed means operable to dispense selected lengths of said strip, a planetary clutch including a sun gear element, a planet supporting spider element and a ring gear element, a first of said elements being drivingly connected to said drive member, rotation of a second of said elements operating said feed means, an actuator movable from a first position to a second position, movement of said actuator to said first position locking said feed means against feeding and operating to release the third of said elements for free rotation, movement of said actuator to said second position locking said third element against rotation and releasing said feed means for feeding.

### 3,412,914 METHOD AND MEANS FOR STRAND DISPERSAL

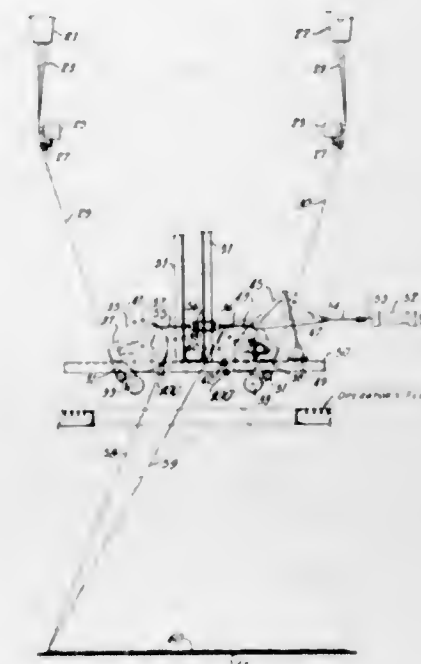
Sheldon A. Canfield, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed Mar. 18, 1966, Ser. No. 535,608  
27 Claims. (Cl. 226-7)

Method and apparatus for controlling the distance of separation of strands from each other in a group of

strands in an ambient fluid stream surrounding and traveling with the group through contiguous fluid by varying the pressure of one fluid with respect to the pressure of

welding machine has a tubular member which is axially movable within an outer cylinder and includes a hydro-

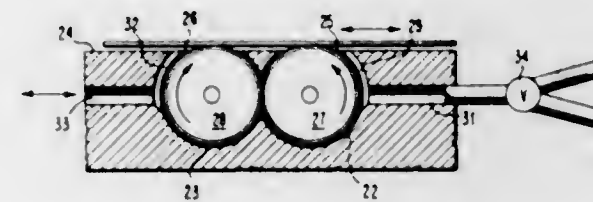


the other fluid. This may be accomplished by restriction, venturi, or spaced nozzle means disposed in the path of said group to receive the passage of the group there-through.

### 3,412,915 PNEUMATIC CAPSTAN ASSEMBLY

Friedrich R. Hertrich, Boulder, Colo., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Sept. 29, 1966, Ser. No. 582,813  
2 Claims. (Cl. 226-49)



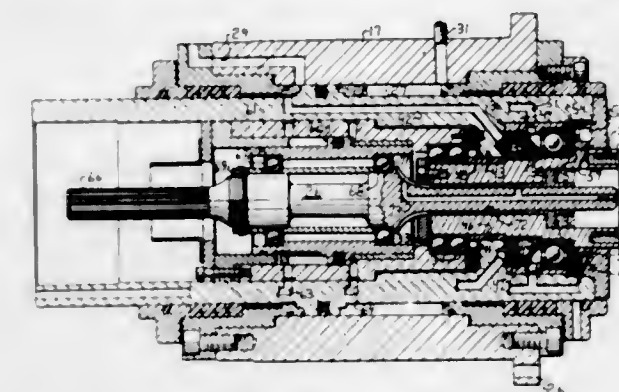
A pneumatic capstan assembly employing a pair of oppositely rotatable capstans. The capstans are mounted in a common enclosure in closely spaced parallel relation. The enclosure includes a smooth outer surface along which a member may be transported. A narrow segment of each capstan is exposed to the surface. A separate manifold is open to the surface upstream of and immediately adjacent to the exposed segment of each capstan. Each manifold extends along essentially the full length of the adjacent capstan. A valve selectively connects either manifold to a source of low pressure air and the other to a source of high pressure air.

### 3,412,916 COMBINED LOAD CYLINDER AND SPINDLE FOR A WELDING MACHINE

Samuel G. Dunlap, Goodfield, Alphonzo Rakus, Peoria, Eugene R. Martin, East Peoria, and George W. Vicary and Ira H. Sage, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of Illinois

Filed June 30, 1966, Ser. No. 561,829  
5 Claims. (Cl. 228-2)

A combined load cylinder and spindle for a friction

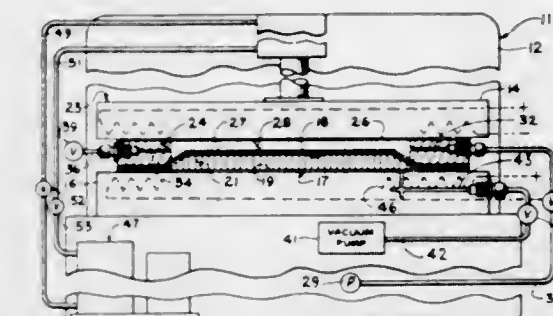


static bearing between the spindle and the tubular member.

### 3,412,917 BONDING OR BRAZING APPARATUS

Ole P. Omley, Inglewood, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California

Filed Oct. 21, 1965, Ser. No. 499,910  
1 Claim. (Cl. 228-44)

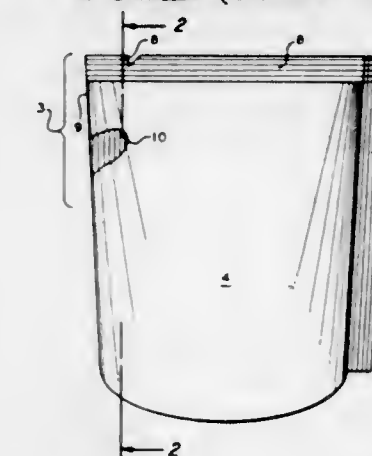


A press facility adapted to have a cellular core panel or the like fabricated thereon. The fabrication operation comprising a brazing operation performed on different portions of the panel at different pressures, a first pressure equal to the actual pressure exerted by the press and a second pressure normally less than the actual pressure exerted by the press.

### 3,412,918 DISPENSING CONTAINER

Clayton C. Sherman, Chicago, Ill., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 31, 1966, Ser. No. 590,653  
4 Claims. (Cl. 229-7)



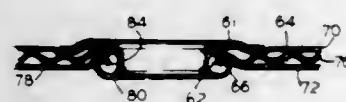
A dispensing container utilizing a tear opening feature is provided with a section wherein the opposing walls are intimately affixed together so as to provide a "stop" for the tear and thereby control the size of the opening formed. A stress concentration means such as a notch or slit can be provided to facilitate initiating the tear.



### 3,412,919 APERTURES FOR CORRUGATED FIBERBOARD CONTAINERS

Robert L. Cain, West Lafayette, Ind., assignor to Inland Container Corporation, Indianapolis, Ind., a corporation of Indiana

Filed Jan. 25, 1967, Ser. No. 611,740  
4 Claims. (Cl. 229—7)

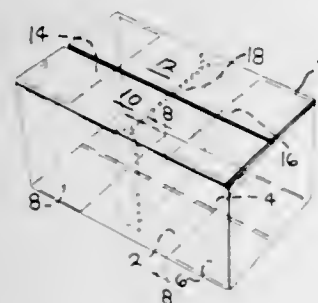


A corrugated fiberboard carton for fluids having at least an inner liner coated to protect the liner from degradation from fluids, and having an aperture for filling or pouring provided with an annular grommet protecting the raw edges of the fiberboard at the aperture from the contained fluids, the grommet rigidifying the carton and adapted to receive a plug, valve, or pour spout.

### 3,412,920 FIBREBOARD CARTON

Jean X. Desforges, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio  
Continuation-in-part of application Ser. No. 621,555, Mar. 8, 1967. This application Dec. 26, 1967, Ser. No. 705,874

12 Claims. (Cl. 229—15)

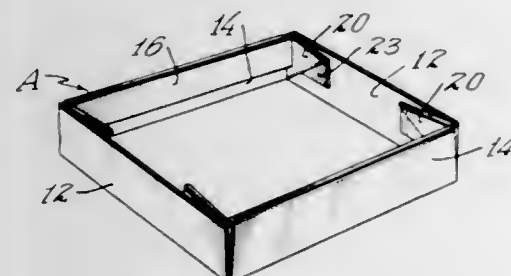


A regular slotted carton formed from a sheet of crushable material with a vertically extending inner pack member located between the non-abutting edges of the innermost pairs of top and bottom closure flaps and extending between the outermost top and bottom closure flaps. The height of the inner pack member slightly exceeds the distance between the outermost top and bottom closure flaps.

### 3,412,921 SELF-LOCKING TRAY

Vernon C. Rekow, St. Paul, Minn., assignor to Hoerner-Waldorf Corporation, St. Paul, Minn., a corporation of Delaware

Filed Oct. 26, 1967, Ser. No. 678,388  
2 Claims. (Cl. 229—31)

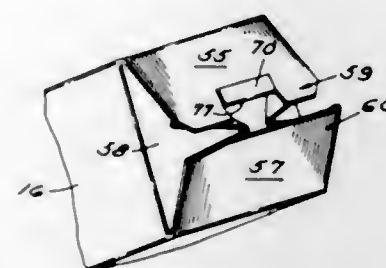


This invention relates to a tray which may be locked in set up form without the use of staples, adhesives or

other such means. The tray includes a rectangular bottom panel having side walls hinged to two opposed parallel edges and end walls hinged to the remaining opposed parallel edges. Triangular gusset flaps are hinged to the sides of the end walls and to the ends of the side walls, the gusset flaps at each corner being connected along fold lines which extend diagonally outwardly from the corners of the bottom panel. The gusset flaps hinged to the side walls include a flap hinged to the upper edge and folded between the end wall gusset flaps and the end wall panels. Liner flanges are hinged to the upper edges of the side walls and are folded between the parallel gusset flap structures to hold the tray from unfolding.

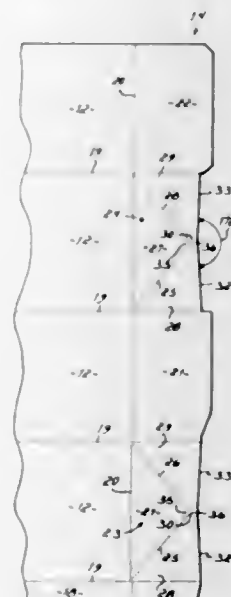
3,412,922  
PAPERBOARD CONTAINER CLOSURE  
Melvin W. Miller, Detroit, and Duncan J. Crawford, Franklin, Mich., assignors to Ex Cell-O Corporation  
Continuation-in-part of application Ser. No. 450,651, Apr. 26, 1965. This application Sept. 6, 1966, Ser. No. 577,212

3 Claims. (Cl. 229—37)



An improved container bottom closure having a fold-under tab in the middle of the tuck-in flap so designed that by using the closure structure and length of the tab forming slits the bottom closure is sealed from edge wicking.

3,412,923  
BOTTOM STRUCTURE FOR LIQUID  
CONTAINING CARTON  
Richard C. Ihde, Parma Heights, William F. Bozic, Olmsted Falls, Max A. Luehrs, Parma, and James F. Manning, Strongsville, Ohio, assignors to U.S. Plywood-Champion Papers Inc., a corporation of New York  
Filed Sept. 28, 1966, Ser. No. 582,607  
2 Claims. (Cl. 229—37)



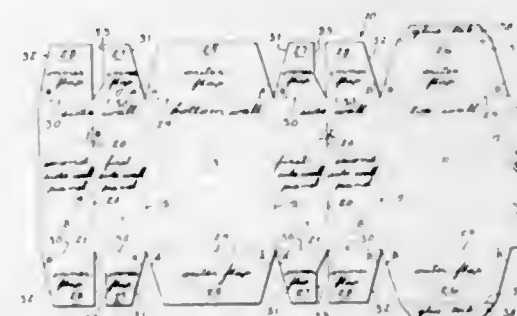
A bottom structure for a liquid-containing carton including four panels hinged to each other and to the carton

side walls, two of the opposed panels being formed by triangular sections which are foldable upon one another to provide a liquid-tight sealed bottom.

### 3,412,924 DOUBLE COMPARTMENT CARTON AND BLANK THEREFOR

Robert A. Krzyzanowski, Milwaukee, Wis., assignor to Milprint, Inc., Milwaukee, Wis., a corporation of Delaware

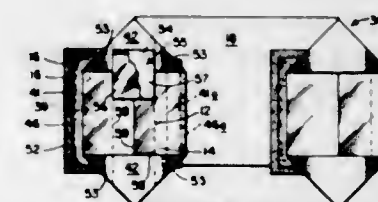
Filed July 28, 1966, Ser. No. 568,481  
2 Claims. (Cl. 229—51)



A double compartment carton with two opposed walls having an intermediate portion closer to each other than the outer extremities of the wall panels, and a severance zone extending around the carton along which the carton is severable into two portions, each of which portions may carry packaged articles.

3,412,925  
FLAT BOTTOM MULTI-PLY BAG  
Shirley H. Booth, Franklin, and John C. Lepisto, Middletown, Ohio, assignors to Albermarle Paper Company, a corporation of Virginia  
Continuation-in-part of application Ser. No. 548,583, May 9, 1966. This application Dec. 13, 1967, Ser. No. 690,230

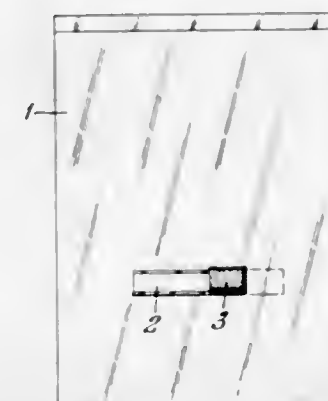
7 Claims. (Cl. 229—55)



A multiwall bag having an inner, a second, and a third ply of tubular, concentrically arranged material wherein the inner ply is made from a preformed, tubular thermoplastic material. Both the inner plastic ply and the second or next innermost ply have the same length and initially have straight cut end sections. The bag has a diamond fold closure on at least one end provided by two infolded corner tabs and two infolded side flaps wherein one of the side flaps has one portion of a greater length than the other to provide a stepped-end seal when the side flaps are infolded. The diamond fold end closure is made by adhesively joining the side flaps to each other and to the corner flaps without permanently adhesively joining the interior surface of the inner plastic ply either to itself or to any other surface of the second or third plies of material. The bag thus constructed has the advantages that the interior plastic ply substantially covers the inside of the bag whereby materials which would normally damage kraft paper can be conveniently packaged without dam-

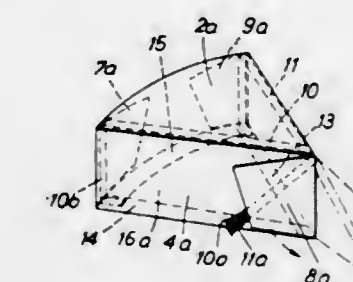
age. The bag can be produced on high speed multiwall bag tubing and flat bottom bag bottoming equipment without any sacrifice in speeds since the bag does not require a hermetic or a permanent adhesive end seal for the plastic inner ply. A process for the manufacture of the bag is also disclosed.

3,412,926  
BAG AND CLOSURE THEREFOR  
Robert Bostwick, Somerville, N.J., assignor to Union Carbide Corporation, a corporation of New York  
Filed July 11, 1967, Ser. No. 652,568  
2 Claims. (Cl. 229—62)



A plastic bag having a closure removably attached to the body of said bag, the closure being a length of adhesive tape which can be readily removed from the bag to be used as a tape tie for said bag.

3,412,927  
CYLINDRICAL SECTOR-SHAPED TEARABLE  
WRAPPING OR PACKAGE, PARTICULARLY  
FOR CHEESE PORTIONS, AND BLANK FOR  
FORMING SUCH WRAPPING OR PACKAGE  
Jakob Baur, Thun, Bern, Switzerland, assignor to Gerber-kase AG, Thun, Switzerland, a company limited by shares of Switzerland  
Filed June 13, 1966, Ser. No. 557,131  
Claims priority, application Switzerland, July 23, 1965, 10,392/65  
10 Claims. (Cl. 229—87)



An improved substantially circular cylindrical sector-shaped tearable wrapping or package for an article or commodity such as a cheese portion, and an improved blank for fabricating such a package. The blank has one panel substantially in the form of a sector of a circle, a second panel forming the outer arcuate or cylindrical wall surface of the package and side panels for forming the side walls of the package. A cover sheet or foil forms the remaining surface and is also substantially in the form of a sector of a circle. Two tear strips extending approximately along the straight side edges of one of the sector-shaped sides are included. The tear strips have portions extending past their point of intersection.

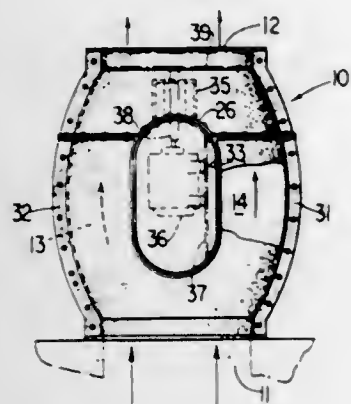


3,412,928

**DUAL PASSAGE FAN**

Richard L. Hull, Davenport, Iowa, Billy L. Bristol, Silvis, Ill., and Charles L. Hinterberger, Bettendorf, Iowa, assignors to Ametek, Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 26, 1966, Ser. No. 575,317  
3 Claims. (Cl. 230—117)



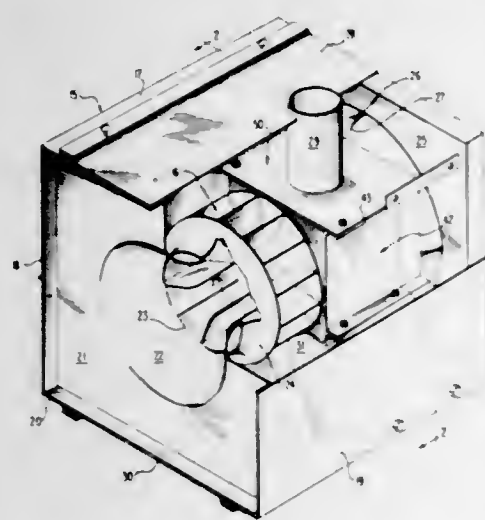
A split tubular fan casing for housing a motor and shaft and one or two fan wheels, wherein the casing includes a half-barrel section and mating half-barrel and half-conical end sections connected thereto.

3,412,929

**INLINE CENTRIFUGAL FAN**

Robert C. Greenbeck, Schofield, Wis., assignor to Greenbeck Fan & Ventilator Corp., Schofield, Wis., a corporation of Wisconsin

Filed Dec. 6, 1966, Ser. No. 599,582  
6 Claims. (Cl. 230—117)



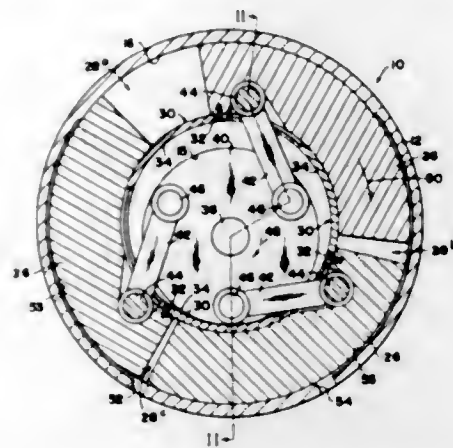
A box-like inline centrifugal fan casing having a rectangular housing with inlet and outlet throats, with U-shaped brackets for the internal structure.

3,412,930  
**COMPRESSOR**

Albert J. Wanner, 86 Wise St., Akron, Ohio 44304  
Filed Apr. 28, 1967, Ser. No. 634,516  
4 Claims. (Cl. 230—144)

A compressor having an annular housing characterized by a plurality of arcuate pistons which are slidably received in an annular piston receiving chamber in the housing. Each piston is operatively connected by pivotal link arms to circumferentially spaced points of a flange

mounted in eccentric relationship to the annular housing whereby rotation of said flange causes adjacent ends of



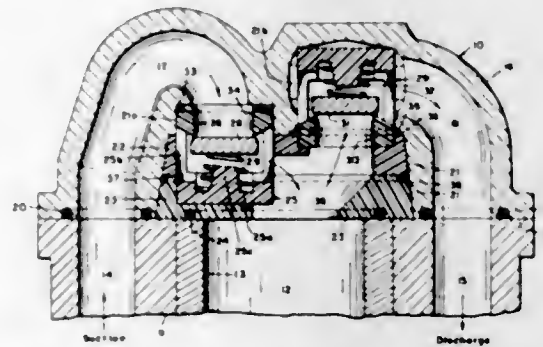
the pistons to vary in circumferential spacing relationship to achieve compressive action.

3,412,931

**VALVED CYLINDER HEADS**

Harry E. Palmer, Calgary, Alberta, Canada, assignor to Palmer Pumps Limited, Calgary, Alberta, Canada, a Canadian corporation

Filed Oct. 18, 1966, Ser. No. 587,600  
6 Claims. (Cl. 230—231)



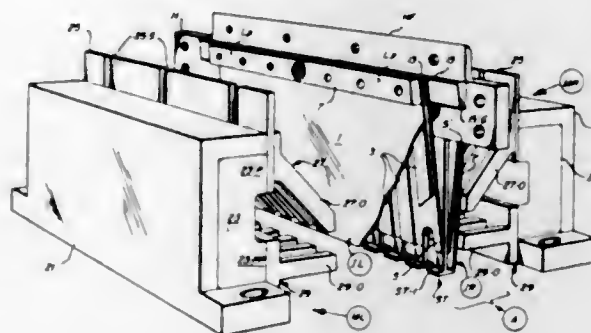
A metallic cylinder head having suction and discharge ports and a chamber communicating the ports with a cylinder. A plastic insert removably positioned in the chamber contains removable suction and discharge valve cages and removable suction and discharge valve seats, all of plastic material. Suction and discharge valve members of metal or ceramic are removably positioned in the respective cages and spring-biased against the respective seats.

3,412,932

**PUNCH INTERPOSER ARRANGEMENT AND ASSOCIATED SELECTION MEANS**

Earl E. Masterson, Newtonville, David W. Bernard, Sherborn, Cheng-hua Wang, Newton Center, and Michael S. Shebanow, Medfield, Mass., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed July 14, 1966, Ser. No. 565,251  
18 Claims. (Cl. 234—115)



For an actuator arrangement including a flexible-strip interposer, improved magnetic features for thrusting the interposer into, and out of, "actuating condition" mag-

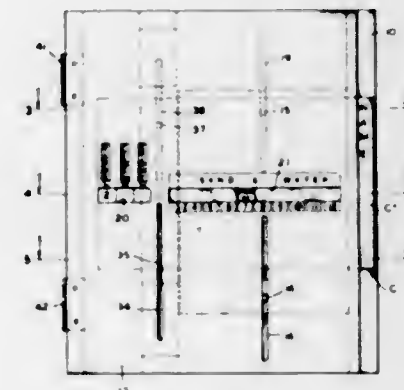
netically, including such features as: opposed flux generating means (permanent versus solenoidal, in certain cases) with a ferromagnetic interposer flexure; a non-magnetic guide sheet intercepting the "working gap"; individual pole pieces for each flexure; a common permanent magnet for each aligned set of such pole pieces; and an adjustable flux-shunt between the common magnet and the pole pieces.

3,412,933

**INFORMATION SELECTOR**

Fred W. Woodward, Jr., 40 Putnam Drive NW, Atlanta, Ga. 30305

Filed July 29, 1966, Ser. No. 568,926  
7 Claims. (Cl. 235—89)



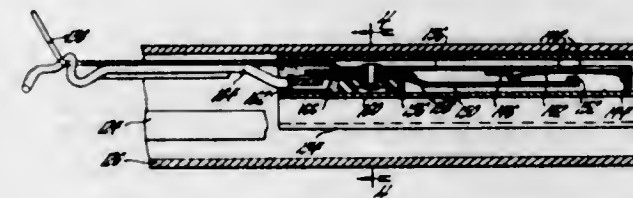
1. A device for visually selecting specific indicia from a table having a multiplicity of rows of lines and columns of such indicia and for masking non-selected indicia thereon, comprising a holder for said table, said holder comprising removably attached front and back members, means mounting said table on said back member, said means permitting longitudinal shifting of said table along a row of indicia, the front member overlying said table, said front member having first means through which a first portion of a row on said table may be exposed, said front member having second means through which a second portion of said row of said table may be exposed, whereby the shifting of said table permits registration of said first and second means with a selected row on said table, and masking means movably mounted on said front member and covering said second means, said masking means having guide means engaging said front member and a plurality of exposure means each of which is selectively registrable with a different unitary portion of said row, said exposure means selectively exposing various portions of said row as said masking means is shifted.

3,412,934

**THERMOSTATIC CONTROL DEVICE**

Wilbur F. Jackson, Rolling Hills, and Henry C. Brauck-siek, Buena Park, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Continuation of application Ser. No. 521,179, Jan. 17, 1966. This application Nov. 14, 1966, Ser. No. 601,268  
4 Claims. (Cl. 236—21)



A combined normal and abnormal temperature responsive control device for controlling fuel flow to burner

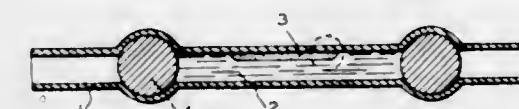
apparatus has a rod and tube thermostat unit responding to normal temperature conditions for normal control of the fuel flow, a thermoelectric safety shut-off device responding to an unsafe condition for shutting off the fuel flow, and an abnormal temperature sensor responding to an abnormal temperature condition for abnormal control of the fuel flow. The abnormal temperature sensor includes a sealed enclosure disposed in the space between the rod and tube of the normal sensing thermostat unit with a bimetal switch in the sealed enclosure being electrically connected in the circuit of the thermoelectric safety shut-off device for actuation thereof in response to an abnormal temperature condition.

3,412,935

**GAS DISPENSING DEVICES**

Andrew E. O'Keeffe, Cincinnati, Ohio, assignor to the United States of America as represented by the Secretary of Health, Education, and Welfare and the Secretary of Agriculture

Filed Aug. 31, 1966, Ser. No. 576,351  
2 Claims. (Cl. 239—34)



A device for emitting a constant, known, precise amount of gas into a surrounding fluid medium comprises a sealed vessel containing a normally gaseous substance in equilibrium with its liquid phase. The walls of the vessel may be permeable to the gas over their entire area or only a portion of the vessel may be permeable. Rate of emission varies with temperature; but remains constant at any given temperature from the time the first bubble of gas appears (in a vessel originally completely filled with liquefied gas) until the time when the last drop of liquid is exhausted.

3,412,936

**LIQUID-EJECTING NOZZLE**

Percival Lionel Boucher and Denis Angellinetta, London, England, assignors to Glenfield & Kennedy Limited, Kilmarnock, Scotland, a British company

Filed Aug. 15, 1966, Ser. No. 572,341  
Claims priority, application Great Britain, Aug. 28, 1965 37,076/65  
4 Claims. (Cl. 239—107)



A liquid-ejecting nozzle consisting of a tubular casing having a side wall in which a port is formed. The casing



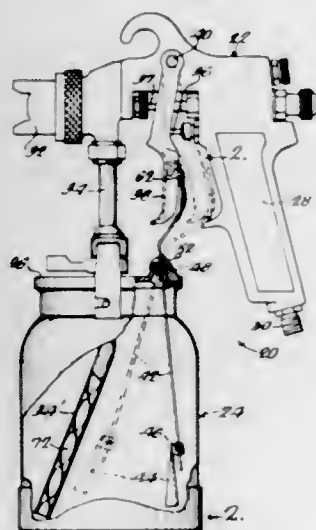
presents an annular valve seat located part of the way across the port and a plunger is movable within the casing. A spring urges the plunger to move across the port into engagement with the valve seat and the end of the casing adjacent the rear end of the valve seat is connectible to a source of supply of water.

3,412,937

**SPRAY GUN WITH PAINT AGITATOR**

Frank E. Chamberlain, Varna, Ill., assignor to Binks Manufacturing Company, Chicago, Ill., a corporation of Delaware

Filed May 20, 1966, Ser. No. 551,749  
14 Claim. (Cl. 239—142)



An improved spray gun assembly including a fluid supply container connected to the spray gun and manually operable trigger means for actuating the spray gun, in combination with agitator means for automatically agitating the fluid contents of the supply container, the agitator means being actuated automatically by the trigger means upon each actuation of the latter.

3,412,938

**MOBILE CROP SPRAYER**

Clarence A. Larson, 4221 Coulee Springs Lane, La Crosse, Ws. 54601

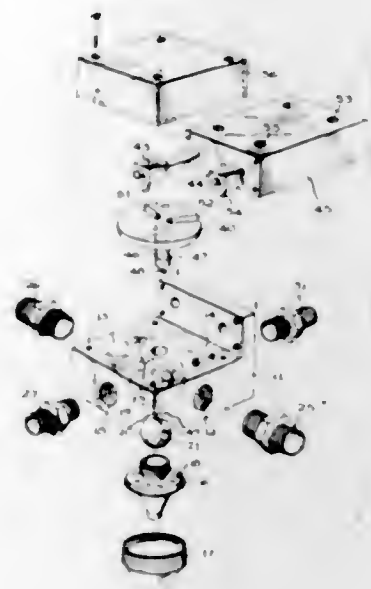
Filed Sept. 6, 1966, Ser. No. 577,395  
4 Claims. (Cl. 239—172)



An improved crop sprayer, particularly for tobacco, having a prime mover, pump means, and a liquid spray tank arranged longitudinally on the frame of a single-wheeled vehicle, with the aforesaid components being fully enclosed within a smoothly contoured sheet metal housing. The housing has a tapered front end portion terminating in a nose which brushes the tobacco leaves aside to avoid damaging them as the vehicle is propelled between narrow rows of tobacco plants.

3,412,939  
**TWO-COLOR SPRAY GUN WITH BALL VALVE**  
William R. Shaffer, Huntingdon, Pa., assignor to Wald Industries, Inc., Huntingdon, Pa., a corporation of Pennsylvania

Filed May 3, 1967, Ser. No. 635,880  
6 Claims. (Cl. 239—415)

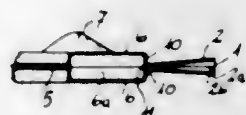


A double-color gun with air pressure activated arms which turn an indexing wheel through 90° which in turn rotates a ball valve having a passage therethrough with different fluid inlets in different positions of rotation.

3,412,940

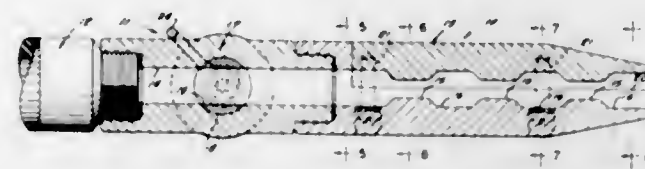
**BURNER FOR TOWN GAS, LIQUEFIED GAS, NATURAL GAS AND MIXTURES THEREOF, AND ADAPTED TO BE FITTED ON BOILERS, STOVES, AIR HEATERS AND THE LIKE**

Ferrolti Tredicesimo Luciano, San Bonifacio, Verona, Italy  
Filed June 13, 1966, Ser. No. 556,937  
6 Claims. (Cl. 239—553)



A gas burner assembly having a plurality of burner units which can be assembled together to receive gas from a common source. Each of these units is formed from a single body of sheet metal which is folded so as to have a pair of opposed walls the configurations of which coact with each other to provide the entire structure for each burner unit. Each of these units has an elongated bottom edge provided with a row of spaced openings through which the combustible gas is adapted to issue, and these openings are situated at the bottom ends of small, tapered channels which extend upwardly from the bottom openings where these channels have their largest cross-sectional area, the elongated row of tapered channels having their top smallest ends in communication with an elongated gas-receiving chamber defined in each unit between the opposed walls thereof just over the tapered downwardly diverging channels. All of the chambers of the several units communicate with a common header from which gas is delivered to the several units to flow from the chambers thereof through the downwardly diverging channels to the openings at the bottom of the units where the combustible gas can be burned.

3,412,941  
**HOSE NOZZLE**  
Sillick Arthur Steinback, 2717 Bilglade, Fort Worth, Tex. 76133  
Filed Feb. 10, 1966, Ser. No. 526,472  
3 Claims. (Cl. 239—569)



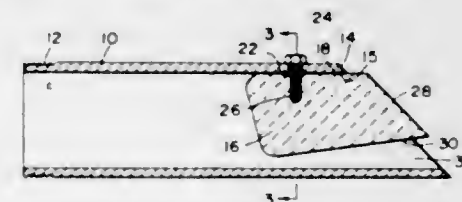
The invention described herein comprises a nozzle for attachment to a fire hose, or for use where high velocity streams of water or chemicals are required, as in fighting fire or in hydraulic mining operations. The nozzle has an axial flow passage of uniform capacity throughout its length formed with a series of chambers having planar walls in parallel planes and disposed in alternate transverse arrangement with respect to each other whereby to provide a tortuous fluid flow therethrough resulting in the discharge of a high velocity stream capable of maximum volume and projection and minimizing nozzle spray and droplets at the outlet which tend to reduce the efficiency of the conventional nozzle.

3,412,942

**NOZZLE HAVING INTERIOR GUIDE**

Donald L. Smith, Cattaraugus, and Peter M. Downie, Niagara Falls, N.Y., assignors to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware

Filed Sept. 28, 1966, Ser. No. 582,596  
6 Claims. (Cl. 239—590)



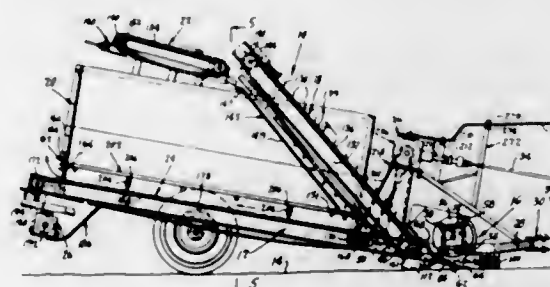
A nozzle for directing a high velocity blast of gas, such as steam or air, at substantially right angles against a stream of molten inorganic material to produce ceramic fibers. The nozzle is provided with a core or insert plug having a novel tapered configuration defining a diverging passageway that causes the gas to flow at a greater velocity to produce a finished product having a large percentage of fiber content.

3,412,943

**SELF-LOADING SPREADER**

Robert L. Lewis and Carl J. Thomas, Baxley, Ga., assignors to Lewis Brothers Manufacturing Co., Baxley, Ga.

Filed July 29, 1966, Ser. No. 568,908  
13 Claims. (Cl. 239—651)



A self-loading, storing, portable spreader is provided with a plurality of loading and unloading conveyors as well as spreading discs to provide a structure which can

load material in the field, store and transport the material to another field, and finally spread the material over the second field.

3,412,944

**PROCESS FOR PRODUCING TITANIUM DIOXIDE PIGMENTS**

Thomas S. Wollenberg, Brandywine Hundred, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Filed Aug. 3, 1965, Ser. No. 477,027  
2 Claims. (Cl. 241—5)

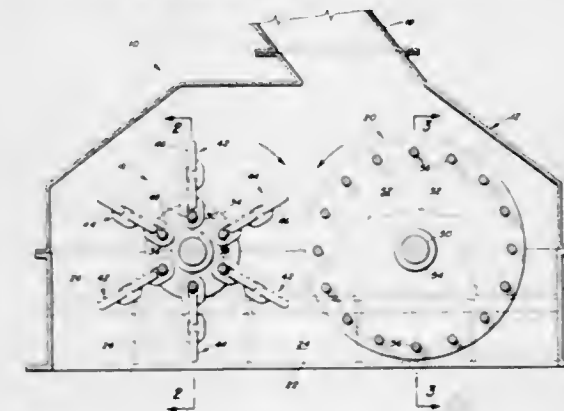
In processes for producing titanium dioxide pigments having improved gloss, hiding power and dispersibility of titanium dioxide pigment by double pass grinding in a fluid energy mill with the addition of a grinding aid, triethanolamine, prior to the second pass, the improvement which comprises (1) grinding a titanium dioxide pigment in a fluid energy mill, (2) adding 0.1 to 1.0% by weight, based on the weight of the original pigment of triethanolamine, and (3) grinding the so-treated pigment in a fluid-energy mill at a controlled energy level in the range of 0.5:1 to 2:1 weight ratio of steam to pigment.

3,412,945

**TWIN ROTOR HIGH EFFICIENCY CRUSHER**

Walter J. Sackett, Sr., 3700 Echodale Ave., Baltimore, Md. 21206

Filed Oct. 21, 1966, Ser. No. 588,502  
8 Claims. (Cl. 241—154)



A materials crusher is described in which a pair of oppositely rotatable elements are arranged in an enclosure. One of the rotatable elements is in the form of a squirrel cage of parallel bars. The other rotatable element consists of a plurality of lengths of link chain attached to the cross rods of a smaller cage.

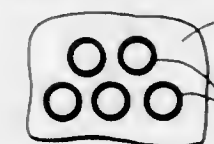
A feed port is arranged in the top of the housing proximate the squirrel cage. Material dropped thereon is impelled against the flailing chains. The resulting powder falls out of the open bottom.

3,412,946

**COMMUNUTING DEVICE**

Karl Gabler, Duren, Rhineland, and Matthias Schmitz, Kleinhau Kreis Duren, Germany, assignors to O. Dories A.G., Duren, Rhineland, Germany

Filed May 27, 1965, Ser. No. 459,291  
Claims priority, application Germany, Aug. 22, 1964, D 45,266  
23 Claims. (Cl. 241—293)



In a comminuting device, a plurality of hollow working elements are disposed on a carrier body, with the working elements extending through the carrier body and form-



ing passageways therethrough. Each of the working elements has at least one working surface which is transverse to the longitudinal axis of the respective working element.

3,412,947

# APPARATUS FOR ATTACHING WINDING FORMERS ONTO ELECTRICAL MOTOR STATORS

Ernst Reichert, Dornigheim (Main), and Willi Muskulus, Bergen-Enkheim, Germany, assignors to Firma Balzer & Droll KG, Bergen-Enkheim, Germany

Filed July 6, 1966, Ser. No. 563,120

Claims priority, application Germany, May 15, 1965, B 81,939

22 Claims. (Cl. 242—1.1)



An apparatus for winding a coil onto a stator having a central bore and grooves opening into the central bore, which apparatus includes a needle-carrier movable along a longitudinal axis for moving the coil wire through the grooves, and a mechanism for positioning the stator substantially coaxially about the longitudinal axis. A first winding former is positionable on one side of the stator and a second winding former is positionable on the other side of the stator. The two formers move towards each other through the central bore parallel to the longitudinal axis to engage the formers with each other. The formers are held to each other in a predetermined relationship with respect to the stator by a mechanism movable perpendicular to the longitudinal axis.

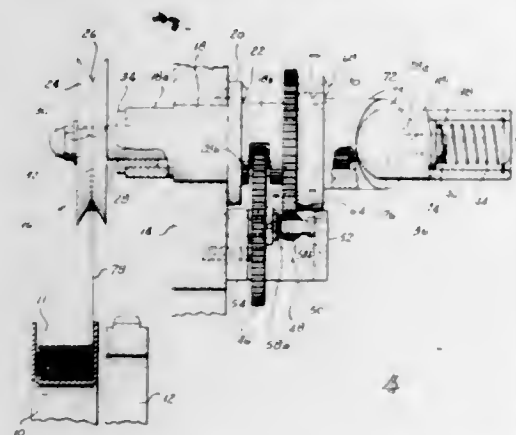
3,412,948

# TOROIDAL COIL WINDING MACHINE WIRE GUIDE

Rudolf Fahrbach, Union, N.J., assignor to The Universal Manufacturing Company, Inc., Irvington, N.J., a corporation of New Jersey

Filed Aug. 31, 1965, Ser. No. 483,954

10 Claims. (Cl. 242—25)



A guide for wire supplied to a toroidal winding machine having a cylindrical cam rotating on a shaft coaxial with

a guide pulley shaft proportional to the rotation of the guide pulley. A linkage between the cam follower and the guide pulley shaft effects reciprocal axial displacement of the pulley and wire therein guided on the magazine of the machine.

3,412,949

# COP WINDER WITH CONTROLLED OR PROGRAMMED YARN TENSION

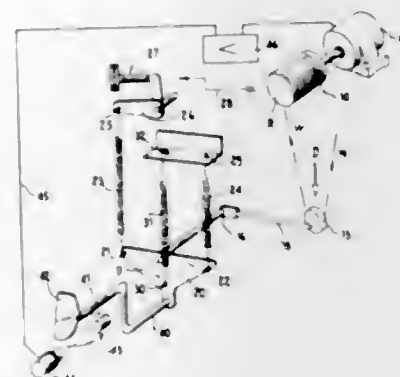
Gaspare Polese, Padova, Italy, assignor to UTITA

Officine e Fonderie di Este, Este, Italy

Filed July 7, 1966, Ser. No. 563,440

Claims priority, application Italy, July 13, 1965, 6,839/65

12 Claims. (Cl. 242—45)



A yarn feeler means, for a yarn winder, includes a dancer pulley carried rotatably by a pivotally supported arm pivotal about the axis of a mounting shaft, the dancer pulley being engaged in a loop of the yarn in advance of the yarn winding means. A lever is secured to the shaft to pivot with the arm, and first and second springs extend between fixed points and points on the lever on opposite sides of the pivot axis of the shaft. The first spring biases the arm in a direction to extend the loop, and the second spring opposes the bias of the first spring. A third spring is connected between a fixed point and a point on the lever which, in the mean position of the arm means, is on a line intersecting the pivot axis and the fixed point connection of the third spring, the pivot axis lying between the fixed point connection of the third spring and the connection of the third spring to the lever. As the lever swings from the mean position in one or the other direction, one or the other of the first and second springs has its force increased and the other thereof has its force decreased. Due to the particular connection of the third spring to the lever, this connection is moved to one side of the mentioned line and the third spring augments the force of that one of the first and second springs whose force has been decreased. Thereby, a substantially constant force is maintained on the dancer pulley and the loop.

The yarn winder is driven by a variable speed motor, and the speed of this motor is controlled in response to movement of the feeler means. For this purpose, a shutter is connected to pivot with the mentioned shaft and intersects more or less of the light passing from a light source to a photocell, this photocell providing a signal to an amplifier which controls the speed of operation of the variable speed motor.

3,412,950

# CLOTH ROLL FEEDING APPARATUS

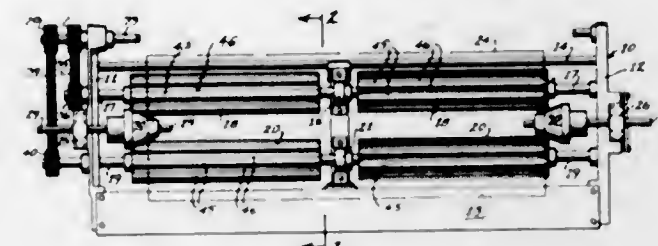
Thomas W. Martin, Sr., Nashville, Tenn., assignor to Cutters Machine Company Inc., Nashville, Tenn., a corporation of Tennessee

Filed Oct. 24, 1966, Ser. No. 588,983

4 Claims. (Cl. 242—54)

A pair of feed rollers rotatably mounted horizontal and parallel to each other and spaced apart sufficiently to sup-

port a cloth roll, the surface of each feed roller having a plurality of circumferentially alternating elongated rib members and elongated depressions, at least one of the



feed rollers comprising a plurality of coaxial roller sections with the rib members on the roller sections being axially disaligned.

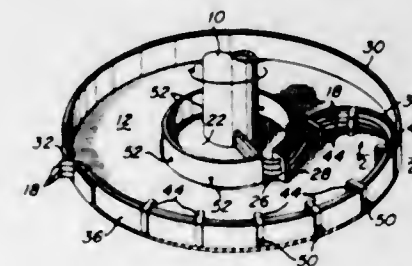
3,412,951

# CABLE COILER APPARATUS

Roy Ober, Springfield, Ohio, assignor to Robbins & Myers, Inc., Springfield, Ohio, a corporation of Ohio

Filed Jan. 6, 1967, Ser. No. 607,773

5 Claims. (Cl. 242—54)



This invention relates to cable coiler apparatus. The invention relates more particularly to apparatus in which one or more cables or the like extend from stationary structure to rotary structure. This invention provides means for coiling of the cables with rotative movement of the rotary structure in one direction and for uncoiling of the cables with rotative movement of the rotary structure in the opposite direction.

3,412,952

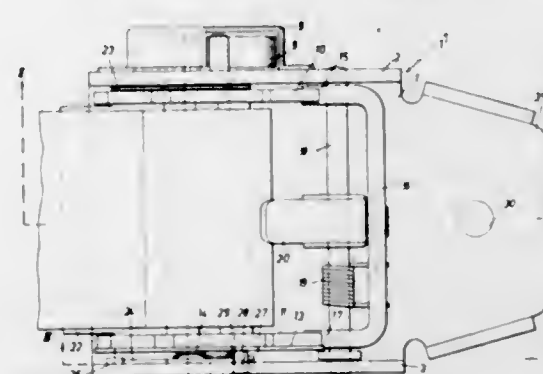
# SELF-RETRACTING WEBBING ROLLER FOR SAFETY BELTS

Gunter Wohler, Hamburg-Wandsbek, and Wolfgang Wolff, Hamburg-Rahlstedt, Germany, assignors to Sigmatex A.G., Basel, Switzerland

Filed Oct. 10, 1966, Ser. No. 585,517

Claims priority, application Germany, Oct. 9, 1965, S 100,011

7 Claims. (Cl. 242—107.4)



A self-retracting webbing roller apparatus for safety belts as used in motor vehicles and aircraft. The apparatus includes a toothed wheel fixed to a roller and controlled

by a spring loaded pawl. The pawl has a locked position and an unlocked position. The position of the pawl is controlled by a self-acting member which comprises a rotatably mounted disk adjacent the toothed wheel and having a cam. The pawl is in an unlocked position while in contact with the cam during the uncoiling of a belt. The pawl is automatically disengaged from the cam thereby entering into a locked position when tension on the belt is reduced.

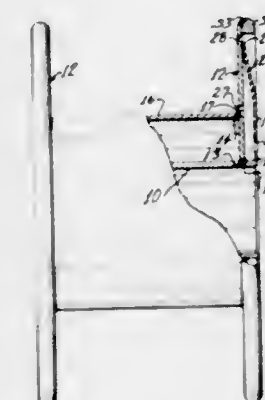
3,412,953

# WEAR-RESISTANT HEAD FOR REEL

James A. Morris, Decatur, Ala., assignor to Metco, Incorporated, a corporation of Alabama

Filed June 28, 1967, Ser. No. 649,636

3 Claims. (Cl. 242—118.8)



A reel having disc-shaped heads secured rigidly to a cylindrical hub inwardly of the ends of the hub. Dished plates are secured to the ends of the hub with outer portions of the plates extending inwardly and secured to the outer surface of the heads. Annular, inwardly opening grooves spaced equal distances from the hub are provided in the heads for receiving ends of a cylindrical drum. A hard, metal weld secures a rim member to the outer peripheral surface of the heads to provide a bearing surface.

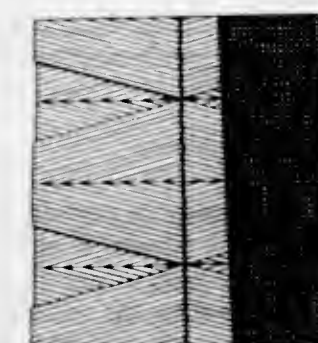
3,412,954

# FORM STABLE CORELESS PACKAGES OF FOAMED THERMOPLASTIC TWINE AND PROCESSES OF MANUFACTURE

Henry Alexander Hood, Moorestown, N.J., assignor to Wall Industries, Inc., a corporation of Delaware

Filed Oct. 28, 1965, Ser. No. 505,467

9 Claims. (Cl. 242—159)



Foamed thermoplastic twine is either heated to a temperature in the range of 100° F. to 185° F. below the melting point thereof and immediately wound on a core, or wound on the core and then heated to such temperature. After cooling, the core is removed to provide a form stable coreless package of twine.



3,412,955

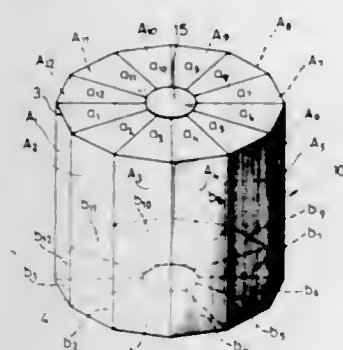
## SATELLITE CONSTRUCTION

Friedrich Vilbig, Munich-Solln, Germany, assignor to Bolkow Gesellschaft mit beschränkter Haftung, Ottobrunn, near Munich, Germany

Filed Oct. 21, 1966, Ser. No. 588,600

Claims priority, application Germany, Oct. 26, 1965, B 84,254

10 Claims. (Cl. 244—1)



1. A drum-shaped satellite, particularly a spin stabilized satellite, having a lateral surface and end faces with solar cells for the energy supply, said lateral surface being formed of a plurality of strip-shaped segments with said solar cells being arranged on the faces of said segments, said end surfaces including a plurality of strip-shaped sectors with a solar cell associated therewith, and disengageable hinge means securing said sectors and said segments on said satellite permitting the pivoting of said segments and said sections up to 90° for the purpose of changing the orientation of the solar cells in respect to the position of the satellite in respect to the sun.

3,412,956

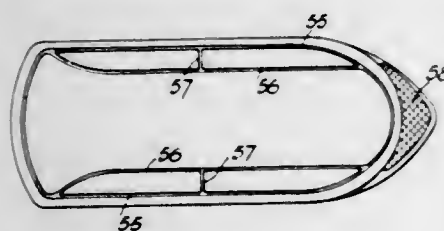
## VEHICLE FOR TRAVELLING OVER LAND AND/OR WATER

Christopher Sydney Cockerell, East Cowes, Isle of Wight, England, assignor to Hovercraft Development Limited, London, England, a British company

Continuation-in-part of applications, Ser. No. 627,925, Dec. 12, 1956, and Ser. No. 731,338 and Ser. No. 731,474, Apr. 28, 1958, both now abandoned. This application Mar. 22, 1960, Ser. No. 16,677

Claims priority, application Great Britain, Dec. 12, 1955, 35,656/55; May 2, 1957, 14,097/57, 14,098/57; Mar. 23, 1959, 9,900/59; Oct. 7, 1959, 34,037/59

40 Claims. (Cl. 244—2)



2. A vehicle for hovering or travelling over land and/or water comprising means which in operation produce and contain a pressurized cushion of gas underneath the vehicle for at least partly supporting the vehicle above the surface over which it is adapted to hover or travel, and means for subdividing the said cushion into a plurality of gas-containing compartments wherein different gas pressures can be produced, at least two of said compartments being positioned along the periphery of said cushion on opposite sides of the fore and aft centre line of the vehicle, and at least two of said compartments being so positioned that their centres of pressure lie on opposite sides of a transverse axis through the centre of gravity of said vehicle.

3,412,957

## INFLATED BALLOON

Arthur D. Struble, Jr., 1754 S. Crenshaw Blvd., Torrance, Calif. 90501

Filed Sept. 24, 1965, Ser. No. 489,999

16 Claims. (Cl. 244—33)



A dirigible-shaped inflated balloon having an internal curtain with a superpressuring line attached to the curtain, the superpressuring line then being attached to a collapsible tube and passing outwardly of the body of the balloon, whereby the volume of the body may be changed by pulling on or releasing the superpressuring line, the superpressuring line then includes an elastic section; it passes about the rotor of a generator and through an annular tube on which the generator is located to a remote tethering or operating location, and inelastic support lines are attached to the body member and to the annular tube. The body member may be provided with inflatable, retractable fins for stabilization and a reflective surface may be formed on the nose of the balloon.

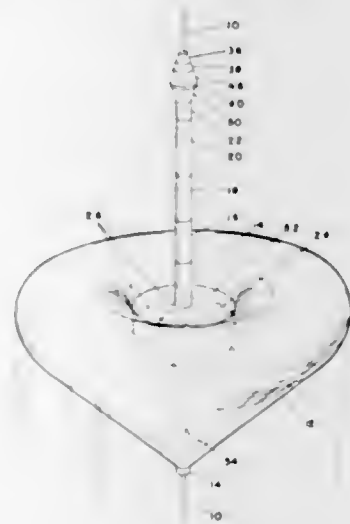
3,412,958

## SUPPLY UNIT

Arthur D. Struble, Jr., 1754 S. Crenshaw Blvd., Torrance, Calif. 90501

Filed Oct. 13, 1965, Ser. No. 495,423

13 Claims. (Cl. 244—33)



A system for supplying energy, such as gas, liquids or electricity to a device such as a lighter-than-air balloon, located at one end of a line, from a supply station, such as an earth-located location, at the other end of the line, including, a carrier or body member mounted on the line and adapted to travel along the line, such as a lighter-than-

air balloon surrounding the line and adapted to slide up the line to the remotely located lighter-than-air vehicle, gas, liquid and electrical supply units mounted within the body or carrier and adapted to be carried along the line with the body member, a bayonet-type coupling member connected to the gas, liquid and electrical supply unit and moved along the line therewith adapted to couple to a receiving element coupled to the balloon at the remote location, the bayonet and the receiving cup having complementary electrical contacts, gas and liquid supply tubes which puncture the frangible element in the supply bayonet and a seating ring which locks above spring-loaded clamps in the receiving cup, and appropriate sealing means to seal the bayonet in said cup for transmission of liquids or gases from the supply unit through the bayonet and into the remotely located vehicle. When the supply of gas, liquid or electricity from one supply unit has been exhausted, this supply unit may be destroyed or it may be left coupled to the remotely located vehicle, in which case the bottom of the supply unit has a receiving cup similar to that mounted on the remote vehicle for receiving the bayonet supply means of another supply unit.

3,412,959

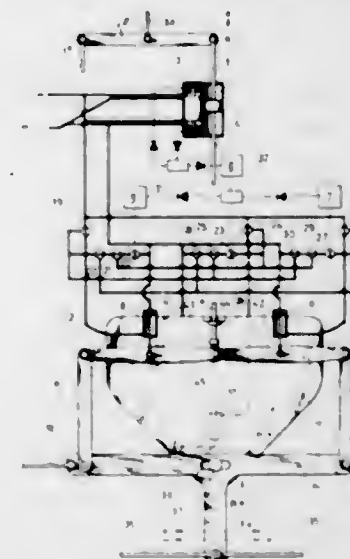
## ELECTRO-HYDRAULIC TRIMMING APPARATUS FOR JET SUPPORTED VTOL AIRCRAFT

Wolfgang Wachter, Munich, Germany, assignor to Bolkow Gesellschaft mit beschränkter Haftung, Ottobrunn, near Munich, Germany

Filed Mar. 21, 1967, Ser. No. 624,796

Claims priority, application Germany, Mar. 25, 1966, B 86,361

8 Claims. (Cl. 244—52)



Electro-hydraulic trimming apparatus for a jet supported VTOL aircraft having plural engines positioned symmetrically to its roll axis, thrust regulators for the engines, a manually operable biaxial control device, and lever means transmitting control movements of the control device to the thrust regulators for compensation of interference moments due to engine failures or unsymmetrical load drops, includes a feeler system converting the interference moments into electrical signals having magnitudes and polarities corresponding to the magnitudes and directions of the interference moments. Angular acceleration meters, one producing control signals responsive to rotation about the roll axis and the other producing control signals responsive to rotation about the pitch axis are connected to respective threshold value switches which transmit, with a preset time delay, control signals exceeding predetermined threshold values. A linearly reciprocable servomotor is connected to the lever means and is operated under the control of an electromagnetically operated four-way valve serving to convert the signals into corresponding compensating movements of the lever means.

3,412,960

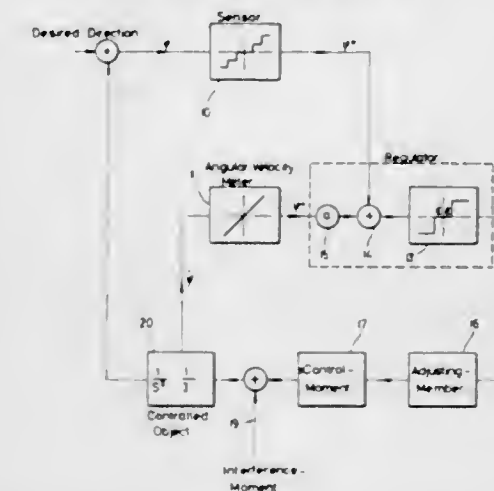
## METHOD AND APPARATUS FOR REGULATING THE ORIENTATION OF ACCELERATION-CONTROLLED BODIES

Heinz Kocher, Ottobrunn, and Werner Kitzig and Plet Witteveen, Munich, Germany, assignors to Bolkow Gesellschaft mit beschränkter Haftung, Ottobrunn, near Munich, Germany

Filed May 24, 1966, Ser. No. 552,580

Claims priority, application Germany, May 28, 1965, B 82,137

10 Claims. (Cl. 244—77)



The disclosure is a method and apparatus for regulating the orientation of an acceleration-controlled body. A first sensor provides a step output signal corresponding to the magnitude and direction of a deviation of the body from a predetermined orientation, and a second sensor, such as an angular velocity meter, provides a linearly variable output signal corresponding to the angular velocity of the deviation. The step signal and the linearly variable signal are compared in a three-position regulator having a dead zone extending to each side of its null position, and the regulator provides a deviation correcting signal for adjusting the orientation of the controlled body through a setting phase to a setting-free phase or a resetting phase, and vice versa. Switching from one phase to another is effected only when the difference between the step signal and the linearly variable signal is equal to the half-width of the dead zone.

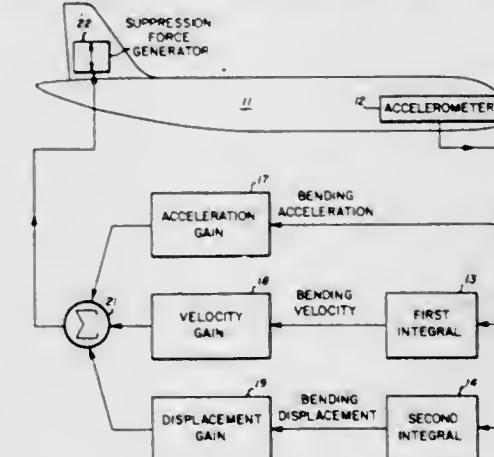
3,412,961

## MEANS FOR SUPPRESSING OR ATTENUATING BENDING MOTION OF ELASTIC BODIES

James C. Howard, Sunnyvale, Calif., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed July 27, 1966, Ser. No. 568,355

4 Claims. (Cl. 244—77)



A system for attenuating or suppressing bending motion in an elastic body in which signals proportional to the bending acceleration, velocity and displacement of the



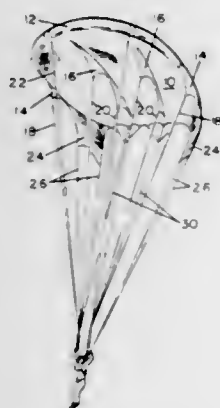
body are utilized to control the generation of forces which are applied to the body to modify its effective bending mass, damping and stiffness, to thereby modify its vibration characteristics. Rigid-body motion components are eliminated from the signals so that the bending signals are uncontaminated.

**3,412,962**  
**RETRACTABLE AIR DRAG REDUCING**  
**AIRCRAFT ATTACHMENT**  
Cland R. Killian, R.F.D. 2, Hayesville, N.C. 28904  
Filed Apr. 10, 1967, Ser. No. 629,676  
8 Claims. (Cl. 244—130)



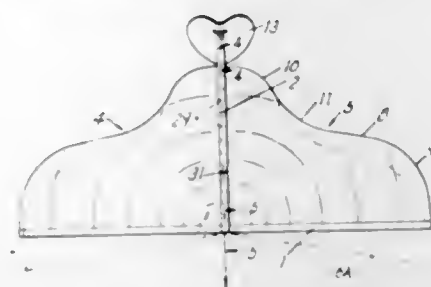
An air drag reducing attachment for the blunt rearward end of an aircraft body portion and including a plurality of elongated concentrically nested and relatively, telescopically engaged tubular members with each smaller member being rearwardly extendible relative to the next largest member so as to form a tapering rear end portion for the aircraft body portion with which the attachment is operatively associated.

**3,412,963**  
**METHOD AND APPARATUS FOR SUPPORTING**  
**AN OBJECT**  
Arthur D. Struble, Jr., 1754 S. Crenshaw Blvd.,  
Torrance, Calif. 90501  
Continuation-in-part of application Ser. No. 423,274,  
Jan. 4, 1965. This application May 24, 1965, Ser.  
No. 458,168  
29 Claims. (Cl. 244—146)



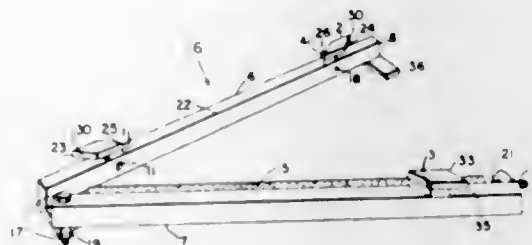
1. A device for supporting an object above the surface of the earth, comprising:
  - (a) a generally-flat, flexible and cambered main body member;
  - (b) said body member having a stiffened leading edge adapted to prevent substantial distortion by wind forces; and
  - (c) rudder elements attached to and depending below the peripheral edge of said body member adjacent the rear thereof, said rudder elements also extending forwardly and outwardly toward the front of said body member and forming an acute angle with respect to a vertical plane cutting through the nominal center of said body member.

**3,412,964**  
**KITE WITH FLEXIBLE BALLOONING**  
**SAIL SURFACES**  
Carl Edward Johnson, 322 Hill St., Rte. 1, Box 355A,  
Coloma, Mich. 49038  
Filed Dec. 27, 1966, Ser. No. 604,794  
10 Claims. (Cl. 244—153)



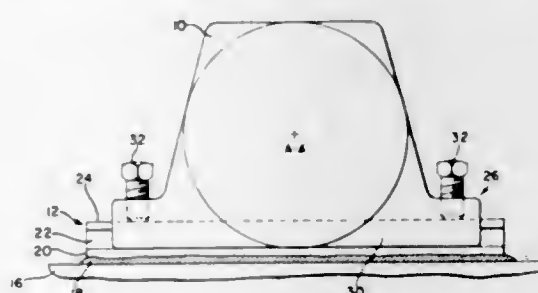
The kite disclosed has a T-shaped frame with a cross bar at the front that is approximately twice as long as the longitudinal member connected rigidly and at right angles to the center of the front cross bar. The supporting surface is a sheet or film of flexible material having its front edge secured along the cross bar and its longitudinal center connected along the rearwardly extending longitudinal base of the T-shaped frame. The sail is slack along its side edges so as to balloon up in flight in symmetrically curved surfaces rearwardly of the front cross member and laterally of the longitudinal axis of the kite. A tail surface of self sustaining rigidity is secured in upwardly and rearwardly inclined position on the rear end of the longitudinal frame member.

**3,412,965**  
**BAG HOLDERS**  
Richard L. Alexander, Orange, Tex., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed May 17, 1966, Ser. No. 550,672  
5 Claims. (Cl. 248—101)



A bag and holder assembly for the detachable holding of disposable plastic bags.

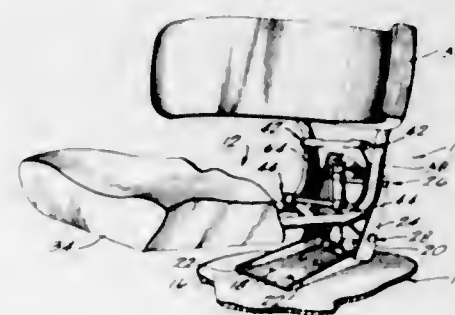
**3,412,966**  
**VIBRATOR MOUNT**  
Carl G. Matson, 401 E. Central Blvd.,  
Kewanee, Ill. 61443  
Filed June 9, 1967, Ser. No. 644,940  
6 Claims. (Cl. 248—228)



A vibrator mount for rigid, preferably permanent attachment to an object to be vibrated in connection with the unloading, settling, flowing, etc. of fluent, particulate

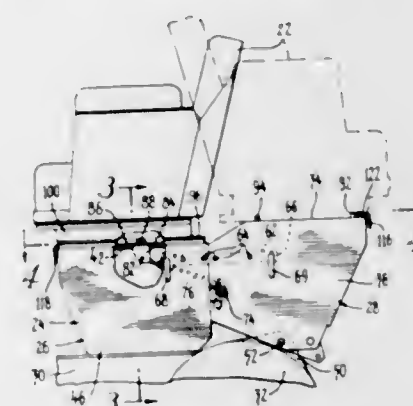
etc. material, the mount being of substantial size as compared with the area of the container etc. wall to which it is attached and having one or more pairs of divergent clamp surfaces to which various types of vibrators or vibrator clamps may be attached.

**3,412,967**  
**RESILIENT SEAT SUPPORT**  
Richard F. Swenson, Milwaukee, and William P. Wohlford, New Berlin, Wis., assignors to Swenson Corporation, Redgranite, Wis., a corporation of Wisconsin  
Filed June 22, 1966, Ser. No. 559,590  
10 Claims. (Cl. 248—400)



A resilient vehicle seat suspension embodying a quadrilateral supporting linkage and a gas spring attached at its opposite ends between adjacent sides of the quadrilateral support in a manner whereby the gas spring reacts through one of the seat supporting links to support the seat, the reaction point of the gas spring being adjustable along the one link to vary the position of the seat as well as the effective resistance of the spring to movement under loads placed on the seat.

**3,412,968**  
**MULTIPLE POSITION VEHICLE SEAT ASSEMBLY**  
Jack H. Rose, Livonia, and Frederick W. Du Vall, Belleville, Mich., assignors to Massey-Ferguson, Inc., Detroit, Mich.  
Filed Feb. 20, 1967, Ser. No. 617,303  
4 Claims. (Cl. 248—425)

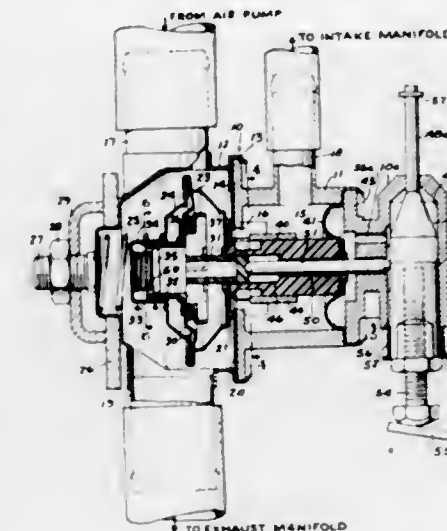


A multiple position seat for vehicle mounted material handling equipment, such as backhoes, wherein the seat may be moved from a driving position to a backhoe operating position.

**3,412,969**  
**VALVE WITH DASHPOT ASSEMBLY**  
Benjamin C. Benjamin, Flint, Mich., assignor to Fuller & Emerson Manufacturing Company, Detroit, Mich., a corporation of Michigan  
Filed Feb. 9, 1966, Ser. No. 526,309  
15 Claims. (Cl. 251—23)

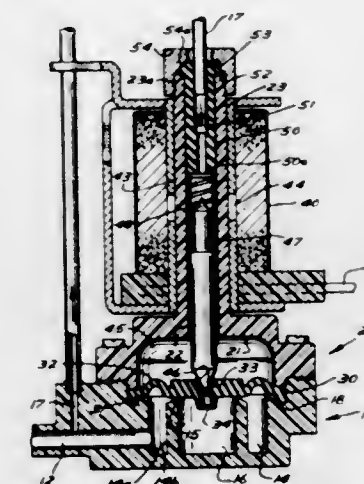
The valve assembly disclosed herein comprises a housing having an inlet and an outlet and a valve seat at the inlet. A dashpot assembly comprising a casing hav-

ing a valve seat seal thereon is supported adjacent the inlet for movement toward and away from the valve seat. A spring yieldingly urges the casing toward the valve



seat. The dashpot assembly includes a plunger extending through the casing and a diaphragm dividing the dashpot casing into two chambers. A metering opening is provided between the two chambers.

**3,412,970**  
**RESILIENT INSERT PILOT SEAT AND CONNECTOR**  
Robert E. Robarge, Minneapolis, Minn., assignor to North American Plastics, Edina, Minn., a corporation of Minnesota  
Filed May 16, 1966, Ser. No. 550,538  
5 Claims. (Cl. 251—30)



This invention relates to an improvement in solenoid valve devices and includes the concept in a preferred form of utilizing the pressure of the controlled fluid to assist in closing the valve and to maintain the same in a closed position. The valve includes a diaphragm type solenoid valve having the plunger mounted above the diaphragm with means to provide pressure to the rear of the diaphragm to seal the same against a seat. The valve includes a conduit to permit flow from the ordinary inlet of the valve to a location behind a diaphragm and the ordinary solenoid plunger incorporated in such a system includes a double ended valving member which will control the fluid through this pressure inlet conduit and will also assist in closing the diaphragm to the valve seat. As an added feature the valve incorporates an insert which provides means for introducing this inlet conduit into the valve member such that the insert will capture this conduit and provide a seat on the other end thereof for controlling flow through the conduit. In a modification of this form the insert is made of a magnetizable material arranged in the flux field of the ordinary energizing coil such that

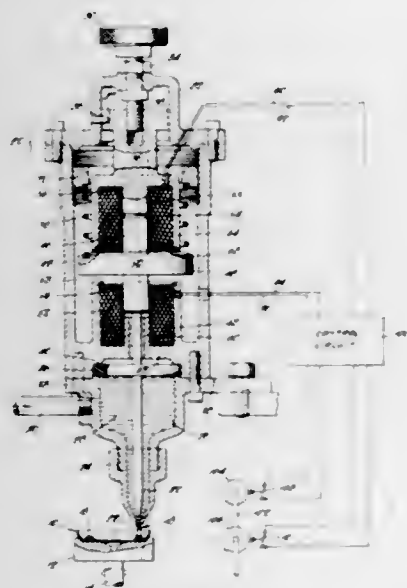


this insert will be magnetized and a direct magnetic force will be supplied to the valve member for positioning thereof. This direct force is more positive in effect than the ordinary provided flux field source of magnetism.

**3,412,971**  
**ELECTRICALLY-CONTROLLED VALVE APPARATUS AND CONTROL CIRCUIT SUITABLE FOR USE THEREIN**

David T. McDivitt, Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

Filed Mar. 3, 1966, Ser. No. 531,605  
15 Claims. (Cl. 251-137)



An electrically-controlled metering valve for dispensing viscous plastic to form a sealing ring around the underside of bottle caps, accurately and at a high rate of speed. A pair of solenoid coils are disposed around the valve stem and actuated alternately to open and close the valve. Each coil is actuated by an SCR having a capacity-discharge circuit associated with it to provide rapid valve operation without the need for high average electrical power and associated excessive heating, and capacitive cross-coupling between the SCR's synchronizes their operation. The desired rapid "snap action" of the valve is enhanced by a rectifier and Zener diode circuit in parallel with each coil.

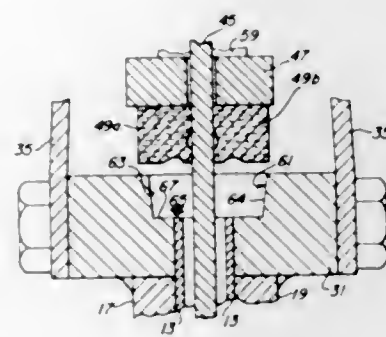
**3,412,972**  
**BONNETLESS GATE VALVE WITH SIDE THRUSTING PACKING BOX**

John L. Williams, Lake Oswego, and Russell W. Bunch, Portland, Oreg., assignors to Fabri-Valve Company of America, Portland, Oreg.

Filed Sept. 21, 1964, Ser. No. 397,702  
1 Claim. (Cl. 251-203)

1. A bonnetless gate valve having a valve body formed with intersecting chest and flow passages, a gate blade extending into said chest and engageable on one of its sides with a seat in said flow passage to control the flow therethrough, said body having a packing receiving recess surrounding said blade, an elongate loop type compressible packing member surrounding said blade and seated in said recess, said packing member comprising a pair of spaced elongate leg portions connected by end portions, a pressure plate means for applying pressure to said packing member and causing it to sealingly engage said blade, said recess being unsymmetrically disposed relative to said chest passage in a direction normal to said

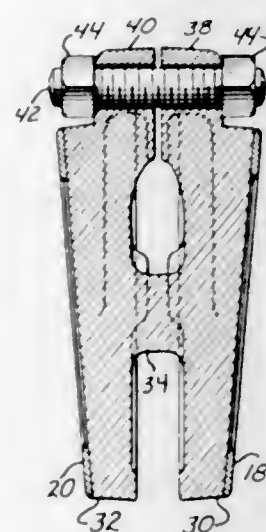
blade so that the portion of said recess on one side of said blade is wider than the portion on the other side of said blade, the narrower recess portion being on the side of the blade opposite from the side that engages the seat, the leg portions of said packing member being of the same cross sectional dimensions, whereby the fit of the leg portion for the narrower recess portion is tighter than the fit of the leg portion for the wider recess portion so that the pressure of said packing member on the side of said blade opposite said seat is greater than on the other side of said blade whereby to press said blade against said seat,



the uniform cross sectional dimensions of the leg portions of said packing member enabling it to be applied in random or indiscriminate fashion to the recess without regard to which leg portion fits in which recess portion, whereby pressure against the blade towards the seat is attained regardless of which leg portion is seated in which recess portion.

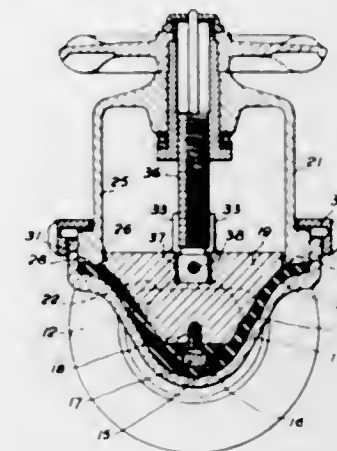
**3,412,973**  
**FLEXIBLE DISC GATE VALVE**  
Edward W. Carr, Cicero, and Eugene C. Petrie, Elmhurst, Ill., assignors to Crane Co., Chicago, Ill., a corporation of Illinois

Filed Nov. 24, 1967, Ser. No. 685,581  
9 Claims. (Cl. 251-327)



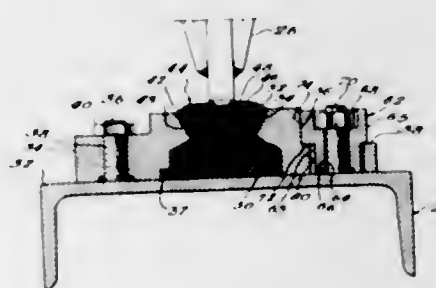
A gate valve of the type having converging valve seats. A pair of spaced discs are centrally joined to form a flexible, wedge-shaped valve closure member. At the widest portion of the closure wedge, the discs are provided with projections adapted to engage the inverted T-head of an actuating member. Cooperatively associated with the disc projections are stop means, such as screws, bolts, rivets, C-clamps and the like, which serve to limit lateral spreading of the discs, thus preventing damage to valve seating surfaces and other elements of the valve structure which might result from expansion of entrapped fluid.

**3,412,974**  
**FLUID CONTROLLING VALVES**  
Derek John Harris, Cwmbran, England, assignor to Saunders Valve Company Limited, Cwmbran, England, a British company  
Filed Aug. 16, 1965, Ser. No. 479,896  
Claims priority, application Great Britain, Aug. 20, 1964, 34,131/64  
9 Claims. (Cl. 251-331)



A diaphragm valve of the straight through bore type having the seating formed partly by a tapering opening from one side which runs tangentially into the bore at the sides, and completed by the bore, has the seating rounded over by a large radius curvature running into the clamping surface, also curved, on the valve casing for the margin of the diaphragm, while the compressor follows the rounded curvature, and reaches to within working clearance of the clamping surface of the valve bonnet. The effect is to obtain tight closure of the valve without the need to allow for stretching of the diaphragm, while the clamped width of the diaphragm margin can be made narrower than in prior art valves. The diaphragm margin may have a peripheral rib which is compressed by the clamping surface on the bonnet. The casing may have a cylindrical wall which bounds the peripheral edge of the diaphragm, formed in a part externally threaded to receive a ring nut by which the bonnet is held to the casing.

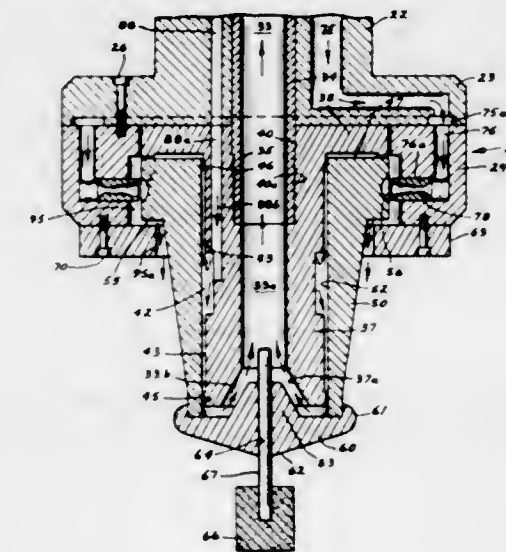
**3,412,975**  
**FABRICATED RESILIENT SEAL RETENTION FOR LARGE VALVE DAMPERS**  
Gregory A. Kurkjian, Jr., Lombard, Ill., assignor to Henry Pratt Company, a corporation of Illinois  
Filed Sept. 6, 1966, Ser. No. 577,362  
6 Claims. (Cl. 251-362)



1. A valve seat retention structure for use in a valve body having a through passage, a resilient sealing member positioned about the inner periphery of the passage and a backing member fixed to the body and abutting one side of the resilient sealing member, comprising: a retaining member mounted on the valve body adjacent the other side of the resilient sealing member for movement toward and away from the resilient sealing member, said retaining member having a first surface for receiving forces from one direction to move the retaining mem-

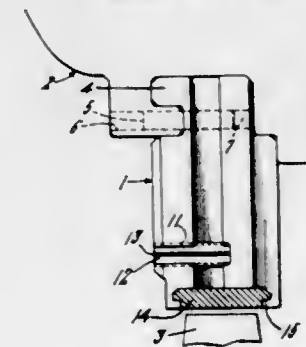
ber towards and away from the resilient sealing member, said retaining member further having a locking surface for receiving forces from another direction for locking the retaining member against movement relative to the valve body and the resilient sealing member; a camming member in the valve body adjacent the retaining member having a first camming surface in abutting relation to the first surface of the retaining member for moving the retaining member responsive to movement of the camming member, said camming member having a second locking surface adjacent the retaining member locking surface, said camming member being mounted to the valve body for rotation relative to the retaining member and also for movement toward and away from the retaining member locking surface between an unlocked position and a locked position; and locking means for locking the camming member and retaining member in selected adjusted positions.

**3,412,976**  
**VACUUM HELD HYDROSTATIC ROTOR**  
Theodore J. Arneson, Jr., % Professional Instruments Co., 4601 Highway 7, Minneapolis, Minn. 55416  
Filed Feb. 8, 1967, Ser. No. 614,673  
10 Claims. (Cl. 253-2)



A rotatable tool or work piece holding device which in connection with a vacuum recess is held in operating position by atmospheric pressure against a thrust pad, said device being slidably removable by interruption of the vacuum and being oriented in operating position by hydrostatic means.

**3,412,977**  
**SEGMENTED ANNULAR SEALING RING AND METHOD OF ITS MANUFACTURE**  
Wayne B. Moyer and Richard W. Gentile, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York  
Filed Apr. 15, 1965, Ser. No. 448,343  
3 Claims. (Cl. 253-39)



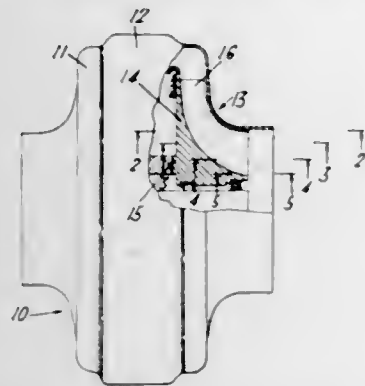
Annular ring of plural segments whose adjoining faces are made by turning about axes parallel to ring axis.



3,412,978

**RADIAL FLOW TURBINE OR COMPRESSOR ROTOR**

John Gregory Keenan and John Alexander Henderson  
Scott, Derby, England, assignors to Rolls-Royce Limited,  
Derby, England, a British company  
Filed July 21, 1966, Ser. No. 566,910  
Claims priority, application Great Britain, Aug. 6, 1965,  
33,872/65  
3 Claims. (Cl. 253—39)

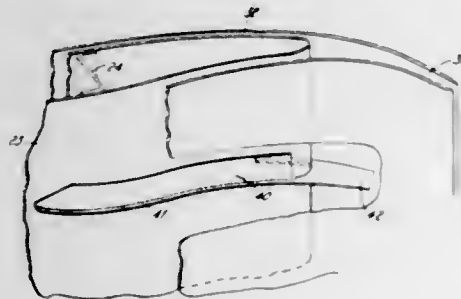


A radial flow compressor or turbine rotor having an inlet and an outlet with vanes extending from the inlet to the outlet and defining flow passages therebetween. The radially inner portion of the vanes are thicker than the radially outer portions and the opposite axial ends of the rotor are of different diameters. Each of the vanes also has a thickness measured at a constant radius with respect to the axis of rotation which increases with increasing distance from the end of the rotor of smaller diameter. These features of the rotor provide each flow passage with an effective flow cross-sectional area varying at a substantially constant rate from the inlet to the outlet of the rotor.

3,412,979

**AEROFOIL-SHAPED BLADE FOR USE IN A FLUID FLOW MACHINE SUCH AS A TURBINE**

Glyn Twiston Davies, Milford, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company  
Filed Nov. 25, 1966, Ser. No. 597,078  
Claims priority, application Great Britain, Dec. 10, 1965,  
52,633/65  
6 Claims. (Cl. 253—39.1)

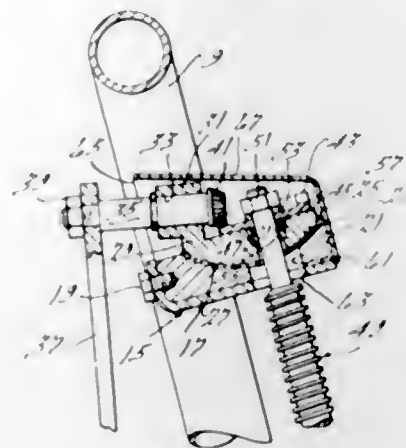


An aerofoil-shaped blade for a gas turbine engine has an external wall and an internal wall and a space therebetween. Apertures are provided in the internal wall for directing some of the cooling fluid admitted to the interior of the interior wall to flow over the interior of the external wall so as to cool it. The cooling fluid escapes from the space between the two walls by means of an aperture in the trailing edge of the blade. A plate extending across the space between the interior and exterior walls is provided so as to limit the flow of cooling fluid in the space towards the low pressure region thereof and to increase the flow of cooling fluid passing over the radially outer portion of the blade. Three ducts are provided through which a portion of cooling fluid entering the interior of the interior wall passes directly to the exterior of the blade without mixing with the cooling air from the space between the two walls.

3,412,980

**FLOATING GEAR SCREW JACK**

Herbert Pikoske, Union Grove, Wis., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware  
Filed Oct. 25, 1966, Ser. No. 589,419  
1 Claim. (Cl. 254—99)

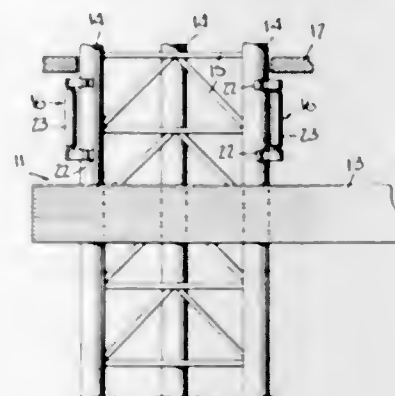


An A-frame jack has a fixed cross piece and brace that carries a saddle with a spherical seat in which is received a spherically surfaced gear carrier that supports a pinion and drive gear for the lift screw.

3,412,981

**MARINE PLATFORM SUPPORT ASSEMBLY**

George T. Richardson, Houston, Tex., assignor to The Offshore Company, Houston, Tex., a corporation of Delaware  
Filed Sept. 29, 1966, Ser. No. 582,984  
13 Claims. (Cl. 254—106)



1. In combination with a support leg of a marine platform having a plurality of spaced elongated members in interconnected braced relation; a plurality of jacking assemblies, each of said jacking assemblies being disposed on a respective one of said members, each of said jacking assemblies including a pair of spaced crescent-like yokes disposed longitudinally of said member, a jack means connecting each of said yokes in movable relation to each other, and a pair of pin cylinder devices mounted at respective ends of each of said yoke for removable engagement with said member.

3,412,982

**FEED MIXER AND METHOD**

Leon G. Feterl, Salem, S. Dak. 57058  
Continuation-in-part of application Ser. No. 382,271,  
July 13, 1964. This application Aug. 23, 1965, Ser.  
No. 481,873  
7 Claims. (Cl. 259—4)

A method and apparatus for mixing stock feed materials comprising the use of a walled mixing chamber having a bottom, side, and end walls and employment of an end-

less conveyor therein having a bottom run disposed above the bottom of the chamber and a top run disposed near

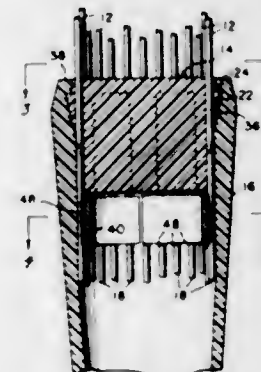


the top of the chamber, with a sloped intermediate run therebetween, said conveyor being utilized to mix the feed materials in cyclic, circuitous fashion.

3,412,983

**STIRRING WHIP AND METHOD OF MAKING SAME**

Sol Kesilman, 7930 Oak Hill Drive, Cheltenham, Pa. 19012; Hyman B. Penn, 435 Twickenham Road, Glenside, Pa. 19038; and Milton Kravitz, 7908 Rolling Green Road, Cheltenham, Pa. 19012  
Filed Feb. 10, 1967, Ser. No. 615,120  
14 Claims. (Cl. 259—144)

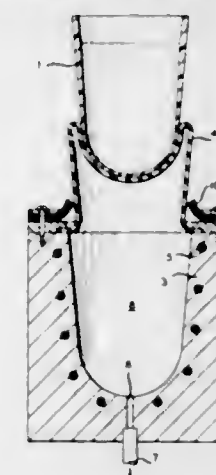


A stirring whip including a plurality of wire loops secured in a block and a hollow handle secured to the block by a liquid-tight resilient grip. The ends of the wire loops are arranged in a spaced, parallel relationship within the block.

3,412,984

**METHOD AND APPARATUS FOR PARISON PREHEATING WITH A COVER**

Jimmie E. Hudson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed June 24, 1965, Ser. No. 466,704  
6 Claims. (Cl. 263—2)

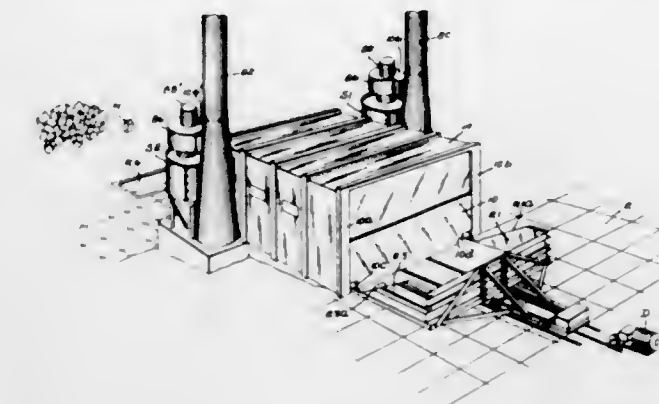


An open topped mold has a flexible liner and a flexible cover extending across the open top. A slit in the cover allows insertion of parisons into the mold for heating. Means is provided to introduce fluid pressure between the mold and the liner so as to displace the liner and thus remove the heated parison.

3,412,985

**METHOD AND APPARATUS FOR BURNING AUTOMOBILE BODIES AND OTHER WASTE MATERIALS**

Robert E. Perry, 32 Abbott St., South Weymouth, Mass. 02190, and George J. Perry, Norwood, Mass.; said George J. Perry, assignor to said Robert E. Perry  
Filed May 23, 1966, Ser. No. 552,003  
12 Claims. (Cl. 263—2)

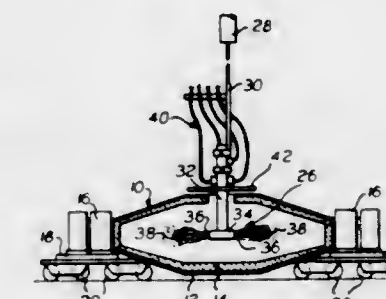


A burning chamber formed with a channelled base is employed to slidably support a row of vehicles arranged side by side in abutting relationship above burning units in the base. A traveler member periodically advances auto bodies to be burned into the chamber to advance the entire row of burned bodies and eject a rearmost burned body into a discharge chute. Combustion gases are directed by the burning units along the underside of the row of vehicles and many includes both conventional and jet type burners operating at superatmospheric pressure. Products of combustion are processed to remove heavy smoke particles.

3,412,986

**DOUBLE-ENDED OXY-FUEL BURNER**

Thomas L. Shepherd, Essex Fells, and James W. Estes, Piscataway, N.J., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York  
Filed Apr. 17, 1967, Ser. No. 631,210  
10 Claims. (Cl. 263—4)



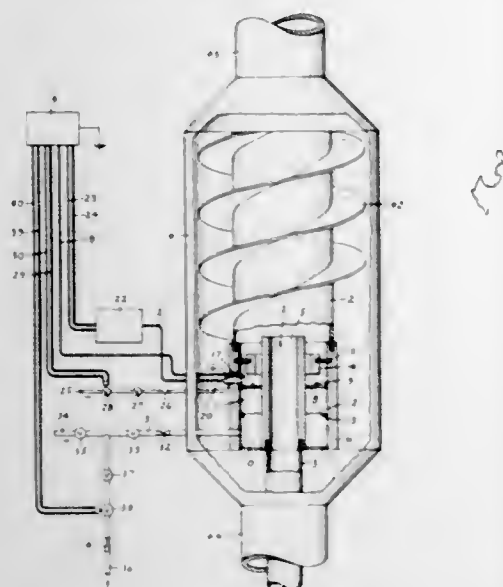
This specification discloses a double-ended oxy-fuel burner which is intended especially for heating ladles that are used in iron and steel works for transporting molten metal from a blast furnace to another location at which the metal must be delivered while still in a molten condition. The burner is not used when the ladle is loaded with molten metal. It is used to pre-heat the ladle, and it can be used where necessary to keep the ladle from cooling between successive loads of metal. The burner is proportioned to the ladle and has oppositely directed orifices for producing long flames and for projecting them in opposite directions. The burner is constructed with cooling jackets extending all the way to the ends of the tips so that the burner can withstand the high temperature within the ladle.



3,412,987

**THERMOCONVERTER RUN WITH UNIVERSAL FUEL FOR THE PRODUCTION OF PURE AIR**  
Marco Djuragin, Sao Paulo, Brazil, assignor of one-half to Maximilian LinkerFiled July 13, 1966, Ser. No. 564,833  
Claims priority, application France, Sept. 28, 1965, 32,802

9 Claims. (Cl. 263—19)



The present invention which relates to a thermoconverter structurally comprises a large diameter cylinder having a smaller diameter cylinder set therein. A combustion chamber is formed between the large and small diameter cylinders and a screen separates a lower section from an upper section of the combustion chamber. A series of burners are provided in the large diameter cylinder walls and are in turn connected to a control panel for varying the degree of combustion required within the combustion chamber. Firebrick walls are provided above the series of burners and are supported on the large diameter cylinder. An air cylinder is provided in communication with the small diameter cylinder for the introduction of air thereinto. The entire combustion chamber structure is internally connected to a large external cylinder and a spiral ribbed cylinder is connected to the upper end of the large diameter cylinder. With this structure affords the heating of air with any fuel free of contact with the air from which comes out of the converter.

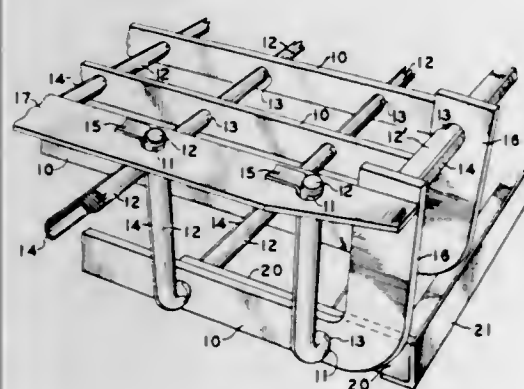
3,412,988

**GRID STRUCTURE**

Michael D. Casella, Cleveland, Ohio, assignor to Rose Iron Works, Inc., Cleveland, Ohio, a corporation of Ohio

Original application Apr. 3, 1964, Ser. No. 357,243, now Patent No. 3,337,198, dated Aug. 22, 1967. Divided and this application July 10, 1967, Ser. No. 652,121

7 Claims. (Cl. 263—47)



A grid structure having a plurality of spaced apart supporting beam members interconnected by spacer tie bars extending through aligned openings in the beam members.

the beam members in such a manner as to permit expansion and contraction of the grid parts during use with minimal distortion or weakening.

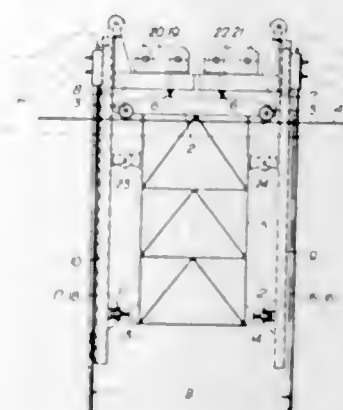
3,412,989

**DEVICE FOR THE EXCHANGE OF LANCES CAPABLE OF BEING INSERTED INTO METALLURGICAL VESSELS SUCH AS CRUCIBLES**  
Franz Penn, Linz, Austria, assignor to Vereinigte Österreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria

Continuation of application Ser. No. 385,713, July 28, 1964. This application June 22, 1967, Ser. No. 648,168

Claims priority, application Austria, Aug. 26, 1963, A 6,851/63

3 Claims. (Cl. 266—34)



The device for exchanging lances for insertion into metallurgical vessels disclosed herein includes a crane movable along a track above a metallurgical furnace and being provided with at least one power-driven lance carrier, which is movable on guides on the crane in a direction transverse to the tracks on which the crane is supported, each lance carrier being provided with a pair of lances and means supporting the lances to enable them to be raised and lowered for introduction into and withdrawal from the furnace, the transverse movement of the lance carrier enabling the lances to be moved to a blowing position or a reserve position.

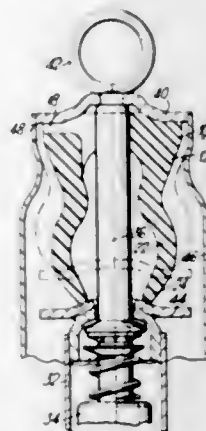
3,412,990

**COMPRESSION SPRINGS OF ELASTOMERIC MATERIAL**

Dennis John Gladstone, Luton, England, assignor to General Motors Corporation, a corporation of Delaware

Filed July 14, 1966, Ser. No. 565,315  
Claims priority, application Great Britain, July 21, 1965, 30,940/65

2 Claims. (Cl. 267—63)



A compression spring for shock absorbers made of elastomeric material being adapted to surround the shock absorber piston rod and to resist movement of the piston rod inwardly into the shock absorber during the compression stroke. A frusto-conically shaped base portion of the com-

3,412,993

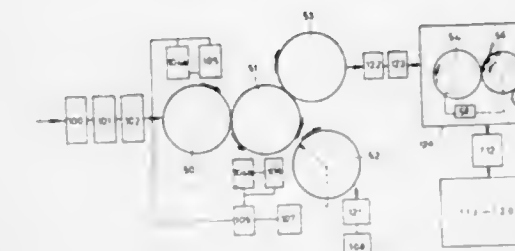
**PROCESS AND AN APPARATUS FOR CHECKING BANK NOTES OR BILLS AFTER THEIR PRINTING AND BEFORE THEIR PACKING**

Gualtiero Glori, 4 Rue de la Paix, Lausanne, Switzerland

Filed June 2, 1966, Ser. No. 554,843

Claims priority, application Switzerland, June 2, 1965, 7,701/65

8 Claims. (Cl. 270—1)



This disclosure relates to a process and an apparatus for checking bank notes after printing and before packaging which includes a source of supply of stacks of notes having control colour marks thereon; first counting means for the notes; transport means for conveying the notes at a given speed in a certain direction to successive stations where checking operations are to be performed; first detecting means positioned after the first counting means for detecting the presence of the colour marks on either surface of the notes while they are conveyed by the transport means and for emitting a signal in the presence of these marks; second detecting means including at least three photo-optical detectors positioned above and three below the transport means for checking the centering of the notes relative to the edges thereof as they are conveyed in front thereof and for emitting a signal upon the detection of an imperfect note, two of the detectors scanning at least one of the edges of the notes at two spaced reference positions, while the third detector scans one adjacent edge of the notes at a reference position; a control unit to which the signals from the first detecting means and the detectors are fed; a take-off station controlled by the control unit with a time lag with respect to the emission of the signals for removing imperfect notes; and second counting means for counting the checked notes.

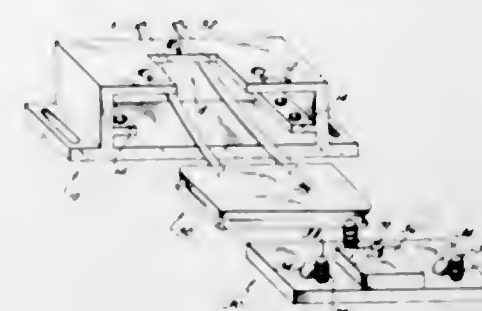
3,412,991

**REPRODUCIBLE POSITION PLATFORM**

John Anthony De Naples, Jr., Stamford, and Richard Terence Hunt and John Brian Peter Williamson, Wilton, Conn., assignors to Burndy Corporation, a corporation of New York

Filed July 28, 1966, Ser. No. 575,912

4 Claims. (Cl. 269—35)



An inflatable bladder-like device, interposed between a base and a moveable platform, can be inflated to raise the platform above the base into a precisely-known position. The position of the platform relative to the base is determined by cooperating ball-and-socket alignment guides. When the alignment guides are disengaged, the platform can be removed from the base without disturbing the location of the base relative to other objects.

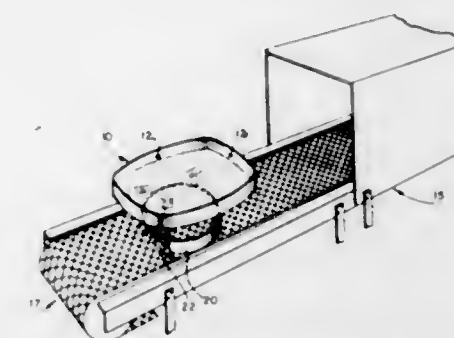
3,412,992

**SUPPORT DEVICE**

Richard J. Lindeman, Elmwood Park, Ill., assignor, by mesne assignments, to National Video Corporation, Chicago, Ill., a corporation of Illinois

Filed Aug. 14, 1964, Ser. No. 389,532

4 Claims. (Cl. 269—296)



1. A device for supporting the glass faceplate panel of a cathode ray tube on a conveyor passing through an oven for annealing purposes, including in combination a ring-shaped base frame adapted to be placed on the conveyor, a frame member pivotally mounted to said base frame about a horizontal axis with said frame on the conveyor, first and second support posts secured to said base frame, third and fourth support posts secured to said frame member on opposite sides of the pivotal mounting thereof, said first through fourth support posts extending upwardly from said base frame and said frame member with said posts positioned at the corners of a rectangle with respect to one another and steel wool mounted on the tops of said support posts to cushion said base plate and to prevent indentations in the soft glass thereof.

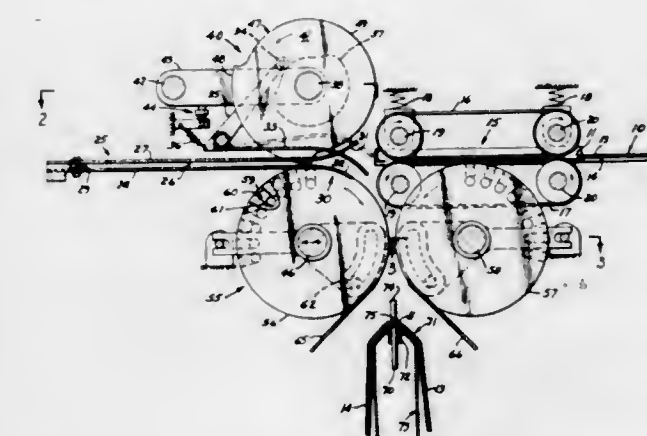
3,412,994

**UNFOLDING DEVICE FOR SIGNATURE GATHERER**

Lyle V. Dutro, 1660 Carriage House Road, Pasadena, Calif. 91107

Filed Jan. 5, 1966, Ser. No. 518,911

2 Claims. (Cl. 270—54)



A signature is delivered with its folded edge leading into a reception means, later ejected from the reception means with its open edge leading by a wheel having a raised arcuate portion which engages the face of the signature.

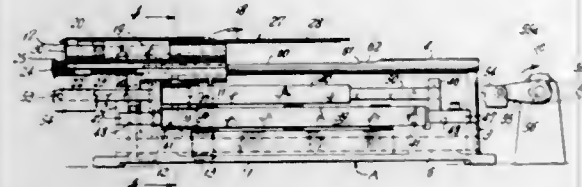


nature, then guided between a pair of cooperating suction cylinders which open the signature and drop it on a conveyor below.

3,412,995

**RAM DRIVE MECHANISM**

Eriks Parups, Norwalk, Conn., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware  
Filed Sept. 22, 1966, Ser. No. 581,327  
15 Claims. (Cl. 271—54)



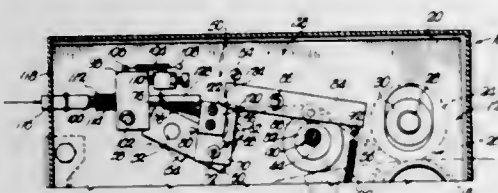
A differential drive and feed mechanism for moving relatively flat items between two spaced apart positions in response to a power unit movement of considerably shorter distance than the distance between the spaced apart positions. A gripping and feeding ram is mounted for reciprocatory movement between the spaced apart positions and rotatably carries a differential pinion assembly which simultaneously meshes with a fixed rack and a movable rack connected to the power unit. A short stroke of the driven rack produces a longer stroke of the ram depending on the diameter ratio of the differential pinion assembly.

3,412,996

**SINGLE SHEET EJECTOR FOR PRINTING PRESS**

Carlton A. Bird, Emporia, Kans., assignor to Diddler-Glaser, Inc., Emporia, Kans., a corporation of Kansas

Filed Aug. 22, 1966, Ser. No. 574,229  
6 Claims. (Cl. 271—64)



A single sheet ejector for a paper sheet handling machine wherein mechanism is provided for delivering the sheets successively in rapid order to a stacking station and including a rocker bar oscillated in synchronism with the speed of delivery of the sheets, a shaft overlying the path of travel of the sheets, fingers on the shaft normally positioned above the sheets during rapid delivery thereof, and push button operated structure for coupling the rocker bar to the shaft supporting the fingers only for the time period necessary to move the fingers downwardly into disposition to divert one sheet from the stream thereof and then permitting the fingers to return to their original standby position while the push button structure remains in an actuated condition so that only one sheet is diverted each time the structure is operated.

3,412,997

**FEEDING DEVICE FOR PANEL MATERIAL WORKING MACHINE**

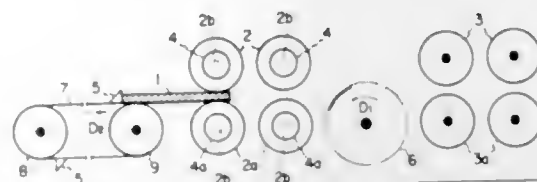
Noriyuki Nagaoka, Nagoya-shi, Japan, assignor to Kabushiki Kaisha Teihei Seisakusho, Nagoya-shi, Aichi-ken, Japan

Filed Jan. 13, 1967, Ser. No. 609,029  
Claims priority, application Japan, Jan. 14, 1966, 41/3,054

1 Claims. (Cl. 271—69)

A panel material fed toward the working tool of a panel material working machine is maintained in true

alignment with its leading edge always perpendicular to its direction of travel by being inserted a substantial distance between front feed rolls at a speed higher than the initial peripheral speed of the front rolls, which are



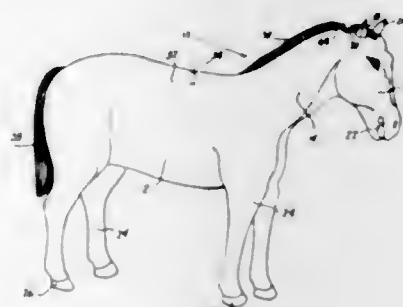
driven through overrunning clutches functioning to permit the rolls to over-run upon being contacted by the panel material and to rotate without slippage thereby to prevent the driving action of the rolls from disturbing the alignment of the panel material.

3,412,998

**TOY HORSE AND ACCOUTERMENTS THEREFOR**

Milton L. Lott and Glenn H. Lott, both of 615 E. 8th St., Minneapolis, Kans. 67467

Filed June 2, 1965, Ser. No. 460,714  
1 Claim. (Cl. 272—52)



A toy animal of appreciable size and of a type to enable a child to mount and "ride" the animal, the toy being optionally provided with releasably secured riding accouterments in the nature of diverse saddle means and bridle devices to provide a degree of realism to the toy and to enhance the child's enjoyment in the use of the invention when at play by himself or among other children.

3,412,999

**BOWLING PIN HOLDER DEVICE**

August Schmid, Schwerzenbach, Switzerland, assignor to Patentverwertungs- und Finanzierungsgesellschaft Sernia AG., Glarus, Switzerland, a corporation of Switzerland

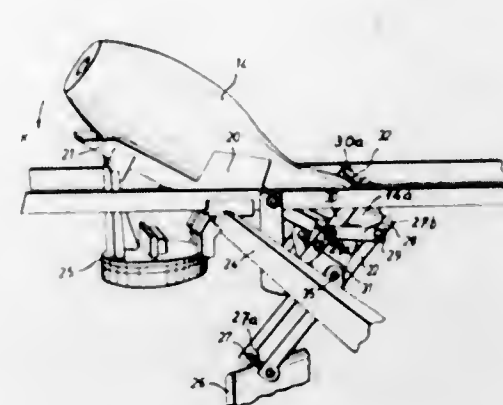
Filed Nov. 4, 1964, Ser. No. 408,890  
Claims priority, application Switzerland, Nov. 11, 1963, 13,804/63

9 Claims. (Cl. 273—42)

2. A pin holder device for a bowling pin comprising a pin support element, means mounting said pin support element for pivotal movement about a substantially horizontal axis between a position for receiving a bowling pin and a position wherein a pin supported thereby is in a substantially erect position, means for moving said carriage and said pin holder device up and down relative to a bowling alley, holding means for holding the head of a

pin to retain the bowling pin upon said pin support element, and means for controlling the operation of said holding means so that the holding means releases the head of the bowling pin in response to further downward

piece extends along the raceway and about a guide then back toward the starting end, laterally of the raceway, where it is fixed to the support. An area adjacent the starting end has a multiplicity of holes, pegs are used to deflect



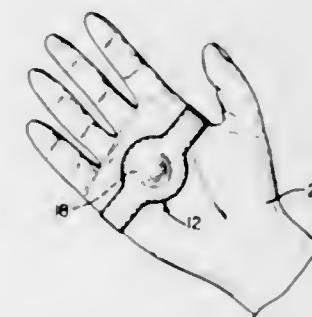
movement of said carriage and pin support element after such bowling pin has been pivoted into a substantially erect position and placed on the bowling alley, said controlling means thereafter rendering ineffectual the holding action of said holding means.

3,413,000

**ATHLETE'S GRIP GAUGING AID**

Ollie M. Alkonis, 800 Florence, Aurora, Colo. 80010

Filed July 18, 1966, Ser. No. 565,991  
16 Claims. (Cl. 273—54)



1. A grip gauging aid for an athlete comprising: a force transmitter; and a mounting means for said transmitter formed for attachment to the athlete's hand; said force transmitter comprising a rigid body, said mounting means being constructed for mounting said force transmitter between an object and the palm of the athlete's hand when the object is gripped for use, said force transmitter comprising means to transmit to the palm the force exerted by the object on said force transmitter normal to the palm as a result of the athlete's normal grip; the transmitter including means forming a significant protuberance extending toward the palm; said protuberance presenting a highly restricted localized area of contact with the palm to apply a highly magnified unit pressure to a localized area of the palm.

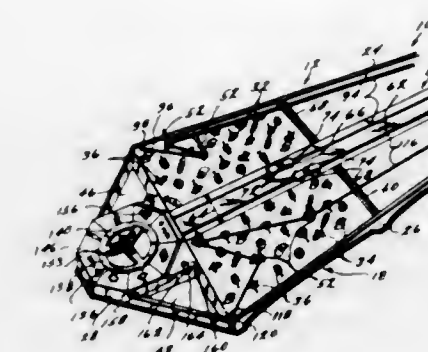
3,413,001

**BOARD GAME EMPLOYING CORD MEANS TO MOVE GAME PIECES ON A CHANCE BASIS**

John W. Ryan, Bel-Air, and Gordon H. Anderson, Palos Verdes Estates, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of California

Filed Apr. 22, 1966, Ser. No. 544,549  
5 Claims. (Cl. 273—86)

A support defines a path along which a game piece is movable from a starting end. A cord attached to the game



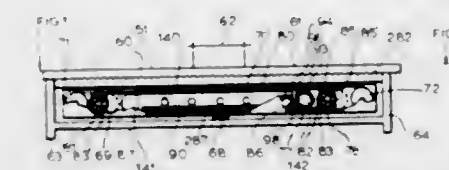
the cord laterally and hold it at a selected hole to pull the game piece along the path in steps. Chance means indicate which holes may be selected and biasing means keeps the cord in tension.

3,413,002

**ELECTRICAL COMPETITIVE GAME**

Thomas Ross Welch, 520 Moreno Ave., Los Angeles, Calif. 90049

Filed Feb. 10, 1965, Ser. No. 431,534  
14 Claims. (Cl. 273—93)



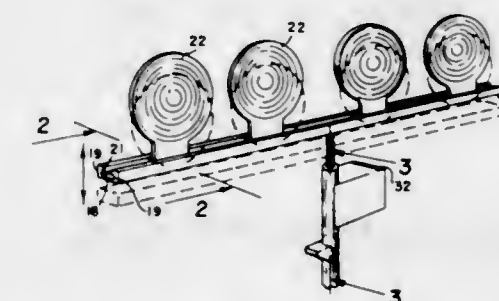
A game consisting of two concealed veils each with opaque and transparent surface sections defining either an offensive or defensive team patterns. The veils are strategically movable with regard to one another. A chance mask with opaque and transparent surface sections or chance indicating markings is randomly partitioned and movable with regard to the veils, with light passing through the relative transparent surface sections providing an indication of the game's progress.

3,413,003

**TARGET AND SUPPORT WITH SNAP-IN FEATURE**

Abraham Philip Bell, 2602 E. Mountain View Road, Phoenix, Ariz. 85028

Filed Mar. 4, 1966, Ser. No. 531,826  
1 Claim. (Cl. 273—102)



A target combination including a ground-supported stake having a transverse channel secured thereto; the channel accepts a plurality of target-supporting frames,



each being capable of longitudinal movement in the channel and, alternatively, each being capable of "snapping" into the channel without longitudinal movement. Each target frame surrounds a self-supporting target constructed of a substantially monochromatic color to facilitate seeing holes therein produced by projectiles passing therethrough.

3,413,004

# GAME APPARATUS COMPRISING CARDS HAVING COLUMNS OF LETTERS THEREON AND MARKERS FOR PLACEMENT ON SAID LETTERS

James A. Smith, Casablanca, Morocco  
(500 N. Wilson St., Metairie, La. 70003)

Filed Feb. 3, 1966, Ser. No. 524,913

2 Claims. (Cl. 273—135)



A plurality of game cards each has plural rows of playing spaces and certain groups of the spaces in the rows are lettered while the remaining spaces are unlettered. Letters may repeatedly occur in some rows. The lettered spaces in each row have a color designation for that row. Game tiles are provided in groups each of which comprises a complete alphabet of lettered tiles and a plurality of unlettered tiles, all tiles in a group being of the same color, each group color corresponding to a different one of said designated row colors, and multiple transparent player tiles are provided to be placed over lettered spaces in the rows on said cards in response to selection and calling of the lettered and colored tiles, each transparent tile having thereon an opaque marking spaced a substantial distance from the center of the tile.

3,413,005

# ZONED LIQUID GOLFING TARGET

Richard A. Stearns, 8720 Gateshead Road,  
Alexandria, Va. 22309

Filed July 14, 1966, Ser. No. 565,304

8 Claims. (Cl. 273—176)



A liquid golf target simulating a conventional golf green and including a liquid containing receptacle associated

with scoring means for indicating the proximity of a golf shot to the flag or pin position on the green.

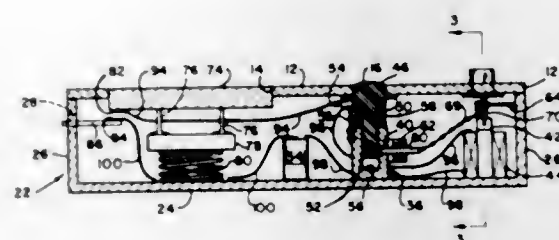
3,413,006

# GOLF TRAINING APPARATUS

Anthony J. Beston, 123 Maple Ave.,  
Blasdell, N.Y. 14219

Filed Aug. 8, 1966, Ser. No. 571,024

7 Claims. (Cl. 273—187)



A platform on which a golfer stands while executing a golf swing includes a sensing element that detects when a golfer shifts his weight to his rearward foot. If a predetermined excess amount of his weight is shifted to said foot, a golf ball is displaced from its teed position.

3,413,007

# TURNTABLE BEARING STRUCTURE

Jack L. Kelly and Ronald K. Wiandt, Decatur, Ill., assignors to General Electric Company, a corporation of New York

Filed Jan. 3, 1967, Ser. No. 607,031

8 Claims. (Cl. 274—39)



A turntable bearing assembly consisting of four cylindrical elements. These elements being a hub, a thrust bearing, a shaft and a support sleeve. The hub is integral with and extends from the underside of the turntable and has a central opening which receives the thrust bearing. The thrust bearing has a central opening for receiving one end of the shaft. The other end of the shaft is fitted within a central opening in the support sleeve. A linear and ring type of bearing contact is provided for by engagement of a radiused peripheral edge of the shaft and the spherical shape of the upper interior wall of the thrust bearing.

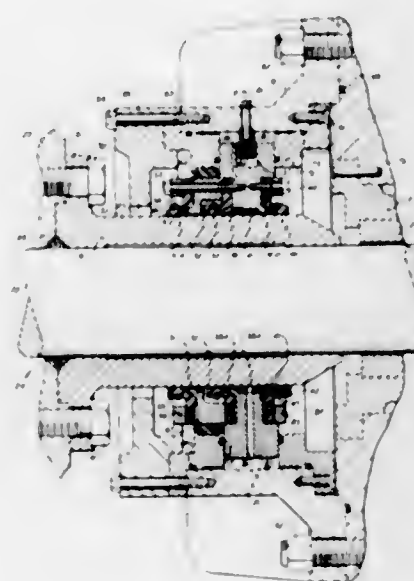
3,413,008

# SHAFT SEAL

Harold Frederic Greiner, Cranston, R.I., assignor to Sealol, Inc., Warwick, R.I., a corporation of Delaware

Filed Jan. 26, 1965, Ser. No. 428,147

1 Claim. (Cl. 277—58)



This invention relates to propeller shaft bearing seals of the type which oscillate under influence of shaft vibration and/or whip.

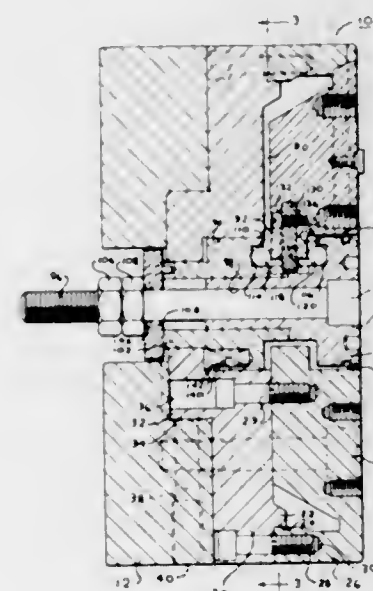
3,413,009

# CHUCK

Oliver T. Sarber, Elkhart, Ind.  
(4110 NW. 47th Court, Fort Lauderdale, Fla. 33313)

Filed Jan. 11, 1966, Ser. No. 521,484

10 Claims. (Cl. 279—2)



A chuck for use on lathes and grinding, screw and boring machines in which a plurality of jaw elements are pivotally connected at their outer edges with the jaw plate, and a member is provided on each of the elements having oppositely facing surfaces. An axially movable sleeve with rollers disposed between the oppositely facing faces and the respective part of the sleeve gives precise engagement of

the jaws and permits repeated usage without any significant change occurring in the adjustment thereof.

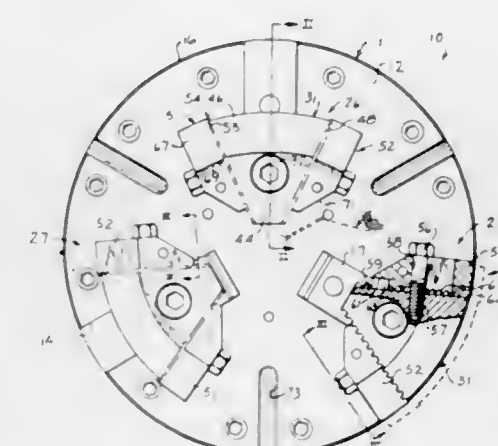
3,413,010

# MECHANICAL DEVICE

Russell E. Buck, Scotts, Mich., assignor to Buck Tool Company, Kalamazoo, Mich., a corporation of Michigan

Filed Jan. 20, 1966, Ser. No. 521,873

8 Claims. (Cl. 279—121)



A chuck construction having a plurality of jaw carriers slideably mounted thereon. Each jaw carrier has a central member pivotally mounted thereon having a pair of work-engaging shoes on opposite lateral sides thereof. Each of the shoes is movable radially along the sidewall of the central member to allow for a fine adjustment in the position thereof. Similarly, each of the central members is adjustably positioned radially on the jaw carrier to allow for a coarse adjustment in the position thereof.

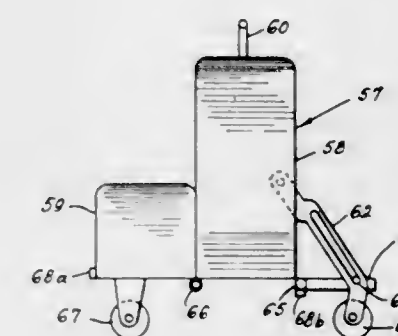
3,413,011

# COLLAPSIBLE LUGGAGE SCOOTER

Dorothea M. Weitzner, 8 E. 62nd St.,  
New York, N.Y. 10021

Continuation-in-part of application Ser. No. 471,355,  
July 12, 1965, now Patent No. 3,314,494. This  
application Apr. 11, 1967, Ser. No. 630,136

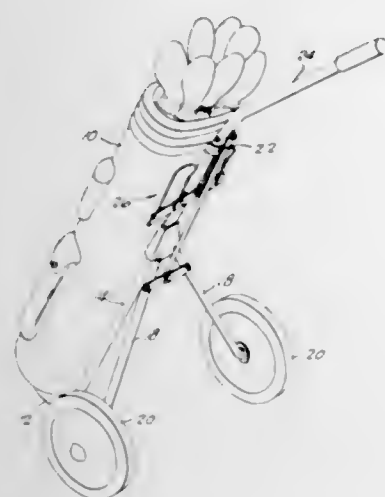
2 Claims. (Cl. 280—37)



A combined luggage scooter and case, the case having top, bottom, front, rear and side walls, platform means adapted to be positioned underneath the bottom wall, caster wheels on said platform means, for transporting the suitcase, and means associated with the platform means to permit the suitcase to be pushed along a supporting surface.



**3,413,012**  
**GOLF BAG CART AND SHOE RACK**  
 Leroy J. Coffman, Torrance, Calif.  
 (P.O. Box 2359, Harker Heights, Tex. 76541)  
 Filed Feb. 3, 1967, Ser. No. 613,839  
 1 Claim. (Cl. 280—47.19)



A hand cart having means to support a golf bag; a shaft and handle for said cart and a pair of shoe trees clamped to said shaft.

**3,413,013**  
**VEHICLE SAFETY ASSEMBLY**  
 Thomas J. Wissing, Southfield, Sidney Oldberg, Birmingham, and William R. Carey, Farmington, Mich., assignors to Eaton Yale & Towne, Inc., Cleveland, Ohio, a corporation of Ohio  
 Filed Mar. 10, 1967, Ser. No. 622,349  
 9 Claims. (Cl. 280—150)



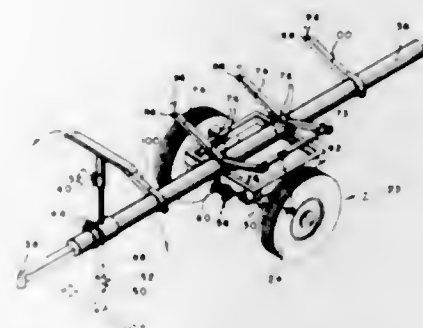
A safety assembly adapted to be attached to a vehicle for protecting an occupant thereof and including an inflatable bag, a container in communication with the bag to store fluid for inflating the bag, and a receptacle defining a chamber in which an explosive charge is disposed. The receptacle is associated with the container and is adapted for confining and directing the energy resulting from the activation of the explosive charge to a predetermined area of the container thereby to open the container and inflate the bag.

**3,413,014**  
**TRANSPORTATION MEANS FOR COMBINE HEADER OR THE LIKE**  
 Adolph E. Franz, % Newton Mfg. Co., 110 E. 17th St., Newton, Kans. 67114  
 Filed Sept. 26, 1966, Ser. No. 581,987  
 6 Claims. (Cl. 280—400)

1. Means adapted to receive and fully support a header in disconnection from or connection to a combine, to avoid binding of the securing means between the header and the combine, and to avoid mislocation, by being adjustable to the disposition of the header relative to the

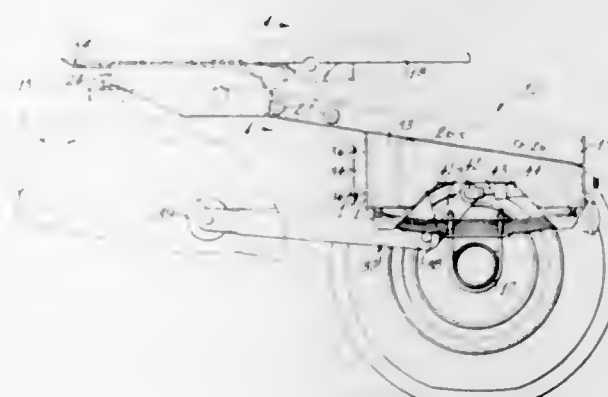
ground in a first upright plane fore and aft of the combine and in a second upright plane transverse of the combine, the combine having means for raising and lowering the header, comprising:

(a) support means from the ground, V-shaped rest means, and said support means including pivotal mounting means for said rest means permitting pivoting in said first upright plane, and means operable to adjust the pivotal position of said rest means in said first upright plane, said V-shaped rest means including first and second rest portions disposed in V relationship to each other with the first rest portion disposed to support the rear lower surface of the header and with the second rest portion disposed to support the header bottom,



(b) said support means including pivotal means for pivotal movement in said second upright plane of at least a portion of said support means including said pivotal mounting means and said rest means supported thereby, and means operable to adjust pivotal position in said second upright plane,  
 (c) whereby adjustment of position of said V-shaped rest means to fully support said header is accomplished by raising and lowering said header and by pivotal adjustment in rest and support means in said first and second upright planes,  
 (d) a tubular member extending longitudinally of said vehicle to which said rest means is secured and said pivotal mounting means for said rest means permitting pivoting in said first upright plane being pivotal mounting means for said tubular member.

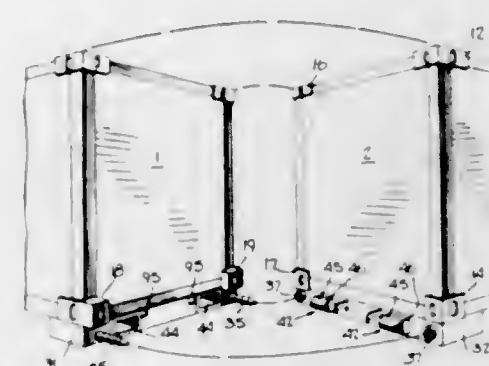
**3,413,015**  
**DOLLY FOR TRACTOR-TRAILER ASSEMBLIES AND PROCESS OF USING SAME**  
 John P. K. Fontaine, P.O. Box 1591, Birmingham, Ala. 35201  
 Filed July 8, 1966, Ser. No. 563,842  
 3 Claims. (Cl. 280—415)



Process and apparatus for utilizing a dolly and the fifth wheel of a two axle tractor selectively as components of a three axle tractor to tow a single trailer or as components with a two axle tractor to tow trailers in

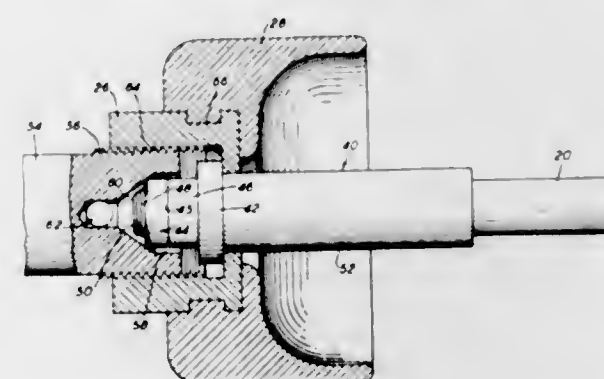
tandem. The dolly has a longitudinally shiftable fifth wheel so that, as a single trailer, the fifth wheel of the tractor is connected directly to the dolly and as tandem tractors, the dolly is transferred between and connected to the trailers with the forwardmost trailer connected to the fifth wheel of the tractor.

**3,413,016**  
**MULTIPLE CHASSIS AND CONTAINER SYSTEM**  
 William A. Bertolini, Smoke Rise, N.J., assignor to Theurer, Inc., Newark, N.J., a corporation of New Jersey  
 Continuation-in-part of application Ser. No. 600,598, Dec. 9, 1966. This application Nov. 24, 1967, Ser. No. 685,694  
 13 Claims. (Cl. 280—415)



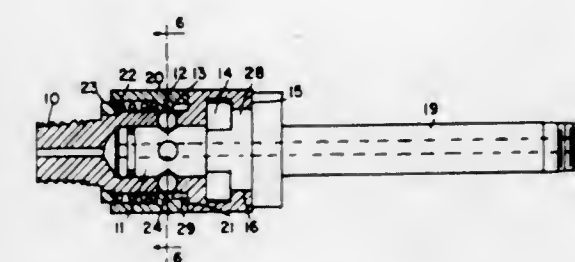
The disclosure contained in the following specification is of a technique for tying tractor-drawn chassis together so that connections are not required between the containers carried thereon and thus standard cargo containers may be employed. The chassis interconnection shown is a bolt and mating floating socket which when coupled together serve to carry tensile forces so that the front chassis can pull the rear chassis along, but which, because of the floating design, permit a degree of rotational movement in the longitudinal vertical plane between the two chassis thereby tied together.

**3,413,017**  
**GAS LINE CONNECTORS**  
 Howard G. Hughey, Fanwood, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York  
 Filed Aug. 12, 1965, Ser. No. 479,102  
 2 Claims. (Cl. 285—38)



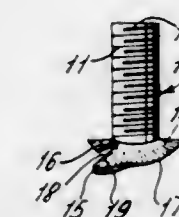
A pipe coupler of the gland and nut type, designed for hand tightening, in which the gland has a replaceable plastic sealing sleeve that is not directly exposed to the force of a stream in the pipe and in which the gland is adapted to form an emergency seal in the absence of the sealing sleeve. The nut may be of various types incorporated into a universal design of hand grip knob structure by a die casting operation which forms the knob while keying the nut into a standardized cavity in the body of the knob.

**3,413,018**  
**QUICK CONNECT COUPLING**  
 Joseph S. Francis, 15134 Irving St., Dolton, Ill. 60419  
 Filed June 2, 1966, Ser. No. 554,831  
 5 Claims. (Cl. 285—86)



A coupling for disconnectably connecting two elements wherein provision is made for retaining the elements in coupled condition by endwise coupling movement combined with rotary movement to bring the elements into coupling retained engagement against endwise disconnection; with provision of means for snap retaining the elements in their relatively rotated condition, and in coupled relationship, together with provision for releasing such retaining means to permit rotation to a disengaging position.

**3,413,019**  
**CONDUIT CONNECTOR PARTICULARLY FOR UNDERGROUND SPRINKLER SYSTEMS**  
 Gerhard Dyck, 1306 13th St. E., Saskatoon, Saskatchewan, Canada  
 Filed June 29, 1967, Ser. No. 650,055  
 Claims priority, application Canada, Apr. 14, 1967, 987,897  
 12 Claims. (Cl. 285—209)



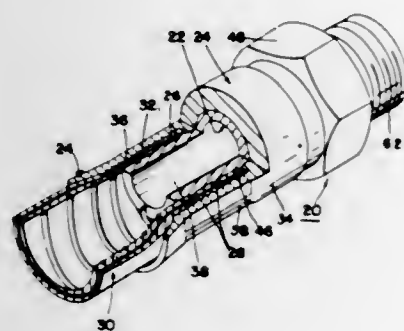
A connecting element is provided which includes a hollow stem, which is preferably threaded. Integral with the stem is an irregularly shaped circumferential enlarged annulus, for example a slotted circumferential annulus, or a slotted dished circumferential annulus, or a slotted dished circumferential annulus which includes a tongue extending from the leading edge of the slot, preferably in the form of a dished extension. Preferably, the circumferential edge near the slot is sharpened and the leading edge of the slot is thickened and the trailing edge of the slot is bevelled. The element is attached to a conduit by inserting a part of the enlargement into a hole in the conduit and then twisting the stem until the enlargement is within the conduit.

**3,413,020**  
**COMPOSITE TUBE FITTING**  
 Edward C. Johns, Streetsboro, Ohio, assignor to Samuel Moore and Company, Mantua, Ohio, a corporation of Ohio  
 Filed June 24, 1966, Ser. No. 560,219  
 21 Claims. (Cl. 285—251)

A fitting assembly for fluid pressure transmission including a fitting member having an inner sleeve and an outer sleeve disposed in spaced relation around and



threadably connected adjacent one end to the inner sleeve. A reinforced, crush-resistant composite tubing member is adapted to be disposed in the space between the inner and outer sleeves. The inner sleeve includes external



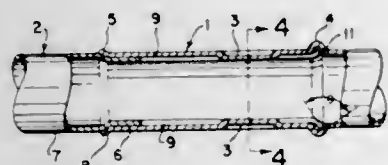
threads for threaded engagement with the tubing member, and the outer sleeve includes internal teeth adapted for pressure engagement with the tubing member upon deformable movement thereof toward the inner sleeve.

3,413,021

## TUBULAR COUPLING

Dean F. Potts, Toledo, Ohio, assignor to Ferry Cap and Set Screw Company, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 20, 1965, Ser. No. 498,620  
9 Claims. (Cl. 285—319)



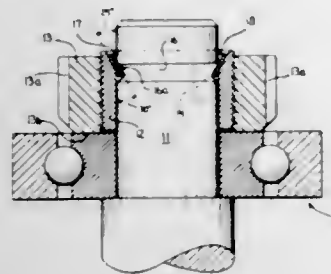
A tubular coupling having a male portion with a lip at its end and slots which begin at the lip and extend along a portion of the length of the tube. A female portion of the coupling has an internal groove located at a distance from its mount to receive the lip on the male portion.

3,413,022

## SELF-LOCKING THREADED RING ASSEMBLY

Robert F. Waddell, Indianapolis, Ind., assignor to Standard Locknut & Lockwasher, Inc., Indianapolis, Ind., a corporation of Indiana

Filed Nov. 14, 1966, Ser. No. 594,281  
4 Claims. (Cl. 287—52.07)



1. An assembly for locking an element rigidly to a shaft comprising an exteriorly threaded sleeve adapted to freely encircle the shaft and a nut adapted to be threaded on said sleeve and to engage at its inner end a surface of the element supported on the shaft, said sleeve having at least one axially extending slot at the end of the sleeve remote from said engaging surface of the nut, said shaft having a circumferential groove with a face inclined with relation to the shaft axis, said sleeve

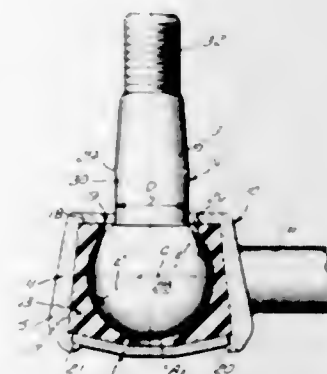
having at its slotted end an annular internal surface which is inclined to the shaft axis and is disposed generally opposite to and spaced from said inclined groove face, the angle of inclination of said groove face with the shaft axis being greater than the angle of inclination of said annular sleeve surface with the shaft axis, and a thrust diverter ring accommodated within the space between and in engagement with said annular sleeve surface and said groove face, whereby upon initial tightening of said nut against said element said slotted end of said sleeve is expanded to take up the thread tolerance between the sleeve and the nut, and subsequent tightening of said nut, because of the difference in angle of inclination of said shaft groove face and said annular sleeve surface, redirects forces from a direction parallel to the shaft axis to a direction generally transverse to the shaft axis to lock said nut axially upon the shaft.

3,413,023

## PRELOAD-CAPSULE JOINT

Edward J. Herbenar, Detroit, Mich., assignor to TRW Inc., a corporation of Ohio

Filed Apr. 26, 1965, Ser. No. 450,616  
7 Claims. (Cl. 287—87)



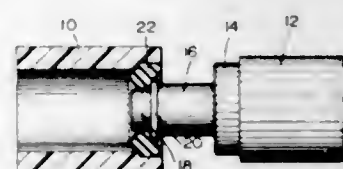
Ball and socket joints for automotive wheel suspensions and steering linkages having the ball member enveloped in a preformed high density linear ethylene copolymer plastic bearing which, in turn, is enveloped by a rigid socket housing. The bearing is stretched by the ball member and compressed by the socket member to provide force vectors generally normal to the surface of the ball member and effective to release energy for taking up wear developed during use of the joint. The bearing has apertures at opposite ends and the ball has loaded zones of engagement with the bearing adjacent each aperture and at the equator of the bearing wall. Annular pockets are provided between these loaded zones and lubricant is trapped in these pockets.

3,413,024

## MECHANICAL COUPLING

Vernon M. Farquhar, 90 Lawton Ave., Lynn, Mass. 01902

Filed July 13, 1965, Ser. No. 471,537  
1 Claim. (Cl. 287—126)



A snap-action coupling comprises a tube with an open end entered by a cylinder of smaller diameter. An an-

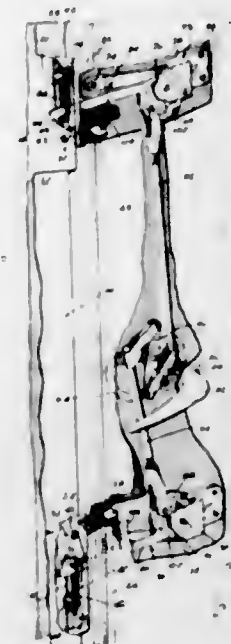
nular washer having a square cross-section fits between the tube and cylinder and is rolled by the cylinder when advancing into the tube.

3,413,025

## SLIDING CLOSURE LATCH

Richard C. Sperry, Fort Worth, Tex., assignor to Bell Aerospace Corporation

Continuation of application Ser. No. 424,389, Jan. 8, 1965. This application May 1, 1967, Ser. No. 635,264  
4 Claims. (Cl. 292—111)



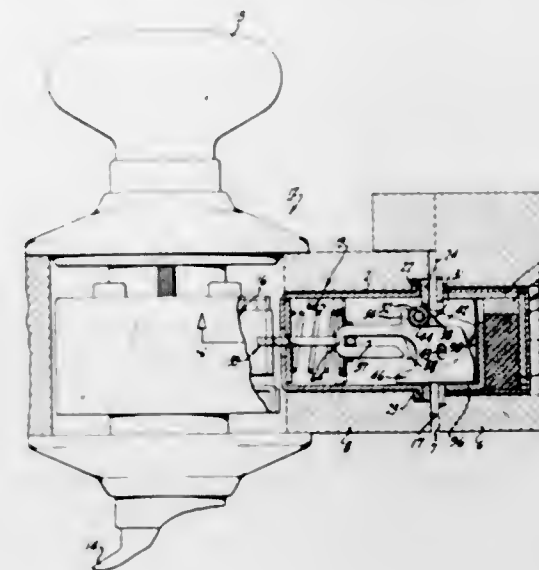
A cam mounted latch and an over-center linkage connecting the cam to a handle so that vibration-induced forces acting on the latch are prevented from moving the latch out of engagement with its striker.

3,413,026

## MAGNETIC LATCH

Marron Kendrick, Atherton, and Ralph E. Neary, San Francisco, Calif., assignors to Schlage Lock Company, a corporation

Filed Mar. 11, 1966, Ser. No. 533,688  
13 Claims. (Cl. 292—144)



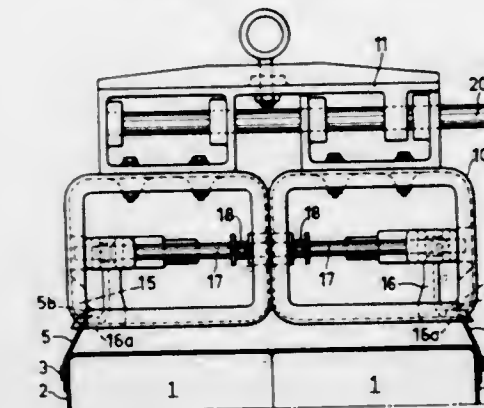
A magnetic latch has a magnet unit on a door frame and a latch unit on a swinging door mounted on the frame. The latch unit has both pivoted and sliding mem-

3,413,027

## METHOD AND APPARATUS FOR HANDLING A LOAD

Karl Gunnar Bohlin and Carlerik Gustafsson, Sundsvall, Stig Arthur Johnsson, Tunadalsverken, and Per Albin Strombeck, Sundsvall, Sweden, assignors to Svenska Cellulosa Aktiebolaget, Sundsvall, Sweden

Filed May 6, 1966, Ser. No. 548,113  
Claims priority, application Sweden, May 7, 1965, 6,040/65  
12 Claims. (Cl. 294—81)



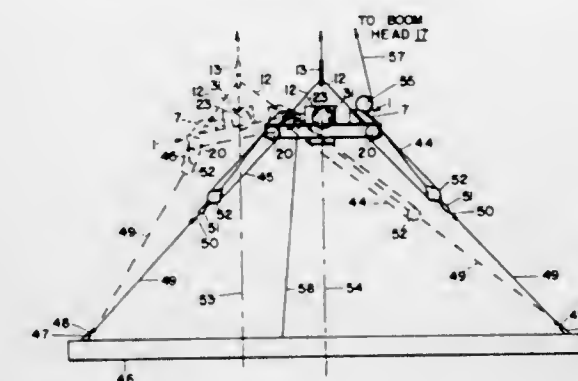
An apparatus for handling loads including a packaging element having a lifting element fixedly attached thereto and a load lifting device. The packaging element is formed from an elongated packaging material which substantially encloses the load. At least one elongated, flexible lifting element is fixedly connected to the packaging material at opposite sides of the load and extending above the top of the load in a direction towards the center thereof. The load lifting device engages and raises the lifting element to transfer the lifting forces to the lifting element.

3,413,028

## LOAD EQUALIZER

George W. Wilkie, Wilmington, Del., assignor to Sun Shipbuilding & Dry Dock Company, Chester, Pa., a corporation of Pennsylvania

Filed Oct. 7, 1966, Ser. No. 585,080  
7 Claims. (Cl. 294—67)



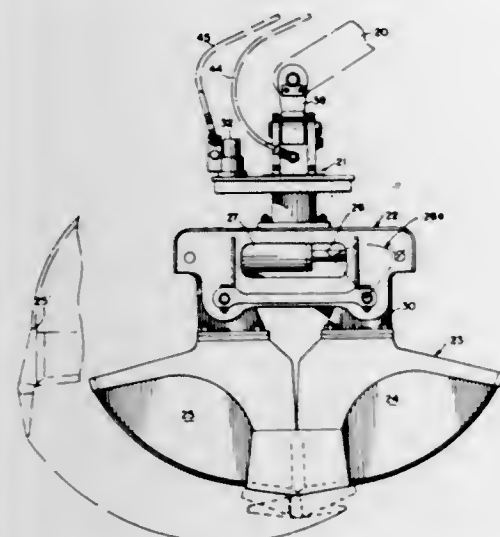
A rectangular frame is suspended at its four corners from a single-point suspension (cargo hook), and each of the four corners of the frame is coupled by means of a separate set of falls to a respective corner of the load (which may be a rectangular spreader from which is suspended a container). All four of the sets of falls are operated simultaneously by powered driving means carried by the frame, thereby to adjust the transverse central plane of the frame with respect to the transverse central plane of the spreader.



3,413,029

**MATERIAL HANDLING APPARATUS**

Robert P. Donovan, Danville, Ill., assignor to Esco Corporation, Portland, Oreg., a corporation of Oregon  
Filed Aug. 1, 1966, Ser. No. 569,421  
3 Claims. (Cl. 294—70)

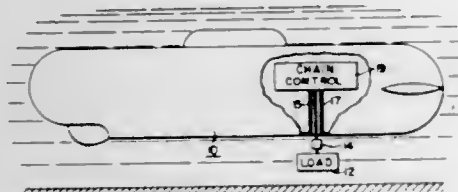


Actuator coupling for connecting a grapple or clamshell to a boom, the actuator coupling including a generally rectangular frame having opposed, side-by-side cylinder and piston rod units connected to arms at respective ends of the actuator coupling frame, the arms in turn being coupled to pivot shafts on the frame with the arms replaceably carrying the clamshells, grapples, etc. The entire coupling is rotatable through 360° and is equipped with interconnected torque tubes to balance the operation.

3,413,030

**LOAD RELEASE APPARATUS**

Stephen Drake, Santa Clara, Calif., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Oct. 19, 1966, Ser. No. 587,915  
5 Claims. (Cl. 294—83)



Upper and lower flanged link members of a release device are maintained in axially aligned position by means of a plurality of collar segments, restrained from separating by means of a cylindrical sleeve. By withdrawing the release mechanism into a pipe, the cylindrical sleeve is forced off the collar segments which are then retained by the pipe. As the release mechanism is lowered back out of the pipe the segments are no longer restrained and disconnection takes place.

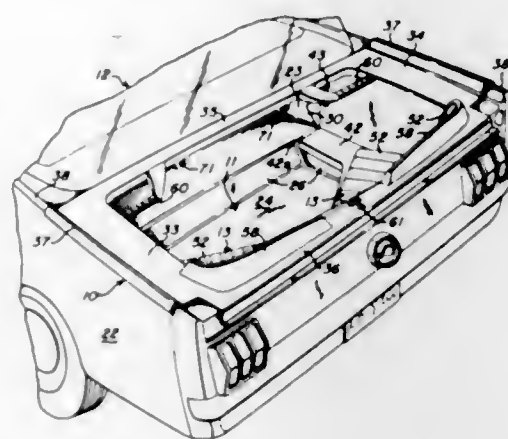
3,413,031

**RUMBLE SEAT INSERT FOR AUTOMOBILE**

Ross J. Gafvert and Charles L. Chaney, Yellow Springs, Ohio, assignors to Zetetics Corporation, Yellow Springs, Ohio, a corporation of Ohio  
Filed Nov. 8, 1966, Ser. No. 592,798  
6 Claims. (Cl. 296—63)

An auxiliary seat for insertion into the trunk cavity of a standard automobile when the trunk lid has been completely removed. The auxiliary seat is formed as an

integral unit and has a horizontal deck portion which engages the trunk deck of the automobile. The deck portion has an opening in the center thereof which aligns with the opening of the trunk cavity. Side walls are secured to the hinge connections for the trunk lid and

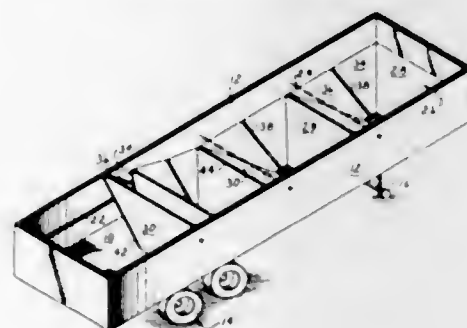


a rear portion of the seat is secured to the latch connection. Seats are formed on the bottom ledge to receive cushions which are also placed on the rear wall, and a removable cover is provided for completely enclosing the top of the auxiliary seat.

3,413,032

**HOPPER TRAILER**

Jack W. Dendy, 208 W. 18th, Portales, N. Mex. 88130  
Filed Mar. 16, 1967, Ser. No. 623,639  
2 Claims. (Cl. 298—8)



Folding funnels or a series of hoppers are placed in a trailer having an ordinary grain bed. When carrying bulk grain, the hoppers are extended. When carrying sacked grain or other cargo, the hoppers are collapsed and moved to the front of the trailer for storage.

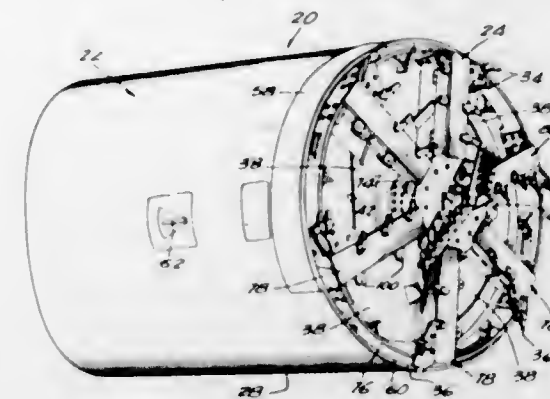
3,413,033

**ROTARY TUNNELING MACHINE HAVING IMPROVED DEBRIS DISPOSAL MEANS**

Herbert L. Clark, Arcadia, Calif., assignor to Smith Industries International, Inc., Los Angeles, Calif., a corporation of California  
Filed Sept. 9, 1966, Ser. No. 578,287  
16 Claims. (Cl. 299—33)

A rotary tunneling machine as provided with a front shearing edge surrounding a rotary cutting wheel which is axially adjustable to a rear cutting position wherein the shearing edge is conditioned to shear the tunnel wall in advance of the wheel and a forward cutting position wherein the cutting wheel is conditioned to cut the tunnel wall in advance of the shearing edge. The cutting wheel has relatively wide radial spokes for sweeping debris upwardly

from the bottom of the cut and deflecting debris rearwardly to a conveyor as the cutting wheel advances into the tunnel face, and removable baffle plates along the rear

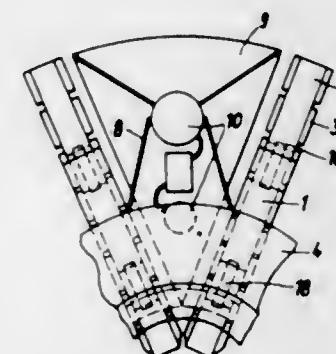


sides of the spokes for deflecting debris from the spokes to the conveyor when the cutting wheel occupies its forward cutting position.

3,413,034

**OSCILLATORY TUNNELING HEAD HAVING REMOVABLE SECTOR PLATES**

Wilfried Krabbe, Harksheide-Nord, Erwin Michael, Hamburg, Emil Rang, Frankfurt am Main, and Wolfram Schenck, Hamburg-Gross Flottbek, Germany, assignors to Philipp Holzmann Aktiengesellschaft, Frankfurt am Main, Germany  
Continuation-in-part of application Ser. No. 539,499, Apr. 1, 1966. This application Aug. 1, 1967, Ser. No. 657,578  
17 Claims. (Cl. 299—33)



A tunnel excavator comprising a shield adapted for a forward thrust, an oscillatory excavating means which includes a rotary disc with radial cutting arms and detachable segment plates, the disc being attached to an axial shaft having a clamp collar on its periphery, hydraulic driving means to turn the clamp-collar back and forth, and clamp collar control means for effecting a step-by-step rotation of the shaft.

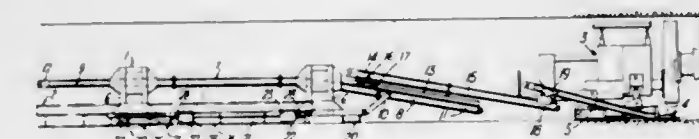
3,413,035

**ENDLESS BAND CONVEYORS**

Peter Lockwood, Aycliffe Industrial Estate, near Darlington, England, assignor, by mesne assignments, to Mining Progress Inc., Highland Mills, N.Y., a corporation of New York  
Filed June 7, 1966, Ser. No. 555,767  
Claims priority, application Great Britain, July 22, 1965, 31,162/65  
4 Claims. (Cl. 299—64)

Endless band conveyor unit usable in mining operations, comprising a substantially longitudinal supporting frame having two substantially longitudinal parallel frame

base members carrying the frame and normally in resting contact with the floor, a raised conveyor carried substantially longitudinally by said frame at the frame upper portion remote from the floor and defining with said parallel frame base members and the floor a substantially continuous and unhindered longitudinal corresponding free space, the conveyor having portions forwardly and rearwardly overhanging the frame, and a self-advancing mechanism external to the free space and including said two parallel frame base members, two substantially longitudinally parallel floats associated with the floats, upright hydraulic jacks associated with the floats, and hydraulic cylinder and piston assemblies secured substantially longitudinally between the frame and floats, the hydraulic jacks being capable of lifting the frame of the unit from the floor to the top surfaces of the floats, and the hydraulic piston and cylinder assemblies being capable of advancing the floats and then advancing the frame along the floats after operation of the hydraulic jacks, the



rearwardly overhanging portion having an elevated rear end and the forwardly overhanging portion inclining upwardly from its forward end and the remaining portion of the conveyor above the supporting frame, together with the rearward overhanging portion, extending substantially horizontally to the elevated rear end of the rearwardly overhanging portion and encompassing said free space thereby, whereby to accommodate in an unhindered manner in said free space along substantially the full length of the raised conveyor a main belt conveyor and to permit longitudinal displacement therebetween up to the full operative length of overlap of said raised conveyor and said main belt conveyor, in order to increase the operative range of a mining machine with respect to which the raised raised conveyor is intended to be used in terms of said operative lengths of overlap before interruption of the conveying of mineral extracted by the mining machine to the main belt conveyor must be effected so as to insert additional main belt conveyor sections to continue the mining operation.

3,413,036

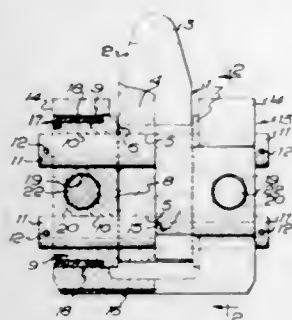
**PICK HAVING LIMITED ANGULAR MOVEMENT, OPPOSED DIRECTIONAL CUTTING FACES, AND TRUNNION MOUNTING THEREFOR**

Gerald R. O. Pentith, Aycliffe, near Darlington, and Frederick Webster, Sheffield, England, assignors, by mesne assignments, to Mining Progress Inc., Highland Mills, N.Y., a corporation of New York  
Filed Nov. 16, 1966, Ser. No. 594,934  
Claims priority, application Great Britain, Nov. 20, 1965, 49,387/65  
8 Claims. (Cl. 299—85)

Pick and pick-mounting combination for use in a mineral machine including a pick having a head with two oppositely directed cutting faces and a shank with a transverse hole in a direction parallel to the face widths, a trunnion block member forming one part of the mounting and having a central portion provided with a transverse socket to receive the shank, the block member having a hole intersected by the socket to register with the shank hole, a pin extending through the registering holes locating and securing the shank in the socket, the block member having coaxial trunnions extending in opposite directions at right angles to the lengthwise direction of the socket, for example with each trunnion having a pair



of diametrically opposed recesses, and a journal member forming a second part of the mounting and having two side portions, a journal in each side portion for one of the trunnions, for example with bearing bushes in the journals, and for example with stop means in operative

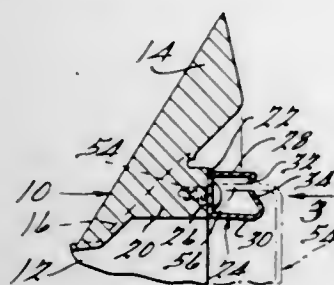


association with the trunnion recesses, with play between the stop means and the respective recesses, to provide two positions of rest for the block member, whereby to permit limited angular movement of the block member and a pick secured in its socketed position with its operative end protruding beyond the journal member side portions.

### 3,413,037 WHEEL COVER

Edward G. Spisak, Wayne, Mich., assignor to Gar Wood Industries, Inc., Ypsilanti, Mich., a corporation of Michigan

Filed Nov. 17, 1966, Ser. No. 595,175  
3 Claims. (Cl. 301—37)



In combination with a vehicle wheel and wheel cover therefor, the improvement comprising a plurality of circumferentially spaced one piece spring clip members interposed between the wheel and wheel cover members, each of the spring clip members comprising first and second axially and radially inclined retaining sections and a mounting section adapted to be fixedly secured to one of the members, the retaining sections defining an elongated arcuate shaped access opening therebetween and each defining biting edge portions, the biting edge portions each being formed with recessed areas defining anti-indexing sections thereon, and an axially extending retaining element interposed between the wheel and wheel cover members and adapted to be detachably received within the access openings of the spring clip members, whereby the biting edge portions thereof clampingly engage the radially inner and outer sides of the retaining element to positively secure the wheel cover member on the wheel member.

### 3,413,038 TRANSPORTATION OF SOLIDS

David M. Frazier, 208 Shorecrest Drive,  
Tampa, Fla. 33609  
Filed Apr. 10, 1967, Ser. No. 629,664  
16 Claims. (Cl. 302—14)

Method and means for transporting solids in a slurry whereby low energy liquid is periodically removed from the slurry and replaced by high energy liquid to effect

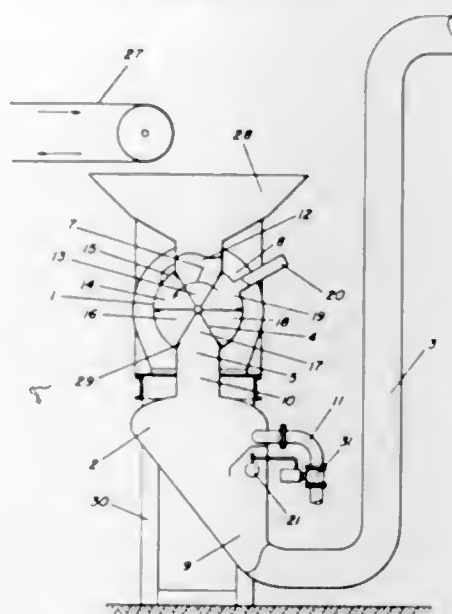
more efficient transportation of the desired fraction of the slurry. Removal is accomplished via a solids separator



and replacement is accomplished via a jet pump. The system is useful both in dredge and in overland operation.

### 3,413,039 TRANSPORT EQUIPMENT FOR FLUID MATERIALS, GRAINY MATERIALS AND SMALL FISH, SUCH AS HERRING

Haraldur Asgeirsson, Aegissida 48, Reykjavik, Iceland  
Filed May 18, 1966, Ser. No. 551,087  
Claims priority, application Iceland, May 22, 1965, 1,488  
21 Claims. (Cl. 302—14)



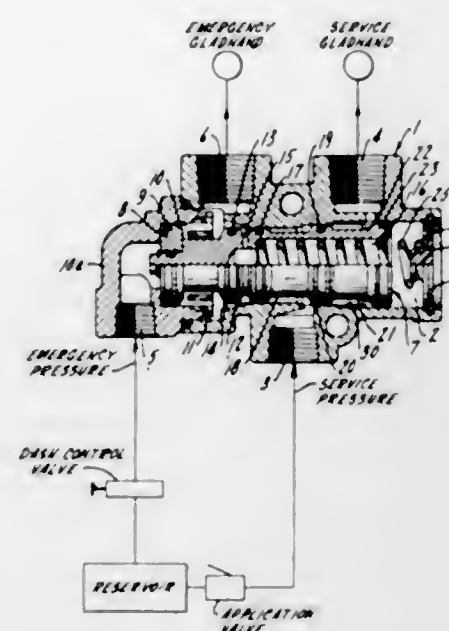
A fluent material handling apparatus including a pressurized chamber into whose upper portion fluent material to be conveyed is downwardly discharged in successive batches from a rotary pressure sealing transfer device disposed thereabove, said pressurized chamber including a lower material discharge outlet through which the material delivered into the upper portion of the pressurized chamber may be discharged by the pressurized atmosphere in the pressurized chamber and the pressure sealing transfer device including means by which a seal against the free flow of pressurized atmosphere from the pressurized chamber in a reverse direction through the pressure sealing transfer device is provided.

### ERRATUM

For Class 302—29 see:  
Patent No. 3,413,041

### 3,413,040 TRACTOR PROTECTING VALVE

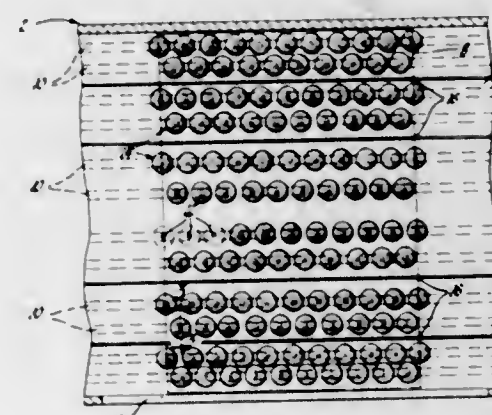
Charles Horowitz, Niles, Ill., assignor to Berg Mfg. & Sales Co., Des Plaines, Ill., a corporation of Illinois  
Filed Dec. 9, 1966, Ser. No. 600,635  
5 Claims. (Cl. 303—29)



This invention relates to vehicle air brake systems and has particular relation to means for protecting the air braking system of a tractor in a tractor-trailer vehicle combination.

### 3,413,041 IN-FLOOR AIR CASTER CARGO HANDLING SYSTEM

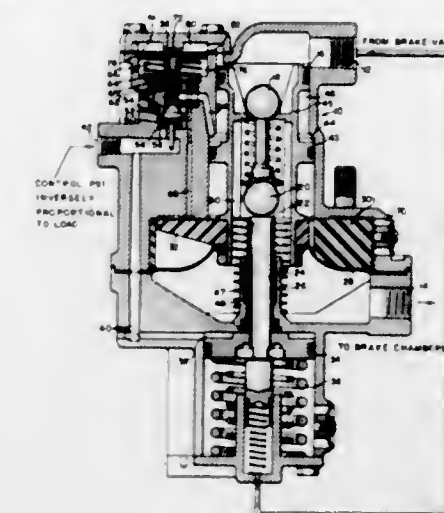
Cletus L. Moorman, Trotwood, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed May 23, 1967, Ser. No. 640,689  
7 Claims. (Cl. 302—29)



A floor structure is formed with an air manifold system and a plurality of horizontally spaced openings communicating therewith in which are mounted a plurality of low unit loading air cushion assemblies providing a support medium enabling substantially frictionless mobility of cargo. Connection of the assemblies with their respective openings is accomplished by bayonet type mountings facilitating rapid assembly and disassembly. Each of the assemblies also includes valve structure which automatically diminishes air flow under no-load conditions.

### 3,413,042 BRAKE BALANCING VALVE WITH BRAKE TARE COMPENSATING MEANS

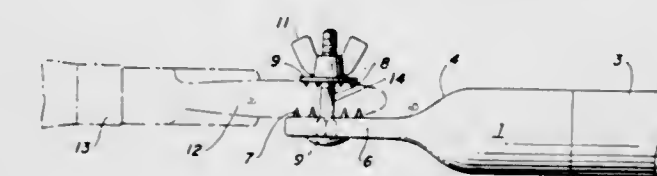
Gunter K. B. Herold, Elyria, Ohio, assignor to Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio, a corporation of Delaware  
Filed Mar. 30, 1967, Ser. No. 627,203  
4 Claims. (Cl. 303—60)



A load proportioning brake valve wherein brake valve pressure acting on a constant area piston is balanced against brake chamber pressure acting on a diaphragm whose effective area is varied with vehicle load, an added constant effective area to which is applied pressure inversely proportional to load to act in concert with the brake valve pressure acting on the constant area piston, the added pressure serving to overcome brake tare, the invention which comprises means for applying and releasing pressure to and from the added area simultaneously with the application and release of brake valve pressure to and from the constant area piston.

### 3,413,043 EXTENSION ATTACHMENT FOR BRUSHES AND THE LIKE

Hugo L. Bertolina, 438 32nd Ave.,  
San Francisco, Calif. 94121  
Filed Feb. 16, 1966, Ser. No. 527,958  
1 Claim. (Cl. 306—3)



1. An extension attachment for holding a brush handle with a hole therethrough on a handle bar, comprising
  - (a) a ferrule having an axial threaded socket in one end thereof attachable to said handle bar, the other end of said ferrule being closed,
  - (b) a transversely flattened portion formed integrally with and in axial extension of said closed end,
  - (c) a plurality of substantially pyramidal projections projecting from a face of said flattened portion for engaging one side of said brush handle,
  - (d) a bolt non-rotatably held in said flattened portion and extending generally in the same direction as said pyramidal projections and through the hole of said brush handle,
  - (e) and means threaded on said bolt for engaging the other side of said brush handle for clamping said brush handle against said flattened portion,
  - (f) a washer on the bolt,



- (g) grip projections projecting from the face of said washer toward said flattened portion for engaging the adjacent side of said brush handle,  
 (h) and a nut on the bolt adjacent said washer for pressing said washer against said brush handle thereby to penetrate said pyramidal projections and said grip projections into the opposite sides of said brush handle.

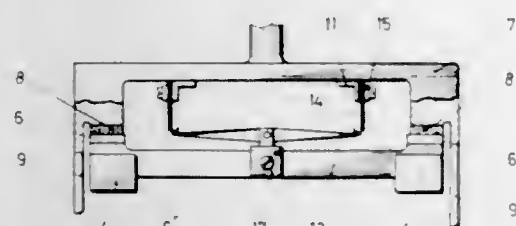
**3,413,044**  
**BALANCE COMPRISING KNIFE**  
**EDGE BEARINGS**

Ludwig Weickhardt, Göttingen, Germany, assignor to Sartorius-Werke G.m.b.H. (und vormals Goettinger Präzisionswaagenfabrik G.m.b.H.)

Filed Jan. 10, 1967, Ser. No. 608,406

Claims priority, application Germany, Jan. 28, 1966, S 101,680

9 Claims. (Cl. 308—2)



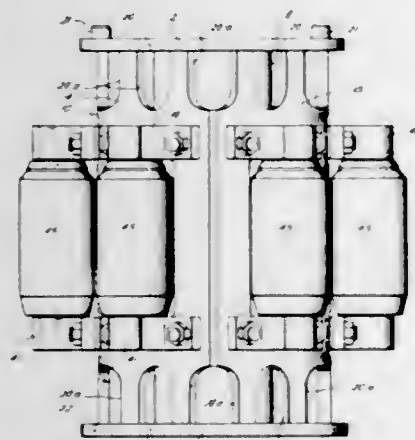
This disclosure relates to a balance which comprises knife edge bearing assemblies consisting of two spaced apart parts, each of which comprises a knife edge member and a V-bearing. The knife edge members and V-bearings are engageable in a line of contact. The invention provides torsionally elastic means which elastically oppose a relative movement of said knife edge members and V-bearings in the direction of said line of contact so that the danger of damage due to impact between the knife edge members and other parts of the balance in the direction of said line of contact is minimized and an action of frictional torque on said bearing assemblies is prevented.

**3,413,045**  
**SEALED LUBRICATED REAMER-STABILIZER**

William Isaac Wohlfeld, Midland, Tex., assignor to Smith Industries International Inc., a corporation of California

Filed Apr. 19, 1967, Ser. No. 632,099

4 Claims. (Cl. 308—6)



Metal roller of large hole reamer-stabilizer is rotatably mounted on hollow spindle carried by body of reamer-stabilizer. Tapered roller bearings mount roller on spindle. Hollow spindle provides grease reservoir communicating through radial ports in spindle and thence through annulus between roller and spindle with the bearings adjacent ends

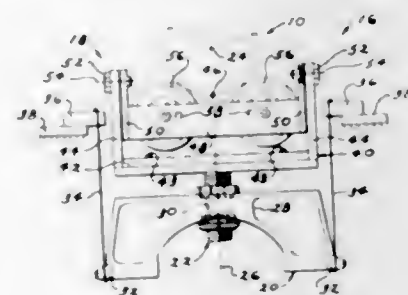
of roller and spindle. Floating, face-type, pressure seals between each end of roller and spindle beyond bearings prevent entrance of drilling fluid into bearings and loss of grease from bearings. Entrance of grease into reservoir is provided through check valve type grease gun collector in plug closing one end of hollow spindle. Other end of hollow spindle is closed by a plug having a port there-through. The port is closed by an elastic, e.g. fabric reinforced elastomer tube extending into hollow spindle, the end of the tube remote from the port being closed. Grease pumped into reservoir through check valve collapses tube and fills hollow spindle with grease which is maintained under pressure by elasticity of tube. As grease is lost in use of apparatus, tube expands, moving grease from reservoir in spindle to the bearings. When apparatus is subjected to pressure of drilling fluid deep in an earth bore, volume reduction of grease due to increased pressure is compensated by expansion of tube and flow of grease from spindle to bearings, thereby preventing movement of external fluid past seals into bearings. Pressure across seals never exceeds initial pressure when reservoir filled since external fluid pressure on seal is balanced by internal fluid pressure of grease which in turn is subjected to external fluid pressure acting on tube.

**3,413,046**  
**BALANCING SUPPORT STAND**

Harry R. Kincaid, Johnstown, Ohio, assignor to International Research and Development Corporation, Worthington, Ohio, a corporation of Ohio

Filed Mar. 14, 1967, Ser. No. 623,129

9 Claims. (Cl. 308—15)



This invention relates to balancing support stands for use in dynamic balancing of rotors weighing up to about 10,000 pounds. The present balancing support stand utilizes the basic compound pendulum motion and consists of a rotor support and a yoke which is positioned below the rotor support and which is suspended by a pair of reeds. The present balancing support stand includes a vertically adjustable connecting mechanism for rotatably connecting the rotor support to the yoke, the arrangement being such that (a) the rotor support may undergo free rotary motion about a vertical axis normal to the longitudinal axis of the rotor and independently of the swinging motion of the yoke; and (b) the rotor support may be raised or lowered, as desired, relative to the yoke to accommodate differences in the diameter of the opposite ends of the rotor and to position the rotor horizontally without setting up stresses which would be manifested at the reeds suspending the yoke.

**3,413,047**  
**BEARING DEVICE FOR A VERTICAL SHAFT**  
**OF A CRUSHING CONE OF A GYRATORY**  
**CRUSHER**

Anatoly Alexandrovich Levishko, Ulitsa Pobedy 23, kv. 18, Sverdlovsk, U.S.S.R.

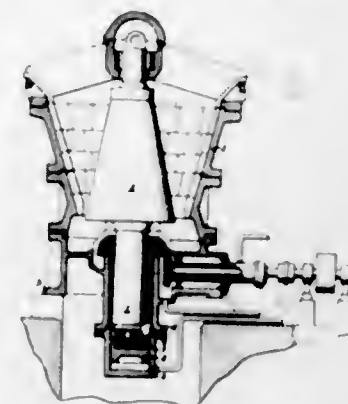
Filed Nov. 18, 1965, Ser. No. 508,435

4 Claims. (Cl. 308—144)

A bearing device for a vertical shaft of a crushing cone of a gyratory crusher in which an elastic member com-

pletely fills the lower portion of a cylindrical space in a bearing support disposed beneath the shaft, the lower portion of a thrust bearing entering said space and rest-

manently fixed tubular guide extending from its under surface for positioning the tissue rolls allowing them to turn easily.



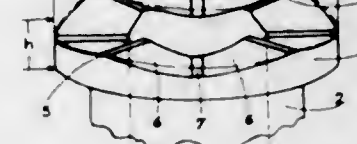
**3,413,048**  
**SELF-LUBRICATING ABUTMENT**

Michel Eudier, Paris, France, assignor to La Metallurgie Française des Poudres-Métafram, Paris, France, a company of France

Filed July 26, 1966, Ser. No. 568,010

Claims priority, application France, Aug. 4, 1965, 27,227

1 Claim. (Cl. 308—160)



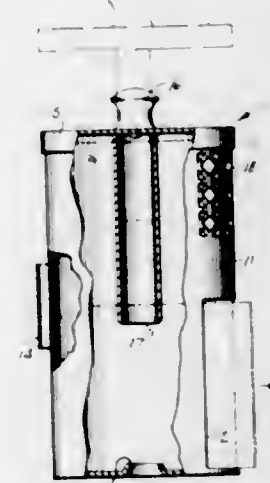
A self-lubricating abutment on a shaft has a porous sintered metal base having undulations passing through the axis of rotation and a layer of sintered microporous metal having a porosity below 1.3 microns covering the entire surface of the undulations.

**3,413,049**  
**TOILET TISSUE HOLDER**

Stanley L. Smay, 420 N. 16th St., Quincy, Ill. 62301

Filed Oct. 12, 1966, Ser. No. 586,166

4 Claims. (Cl. 312—39)



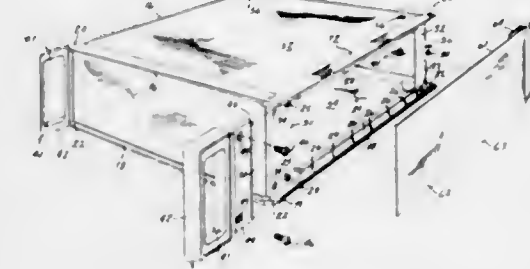
A cylindrical dispenser holding on a vertical axis two or more tissue rolls so as to have them readily available when needed. The only movable part, the lid, has a per-

**3,413,050**  
**INSTRUMENT ENCLOSURE ADAPTABLE TO**  
**VARIOUS HEIGHTS AND INCLUDING RE-**  
**MOVABLE HANDLES**

Edwin J. Sommers, East Paterson, N.J., and Dale W. Gruy, Sunnyvale, Noland E. Vogt, Menlo Park, and Dennis J. McCroskey, Redwood City, Calif., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Mar. 8, 1967, Ser. No. 621,623

7 Claims. (Cl. 312—107)



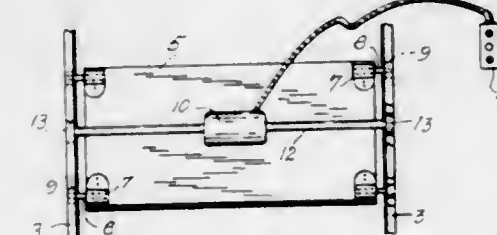
The instant disclosure describes an instrument enclosure consisting of substantially identical die-cast upper and lower frame members which are fabricated to a predetermined size. These upper and lower frame members are spaced apart by means of structural spacer struts positioned at the four corners of the enclosure and inwardly of its peripheral edges. In this manner, recesses are provided so that either a removable handle or a decorative cap may be secured to the enclosure depending upon the environment in which it is to be used. Furthermore, the upper and lower frame members include grooved tracks into which the side members of the enclosure are securely held.

**3,413,051**  
**ROLLERWAY CABINET**

Theron W. Lundberg, 5 Easy St., Salem, N.H. 03079

Filed Mar. 7, 1967, Ser. No. 625,905

1 Claim. (Cl. 312—223)



A roller supported cabinet mounted on trackways in the cellar staircase of a dwelling and movable to a position at the top of the stairs in the event the stairs are not in use, and retractable from such position to permit use of the stairs. This novel concept thus provides added cabinet or closet facilities not otherwise built into the dwelling.

**3,413,052**  
**AUTOMATIC VENDING DEVICE**

Petrus M. R. Schoenmakers, 16 Prinses Beatrixstraat, Kaatsheuvel, Netherlands

Filed Nov. 24, 1964, Ser. No. 413,440

Claims priority, application Netherlands, Nov. 29, 1963, 301,148; Oct. 9, 1964, 6411756

7 Claims. (Cl. 312—291)

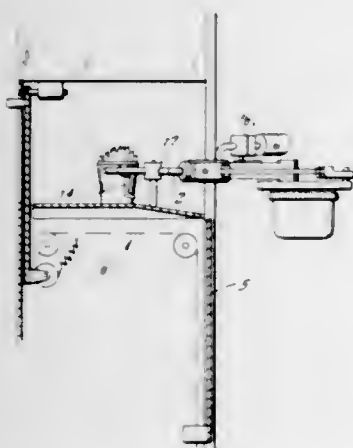
1. In an automatic vending machine having means for delivering items to be vended, said delivery means comprising an arm pivotally mounted to said machine for



receiving the items to be vended, and a delivery chamber having first and second alternately open and closed first and second doors, respectively;

said pivotally mounted arm having an end thereof having item holding means thereto attached for receiving and holding the items to be vended; said item holding means having spring biased releasable clamping means including lever means movable between a first and second position for releasing said clamping means;

an abutment means on said machine; said abutment means being so positioned that when said item holding means is within said delivery chamber, said lever means is engageable with said abutment means and moved to its second position;



said pivotally mounted arm being pivotable in a first direction into said delivery chamber for bringing the items being vended to a receiving means within said delivery chamber when said first door is closed and said second door is open, and said pivotally mounted arm being pivotable in the opposite direction out of said delivery chamber while said second door is open and said first door is closed, said first door being openable only when said pivotally mounted arm is out of said delivery chamber and said second door is closing, and furthermore when said pivotally mounted arm is pivoted into said delivery chamber, said lever means engaging said abutment means, thereby moving said lever means to its second position to release said clamping means, thereby releasing the items to be vended from the grip of said item holding means;

a receiving means so positioned in said delivery chamber as to receive each item being vended after it is released from said item holding means.

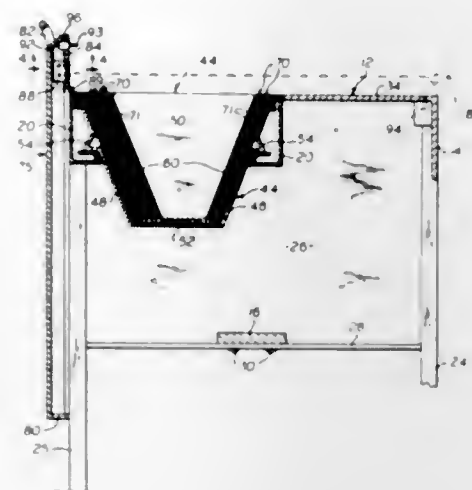
### 3,413,053 POSTING CABINET WITH FILE AND POSTING SURFACE

Charles M. Featherston, Norwalk, Conn., assignor to Vue-Fax System Controls Corporation, Westbury, N.Y., a corporation of New York

Filed Apr. 10, 1967, Ser. No. 629,597  
11 Claims. (Cl. 312—304)

This specification discloses an improved posting cabinet having the usual visible index card file but with the file set back far enough to provide a desk space or "posting surface" in front of the file. While the depth of the posting surface is ample for efficient work space, the file is still close enough to an operator, sitting in front of the posting cabinet, to reach conveniently even the back cards in the file. The index tabs on spacer panels preferably extend above the level of the posting surface for good visibility, even when the spacer panels are sloping forward, and a cover that extends over both the file and posting

surface has underside clearance for the tabs and provision for locking at the front. For extra capacity, the posting surface is made wider and files are located side-

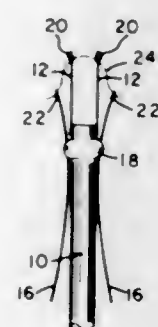


by-side at the back of the posting surface. The operator faces the work at all times and the cabinet is constructed to provide ample knee room under the posting surface.

### 3,413,054 METHOD OF FABRICATING AN INCANDESCENT LAMP AND ITS CONSTRUCTION

Ernest A. Richards, John J. Vetere, and John Appolloni, Beverly, Mass., assignors to Sylvania Electric Products, a corporation of Delaware

Filed Dec. 30, 1966, Ser. No. 606,436  
3 Claims. (Cl. 316—19)



The method of fabricating a miniature lamp is described. A pair of support wires and a pair of filament lead wires are positioned on the end of an exhaust tube. The support wires are first inserted into the end of the tube. Below the point of insertion, a loosely fitting annular glass ring is positioned allowing enough space for the pair of filament lead wires. The glass ring is fused to the filament wires and the exhaust tube. After bending of the ends of the wires, a filament is fitted thereto, the ends of which are secured to the lead wires and looped and supported in axial arrangement by the support wires.

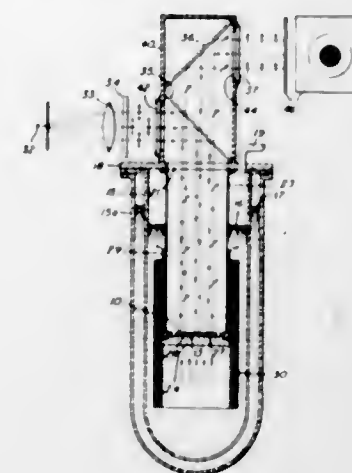
### 3,413,055 MAGNETO-OPTIC GLASS BODY AND ELECTRIC CIRCUIT ELEMENT IN READ-OUT APPARATUS INCLUDING THE SAME

Warren De Sorbo, Ballston Lake, N.Y., assignor to General Electric Company, a corporation of New York

Filed Apr. 12, 1961, Ser. No. 102,411  
5 Claims. (Cl. 350—151)

1. A light-transmitting, plate-like body of cerous phos-

phate glass having optically-smooth top and bottom surfaces and having the magneto-optic Faraday property, one



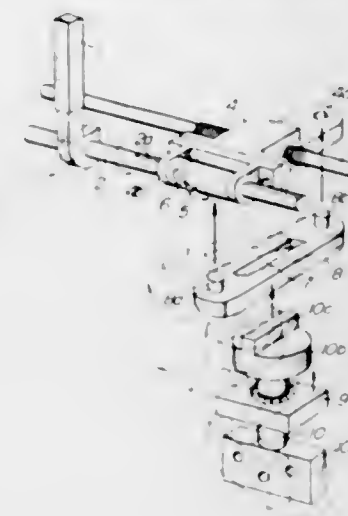
of said surfaces of the body being coated for the reflection of light beams incident to the other said surface.

### 3,413,056 DEVICE FOR OPHTHALMIC INSTRUMENT FOR ADJUSTING INTERPUPILLARY DISTANCE AND ANGLE OF CONVERGENCE OF LENS CASES

Taketoshi Ishihara, Tokyo, Japan, assignor to Tokyo Kogakukikai Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed June 30, 1965, Ser. No. 468,536  
Claims priority, application Japan, Aug. 31, 1964, 39/50,921

2 Claims. (Cl. 351—28)



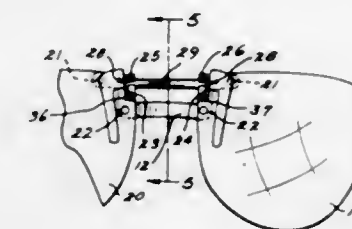
An ophthalmic instrument used in near and far vision testing having card holder means attached to cam means affixed to linking means which supports lens cases to be used in the vision test, said cam means and linking means joined in such a manner that by rotating the shaft containing cam means simultaneously results in the automatic adjustment of the interpupillary distance and in the angle of convergence of the lens cases affixed to said linking means.

### 3,413,057 SPECTACLE SUPPORTED PIVOTED AUXILIARY EYE PROTECTORS

Walter C. Carmichael, West Peabody, Mass., assignor, by mesne assignments, to American Optical Corporation, a corporation of Delaware

Continuation of application Ser. No. 250,823, Jan. 11, 1963, This application Sept. 22, 1965, Ser. No. 489,369  
1 Claim. (Cl. 351—47)

Auxiliary sunglasses which can be clipped onto wearer's



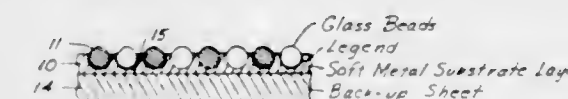
frame and swing into and out of position over the lenses of the glasses as desired.

### 3,413,058 REFLEX-REFLECTING ARTICLES

Chi Fang Tung, Lincoln Township, Washington County, and Philip V. Palmquist, Maplewood, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Continuation-in-part of application Ser. No. 300,475, Aug. 7, 1963. This application July 9, 1964, Ser. No. 381,459

9 Claims. (Cl. 350—105)

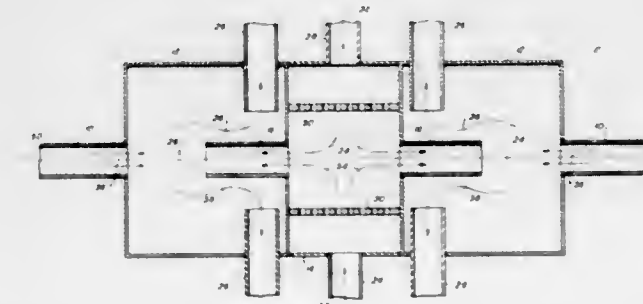


Reflex-reflecting articles having a compact layer of glass beads held in position on a metal substrate layer, the beads being embedded in and held in position solely by a substrate of malleable and ductile metal. Such articles may be formed by pressing the beads into the metal substrate under elevated temperature conditions, no adhesive being required to effect the bonding of the beads to the metal substrate.

### 3,413,059 GAS LENSES FOR ULTRAHIGH FREQUENCY WAVE ENERGY PROVIDED BY OPPOSING FLOWS OF GASES

Dwight W. Berreman, Westfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 23, 1964, Ser. No. 353,689  
6 Claims. (Cl. 350—179)



This application describes apparatus and methods for focusing an optical beam by means of flowing gases. In the embodiments described, two transparent gases, having different refractive indices, are caused to flow into an enclosure in opposite directions, thereby establishing a curved front between them extending along a direction transverse to the direction of beam propagation. The effect of such a curved front between two dissimilar gases is to create a transparent gas lens along the beam path. The accumulated gas is permitted to escape through suitably located exhaust vents.



3,413,060

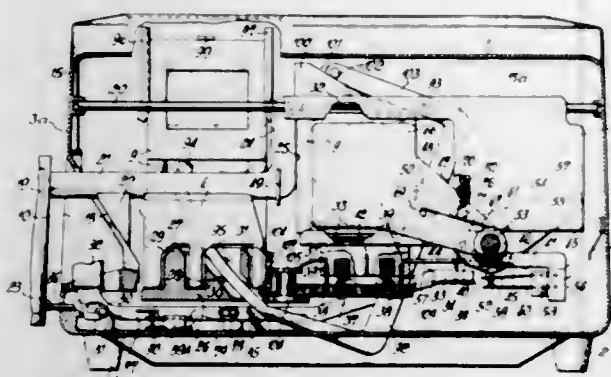
**SLIDE PROJECTOR WITH SHUTTER**

Helmut Rube, Endersbach, Germany, assignor to Robert Bosch Elektronik und Photokino G.m.b.H., Stuttgart-Unterturkheim, Germany

Filed May 2, 1966, Ser. No. 546,892

Claims priority, application Germany, May 3, 1965, B 81,715

20 Claims. (Cl. 353—21)



1. In a slide projector, a projection gate; a transfer unit for transporting slides between a magazine and said projection gate; a shutter movable between open and closed positions and normally assuming said closed position to blank the light beam from the viewing screen when there is no slide in said projection gate; motion transmitting means normally cooperating with said transfer unit for moving said shutter to open position in response to transfer of a slide into said projection gate; and control means for selectively idling said motion transmitting means so that the shutter remains in closed position while said transfer unit transports at least one slide into said projection gate.

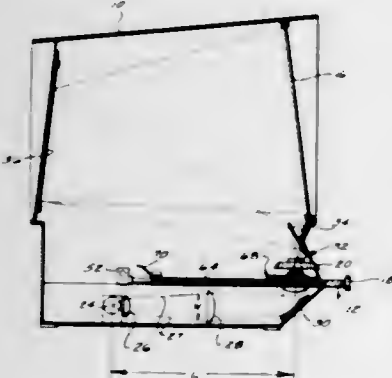
3,413,061

**MICROFILM READER**

Lewis E. Simpson, 255 W. 234th St., Wilmington, Calif. 90744, and William E. Karow, 7367 W. 93rd Place, Los Angeles, Calif. 90045

Filed Feb. 2, 1966, Ser. No. 527,646

4 Claims. (Cl. 353—23)



An optical reader for reading flat film having micro-images comprising a transparent carrier platform for holding the film. The platform having a transparent cover hinged to the platform at its rear to hold down the film, and a projection fixed to the rear of the cover for abutting the housing to lift the cover as the platform is moved out of the housing. The platform is moved in and out of the housing by sliding it, but is moved laterally by rotation of a knob on the platform which rotates a drive wheel which is rotatably engaged with a rod fixed to the housing. The knob and drive wheel are coupled in a telescoping arrangement to allow the platform to move toward and away from the drive wheel.

3,413,062

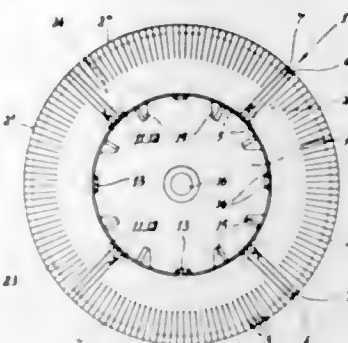
**CIRCULAR MAGAZINE FOR PHOTOGRAPHIC PROJECTORS**

Erich Zillmer, Braunschweig, Germany, assignor to Voigtlander A.G., Braunschweig, Germany, a corporation of Germany

Filed Mar. 14, 1966, Ser. No. 533,925

Claims priority, application Germany, Mar. 16, 1965, Z 11,408

9 Claims. (Cl. 353—117)



A magazine for photographic projectors. The magazine is circular and is composed of a number of segments which respectively form parts of a circle and which are located in end-to-end relation. These segments are connected to each other and are supported for movement relative to a support plate. This support plate has a wall surrounding the segments and formed with an opening through which individual slides can be displaced to and from the magazine segments, while a closure means is provided for covering and uncovering this opening.

3,413,063

**ELECTROPHOTOGRAPHIC APPARATUS**

Charles J. Young, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Mar. 28, 1966, Ser. No. 537,964

3 Claims. (Cl. 355—14)



Apparatus for making a plurality of visible copies of an electrostatic latent image on an insulating surface of a recording element comprises means to move the recording element along a predetermined path and a plurality of developing stations and copy transfer stations disposed sequentially along the path. The original latent image is redeveloped for each transfer copy (in addition to the first copy desired).

3,413,064

**MICROFICHE ALIGNMENT CLAMPING MECHANISM**

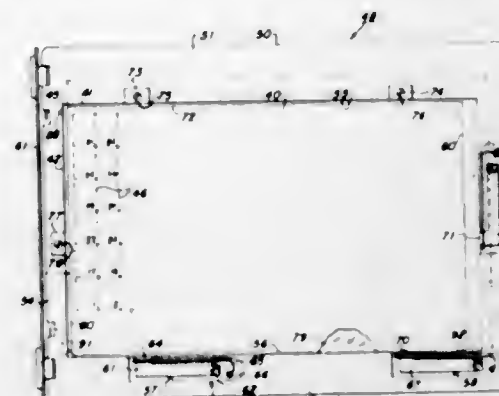
Russell R. Roberts, Ontario, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed June 30, 1965, Ser. No. 468,388

4 Claims. (Cl. 355—42)

A clamping arrangement for a microfiche card supported along its edges in a holder where the holder is

movable in two directions relative to a fixed optical scanning axis. A clamping member is adapted to engage each



side of the card for clamping the same in a fixed plane before scanning.

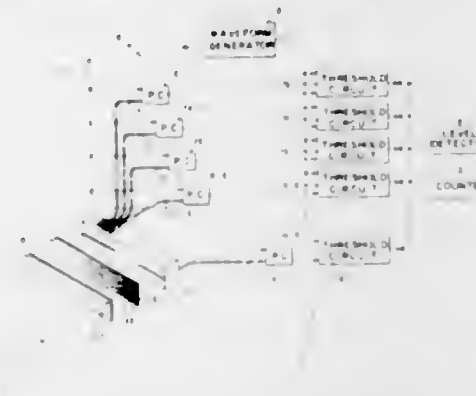
3,413,065

**DIGITAL SCANNING DENSITOMETER**

Howard L. Funk, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Sept. 23, 1964, Ser. No. 398,635

9 Claims. (Cl. 356—202)



A variable density filter is used to provide a plurality of values of light intensity to a plurality of photocells connected by fiber optics to a viewing block of a photometer. A digital output is provided by connecting the photocells through threshold circuits to a level detector serially by means of a scanning ramp (sawtooth) voltage. The number of pulses produced is recorded in a counter indicative of the optical density of the sample body.

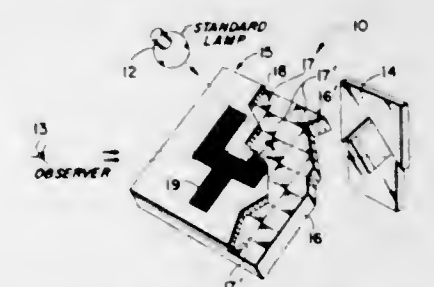
3,413,066

**COMPARISON PHOTOMETER AND TARGET THEREFOR**

Conrad H. Biber, Needham, and Jeremy M. Topaz, Brighton, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Nov. 13, 1964, Ser. No. 410,977

9 Claims. (Cl. 356—230)



1. In a comparison photometer, the combination of:  
(a) a first light source defining a background area of substantially uniform illumination;  
(b) target means defining a reflective pattern partially covering said background area, and an index symbol superposed on said pattern and having portions over-

lying both said background area and said reflective pattern; and

(c) a second light source for illuminating said pattern; (d) said pattern and index symbol being arranged so that the latter is uniquely intelligible only when the level of brightness of said background area bears a predetermined relationship to the level of brightness of said pattern;

(e) said index symbol being defined by a first plurality of areas that absorb substantially all of the light incident thereon and a second plurality of areas that transmit substantially all of the light incident thereon such that all portions of said index symbol appear substantially uniformly bright when the level of brightness of said background area bears said predetermined relationship to the level of brightness of said pattern.

3,413,067

**LIGHT CONDUCTING ROD ENDOSCOPIC INSTRUMENT WHICH MAKES USE OF THE PRINCIPLE OF TOTAL INTERNAL REFLECTION TO SIGHT PERPENDICULARLY TO THE ROD AXIS**

Nicholas J. Froio, Harvey, Ill., assignor to Froio Corporation, a corporation of Illinois

Filed Mar. 25, 1964, Ser. No. 354,529

6 Claims. (Cl. 356—241)



The disclosure describes an endoscope having in one embodiment an elongated rod like light-transmitting solid body with a concave conical face at the distal end which provides an internal convex reflecting face radially opposite a clear coaxial side face. The viewing end is enlarged to provide an annular frusto-conical shoulder with an annular groove thereabove whose lower planar wall provides an internal reflecting surface for circumferentially directed light to increase ambient lighting therethrough. Auxiliary light means at the shoulder, a radially recessed side face, a distal end cap and cylindrical protective sheath are provided in other embodiments.

3,413,068

**SYSTEM FOR CONTROLLING EXTENSION AND RETRACTION OF THE CARTRIDGE IN A BALL-POINT PEN**

Jean Michel Collaud, Onex-Geneva, Switzerland, assignor to Fabrique Suisse de Crayons Caran d'Ache S.A., Geneva, Switzerland, a company of Switzerland

Filed Mar. 24, 1966, Ser. No. 537,114

Claims priority, application Switzerland, Apr. 15, 1965, 5,301/65

2 Claims. (Cl. 401—114)

A ball-point pen having a push-button assembly including a tubular housing the free end of which is adapted to engage a short ink cartridge of large diameter



while the interior thereof may receive a long smaller diameter ink cartridge. The assembly includes a threaded and room air into the main air stream upstream from the combustion chamber.



3,413,070

## GAS LIGHTER

Rodney S. Piffath, Burbank, and James R. Walker, Jr., North Hollywood, Calif., assignors to James A. A. Smith, trustee in bankruptcy of the estate of Star-Fire, Inc., bankrupt, assignors to Gene Goble, Escondido, Calif.

Filed June 28, 1966, Ser. No. 561,188

6 Claims. (Cl. 431-89)



coupling slidably carried by the push-button and engageable with a threaded bushing within the pen casing.

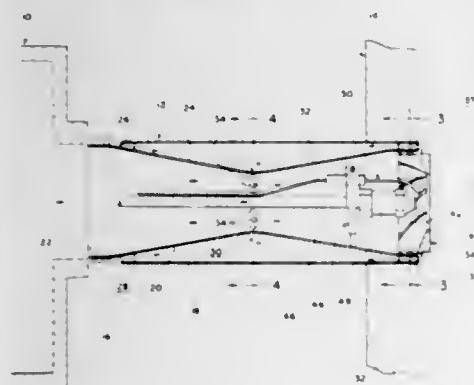
3,413,069

## METHOD AND APPARATUS FOR ELIMINATING FURNACE PULSATIONS

Bruce R. Walsh, Wilkensburg, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Feb. 28, 1967, Ser. No. 619,215

10 Claims. (Cl. 431-4)



An air tube for gun type oil burners to eliminate pulsation which includes means to mix both combustion gases

A lighter adapted to burn a gaseous fuel of the liquefied petroleum type. The lighter includes a container for the liquefied gaseous fuel and includes a valve operating member threadedly connected to the container to regulate the flow of gaseous fuel therefrom. The operating member carries a burner and a device for igniting the gaseous fuel emanating from the burner. A common retainer secures the igniting device to the operating member, and also secures a wind guard thereto. A check valve in the gaseous fuel passage through the operating member responds to an excessive rate of flow to reduce such rate.

## CHEMICAL

3,413,071

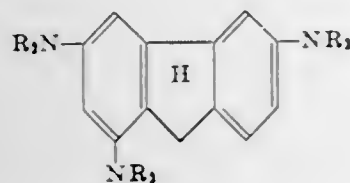
## HEXAMETHYLTRIAMINOPHENYLFLUORENE PRINTING COMPOSITION AND MANIFOLDING SHEET THEREWITH

Chester Davis, 415 E. 5th St., Newport, Ky. 41071

No Drawing. Filed July 18, 1963, Ser. No. 296,076

13 Claims. (Cl. 8-2.5)

The invention herein is the use of Fluorene Violet dye with the formula



where R is short chain alkyl group, in an ink or in their leuco form for oxidation to a colored form on paper or a fabric. The dye can also be applied as a pigment when

reacted with molybdic or phosphotungstic acid. The 9-0 nitro derivative and oleic salt are produced and used in a manner similar to the dyes of the above structural formula.

3,413,072

## DYEING HUMAN HAIR WITH AN OXIDATION DYE AND 1-PHENYL-3-METHYL-5-PYRAZOLONE

Giuliana Ghilardi and Jacqueline Raymonde Lemonnier, born Richard, Paris, France, assignors to Societe Anonyme dite: L'Oreal, Paris, France

Filed Jan. 28, 1965, Ser. No. 428,701

Claims priority, application France, Feb. 4, 1964, 962,624

5 Claims. (Cl. 8-11)

A process for dyeing human hair with an oxidation dye, which comprises dyeing the hair with a composition containing an effective amount of the dye, an oxidation retarding amount of 1-phenyl-3-methyl-5-pyrazolone and an effective amount of an effective oxidizing agent.

3,413,073

## SUBSTITUTED PARADIAMINO-ANISOLE AND ITS USE FOR DYEING HUMAN HAIR AND KERATINIC FIBERS

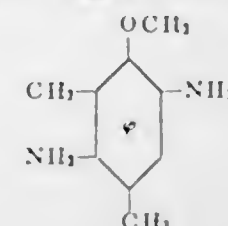
Andrée Bugaut, Boulogne-sur-Seine, and Giuliana Ghilardi, Paris, France, assignors to L'Oreal, Paris, France

No Drawing. Filed Apr. 18, 1966, Ser. No. 543,050

Claims priority, application France, Apr. 21, 1965, 14,059

6 Claims. (Cl. 8-11)

A new compound having the formula



that is suitable for dyeing hair and other keratinic fibers.

3,413,074

## UNION DYEING AND PRINTING OF POLYESTER/CELLULOSE BLENDS

Albert Daniel Lowande, Middlesex, and Alfred Louis Cate, Somerset, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 31, 1967, Ser. No. 664,617

4 Claims. (Cl. 8-21)

Union dyeing or printing of polyester/cellulose blends is carried out by (1) applying to the fabric a padding solution or a printing paste comprising (a) a fiber-reactive dye characterized by the presence therein of a methyloated iminobispropionamide group attached to the dye by a defined type of bridging group, (b) a disperse dye having a Hot Press rating of 4-5 or 5, (c) an acid catalyst, such as ammonium chloride, and (d) water, and (2) drying the fabric at a temperature of 380-435° F. for from 5 seconds to 3 minutes. The dyed fabrics exhibit excellent fastness to washing as well as improved strength, brightness and fastness to light.

3,413,075

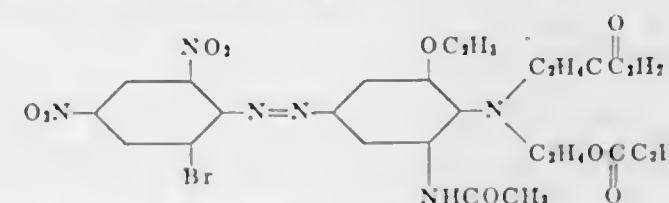
## AZO DYESTUFF MIXTURES AND AROMATIC POLYESTER FIBERS COLORED THEREWITH

Albert C. Rotcop, Passaic, N.J., and Herman P. Baumann, Charlotte, N.C., assignors to American Aniline Products, Inc., a corporation of Delaware

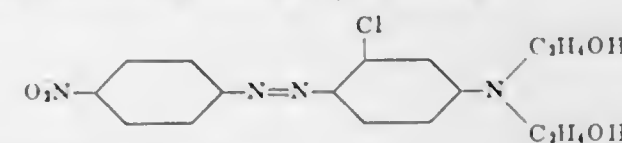
No Drawing. Filed Feb. 8, 1966, Ser. No. 525,842

4 Claims. (Cl. 8-26)

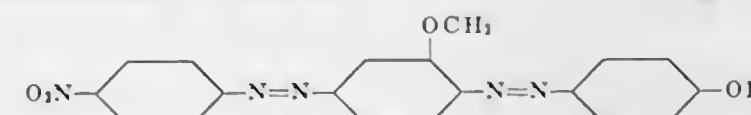
Polyester fibres are dyed in uniform black shades with a dyestuff mixture of 50 to 80% by weight of a blue monoazo component such as:



and 20 to 50% by weight of an orange monoazo component containing a monoazo dye such as:



and a disazo dye such as:



The individual components of the mixture effectively penetrate and fix on the fiber at approximately the same rate

at a given temperature, which can be varied over a range of 180-220° C., using the Thermosol process.

3,413,076

## DYEING NITRIC ACID TREATED FORMED POLY-PROPYLENE OBJECTS CONTAINING FATTY ACID DIAMIDES OF ALKYLENE DIAMINES

Akio Koshima and Hirohisa Nara, Uji-shi, Kyoto-fu, Japan, assignors to Nippon Rayon Co., Ltd., Uji-shi, Kyoto-fu, Japan, a corporation of Japan

No Drawing. Continuation of application Ser. No. 251,488, Jan. 15, 1963. This application Feb. 7, 1967, Ser. No. 614,519

2 Claims. (Cl. 8-31)

The present disclosure shows the blending of polypropylene with bisamides or biscarbamates of alkylene diamines or alkylene dicarboxylic acids and then applying nitric acid to the blend to get a readily dyeable polypropylene product. In one example, methylene-bistearamide blended with polypropylene and extruded into a fiber is treated with nitric acid. Other acids such as HCl, H<sub>2</sub>SO<sub>4</sub>, H<sub>3</sub>PO<sub>4</sub>, HI, HBr, HF, oxalic acid and paratoluene sulfonic acid can be used. After acidification alkylene diamines and ethylenimine are applied to the fiber.

3,413,077

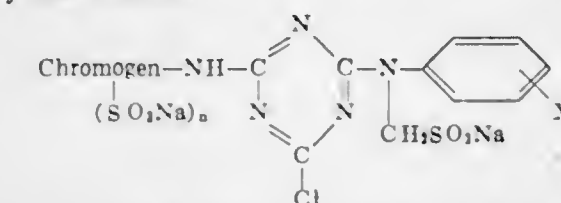
## PROCESS OF DYEING CELLULOSE AND POLY-AMIDE FABRICS WITH REACTIVE DYESTUFFS

Mario Bertin, Ugo Moiso, Giulio Craia, and Aldo Pasquarelli, Milan, Italy, assignors to Aziende Colori Nazionali Affini ACNA S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Continuation-in-part of application Ser. No. 313,451, Oct. 3, 1963. This application June 7, 1965, 462,072

2 Claims. (Cl. 8-54)

2. The process of dyeing fabrics selected from the group consisting of cellulose and polyamide materials which comprises contacting said materials with an effective amount of a reactive dye; said dye being characterized by the formula:



wherein n ranges from 1 to 4 and X is selected from the group consisting of H, -CH<sub>3</sub>, -OCH<sub>3</sub>, and -OC<sub>2</sub>H<sub>5</sub>.

3,413,078

## BLEACHING OF SYNTHETIC FIBERS, ALONE OR MIXED WITH NATURAL AND/OR ARTIFICIAL CELLULOSE FIBERS

Pierre Lhoste, Paris, and Jean Bouvet, Eure, France, assignors to Office National Industriel de L'Azote, Toulouse, France

No Drawing. Filed Nov. 30, 1965, Ser. No. 510,676

Claims priority, application France, Dec. 1, 1964, 5,030

5 Claims. (Cl. 8-108)

A method is provided for the bleaching of synthetic textile fibers alone or in admixture with natural and/or artificial cellulose fibers. The fibers are first pre-soaked in an aqueous solution of a bleaching agent selected from the group consisting of trichlorocyanuric acid, a mixture of trichlorocyanuric acid and cyanuric acid, and a mixture of alkali metal or alkaline earth metal hypochlorite and cyanuric acid. The pre-soaked material is then subjected to a squeezing operation at ambient temperature until the solution take-up amounts to about 50% to 120% of the weight of the said material. Then, as the bleaching step-proper, the resultant impregnated-and-squeezed material is maintained at a temperature between the squeezing



temperature and 100° C. for a period ranging from about 1 minute to several hours.

3,413,079

# ALKANOIC ACID AND HYDROXY ALKANOIC ACID SALT SOFTENING OF TANNED COLLAGEN STRANDS

Ernest J. Rich, Jr., Edison, N.J., assignor to Ethicon, Inc., a corporation of New Jersey  
No Drawing. Filed Sept. 30, 1965, Ser. No. 491,887  
7 Claims. (Cl. 8—130.1)

The invention involves heating an extruded collagen strand at 125 to 137° C. for 1 to about 3 hours in a solution of sodium acetate, potassium acetate, sodium or potassium lactate or the ammonium salts of acetic and lactic acid. The collagen strands are first lubricated with .4% dehydrated castor oil emulsified with .4% gelatin before the heat treatment.

3,413,080

# METHOD OF TREATING WEBS OR YARNS

Gunther Schlagenhof, Wattwil, and Karl Joseph Windhausen, Ebnat, Switzerland, assignors to Heberlein Patent Corporation, New York, N.Y., a corporation of New York

Filed July 31, 1964, Ser. No. 386,656  
Claims priority, application Switzerland, Aug. 6, 1963, 9,722/63  
4 Claims. (Cl. 8—137)



Method of treating sheet material and yarns by wrapping same around a perforated drum, rotating the drum and periodically introducing charges of treating fluid into the rotating drum.

3,413,081

# PROCESS FOR RETARDING THE EVAPORATION OF ORGANIC LIQUIDS

Werner Wolff, Neutoting (Inn), and Guido von Rosenberg and Hans Lambert, Gersthofen, near Augsburg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany  
No Drawing. Filed Sept. 16, 1963, Ser. No. 309,916  
Claims priority, application Germany, Sept. 19, 1962, F 37,841  
4 Claims. (Cl. 21—60.5)

Volatilization of organic solvents in solutions or pastes is retarded by adding about 0.1% to about 10% by weight, referred to the solvent, of a partial ester of a polyhydric ether alcohol with a monobasic fatty acid or hydroxy fatty acid. Said esters may be condensed with polybasic acids or the anhydrides thereof.

3,413,082

# PROCESS FOR RECOVERING Zr-VALUES FROM ORES

William H. Owens, Milton, Fla., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania  
No Drawing. Filed Nov. 13, 1962, Ser. No. 237,381  
12 Claims. (Cl. 23—15)

1. In the method of separating the zirconium from the zirconium-silica bearing ore which involves heating the ore at elevated temperature with an alkali selected from the group consisting of alkali metal hydroxide and

alkali metal carbonate to convert a substantial portion of the silica to water soluble form and produce a water insoluble alkali metal zirconium component, leaching such water soluble form of silica from the alkali metal zirconate to leave a silica lean alkali metal zirconate residue and thereafter dissolving such alkali metal zirconate residue in acid to solubilize zirconium, the improvement wherein a compound having a metal cation, a silicate of which metal cation is water insoluble, is added to the residue, the resulting mixture is heated prior to dissolving in acid to solubilize the zirconium, whereby to obtain an acid solution of zirconium containing a separable solid phase of silica and such solid phase silica is separated therefrom.

3,413,083

# PROCESS FOR THE PREPARATION OF MIXED OXIDES

Gustav Daendliker, Birsfelden, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Nov. 3, 1965, Ser. No. 506,278  
Claims priority, application Switzerland, Nov. 11, 1964, 14,523/64  
6 Claims. (Cl. 23—24)

A new process is provided for the manufacture of mixed oxides which contain in the cation one or more of the following elements: alkali or alkaline earth metal, lead, zinc, cadmium and rare earths, and which contain one or more of the following elements in the anion: aluminum, tin, iron, titanium, zirconium, hafnium, molybdenum, tungsten and antimony. The mixed oxides are obtained by dissolving the alcoholates of the elements in stoichiometric proportions in an anhydrous organic solvent to form mixed alcoholates. The mixed alcoholate is separated from the solvent, preferably by precipitation, with concentrated ammonia and the alcoholate is pyrolyzed to form the oxide.

The oxides of this invention have well-known uses in the art. For example, the oxides may be employed to form corrosion and oxidation resistant coatings.

3,413,084

# METHOD OF CONTROLLING THE ATMOSPHERE IN PREPARING FERRITES

Frank G. Brockman, Dobbs Ferry, N.Y., assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware  
Filed Oct. 24, 1965, Ser. No. 504,902  
3 Claims. (Cl. 23—51)

A method of regulating the oxygen content of a ferrite in which the ferrite is heated in a reaction zone in an atmosphere of CO<sub>2</sub> and CO, the ratio of the partial pressures of CO<sub>2</sub> and CO in the atmosphere being automatically controlled by supplying the atmosphere from a reaction chamber in which CO<sub>2</sub> is passed over carbon (C) to form CO. The ratio  $p_{CO}/p_{CO_2}$  is automatically controlled by regulating the temperature in the latter reaction vessel in response to the temperature in the reaction zone in which the ferrite is heated.

3,413,085

# PROCESS FOR PREPARING CUPROUS HALIDE SORBENTS

Warren Alfred Knarr, Baton Rouge, La., and Edward Allen Hunter, Lake Jackson, Tex., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 10, 1964, Ser. No. 410,276  
12 Claims. (Cl. 23—97)

Cuprous halide sorbents suitable for use in selective olefin separation and recovery systems are prepared by first dissolving cuprous halide in a solvent containing less than about 0.4 wt. percent of a complexing agent, then

treating the solution with less than the stoichiometric amount of a complexing agent to form an insoluble precipitate, recovering the precipitate and dissociating it to produce an active cuprous halide sorbent.

3,413,086

# CONVERSION OF POTASSIUM CHLORIDE TO POTASSIUM SULFATE

Richard L. Every, Ralph Leroy Grimsley, and Jimmy H. Stanton, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Feb. 27, 1967, Ser. No. 618,709  
8 Claims. (Cl. 23—121)

Sulfur dioxide, water and an amine are reacted in an alcohol diluent to form the amine hydrogen sulfite, this product is oxidized and the resulting amine hydrogen sulfate is then reacted with potassium chloride in water diluent to precipitate potassium sulfate and form amine hydrogen chloride which is converted back to the original amine by thermal decomposition and recycled to the reaction zone.

3,413,087

# METHOD FOR EXTRACTING ALUMINA FROM ITS ORES

Richard C. Roberts, Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Continuation-in-part of application Ser. No. 302,535, Aug. 16, 1963. This application Mar. 13, 1964, Ser. No. 351,866

16 Claims. (Cl. 23—143)

A method of extracting alumina from bauxite by digestion with caustic alkali solution, in which the silica content of the ore is insolubilized and the heat recoverable from the digestion process is utilized and scale formation is reduced. The bauxite is digested at elevated temperature and pressure followed by cooling of the resulting digestion liquor with recovery of steam generated thereby, alumina being separated from the digestion liquor and spent liquor recycled for treatment of fresh ore. A thick slurry of fresh comminuted ore and caustic alkali solution is prepared, the amount of the solution being insufficient to dissolve all the soluble alumina but sufficient to dissolve substantially all the silica in the ore, and the slurry is treated to precipitate substantially all the silica present. Then the ore slurry is heated by indirect heat exchange with recovered steam, and the heated slurry is passed to the digestion stage, while the resulting spent liquor containing residual silica is partly recycled to the initial ore preparation stage.

3,413,088

# PRODUCTION OF ZINC OXIDE

Leslie Jack Derham and John Marriott, Avonmouth, England, assignors to Imperial Smelting Corporation (N.S.C.) Limited

Filed Apr. 3, 1964, Ser. No. 357,232  
Claims priority, application Great Britain, Apr. 5, 1963, 13,598/63  
6 Claims. (Cl. 23—148)



The invention disclosed is a one-stage process for the production of zinc oxide. A few simple controls may be

adjusted to give zinc oxide with a predetermined mean particle size. To this end a continuous supply of zinc vapour is burned using a continuous supply of an oxygen-containing gas, such as air, the hot gas and zinc oxide suspension so formed is continuously drawn off, and a proportion of the suspension is continuously recycled to provide nuclei for further grain growth.

3,413,089

# PROCESS FOR THE PRODUCTION OF PEROXIDES

Fernand Coussemant and Jean Vidal, Paris, France, assignors to Institut Français du Pétrole, des Carburants et Lubrifiants, Rueil-Malmaison, Hauts-de-Seine, France  
No Drawing. Filed Jan. 7, 1966, Ser. No. 519,006

Claims priority, application France, Jan. 9, 1965, 1,411; Aug. 20, 1965, 29,054  
16 Claims. (Cl. 23—184)

To produce alkali metal peroxides, the steps of contacting a solution of non-enolizable ketone, such as benzophenone, in a liquid hydrocarbon, such as benzene, with an alkali metal preferably in amalgam form; and reacting the resultant dissolved reaction product with molecular oxygen to form said alkali metal peroxides which separate as solids from the solution. To increase the solubility of the metal-ketone compound as well as the efficiency of the process, it is preferred to add a Lewis base, such as hexamethylphosphoramide, to the ketone solution.

3,413,090

# PREPARATION OF SILICON NITRIDE WHISKERS

Richard H. Krock, Peabody, and Robert H. Kelsey, West Acton, Mass., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

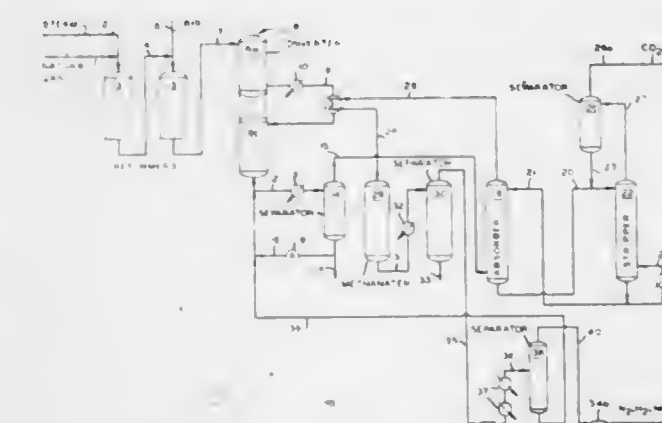
No Drawing. Filed Mar. 19, 1965, Ser. No. 441,372  
12 Claims. (Cl. 23—191)

A vapor phase deposition method for producing alpha-silicon nitride whiskers.

3,413,091

# RECOVERY OF AMMONIA PRODUCED IN THE PREPARATION OF AMMONIA SYNTHESIS GAS

Carl E. Alleman, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed Feb. 1, 1967, Ser. No. 613,310  
2 Claims. (Cl. 23—198)



In the production of ammonia synthesis gas wherein a methane stream is reformed, nitrogen is then added to the stream and it is passed to a carbon monoxide catalytic converter (shift converter), the oxidized products are then removed therefrom and the stream is passed to a compressor wherein an aqueous phase is removed to thereby yield a stream of ammonia synthesis gas that is subsequently passed to an ammonia synthesis zone, it has been found that a substantial amount of ammonia is prematurely synthesized in the shift converter and is



passed out of the process in the aqueous phase removed from the compressor. This invention recovers this ammonia produced in the shift converter by recycling the aqueous stream from the compressor to the stream from the shift converter, the ammonia within the aqueous stream thereby vaporizing and ultimately passing from the compressor in the ammonia synthesis gas.

3,413,092

### PROCESS FOR PREPARING CRYSTALLINE BORON ARSENIDE

Forrest V. Williams, Dayton, Ohio, assignor to Monsanto Company, a corporation of Delaware  
No Drawing. Filed July 21, 1958, Ser. No. 749,661  
The portion of the term of the patent subsequent to Mar. 6, 1978, has been disclaimed  
6 Claims. (Cl. 23—204)

1. Process for the preparation of a cubic crystalline form of boron arsenide which consists essentially of contacting elemental boron with the vapor of arsenic at a temperature between about 700° C. and 900° C.
2. Process for the preparation of orthorhombic boron arsenide which consists essentially of contacting elemental boron with the vapor of arsenic at a temperature between about 900° C. and 1,200° C.

3,413,093

### CARBON BLACK MANUFACTURE

George F. Friauf, Pampa, Tex., and Merrill E. Jordan and Harvey M. Cole, Walpole, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware  
No Drawing. Filed Apr. 28, 1961, Ser. No. 106,155  
4 Claims. (23—209.4)

1. In a process for preparing carbon black by thermally decomposing a normally liquid hydrocarbon feedstock in a reaction zone, the improved method for regulating and controlling the structural characteristics of the resultant carbon black which comprises continuously introducing into the reaction zone, along with the hydrocarbon feedstock, an alkaline earth metal halide selected from the group consisting of calcium halides and strontium halides in a measured amount which is sufficient to impart the desired structural characteristics to the carbon black produced.

3,413,094

### METHOD OF DECREASING THE METALLIC IMPURITIES OF FIBROUS CARBON PRODUCTS

David W. Gibson, Salem, W. Va., assignor to HITCO, Gardena, Calif.

No Drawing. Filed Jan. 24, 1966, Ser. No. 522,386  
9 Claims. (Cl. 23—209.9)

The metallic content and particularly the sodium content of essentially amorphous fibrous carbon products is reduced by treating the products with an aqueous solution of hydrobromic acid or hydriodic acid and thereafter firing the treated products at a temperature sufficient to remove substantial metallic impurities but below a temperature sufficient to substantially increase thermal conductivity and crystallinity of the fibrous carbon product.

3,413,095

### MEMBRANE OXYGENATOR

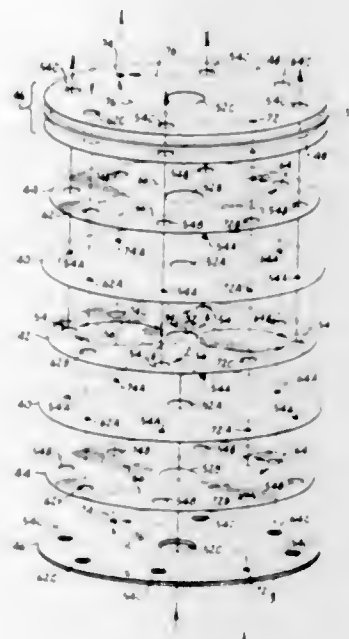
Mogens L. Bramson, 1134 Green St., San Francisco, Calif. 94109

Filed June 14, 1965, Ser. No. 463,819  
17 Claims. (Cl. 23—258.5)

13. A membrane diffusion device comprising a cell which includes:

first and second membranes,

a first foraminous spacing member interposed between said first and second membranes, said first and second spaced membranes constituting a first flow passage for the relatively free, turbulent, flow of a first fluid therebetween, first and second liquid impervious flexible walls, second and third foraminous spacing members interposed between said first wall and first membrane and between said second wall and said second membrane, respectively,



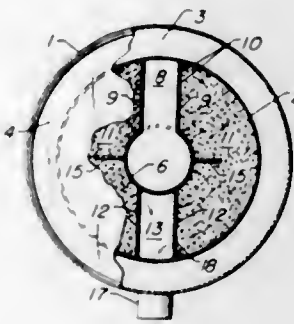
said first wall and first membrane and said second wall and second membrane constituting second and third shunt connected fluid flow passages for the relatively free, turbulent flow of a second fluid therebetween, and means for applying pressure between said first and second walls to press said walls, spacing members and membranes together into a stack to limit said first, second and third flow passages to substantially the thickness of said first, second and third spacing members, respectively.

3,413,096

### CONVERTER-MUFFLER

James R. Britt, Arlington Heights, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Dec. 23, 1965, Ser. No. 515,917  
6 Claims. (Cl. 23—288)



A catalytic muffler designed to prevent channeling or bypassing of the bed by the exhaust gases in the event that the bed suffers loss in depth from attrition or settling.

3,413,097

### AUTOMATIC PIPETTE-SYSTEM ARRANGEMENT, THE ACTION OF WHICH IS CONTROLLED, FOR TRANSFERRING LIQUID FROM ONE TEST TO ANOTHER

Olof Gunnar Hugo Jungner, Hovas, Sweden, assignor to Centrala Automationslaboratoriet AB Calab, Stockholm, Sweden

Filed May 18, 1965, Ser. No. 456,791  
Claims priority, application Sweden, May 21, 1964, 6,171/64  
3 Claims. (Cl. 23—292)



An automatic pipetting arrangement for transferring fluid from one test tube to another provides movement of a vertical pipette holder in successive axial, then lateral, and then axial steps, the axial movements taking place in opposite directions. The arrangement includes a pair of rotatably driven lever arms each having a longitudinal slot therein. A pair of pins disposed for movement within the slots and secured to the holder ride in an inverted U-shaped track and trace out the prescribed movement of the holder upon rotation of the lever arms.

3,413,098

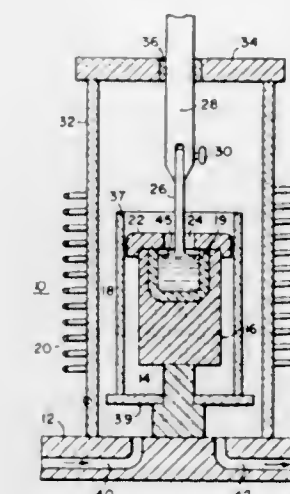
### PROCESS FOR VARYING THE WIDTH OF SHEETS OF WEB MATERIAL

Steven N. Dermatis, Waltham, Mass., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 10, 1966, Ser. No. 571,617  
2 Claims. (Cl. 23—301)

1. A process for producing an elongated body of a material crystallizing in the diamond cubic lattice structure comprised of at least two parallel elongated dendritic crystals, said dendritic crystals being joined crystallographically into a unitary body by a thin web portion of the same semiconductor material extending between the dendritic crystals, the steps comprising melting a quantity of the material, bringing the melt to a temperature at approximately the melting point of the material, contacting a point on a surface of the melted material displaced from the center of the melt surface with a least a surface of a seed crystal in which the seed contacts the melt at a point equal to approximately one-half the radius of the supercooled area from the center of the melt of the material for a period of time to wet the seed crystal with the melted material, the seed crystal having at least two twin planes extending across at least a portion of the surface in contact with the melt, the seed crystal being oriented with a (111) direction parallel to the surface of the melt and a (211) direction perpendicular to the surface of the melt, the twin planes being parallel to the (211)

direction, supercooling at least that portion of the melt extending from the center of the melt and encompassing the seed to a temperature at least 5° C. below the melting point, the surface area of the supercooled portion being at least 0.25 sq. inch, and pulling the seed crystal from



the melt at a rate of approximately 1/4 inch per minute to 4 inches per minute, whereby the material from the supercooled portion of the melt solidifies on the seed crystal and produces an elongated body comprised of at least two dendritic crystals crystallographically joined by a thin web of material.

3,413,099

### PRODUCTION OF URANIUM TETRAFLUORIDE

James A. Rode, St. Louis, Mo., assignor to United Nuclear Corporation, White Plains, N.Y., a corporation of New York

Filed Nov. 14, 1966, Ser. No. 594,201  
11 Claims. (Cl. 23—353)



High bulk density UF<sub>4</sub> is produced by converting UF<sub>6</sub> in a fluidized bed reactor in which UF<sub>4</sub> particles are suspended by gaseous mixtures of UF<sub>6</sub>, tetrachloroethylene or an equivalent organic fluorine acceptor containing 1 to 3 carbon atoms, and a diluent, nitrogen. The temperature within the fluidized bed is in the range of 500° F. to 600° F., and the amount of tetrachloroethylene introduced into the fluidized bed is sufficient to provide a stoichi-



ometric excess of about 9% to 12% for the conversion of  $UF_6$  to  $UF_4$ . The excess  $UF_4$  particles generated in the fluidized bed are removed therefrom.

3,413,100

**PROCESS FOR THE PRODUCTION OF AISCI**

Gilbert S. Layne, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 9, 1967, Ser. No. 644,785

3 Claims. (Cl. 23—367)

This invention relates to a new compound, AISCI, and to its preparation which is accomplished by reacting gaseous aluminum chloride with solid particulate aluminum sulfide at high temperatures in an inert atmosphere to produce gaseous AISCI which is recovered by cooling to form the solid AISCI.

3,413,101

**CONSOLIDATED BODIES OF DIFFERENT ALUMINOUS METALS TO PROVIDE CORROSION PROTECTION AND METHOD OF MAKING**

T. Stevens Daugherty, Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Continuation-in-part of application Ser. No. 375,792, June 17, 1964, which is a continuation-in-part of application Ser. No. 180,401, Mar. 9, 1962, which in turn is a continuation-in-part of application Ser. No. 768,686, Oct. 21, 1958. This application June 10, 1965, Ser. No. 462,996

10 Claims. (Cl. 29—182)

Protecting metals and alloys from corrosion by dispersing an anodic metal therein, including the use of a method which involves compacting and working metal particles.

3,413,102

**FUEL COMPOSITIONS**

Harry J. Andress, Jr., Pitman, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Oct. 10, 1966, Ser. No. 585,254

14 Claims. (Cl. 44—57)

A liquid fuel composition containing as a smoke suppressant an overbased carbonated, alkaline earth metal sulfonized phenate or naphtholate.

3,413,103

**FUEL OIL COMPOSITION OF REDUCED POUR POINT**

David W. Young, Homewood, and Thomas J. Clough, Glenwood, Ill., assignors to Sinclair Research, Inc., a corporation of Delaware

No Drawing. Filed July 29, 1963, Ser. No. 298,482

6 Claims. (Cl. 44—62)

A liquid, distillate mineral fuel oil boiling primarily above the gasoline range which contains a small amount of a copolymer prepared by copolymerizing the vinyl ester of a fatty acid having about 2 to 18 carbon atoms and a dialkyl fumarate wherein the alkyl groups contain about 8 to 18 carbon atoms on the average. The copolymerization is carried out at a temperature of about 50 to 125° C. in the presence of a catalytic amount of a complex salt of a lower trialkyl aluminum and a compound which can be a lower dialkyl ether, a tertiary amine or pyridine. The molar ratio of dialkyl fumarate to vinyl ester is about 1:0.2 to 1:6 and the molecular weight of the copolymer prepared is about 750 to 3000. The copolymer is present in the composition in an amount sufficient to provide the fuel oil with a reduced pour point.

3,413,104

**IMIDES OF OLEFIN-MALEIC ANHYDRIDE COPOLYMERS AS DIESEL FUEL ADDITIVES**

Enver Mehmedbasich, El Cerrito, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 417,470, Dec. 10, 1964. This application June 3, 1966, Ser. No. 554,994

4 Claims. (Cl. 44—62)

Relatively low molecular weight 1-olefin maleimide copolymers, having amine nitrogen in the substituent on the maleimide nitrogen, are provided for use as detergents in compression ignition engines.

3,413,105

**GASOLINE ADDITIVE**

Curtis P. Parsons and Charles T. Pumpelly, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 3, 1966, Ser. No. 517,898

2 Claims. (Cl. 44—72)

1. A gasoline fuel composition for internal combustion engines containing a minor proportion, effective to reduce the hydrocarbon content of the exhaust of an internal combustion engine operated on said fuel, of dibromofluoromethane.

3,413,106

**METHOD OF REDUCING FRICTION ON COATED ABRASIVE CLOTH AND ABRASIVE PRODUCT**

Thomas J. Argiro, Alliance, Ohio, assignor to Armour and Company, Chicago, Ill., a corporation of Delaware

Filed Mar. 16, 1966, Ser. No. 534,783

12 Claims. (Cl. 51—295)



Coated abrasive cloth is provided with a friction reducing back coat of a wax lubricant including a paraffin base wax and preferably a minor proportion of carnauba wax, and an insoluble alkyd resin binder. The back coat is provided by application of an organic solvent solution of the lubricant and a curable soluble alkyd resin, followed by evaporation of solvent and curing of the resin.

3,413,107

**METHOD OF AND APPARATUS FOR THE MANUFACTURE OF FLAT GLASS ON A MOLTEN METAL BATH**

Stephane Dufaire de Lajarte and Maurice Bourdeaux, Paris, France, assignors to Compagnie de Saint Gobain, Neuilly-sur-Seine, France

Filed Mar. 26, 1965, Ser. No. 442,942

Claims priority, application France, Apr. 2, 1964, 969,470

10 Claims. (Cl. 65—65)

Method and apparatus for the continuous production of sheet glass in ribbon form, by depositing molten glass directly, without rolling or like formation, onto one end of an elongated bath of molten metal to form a pool. A pair of filaments of heat-resisting metal are drawn under tension and in transversely-spaced relation, through guides which direct them into adhesive contact with respective side edges of the incipient ribbon at its exit from the pool. The filaments then pass as a unit with the ribbon, while plastic, over and along the surface of the

molten metal, toward the exit end of the bath. A weir or roller, and side abutments restrict the flow of glass from the pool to form an incipient ribbon whose side edges adhere to the respective filaments. Rollers just



outside the exit from the bath, draw the ribbon and filaments as a unit over and along the surface of the bath. The filaments are continuously separated from the ribbon after leaving the bath.

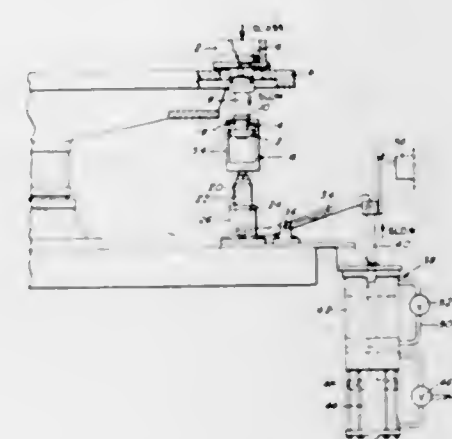
3,413,108

**GLASS FORMING MACHINE HAVING MOLDS WITH MOVABLE BOTTOM SECTIONS**

Jack E. Tatsak, Templeton, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 333,385, Dec. 26, 1963. This application June 13, 1967, Ser. No. 645,837

1 Claim. (Cl. 65—208)



A glass forming machine having movable molds for receiving a continuous solid stream of molten glass, in which the molds have upwardly extending walls and vertically movable valve members across the bottom thereof which have a depending extension which is engaged by a member for moving the valve upwardly or downwardly at selected velocities to prevent the formation of chill marks in the molded glass.

3,413,109

**METHOD OF CONTROLLING THE GROWTH OF UNDESIRABLE VEGETATION**

Joseph F. Vartiak, Naperville, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 370,691, May 27, 1964. This application Apr. 19, 1967, Ser. No. 631,904

The portion of the term of the patent subsequent to Dec. 26, 1984, has been disclaimed

3 Claims. (Cl. 71—65)

This invention relates to a method of spraying oil solutions of herbicidal liquids in the presence of certain polymers whereby the misting and drifting tendencies of these liquids are reduced.

3,413,110

**METHOD AND COMPOSITION FOR CONTROLLING GROWTH OF SUCKERS IN TOBACCO**

Walter W. Puckette, Rte. 1, Gladys, Va. 24554

No Drawing. Continuation-in-part of application Ser. No. 365,140, May 4, 1964. This application Aug. 24, 1965, Ser. No. 482,298

2 Claims. (Cl. 71—78)

A composition for application to growing suckers in tobacco plants, so as to inhibit sucker growth without damaging the plant.

3,413,111

**MANUFACTURE OF HERBICIDAL MATERIALS**

John Theodore Braunholtz and Charles Shepherd, Bracknell, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Apr. 13, 1964, Ser. No. 359,438

22 Claims. (Cl. 71—94)

This invention consists of new process for quaternizing bipyridyls to form bis quaternary ammonium salts which have herbicidal activity.

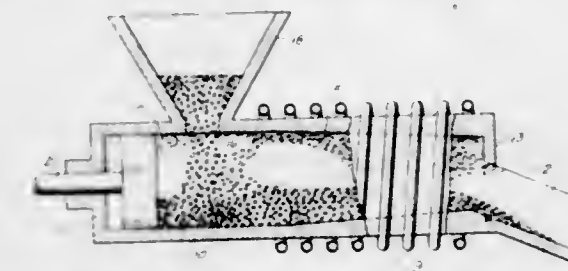
3,413,112

**METHOD FOR FIRING GREEN PELLETS BY INDUCTION HEATING**

Washington Martin Dillon, Sterling, Ill., assignor to Northwestern Steel and Wire Company, Sterling, Ill., a corporation of Illinois

Filed Feb. 2, 1966, Ser. No. 524,512

2 Claims. (Cl. 75—5)



Method and apparatus for drying green pellets. The pellets are supplied to one end of a horizontal chute or conduit. The chute is made from a ceramic or refractory material which acts as an insulator impervious to magnetic fields. The chute has a hopper adjacent its receiving end for supplying pellets to the chute and has a converging discharge end having a restricted opening. A piston is mounted in the chute behind the hopper, for reciprocable movement along the chute to exert compressive forces on the pellets and thereby compact the pellets and force the pellets toward the discharge end of the chute. A coil energized with high frequency power is wound about the chute and induces eddy currents in the compacted pellets, to produce the heat required for firing the pellets. The supply of pellets in the hopper is greater than the pellets discharged through the outlet. The pellets thus may be continuously compacted along the chute, by reciprocation of the piston, which also forces the dried pellets to flow through the outlet in a continuous operation.

3,413,113

**METHOD OF MELTING METAL**

Hanns Arnt Vogels, Essen-Bredeney, and Manfred Wahlster, Bochum-Stiepel, Germany, Borut Marincek, Kusnacht-Zurich, Switzerland, and Kurt Koch, Oberhausen-Sterkrade, Germany, assignors to Rhein Stahl Huttenwerke, A.G., Essen, Germany

Filed July 21, 1965, Ser. No. 473,678

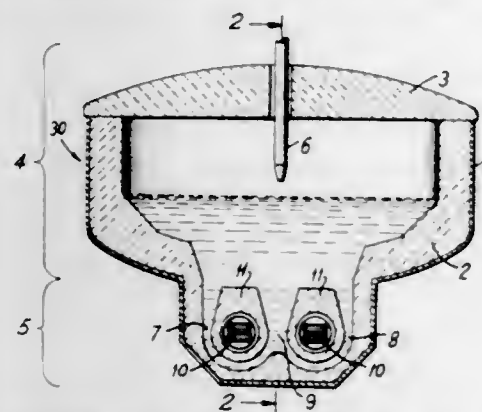
Claims priority, application Germany, July 22, 1964, R 38,428

4 Claims. (Cl. 75—12)

A process for operating a furnace having a separate heating device in the upper portion and an induction



heater in the lower portion comprises charging the furnace with a liquid charge which includes a solid charge portion, initially heating the charge to melt the solid charge at least predominantly by heating the upper portion of the furnace, and refining the furnace charge during the heating and heating the lower portion of the furnace to approximately the temperature range of the melting temperature.



A final refining of the steel is carried out by a refining heating of the charge predominantly by induction heating of the lower portion of the furnace and continuously charging the furnace with a solid metallic charge in finely divided form while the heating in the upper portion of the furnace is carried out and while the induction heater is operated in the lower portion of the furnace.

3,413,114

## PROCESS FOR RECOVERING OSMIUM

Alexander Illis, Copper Cliff, Ontario, Bernardus Jacobus Brandt, Thompson, Manitoba, and Alan Manson, Lively, Ontario, Canada, assignors to The International Nickel Company, Inc., New York, N.Y., a company of Delaware

No Drawing. Filed Nov. 8, 1965, Ser. No. 506,899  
Claims priority, application Canada, Jan. 7, 1965, 920,259

11 Claims. (Cl. 75—121)

1. The process of recovering osmium from a material containing osmium and base metals which comprises sulfating said material at a temperature below about 500° F. with concentrated sulfuric acid to solubilize the base metals, leaching the roasted material to remove the base metals and recovering osmium from the residue.

3,413,115

## BRAZING ALLOY

James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Donald Smith, Enfield, Conn.

No Drawing. Filed Jan. 20, 1966, Ser. No. 521,994  
8 Claims. (Cl. 75—172)

1. A brazing alloy which provides a ductile joint in the brazed region consisting of:

- between about 80.0 to 83.0 percent by weight palladium;
- between about 13.5 to 16.5 percent by weight silver; and,
- the balance essentially silicon with amounts of impurities not to exceed 0.15 percent by weight.

3,413,116

ADDITION AGENTS FOR SINTERING PURPOSES  
Mlarur L. Rao, Burlington, Mass., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Original application Mar. 17, 1967, Ser. No. 624,034, now Patent No. 3,337,336. Divided and this application June 21, 1967, Ser. No. 669,325

15 Claims. (Cl. 75—212)

A process for fabricating highly porous amalgamated zinc anodes using sintering means which undergo exo-

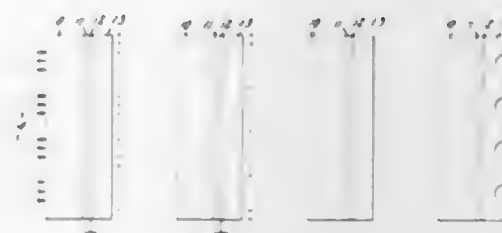
thermic decomposition when mixed with zinc powder having an impurity oxide film thereby cleaning the impurity oxide film from the zinc particles. When the mix of the sintering means and the zinc powder are subjected to pressure, the heat liberated by the exothermic decomposition effects the sintering of the clean zinc particles thereby eliminating the necessity of subjecting the zinc particles to a sintering temperature for a determined length of time. The zinc particles are coated with mercury so as to form an amalgamated zinc anode. A second process for fabricating the highly porous amalgamated zinc anode utilizes sintering means which clean the impurity oxide film from the zinc particles by an electrochemical displacement reaction and partially sinters the zinc during the displacement reaction. The sintering of the zinc is completed by the application of heat thereto. The zinc particles are coated with mercury thereby providing an amalgamated zinc anode.

3,413,117

## COLOR ELECTROPHOTOGRAPHY EMPLOYING A THREE COLOR FILTER AND THERMOPLASTIC MATERIALS

Joseph Gaynor, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed July 16, 1965, Ser. No. 472,581  
20 Claims. (Cl. 96—1.2)



A method of recording an image pattern of colored light is disclosed. The light pattern is projected through a filter composed of three primary colors onto a photo-sensitive thermoplastic material. The thermoplastic material is then heated to form deformations in the surface corresponding to the original color pattern.

3,413,118

## LIVESTOCK FEED AND THE METHOD OF MAKING SAME

Boris Kviesitis, Des Moines, Iowa, assignor to Vylactos Laboratories, Inc., Des Moines, Iowa

No Drawing. Filed Aug. 21, 1964, Ser. No. 391,282  
13 Claims. (Cl. 99—6)

A livestock feed including a non-protein nitrogenous compound selected from the group consisting of urea and ammonium salts added thereto. The non-protein nitrogenous compound is coated with an emulsion comprised of propylene glycol, vegetable oil, vegetable wax and lecithin and a quantity of a palatability increasing agent is then added to the coated non-protein nitrogenous compound so that the same is absorbed thereby.

3,413,119

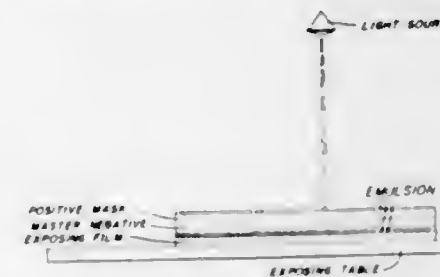
## METHOD OF PREPARING PRINTING PLATES

John P. St. Clair, Olney, Md., Mylon Merriam, Washington, D.C., Edward L. Chambers, Rockville, Md., Clyde A. Clark, Vienna, Va., and William H. Fischer, Jr., and Robert J. Houston, Silver Spring, Md.; said Merriam, said Chambers, said Clark, said Fischer, and said Houston, assignors to the United States of America as represented by the Secretary of the Army

Filed Oct. 7, 1964, Ser. No. 402,364  
5 Claims. (Cl. 96—33)

This invention relates to printing, and more specifically to improved methods for preparing printing plates to re-

produce continuous-tone copy. The method includes the use of a continuous tone film negative and a continuous tone film positive registered in back to back relationship, the positive being developed with a different density than



the negative. Lithographic film is then exposed directly through the registered negative and positive producing upon development irregular, shaped and spaced black granules on cleared areas of film base.

3,413,120

## PROCESS FOR REMOVING COLLOIDAL PROTEINACEOUS SUBSTANCES CAUSING TURBIDITY FROM FERMENTED BEVERAGES AND ESPECIALLY FROM BEER

Karl Achenbach, Frankfurt am Main-Fechenheim, Germany, assignor to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany  
No Drawing. Filed Feb. 19, 1965, Ser. No. 434,127  
Claims priority, application Germany, Feb. 20, 1964, D 43,679

4 Claims. (Cl. 99—48)

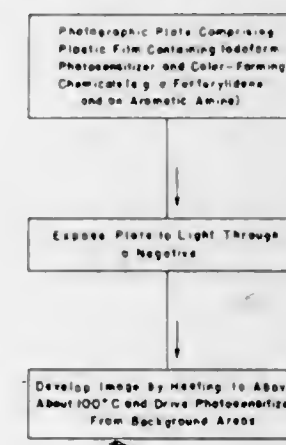
Method of removing colloidal proteinaceous substances capable of producing turbidity from a fermented beverage containing such turbidity producing substances by contacting said fermented beverage with a calcium silicate having a calcium content calculated as CaO of 0.1 to 5% by weight and having secondary particles of a particle size between about 1 to 15 $\mu$  which are agglomerates of primary particles of a particle size below 0.1 $\mu$ , produced by reaction of an aqueous suspension of finely divided SiO<sub>2</sub> with calcium hydroxide at a temperature between 150 and 250° C. under pressure followed by leaching with a dilute acid forming soluble salts with calcium.

3,413,121

## HEAT DEVELOPMENT OF PHOTOGRAPHIC PLATE CONTAINING VOLATILE PHOTOSENSITIZER

John Alan Mattor, Hollis, and Lawrence Price, Old Orchard Beach, Maine, assignors, by mesne assignments, to Scott Paper Company, Delaware County, Pa., a corporation of Pennsylvania  
Continuation-in-part of application Ser. No. 351,316, Mar. 12, 1964. This application Mar. 29, 1967, Ser. No. 626,881

4 Claims. (Cl. 96—48)



A photographic film that contains color-forming chemicals that are activated by a lower haloalkane photosensi-

tizer is developed by simply heating the plate, which simultaneously drives off the haloalkane in the background areas so that they are no longer photosensitive. Color-forming chemicals that can be used are the combination of an aromatic amine with (1) a furfurylidene or (2) a dioxane. The amine used is preferably one that will also volatilize during the heat development of the plate so that the background becomes more stable.

3,413,122

## PROCESS FOR FORMING IMAGES AND ELEMENTS THEREFOR

Ralph Kingsley Blake, Westfield, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 1, 1963, Ser. No. 292,089  
7 Claims. (Cl. 96—68)

1. A process which comprises

(1) subjecting to an imagewise exposure and thereby forming a latent image in the outer unfogged light-sensitive silver halide emulsion layer of a photographic element having, on a support, a contiguous inner emulsion layer comprising unfogged internal silver halide grains and of such sensitivity that said imagewise exposure results in development of less than one-tenth of the available silver halide in the inner layer, said inner unfogged layer being one which at a coating weight of 540 mg./sq. foot of silver will produce an optical density of less than 0.4 in unexposed areas when developed for 5 minutes at 65° F. in the following developer:

	Grams
N-methyl-p-aminophenol sulfate	2.0
Sodium sulfite, desiccated	90.0
Hydroquinone	8.0
Sodium carbonate, monohydrate	52.5
Potassium bromide	5.0
Sodium thiosulfate	10.0
Water to 1 liter.	

the silver halides of both layers being in a water-permeable, macromolecular, organic colloid binding agent,

(2) treating said outer layer with an aqueous photographic developer solution to form a visible silver image in said layer, and

(3) not earlier than step (2) treating the outer layer of the element with an aqueous solution containing before the treating step an anion capable of forming a silver salt which is more insoluble in water than the silver halide of either of said emulsion layers, said anion diffusing imagewise differentially through the outer layer and forming in the inner layer a silver salt image from said anion in register with the earlier formed silver image in the outer layer.

3,413,123

## GELATINE COMPOSITIONS CONTAINING ALKYLENE OXIDE HYDROPHOBIC PLASTICIZERS

Fritz Nittel, Cologne-Stammheim, Hans-Georg Kleppe, Opladen, Wolfgang Himmelmann, Cologne-Stammheim, and Hans Ulrich, Leverkusen, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed July 14, 1965, Ser. No. 472,047  
Claims priority, application Germany, Aug. 20, 1964, A 46,896

16 Claims. (Cl. 96—94)

The invention relates to gelatine compositions, in particular photographic silver halide gelatin compositions, containing hydrophobic plasticizers obtained by reaction of 1 mol of a compound containing at least one hydroxyl group with 1 to 10 mols of an alkylene oxide, at least

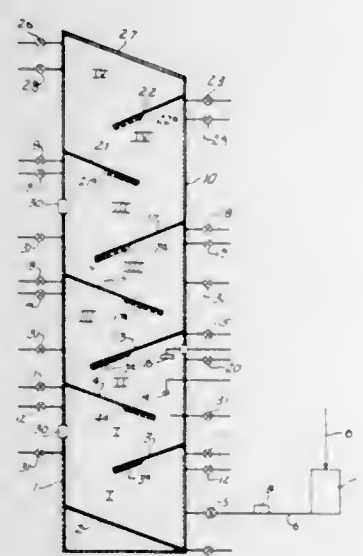


one mol of said alkylene oxide being selected from the group consisting of 3-ethyl-3-hydroxymethyl-trimethylene-oxide and styrene oxide and the remaining mols, if any, being selected from the group consisting of 3-alkoxy propylene oxides-(1,2), 3-aroxypropylene oxides-(1,2) and epichlorohydrin. Color couplers may also be present in the silver halide gelatine compositions.

# ERRATUM

For Class 99—6 see:  
Patent No. 3,413,118

**3,413,124**  
**CONTINUOUS FLOW FERMENTATION APPARATUS AND PROCESS**  
Cavit Akin, St. Louis, Mo., assignor to Falstaff Brewing Corporation, St. Louis, Mo., a corporation of Delaware  
Filed Apr. 5, 1965, Ser. No. 445,354  
11 Claims. (Cl. 99—31)



A continuous flow reaction apparatus for use in connection with continuous reaction methods of treating fermentable materials as well as other non-fermentable materials, the apparatus particularly being directed to an upright reactor casing having a bottom inlet for solid and liquid reactants and a top outlet for the products of the reaction together with a series of unperforated tilted baffles arranged in staggered and spaced relation of varied order and arrangement so as to define a number of process zones in which the reactants move at fast, slow and variable linear speeds. The apparatus is also concerned with means connected to the column for removing desired and undesired products from one or more of the process zones as well as means for adding to the reactants in one or more of the zones.

# ERRATUM

For Class 99—48 see:  
Patent No. 3,413,120

**3,413,125**  
**NON-ALCOHOLIC BEVERAGE**  
Harry R. Schuppner, Jr., El Cajon, Calif., assignor to Kelco Company, San Diego, Calif., a corporation of Delaware  
No Drawing. Filed Oct. 22, 1964, Ser. No. 405,841  
5 Claims. (Cl. 99—79)

An aqueous carbonated non-alcoholic diet-type beverage containing a beverage flavoring material, a beverage coloring material, an edible acid, artificial sweetener, water, and a Xanthomonas hydrophilic colloid.

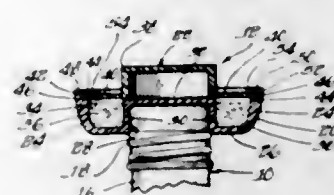
**3,413,126**  
**METHOD OF TREATING A MEAT EMULSION TO PRODUCE A DESIRED COLOR THEREIN**  
Jerome A. Meusel and Ralph A. Brunn, Baltimore, Md., assignors to The Baltimore Spice Company, Baltimore, Md., a corporation of Maryland  
No Drawing. Filed Apr. 14, 1965, Ser. No. 447,975  
4 Claims. (Cl. 99—109)

The use of fumaric acid to assist in the coloring of meat emulsions, particularly in the preparation of products such as frankfurters, said color being developed within a much shorter time than the normal heating time common in the art.

**3,413,127**  
**METHOD OF PREPARING A POULTRY PRODUCT**  
Donald V. Schwall, Glen Ellyn, and Alan B. Rogers, Palos Park, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 354,118, Mar. 23, 1964. This application Aug. 29, 1966, Ser. No. 575,541  
6 Claims. (Cl. 99—107)

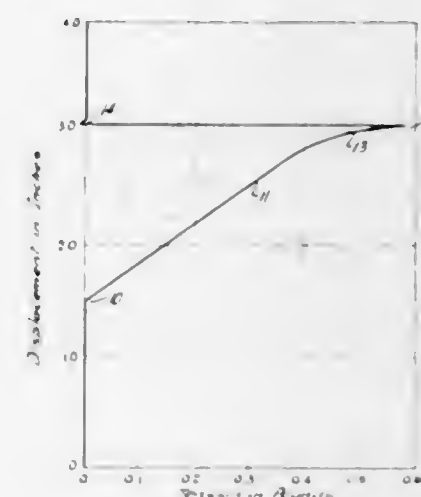
A combination of sodium chloride and edible phosphate salt is applied to the surface of raw pieces of poultry, the pieces are agitated for a period of time until the concentration of salt-soluble protein is formed on the surfaces thereof, and the pieces are then pressed together to form a unitary body characterized by its improved resistance to water cook-out and its retention of intact slicability after cutting. It has been found that in the combination incorporating the sodium chloride and phosphate salts, the flavor characteristics of the two components are non-additive, whereas the binding characteristics are in fact additive, as a result of which it is possible to use a high total salt concentration to obtain the desired binding effect without imparting a noticeable sodium chloride or phosphate taste.

**3,413,128**  
**BOTTLE**  
Ralph H. Steinbarth, Chicago, and Frank J. O'Grady, Oak Lawn, Ill., assignors to La Preferida, Inc., Chicago, Ill., a corporation of Illinois  
Filed May 8, 1967, Ser. No. 636,829  
4 Claims. (Cl. 99—171)



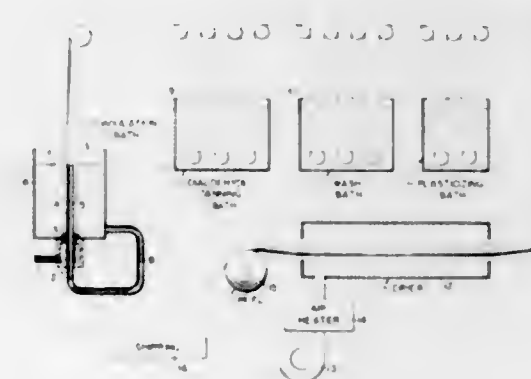
A bottle comprising a first container and a second container. The first container is in the form of a glass bottle having an open-ended neck portion and a body portion for holding a liquid. A closure is provided for the first container. The second container is in removable engagement with the first container at the neck portion thereof, and comprises a body portion having compartment for holding a solid foodstuff which serves as an adjunct to the liquid in the first container. A removable cover is provided for the body portion of the second container. The compartment of the body portion of the second container is sufficient in size to enable the entire rim, or a portion thereof, of a cocktail glass, for example, to be brought into contact with the solid foodstuff in the compartment. The first container of the bottle, in its preferred form, is adapted to hold a tequila cocktail mix, while the second container is adapted to hold a salt, or salt mixture, used as an adjunct in drinking the tequila cocktail.

**3,413,129**  
**METHOD OF PRODUCING COLLAGEN SAUSAGE CASINGS AND PRODUCT**  
Emanuel R. Lieberman, Somerville, N.J., assignor to Johnson & Johnson, a corporation of New Jersey  
Filed Oct. 1, 1964, Ser. No. 400,846  
16 Claims. (Cl. 99—176)



A collagen casing for sausages of the weiner or frankfurter type is manufactured by extruding a mass of acid-swollen collagen fibrils obtained from animal hide and cellulose fibers into an ammonium sulfate coagulating bath, hardening the extruded casing in an aqueous solution containing from about 0.15 percent to 10 percent by weight of ammonium hydroxide and a non-toxic ammonium salt, plasticizing the hardened casing, drying the casing while inflated, heating the dried casing from 40° C. to 80° C. over a period of 8 to 12 hours, and then heating said casing for an additional 12 to 24 hours at about 80° C.

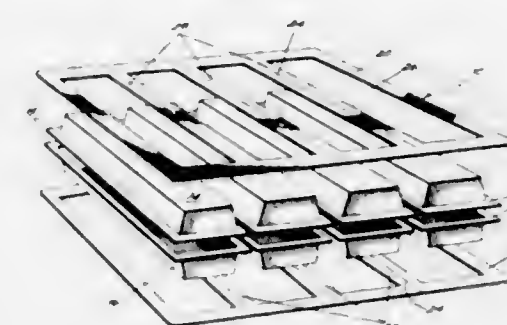
**3,413,130**  
**METHOD OF PREPARING AN EDIBLE TUBULAR COLLAGEN CASING**  
Henry J. Rose, Danville, Ill., assignor to Tee-Pak, Inc., Chicago, Ill., a corporation of Illinois  
Filed June 28, 1965, Ser. No. 467,627  
2 Claims. (Cl. 99—176)



An edible tubular collagen casing is prepared from collagen derived from limed animal hides and tanned or hardened with glutaraldehyde. Animal hides which are either fresh or salt-cured are treated with a lime-containing solution for a period of 3-12 hours to at least partially de-hair the hide. The hide is then mechanically split to remove the epidermal layer and remaining hair and the lime in the corium layer is removed by neutralization with a non-toxic acid and washing to remove by-product salts. The neutralized corium layer is ground at a temperature less than 20° C., swollen by treatment with acid,

and formed into a dilute slurry which is extruded in tubular form. The extruded casing is coagulated in an ammonium sulfate coagulation bath and tanned by treatment with a 1-50% solution of glutaraldehyde at a pH of 4.0-7.0. The tanned or hardened casing is washed and dried to produce a translucent non-fibrous edible product.

**3,413,131**  
**METHOD OF FAT-CONTAINING FOOD PRODUCT PACKAGING**  
Richard K. Fritsche, Fort Thomas, Ky., assignor to The Miami Margarine Company, Cincinnati, Ohio, a corporation of Ohio  
Continuation-in-part of application Ser. No. 92,371, Feb. 28, 1961. This application Dec. 7, 1964, Ser. No. 416,563  
11 Claims. (Cl. 99—179)



Continuously forming a plurality of filled food container segments by sequentially exposing the segments to a "natural flow" fat product, spacially separating filled segment counterparts and grouping same to unite not only the food products but the segments as well as the latter to form a readily separable, package.

**3,413,132**  
**LIGHTWEIGHT CERAMIC PRODUCT AND METHOD OF MAKING**  
John H. Fishwick, West Chester, Pa., assignor to Foote Mineral Company, Exton, Pa., a corporation of Pennsylvania  
No Drawing. Filed Nov. 6, 1963, Ser. No. 321,660  
13 Claims. (Cl. 106—40)

Foamed, lightweight ceramic products, of high strength, thermal shock resistance and thermal stability, are prepared from finely-divided  $\beta$ -spodumene or petalite.

**3,413,133**  
**OPALESCENT GLASS FIBERS**  
Charles J. Stalego, Newark, Ohio, assignor to Owens-Corning Fiberglass Corporation, a corporation of Delaware  
Filed Apr. 10, 1963, Ser. No. 272,062  
3 Claims. (Cl. 106—50)

1. Opalescent glass fibers formed from a melt consisting essentially of, by weight 10-75%  $\text{SiO}_2$ , 5-80%  $\text{B}_2\text{O}_3$ , a sufficient amount of at least one alkaline earth metal oxide to promote immiscibility and from 1-15% by weight of a metallic oxide selected from the group consisting of  $\text{Li}_2\text{O}$ ,  $\text{Na}_2\text{O}$ ,  $\text{K}_2\text{O}$ ,  $\text{Ag}_2\text{O}$ ,  $\text{Al}_2\text{O}_3$  and  $\text{PbO}$ ; said fibers further consisting essentially of two immiscible glass phases including a glass matrix, and uniformly dispersed throughout said matrix, globules of an immiscible phase; said globules being in sufficient quantity to provide opalescence to said fibers; said metallic oxide reducing the immiscibility of said phases and thereby controlling the opalescence of said fibers.



3,413,134

**OXIDATION RESISTANT REFRACTORY COMPOUNDS**

Lawrence P. Kaufman, Brookline, and Edward V. Clougherty, West Roxbury, Mass., assignors to Manlabs, Inc., Cambridge, Mass., a corporation of Massachusetts

No Drawing. Continuation-in-part of application 456,837, May 18, 1965, which is a continuation-in-part of application Ser. No. 414,415, Nov. 27, 1964. This application Jan. 26, 1968, Ser. No. 700,755

5 Claims. (Cl. 106—55)

Refractory binary solid state compounds of several transition elements in Groups IV, V and VI of the periodic table are described having an excess relative to whole number atomic proportions of that component which forms the least volatile oxide at elevated temperatures.

3,413,135

**IRON PIGMENTS AND PROCESSES FOR PRODUCING SAME**

Malcolm E. Matson, Mountain Lakes, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 28, 1964, Ser. No. 385,785

11 Claims. (Cl. 106—304)

Novel iron oxide pigmentary compositions are produced by contacting hydrous iron oxide with a mixture of an aromatic monocarboxylic acid and at least one fatty acid to effect transfer of the iron oxide from the aqueous phase into the organic phase. The resulting compositions are useful as colorants for synthetic organic film forming resins, particularly resins comprising acrylic polymers.

3,413,136

**ABRADABLE COATING**

Roger C. Emanuelson, Glastonbury, and William F. Witherell, Rockville, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

No Drawing. Filed Mar. 10, 1965, Ser. No. 438,734

5 Claims. (Cl. 117—8)

In a jet engine assembly, a method of applying an abradable sealing surface between the tips of rotating elements and the surrounding assembly, featuring the use of a bonding medium and an abradable medium, wherein the rate of application of the bonding medium is decreased while the rate of application of the abradable medium is increased so as to achieve a graded sealing surface.

3,413,137

**METHOD OF MAKING INK-FILLED TRANSFER ELEMENT**

Paul Chebiniak, Binghamton, and Eugene R. Mondou, Vestal, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

No Drawing. Filed Dec. 21, 1964, Ser. No. 420,107

10 Claims. (Cl. 117—36.1)

A porous, plastic transfer element containing a liquid marking material which is expressible from the pores of the element in response to pressure prepared by heating a dispersion in a liquid phase of about 30 parts by weight of a thermoplastic fluorocarbon resin, said liquid phase comprising from about 20 to about 50 parts by weight of a plasticizer which is a non-solvent for the plastic at room temperatures and is capable of solvating the plastic at elevated temperatures and from about 25 to about 60 parts by weight of a liquid marking material which is a non-solvent for said plastic to a temperature sufficient to fuse the plastic to form a continuous solid porous matrix in which the plasticizer is combined and the liquid marking material distributed in its pores so as to be expressible in response to pressure.

3,413,138

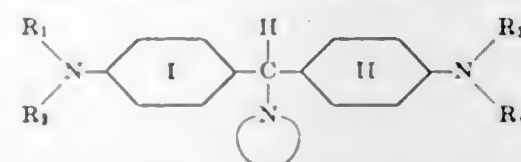
**THERMOSENSITIVE COPY SHEET**

Nick Georgalas and Guy J. Del Franco, Brooklyn, and Pashu Adhikary, Nyack, N.Y., and Peter Loewigkeit, Totowa, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Oct. 13, 1965, Ser. No. 495,711

21 Claims. (Cl. 117—36.8)

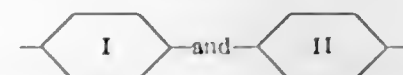
1. A heat-sensitive copying sheet adapted, on being placed in heat-conducted relationship with a graphic original having graphic representations highly absorptive of infrared rays and on irradiation of said graphic original with infrared rays, to produce a copy of said graphic original, said copying sheet comprising a base sheet having thereon (1) a first coating comprising a copolymer comprising the addition polymerization product of an alpha-beta unsaturated carboxylic acid selected from the group consisting of acrylic acid, methacrylic acid, fumaric acid and maleic acid and at least one other ethylenically unsaturated monomer and (2) a top coating comprising a film-forming binder and a heterocyclic derivative of bis(p-dialkylaminoaryl)methane having the formula



where  $R_1$ ,  $R_2$ ,  $R_3$ , and  $R_4$  are individually selected from the group consisting of alkyl radicals having 1 to 5 carbon atoms,



represents a nitrogen-containing heterocyclic radical in which the nitrogen atom which forms the linking point of said radical to the methane carbon atom is part of a heterocyclic nucleus which contains at least one double bond, 5 to 6 ring members, and 1 to 3 nitrogen atoms; said nitrogen-containing heterocyclic radical being selected from the group consisting of those which are free from substituents and those which contain 1 to 2 substituents selected from the group consisting of alkyl up to 18 carbon atoms; octadecenyl; cycloalkyl in which the ring contains 5 to 6 carbon atoms; lower alkyloxy; lower hydroxyalkyl; lower hydroxyalkoxy; phenyl-lower-alkyl; mononuclear hydrocarbon aryl; mononuclear hydrocarbon aroxy; benzo; fluorine; chlorine; bromine; nitro; di-lower alkylamino; lower alkanoylamino and  $-\text{SO}_2\text{NH}_2$ , and



3,413,139

**METHOD OF MAKING COATED PAPER OF LOW GLOSS AND IMPROVED INK HOLDOUT**

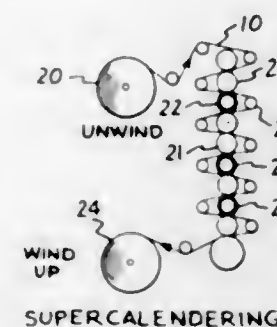
George H. Rasmussen, Wisconsin Rapids, and James A. Rush, Stevens Point, Wis., assignors to Consolidated Papers, Inc., Wisconsin Rapids, Wis., a corporation of Wisconsin

Filed Dec. 30, 1964, Ser. No. 422,207

9 Claims. (Cl. 117—64)

Method of making coated paper of low gloss and improved ink holdout character comprising applying to one or both surfaces of a forwardly moving paper web at least one coat of an aqueous mineral pigment and binder-containing aqueous coating composition, drying said coating

after application, supercalendering said coated web to impart gloss thereto, applying thereover a final aqueous mineral pigment and binder-containing coating composition,



doctoring the last coating before drying, drying it and recovering the coated web as a product of the process in the absence of further supercalendering.

3,413,140

**COATING OF AUTOCLAVED ASBESTOS-CEMENT PRODUCTS**

William A. Heausler, New Orleans, La., and Robert M. Johnson, Kenmore, N.Y., assignors to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 4, 1965, Ser. No. 423,359

14 Claims. (Cl. 117—72)

The surface of a steam-cured asbestos-cement product is coated, first, with a dilute solvent solution of a resin, to form a substantially continuous, resin substrate, which is capable of being penetrated by the vehicle of a subsequently applied paint.

3,413,141

**METHOD AND APPARATUS FOR MAKING ORIENTED MAGNETIC RECORDING MEDIA**

Harry Friedman, East Orange, N.J., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Sept. 2, 1965, Ser. No. 484,637

5 Claims. (Cl. 117—93.2)



In the method of applying a magnetic coating to a moving substrate, a magnetic applicator blade is used which blade has a magnetic field (in the region where it contacts the coating) which is effective to orient the magnetic coating.

3,413,142

**PROCESS OF COOLING DIFFUSION COATED METAL ARTICLES IN LIQUID SODIUM METAL**

Charles H. Lemke, Niagara Falls, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 16, 1965, Ser. No. 472,657

6 Claims. (Cl. 117—119.4)

In an alloy diffusion coating process wherein a metal article is immersed in a molten bath containing a metal transfer agent such as calcium, strontium, barium, magnesium and lithium and at least one metal diffusing element, the coated article is quenched in molten sodium below 300° C. An inert gaseous atmosphere can be used throughout the process.

3,413,143

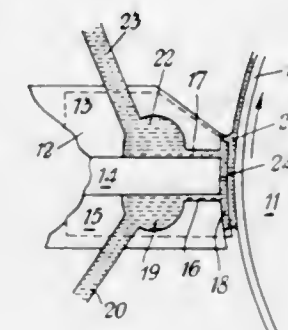
**HIGH SPEED COATING APPARATUS**

Ewen Cameron and Peter Alfred Robert Wills, Ilford, Essex, England, assignors to Ilford Limited, Essex, England, a British company

Filed Nov. 27, 1964, Ser. No. 414,238

Claims priority, application Great Britain, Dec. 10, 1963, 48,765/63

16 Claims. (Cl. 117—120)



A method of applying a coating liquid to a moving web in which the web is moved past an applicator head having three blades with parallel tips which define two closed-ended slots, coating liquid being pumped under pressure from a first said slot on the approach side of the web into the space between the applicator and the web, a fluid seal thereby being formed between the middle blade of the applicator and the web, a predetermined portion of the liquid being extracted via the second slot.

3,413,144

**POLYURETHANE COATED ARTICLES**

Edward M. La Combe, Charleston, and Walter P. Miller, St. Albans, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Mar. 23, 1965, Ser. No. 442,171

8 Claims. (Cl. 117—155)

Paper and fabrics are coated with a urethane polymer which is the reaction product of bis(2-isocyanato)ethyl fumarate and an alkanediol having from 2 to 12 carbon atoms or a polyalkylene glycol having from 2 to 5 carbon atoms in the alkylene moiety and a molecular weight of from 106 to 8000. After cure the polymer is crosslinked. The treated paper has the same utilities of similar coated papers.

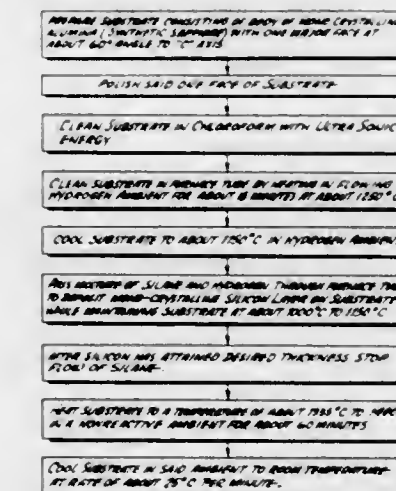
3,413,145

**METHOD OF FORMING A CRYSTALLINE SEMICONDUCTOR LAYER ON AN ALUMINA SUBSTRATE**

Paul H. Robinson, Trenton, N.J., and David J. Dumin, New York, N.Y., assignors to Radio Corporation of America, a corporation of Delaware

Filed Nov. 29, 1965, Ser. No. 510,309

4 Claims. (Cl. 117—201)



An improved method of forming a monocrystalline silicon layer on a monocrystalline alumina substrate includes



the steps of depositing a layer of single crystalline silicon onto an alumina substrate, heating the combination to arrange the atoms of the silicon layer in a more perfect crystalline structure, and slowly cooling the combination.

3,413,146

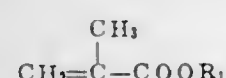
**THERMOPLASTIC RECORDING MEDIUM**

Herbert R. Anderson, Jr., Pound Ridge, and Philip Levine, Scarsdale, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Sept. 2, 1964, Ser. No. 393,902

18 Claims. (Cl. 117—211)

Copolymers consisting of substituted and unsubstituted styrene with a methacrylate or methacrylates having the formula



(where  $R_1$  is selected from an alkyl radical having from 1 to 22 carbon atoms, or a phenoxyalkyl radical having from 7 to 22 carbon atoms) are prepared and used as thermoplastic recording media. The methacrylate portion of the copolymer constitutes 18 to 35 mol percent of the total copolymer composition. The copolymers prepared have a number average molecular weight in the range of 2500 to 6500. These copolymer materials are responsive to electrostatic forces when heated and exhibit superior reversibility by reason of their resistance to radiation and thermal degradation.

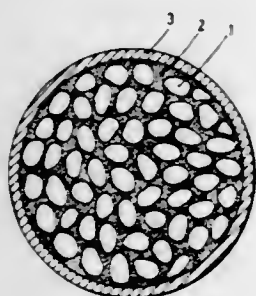
3,413,147

**METHOD OF PROTECTIVELY TREATING AN ELECTRICALLY AND THERMALLY CONDUCTING REFRACTORY BODY OF SINTERED SILICON CARBIDE**

Erich Fitzer, Karlsruhe, Germany, Theodor Chvatal, Vienna, Austria, and Erich Buchner, Erlangen, and Ottmar Rubisch, Meitingen, Germany, assignors to Siemens-Planawerke Aktiengesellschaft für Kohlefabrikation, Meitingen über Augsburg, Germany, a corporation of Germany

Filed Aug. 5, 1964, Ser. No. 388,351

6 Claims. (Cl. 117—215)



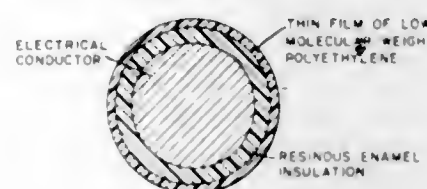
In accordance with this invention, electrical heating elements consisting of sintered bodies of silicon carbide are subjected to surface treatment with phosphoric acid. One way of performing the method is to impregnate the sintered body with phosphoric acid, particularly in high percentile concentration. For fixing the phosphoric acid, the sintered body of silicon carbide, after impregnation with phosphoric acid, is preferably coated with a fixing agent. Suitable as fixing agents, for example, are pigments, suspensions or gel solutions which are brushed or otherwise spread upon the body, or with which the body is impregnated.

**3,413,148  
POLYETHYLENE LUBRICATED  
ENAMELED WIRE**

Frank A. Sattler, Monroeville, and Jack Swiss, Murrysville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 18, 1964, Ser. No. 376,206

7 Claims. (Cl. 117—218)



A thin continuous or discontinuous film of low molecular weight polyethylene is applied to resin insulated or enameled wire to reduce the damage to the resin insulation from automatic winding machines.

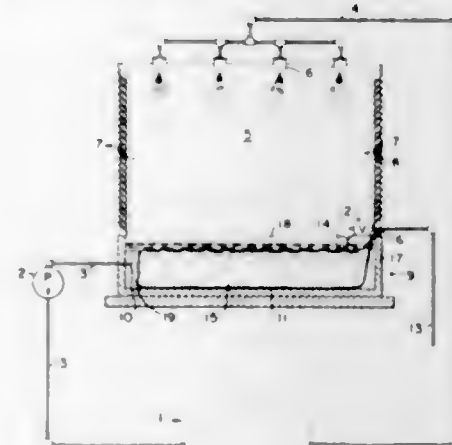
3,413,149

**APPARATUS AND METHOD FOR CLEANING  
A COOLING SYSTEM**

John E. Gilmore, Nashville, Tenn., assignor of forty percent to John Caillouette, and twenty percent to Harlan Dodson, Nashville, Tenn.

Filed June 15, 1964, Ser. No. 375,085

2 Claims. (Cl. 134—22)



An apparatus and a method for cleaning a circulating water cooling system having a sump for receiving the water after it is cooled by being sprayed from nozzles through air circulating through a cooling tower. A flexible container, such as of a plastic material, is filled with a liquid such as water which is sealed in it and takes the place of most of the free water in the sump, thus reducing the quantity and cost of acid needed to make a concentrated solution for cleaning the system. The flexible container is long and wide enough, when emptied and flattened, to fasten to the cooling tower in an inclined position above the sump to divert away from the sump and to drain the used acid and dissolved impurities sprayed through the nozzles as the system is being flushed.

3,413,150

**BATTERY HAVING A MOLTEN ALKALI METAL  
ANODE AND A MOLTEN SULFUR CATHODE**

Joseph T. Kummer, Ann Arbor, and Neill Weber, Dearborn, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Continuation-in-part of application Ser. No. 507,624,

Oct. 22, 1965. This application Sept. 28, 1966, Ser.

No. 582,608

8 Claims. (Cl. 136—6)

1. A secondary battery comprising in combination a battery housing, at least one anodic half-cell unit within said housing defining an anode-reactant chamber at least a portion of which is defined by a cationically-conductive

crystalline structure, a molten alkali metal within said anode-reactant chamber, a conductor extending from within said anode-reactant chamber and in contact with said molten alkali metal, a cathodic half-cell unit within said housing at least a portion of which is defined by said crystalline structure, a cathode within said cathodic half-cell unit spaced apart from said crystalline structure, an electrically conductive fibrous material within said cathodic half-cell unit, in electrical contact with the providing electrical connection between said cathode and a surface of said crystalline structure, and in contact with a cathodic reactant-electrolyte that is electrochemically reversibly reactive with said alkali metal, and temperature control means for maintaining said alkali metal and said cathodic reactant-electrolyte in liquid state, said crystalline structure providing the sole means for reactant transfer between said anode-reactant chamber and said cathodic half-cell unit, being selectively-ionically-conduc-

3. A battery in accordance with claim 2 wherein said alkali metal is sodium and said cathodic reactant-electrolyte comprises ions of sodium and ions of sulfur.

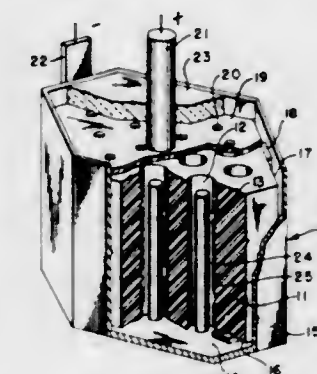
3,413,151

**ROD AND BLOCK ENERGY STORAGE  
APPARATUS**

Harry A. Adams, Bedford, and Roman Zorska, Cleveland, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

Filed Feb. 7, 1966, Ser. No. 525,559

6 Claims. (Cl. 136—83)



An electrical energy storage device operable above the fusion point of the electrolyte. The device employs a plurality of negative electrode rods mounted in channels formed in a massive block positive electrode. The rods are disposed in spaced relation from the block. The electrolyte fills these voids or spaces and contacts the electrodes. A pair of eternally accessible electrical connections in conductive communication with the positive and negative electrodes, are also provided.

3,413,152

**METHOD OF MAKING CARBONACEOUS  
FUEL CELL ELECTRODE**

Hillis O. Folkins and Oral L. Beber, Crystal Lake, Ill., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed July 30, 1965, Ser. No. 476,173

11 Claims. (Cl. 136—86)

1. A method of fabricating and using a fuel cell electrode composed of porous carbonaceous material, binder and metal-containing electrochemical catalytic material comprising intimately contacting a porous carbonaceous material with a binder of sugar solution in an amount sufficient to form a moldable mixture, molding said mixture to form an electrode body, and thereafter subjecting the molded electrode body to a carbonizing treatment to form a coherent, mechanically sound electrode and using said electrode in a fuel cell.

8. The method of fabricating a fuel cell electrode consisting essentially of the steps of:

(a) intimately mixing a finely divided carbonaceous material and a metal-containing electrochemical catalytic material with a sufficient amount of sugar solution and at a temperature suitable to produce a pliable homogeneous mixture, the ratio of said carbonaceous material to said sugar solution being about 10:1 to 4:1;

(b) applying a layer of the mixture of step (a) to a support from the group consisting of (1) an electrically conductive metal substrate and (2) a pliable homogeneous mixture of a carbonaceous material and a sugar solution and applying pressure to thereby form a laminar structure; and

(c) subjecting said laminar structure to a sufficient amount of heat for a time period sufficient to substantially carbonize said sugar solution to thereby form a coherent unitary electrode.

tive with respect to cations of said alkali metal when a difference of electrical potential is provided between said alkali metal and said cathode, is essentially impermeable to said alkali metal and to anions of said cathodic reactant-electrolyte, and consists essentially of a crystal lattice of which at least a major proportion by weight is ions of aluminum and ions of oxygen in crystal lattice combination and alkali metal ions which migrate in relation to said crystal lattice under influence of an electric field.

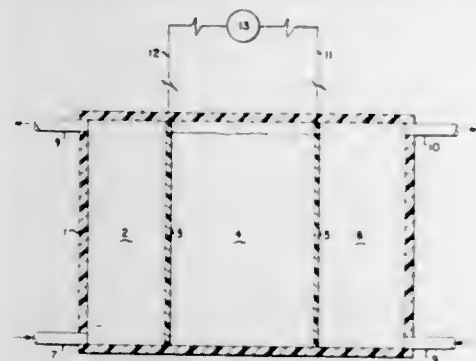
2. A battery in accordance with claim 1 wherein said crystalline structure consists essentially of ions of aluminum and oxygen in crystal lattice combination and alkali metal ions which migrate in relation to said crystal lattice when a difference of electrical potential is impressed on opposite sides of said structure.



### 3,413,153 FUEL CELLS CONTAINING AQUEOUS PERFLUOROCARBOXYLIC ACID BETWEEN HYDROPHOBIC ELECTRODES

Gershon Metzger and Hugh H. Horowitz, Elizabeth, and David J. C. Yates, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Sept. 29, 1964, Ser. No. 400,117  
2 Claims. (Cl. 136—86)

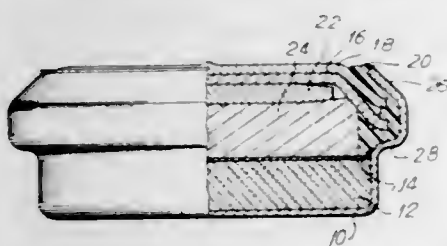


In a fuel cell, use of an aqueous perfluorocarboxylic acid miscible with water between hydrophobic electrodes in producing electricity by anodic oxidation of a fuel immiscible with said electrolyte gives efficient contact of fuel and electrolyte with the anode.

### 3,413,154 ORGANIC ELECTROLYTE CELLS

Mlarur Lakshmanarao Bhaskara Rao, Burlington, Mass., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed Mar. 23, 1966, Ser. No. 536,814  
3 Claims. (Cl. 136—100)

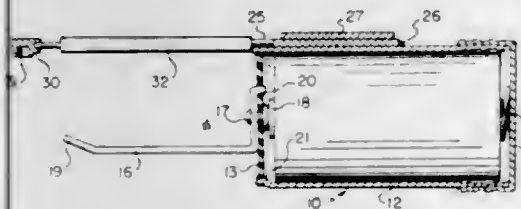


This invention relates to high energy density cells. Light metals such as Li<sup>+</sup>, Ca<sup>+</sup>, Be<sup>+</sup>, Mg<sup>+</sup>, and Al directly or with surface amalgamation with mercury have been used as negative electrodes. For positive electrode a mixture of inert conductor with sulfur has been employed. Electrolytes containing cation of light metals and ammonium ions and anions of tetrafluoroborate, tetra-chloroaluminate, perchlorate and chloride have been used in organic solvents. The solvents are propylene carbonate,  $\gamma$ -butyrolactone, N,N-dimethylformamide and dimethylsulfoxide cell voltages of 2.52 to 1.16 v. have been realized in employing these systems.

### 3,413,155 GLOW ENGINE STARTER

Richard N. Freeman, Sr., Eisenhower Drive, R.D. 3, Willoughby, Ohio 44094

Continuation of application Ser. No. 444,761, Apr. 1, 1965. This application Oct. 6, 1967, Ser. No. 674,075  
7 Claims. (Cl. 136—173)



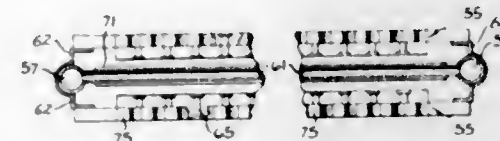
A device for connecting the glow plug of a model airplane engine in circuit with a battery where a handle-like

member has an electrical conductor extending therefrom and having a hole in the end adapted to receive the end of the glow plug such that the device can be electrically connected to the engine.

### 3,413,156 THERMOELECTRIC DEVICE

Robert J. Campana, Solana Beach, Calif., assignor, by mesne assignments, to Gulf General Atomic Incorporated, San Diego, Calif., a corporation of Delaware

Filed Dec. 18, 1963, Ser. No. 331,522  
9 Claims. (Cl. 136—212)

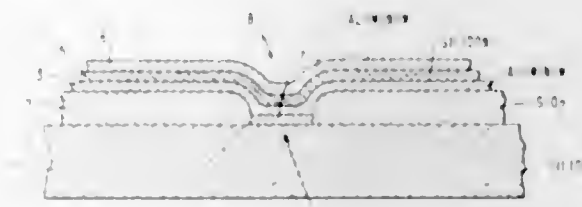


Thermoelectric generator using radiation coupling between the source of heat and collector plates joined to the hot junctions of the thermoelectric elements to transfer heat primarily via radiation and thus eliminate structural connections to the hot junctions of the thermoelectric elements which are supported only via connections to the radiators. With a supply of heat, such as a heated fluid stream where the intensity varies with direction of flow, the collector plates are made with differing radiative absorptivities to approximately equalize the hot junction temperatures of the thermoelectric pairs. End caps attached to the thermoelectric elements are welded at the circumference of undersized holes in the collectors.

### 3,413,157 SOLID STATE EPITAXIAL GROWTH OF SILICON BY MIGRATION FROM A SILICON-ALUMINUM ALLOY DEPOSIT

Lubertus L. Kuiper, Fishkill, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 21, 1965, Ser. No. 499,189  
7 Claims. (Cl. 148—1.5)



1. A method of growing a thin, epitaxial silicon layer upon a silicon substrate, said method comprising: depositing an alloy of silicon and aluminum upon said substrate, and maintaining said alloy and said substrate at a temperature below the eutectic temperature of the alloy to cause the growth of an epitaxial layer at the interface between the alloy and said substrate.

### 3,413,158 WATER-DISPERSED COATING COMPOSITIONS

Katsuya Inouye, Tokyo, Naoto Hirai, Kawasaki, and Masahiro Fujii, Tokyo, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan

Filed Feb. 11, 1965, Ser. No. 431,923  
Claims priority, application Japan, Feb. 13, 1964, 39/7,531  
15 Claims. (Cl. 148—6.2)

A water-dispersed coating composition having excellent paint characteristics and stability comprises copoly-

mer emulsion containing monovinyl aromatic hydrocarbon,  $\alpha,\beta$ -olefinic unsaturated carboxylic ester,  $\alpha,\beta$ -olefinic unsaturated carboxylic acid (the proportion of the olefinic unsaturated carboxylic acid being 6 to 20 parts by weight per 100 parts of resinous components in said emulsion) and a small amount of chromium compound to form cross-linking structure of carboxyl group and chromium compound in the coating in a very short time at baking temperature.

### 3,413,159 PROCESS OF SIMULTANEOUSLY CLEANING AND COATING URANIUM SURFACES

Ival O. Salyer, Dayton, and David Gerald Glasgow, Centerville, Ohio, assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Dec. 24, 1964, Ser. No. 421,083  
16 Claims. (Cl. 148—6.14)

Method of protecting a uranium surface by immersing in a bath containing from 0.01% to 5% by weight of an organic acidic material and from 0.5% to 60% by weight of nitric acid in an inert liquid carrier, and removing from the bath with a coating thereon; the organic acidic material may be either alkanolic, epoxyalkanoic, alkanedioic or alkenoic acids, said acids containing from 8 to 22 carbon atoms, aromatic hydro-carbon mono-carboxylic acids which are free of aliphatic unsaturation and contain from 7 to 13 carbon atoms, and partial esters of phosphoric acid with alkanols of from 4 to 12 carbon atoms.

### 3,413,160 PASSIVATION OF FERROUS METAL SURFACE

Fred N. Teumac, Charlotte, N.C., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 24, 1965, Ser. No. 504,983  
11 Claims. (Cl. 148—6.14)

1. In the method of passivating a ferrous metal surface in contact with an aqueous solution exhibiting an alkaline pH and containing both ferric and ferrous ion species in which additions of oxidizing agent are made to the said aqueous solution, the improvement which comprises: monitoring the state of oxidation exhibited by the ferric iron concentration-ferrous iron concentration ratio during the addition of oxidizing agent and stopping such addition when the oxidation potential of the said aqueous solution is in the range of 250 to 175 millivolts as measured with a ferrous metal electrode with reference to a saturated calomel electrode.

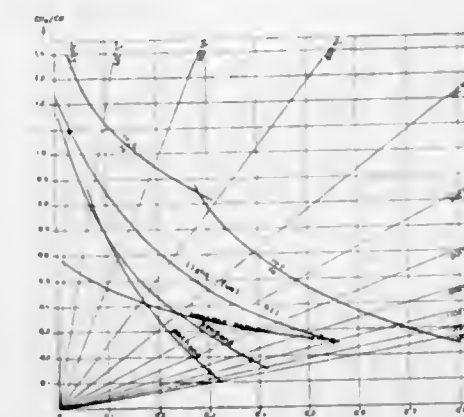
### 3,413,161 PROCESS FOR THE GENERATION AND UTILIZATION OF FURNACE ATMOSPHERES FOR THE HEAT TREATMENT OF METALS, ESPECIALLY OF STEEL

Werner Goehring, 63 Schneiderweg, 7051 Neustadt, near Waiblingen, Germany

Continuation-in-part of application Ser. No. 396,980, Sept. 16, 1964. This application Sept. 19, 1966, Ser. No. 580,308  
Claims priority, application Germany, Sept. 21, 1963, G 38,746  
6 Claims. (Cl. 148—16.5)

Hydrocarbon fuel is mixed with a quantity of air less than that required for complete combustion. This mixture is burned, while steps are taken to prevent the escape of generated heat from the burning mixture. This generated heat is accumulated until chemical equilibrium of the

products of combustion is reached at a temperature above the processing temperature of the steel to be treated. The

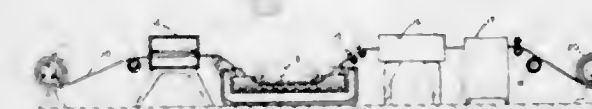


steel is then exposed to the products of combustion for carburizing, bright annealing and oxidation-free cooling.

### 3,413,162 METHOD FOR ELIMINATING TIN SWEAT IN ALUMINUM-TIN ALLOYS

Raymond L. Slater, Novelty, and George R. Kingsbury, Cleveland, Ohio, assignors to Clevite Corporation, a corporation of Ohio

Continuation-in-part of application Ser. No. 541,684, Apr. 11, 1966. This application Jan. 24, 1967, Ser. No. 611,316  
11 Claims. (Cl. 148—20)



A method of eliminating or reducing tin sweat problems in aluminum-tin alloys, occasioned by heating the alloy to a temperature sufficiently high to cause exuding of the tin to the surface, by passing the aluminum-tin alloy through a molten bath of lead, antimony or bismuth, or through a molten alloy thereof, or through a molten alloy thereof with arsenic. The aluminum-tin alloy may be passed through the molten bath after the tin has exuded to the surface of the alloy, thereby to remove the excess surface tin, or the aluminum-tin alloy may be passed through the molten bath to cause the tin sweat and simultaneously to remove the excess tin.

### 3,413,163 ARC WELDING FLUX AND METHOD OF MANUFACTURING THE SAME

Lars Hilding Hillert, Goteborg, Sweden, assignor to Elektriska Svetsningsaktiebolaget, Goteborg, Sweden, a corporation of Sweden

No Drawing. Filed Sept. 7, 1965, Ser. No. 485,545  
Claims priority, application Sweden, Sept. 7, 1964, 10,700/64  
7 Claims. (Cl. 148—23)

A flux for the submerged-arc welding process is disclosed consisting of granules, each of which comprises a plurality of particles of different materials agglomerated by a bonding agent consisting substantially of at least one chromium oxide. The production of the welding flux comprises mixing powdered flux ingredients with chromium trioxide, shaping the mixture into compacted bodies, subjecting the bodies to a temperature exceeding the melting point of the chromium trioxide but not exceeding 600° C., and cooling the product. The bodies may have a size exceeding the desired grain size of the flux, in which case the method includes a subdivision step performed before or after the cooling step.



### 3,413,164 ARC WELDING FLUX AND METHOD OF MANUFACTURING THE SAME

Lars Hilding Hillert, Goteborg, Sweden, assignor to Elektriska Svetsningsaktiebolaget, Goteborg, Sweden, a corporation of Sweden

No Drawing. Filed Sept. 7, 1965, Ser. No. 485,586  
Claims priority, application Sweden, Sept. 7, 1964,  
10,699/64

10 Claims. (Cl. 148—23)

A flux for the submerged arc welding of iron and steel is disclosed which consists of granules each of which comprises a plurality of particles of different material agglomerated by a bonding agent consisting exclusively or practically exclusively of boric oxide. The method of making the granular flux comprises mixing powdered flux ingredients with uncombined boric oxide or boric acid, shaping the mixture into compacted bodies having a size not below the required grain size of the flux, subjecting the bodies to a temperature above the fusion point of boric oxide but not exceeding 600° C., cooling the product and, if required, subdividing the bodies into granules, the order of said two last-mentioned steps being arbitrary.

### 3,413,165 HOT ROLLING PROCESS FOR MAKING GRAIN ORIENTED SILICON IRON SHEET

Gordon John Philip Buchi, Stafford, and Desmond Griffiths, Altrincham, England, assignors to The English Electric Company Limited, London, England, a British company

No Drawing. Continuation-in-part of application Ser. No. 409,972, Nov. 9, 1964. This application June 21, 1967, Ser. No. 647,604

Claims priority, application Great Britain, Nov. 13, 1963,  
44,881/63

5 Claims. (Cl. 148—111)

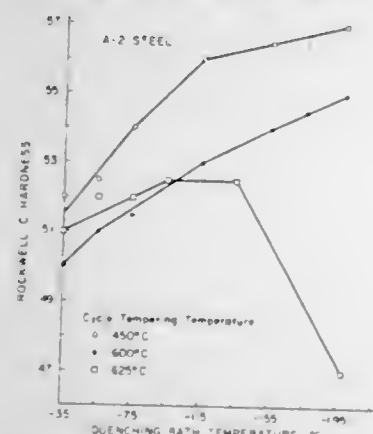
Grain oriented silicon-iron sheet is rolled to final thickness entirely by hot rolling in effectively two stages. Each hot rolling stage may comprise more than one pass. The temperature in the second stage during which the sheet is rolled to its final thickness determines the type of texture which will be imparted to the sheet in the course of a recrystallization anneal. Rolling at temperatures above 1000° C. in the second stage favors the formation of a Goss-type texture, whereas when the temperature is below 900° C. the formation of a cube-type texture is favored.

### 3,413,166 FINE GRAINED STEEL AND PROCESS FOR PREPARATION THEREOF

Victor F. Zackay, Berkeley, Earl R. Parker, Orinda, and Krahamadhati V. Ravi, Berkeley, Calif., assignors to the United States of America as represented by the U.S. Atomic Energy Commission

Filed Oct. 15, 1965, Ser. No. 496,729

7 Claims. (Cl. 148—125)



A high strength, ductile steel is formed by mechanically deforming austenitic steel while below the tempering temperature, then cyclically heating and cooling the steel to progressively lower temperatures so that on each cool-

ing cycle martensite is formed as small size plates in progressively larger numbers along dislocation networks, a high density network of fine martensite plates being formed in the austenite matrix. The cycling is stopped short of complete transformation of the austenitic form to the martensitic form.

### 3,413,167 MANUFACTURE OF PLASTIC-INSULATED ELECTRICAL CABLE

Sidney W. Trill, Scarsdale, N.Y., assignor to Phelps Dodge Copper Products Corporation, New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 339,252, Jan. 21, 1964. This application July 9, 1965, Ser. No. 473,562

6 Claims. (Cl. 156—51)



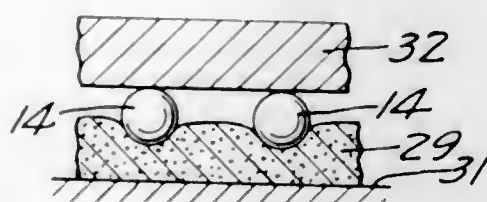
1. A method for controlling the contraction of a plastic insulating material on an electrical conductor comprising the steps of enclosing an electrical conductor coated with a plastic material in a plastic state in a tube section of adjustable length filled with steam at a temperature less than the temperature of the plastic material and more than 212° F., allowing the thermoplastic material to cool to a lower temperature, passing said insulated conductor from said first section into a second section of adjustable length and immersing said insulated conductor in water therein at a temperature below that of the steam at the exit of said first section and above room temperature, said water being pressurized to equal the pressure of the steam in the steam section, passing said insulated conductor out of said second section and into a third section and immersing said insulated conductor in water therein at a temperature approximately equal to room temperature and pressurized to equal the pressure in the second section, and removing said conductor from said third section, whereby an even contraction of the thermoplastic insulation occurs and substantially without the formation of voids between the conductor and the insulation.

### 3,413,168 ADHESIVE BONDING METHOD PERMITTING PRECISE POSITIONING

Alton J. Danielson, Stillwater, and Harold A. Berg, North St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Continuation-in-part of application Ser. No. 258,487, Feb. 14, 1963. This application May 3, 1967, Ser. No. 640,773

7 Claims. (Cl. 156—71)



Small protrusions having a non-adhesive exposed surface and which are collapsible under hand pressure, e.g.,

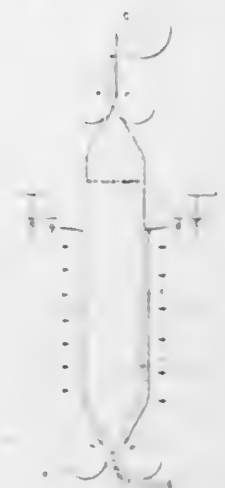
fragile microspheroids, are sparsely randomly uniformly distributed over the pressure-sensitive-adhesive-coated surfaces of various articles to permit sliding non-adherent contact and precise placement of the article on an adhesive-receptive surface prior to final pressure-bonding.

### 3,413,169 METHOD OF MAKING A HOSE COMBINATION OF A PLASTIC LINER AND A FIBROUS SHEATH

Adam Krings, Troisdorf, and Bernhard Kraemer, Oberlar, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany

Filed Aug. 13, 1964, Ser. No. 389,326

11 Claims. (Cl. 156—149)



The present disclosure relates to a hose combination comprising a hose jacket or sheath prepared from natural or synthetic fibers and an inner lining made from a synthetic material. The present disclosure also relates to a continuous process for the preparation of a hose combination wherein an inner lining is introduced into a fibrous outer sheath and combined into a concentric unit by conveying said combination through a zone of heat and pressure.

### 3,413,170 METHOD OF MAKING BUCKLE AND STRAP ASSEMBLIES

Charles Block, North Bellmore, and Leon J. Mintz, Brooklyn, N.Y., assignors to Undergarment Assemblies, Inc., North Bellmore, N.Y., a corporation of New York

Filed Aug. 2, 1965, Ser. No. 476,376

3 Claims. (Cl. 156—204)



In the manufacture of buckle and strap assemblies of the type used in ladies' undergarments, an improved method of temporarily securing the fixed loop of the strap involves the use of a piece of tape bent to "U" shape, the tape having a pressure sensitive adhesive on the outer sides of the "U" so that when placed between the opposing inner faces of the strap loop, the loop is pressed against the adhesive for temporarily holding the two sides of the strap in place until it can be sewn into the garment.

### 3,413,171 PROCESS OF MAKING IDENTIFICATION CARDS

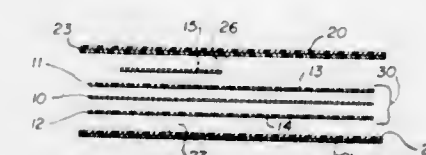
Donald F. Hannon, Willoughby, Ohio, assignor to Laminex Industries, Inc., a corporation of Ohio

Continuation-in-part of application Ser. No. 373,664, June 9, 1964. This application July 31, 1967, Ser. No. 657,120

7 Claims. (Cl. 156—277)

A core sheet is coated on both sides with a heat-softenable bonding material to form a core. Identifying indicia

is printed on the bonding material and, where desired, an identifying photograph adhered to it. The core is then sandwiched between two sheets of protective covering, each composed of polymerized polyethylene glycol ester



and a copolymer. Lamination of the sandwich is effected by roll lamination so that printed indicia on the core and/or the protective covering is disposed between the two then-bonded layers of bonding material.

### 3,413,172 USE OF ENCAPSULATED FORMALDEHYDE IN BONDING RUBBER TO TEXTILE

Alan Paul Osborne, Wood End, near Atherstone, England, assignor to The Dunlop Company Limited, a British company

No Drawing. Filed Jan. 21, 1965, Ser. No. 427,106  
Claims priority, application Great Britain, Feb. 12, 1964,  
5,790/64

6 Claims. (Cl. 156—334)

Textile material, more particular rayon cords, are bonded to natural and synthetic rubber compositions by an in situ adhesive generated during vulcanization of such compositions from a polyhydric phenol and a component releasing formaldehyde during vulcanization. The formaldehyde-releasing component is incorporated in the unvulcanized rubber composition in the form of micro-particles of paraformaldehyde at least partially encapsulated in a sheath of a polymeric material compatible with the rubber composition such as ethyl cellulose, polypropylene, cyclized natural rubber and the resinous condensate product of paratertiary butyl phenol and acetylene.

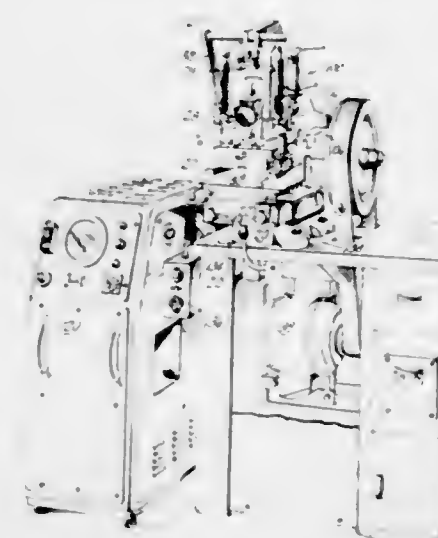
### 3,413,173 UPPER WELDING AND CUTTING MACHINES

Frank C. Long, Quorn, England, assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey

Filed Aug. 24, 1965, Ser. No. 482,197

Claims priority, application Great Britain, Sept. 1, 1964,  
35,663/64

6 Claims. (Cl. 156—380)



1. A press for operating upon a multi-layer workpiece comprising a work support, first and second pressers, a knife mounted on each presser, means for moving the pressers toward the work support so as to press the knives



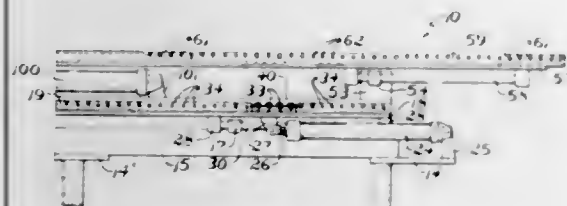
into engagement with the uppermost layer of the workpiece, means for establishing a high frequency electric field between the work support and the knives and means for bringing about movement of one of the pressers after the high frequency electric field has been established for a predetermined time to press a cutting edge portion of one of the knives entirely through the workpiece.

3,413,174

## CONVEYOR APPARATUS

Donald K. Porter, Cuyahoga Falls, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

Filed Mar. 15, 1965, Ser. No. 439,703  
10 Claims. (Cl. 156—405)



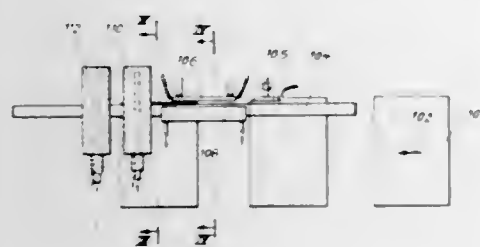
A feed device for advancing tread stock comprising support means, said support means having a pair of longitudinal side bars stock conveying means mounted between said side bars for advancing tread stock, the upper conveying surface having a plurality of ball bearings, and means above said conveying means cooperative therewith to center a tread stock passing there-between.

3,413,175

## DEVICE FOR WELDING TOGETHER THE TERMINAL EDGES OF SUPERPOSED LAYERS OF THERMOPLASTIC MATERIAL

Kurt Röchla, Lengerich, Nordrhein-Westfalen, Germany, assignor to Windmoller & Holscher, Lengerich, Germany

Filed Apr. 8, 1963, Ser. No. 271,298  
Claims priority, application Germany, Apr. 12, 1962, W 32,032; July 21, 1962, W 32,644; Nov. 24, 1962, W 33,392; Dec. 7, 1962, W 33,485  
8 Claims. (Cl. 156—498)



1. A device for welding together the terminal edges of superposed layers of thermoplastic tubular web sections comprising at least one welding tool having a welding surface extending at right angles to the plane of the sections, at least one pair of endless oppositely traveling tensioned bands disposed one above the other and adapted to engage the sections from opposite sides with a portion of the web sections extending so that a zone of material having a width of at least 0.12 inches is retained between the point of engagement with the bands and the fusion-welded seam to be formed, means to move said bands so that a succession of the tubular web sections moves continuously transversely of their longitudinal axes, the mutually facing stretches of the bands functioning to move the edges of the tubular web sections past said at least

one welding tool without the welding tool coming into contact with the said edges, and a cooling station being constituted by hollow rollers through which a cooling medium is circulated, the rollers being urged toward the bands and extending beyond the edges of the tubular web sections which have been welded together.

3,413,176

## EDGE SEALING DEVICE FOR PILE FABRICS

Morton I. Port, West End, N.J., and Jerome E. Cook, Rye, N.Y., assignors to Patchogue-Plymouth Company, New York, N.Y., a joint-venture

Filed Feb. 11, 1966, Ser. No. 526,834  
6 Claims. (Cl. 156—499)



An edge-sealing device for fusing the cut edge of a pile fabric having a backing of woven synthetic thermoplastic material, the device being provided with a heating plate which is secured to a sole plate and set back from the leading edge thereof to define a ledge for accommodating the margin of the fabric. The heating plate is provided with a heated edge which faces the ledge to engage the cut edge of the backing, a deflecting bar being mounted above the heating plate to displace the pile of the fabric away from the cut edge thereof, thereby facilitating intimate contact between the cut edge and the heated edge.

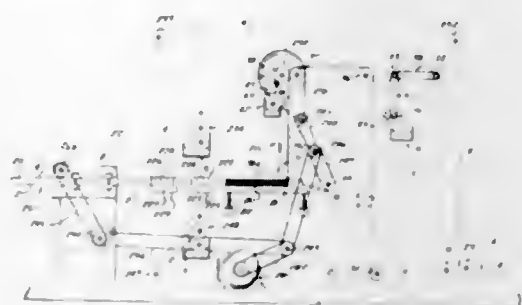
3,413,177

## APPARATUS FOR MAKING LAMINATED CELLULAR PANEL

Edwin R. Hoyt, Australia, Wash., assignor, by mesne assignments, to Hexcel Corporation, a corporation of California

Application Apr. 15, 1963, Ser. No. 273,244, now Patent No. 3,257,253, dated June 21, 1966, which is a continuation-in-part of application Ser. No. 181,624, Mar. 22, 1962. Divided and this application Feb. 12, 1965, Ser. No. 440,048

10 Claims. (Cl. 156—512)



1. A machine for the manufacture of a cellular laminate, comprising: a stand for four rolls of laminae, means for feeding a lamina from each of said rolls in codirectional face-to-face opposition so that there are top and bottom laminae to two inner laminae, means for adhering said inner laminae together along lines of adhesion spaced normal to such direction to form an inner laminate, means for feeding such inner laminate vertically to a cutting zone, a cutter adapted to successively cut such inner laminate transversely of such vertical direction to form successive strips thereof, means horizontally feeding each of said strips, as it is cut from such inner laminate, into back-to-face registry and contact with the previously cut strip, and means causing contiguous ones of

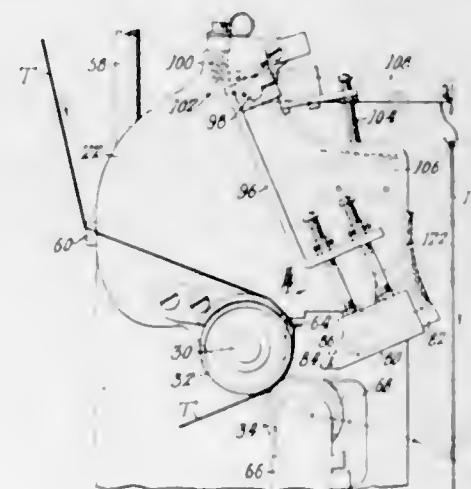
said strips, while in registry, to adhere together at positions intermediate said lines of adhesion whereby said strips are formed into a cohesive stack thereof, means continuously elongating said stack in a direction transverse of the lengths of the strips of such stack to form a grid of such strips having the edges thereof defining upper and lower surfaces, and means for continuously feeding and adhering to said surfaces said upper and lower laminae to form a continuous cellular laminate.

3,413,178

## HEAT SEALING MACHINE

Wilfred Louis Langevin, Beverly, Mass., assignor to Boston Machine Works Company, Lynn, Mass., a corporation of Massachusetts

Filed Oct. 19, 1965, Ser. No. 498,064  
3 Claims. (Cl. 156—545)



A machine for heating and pressing a sealing tape progressively on a seam of an article of wear, comprising a pair of rolls, one of which is driven, between which the seamed article passes, a heated, wedge-shaped shoe movable to and from a position close to the nip of said rolls, a jacket of insulation on said shoe, a motor to drive one of the rolls, automatic means for starting the motor when the shoe moves to the nip of the rolls and for stopping the motor when the shoe moves away.

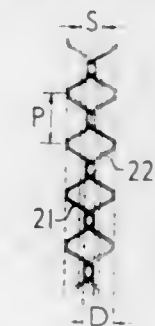
3,413,179

## FLEXIBLE SHEET MATERIAL AND METHOD FOR MAKING SAME

Ronald Stansfield Goy, Sutton Coldfield, Robert Anthony William Longden, Birmingham, Michael D. Roll, Castle Bromwich, near Birmingham, and Roland William Pearson, Disley, England, assignors to Dunlop Rubber Company Limited, London, England, a British company

Continuation-in-part of application Ser. No. 176,051, Feb. 27, 1962. This application Dec. 28, 1966, Ser. No. 605,271

17 Claims. (Cl. 161—60)



A leather-like sheet material made from crimped continuous filaments such as silk, nylon, polyethylene and

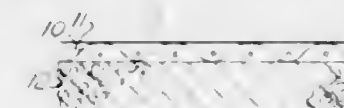
other such natural or synthetic fibres under tension brought closely together so that the spacing between filaments is no greater than the amplitude of the crimped structure, and thereafter releasing the tension whereby the turns of the crimped filaments intermingle into a mat. Bonding material such as a thermoplastic resinous or elastomeric binder is introduced into the mat or on the filaments prior to the formation of the mat. The mat is thereafter consolidated by compression. Heat may also be applied during the process or after consolidation.

3,413,180

## COMPOSITE FLEXIBLE POROUS SHEET MATERIAL

Hilbre Henry Smith, Belmont, near Bolton, England, assignor to The Cotton Silk & Man-Made Fibres Research Association, a corporation of Great Britain and Northern Ireland

Filed June 12, 1964, Ser. No. 374,695  
Claims priority, application Great Britain, June 15, 1963, 23,920/63; Oct. 30, 1963, 42,757/63  
5 Claims. (Cl. 161—89)



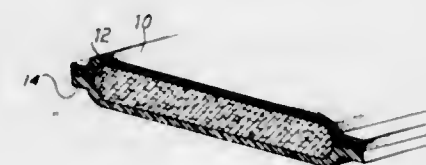
A porous metallized fabric is disclosed which consists of a porous basic fabric having adhering to one surface thereof a thin sheet of metal which conforms to the surface contours of the basic fabric. The metal sheet is ruptured at a sufficient number of the interstices of the basic fabric to give the required degree of porosity. The ruptured parts of the metal sheet extend inwardly of the respective interstices to conform to the wall contours thereof. A sheet of resilient material is bonded to the metallized fabric to produce a composite sheet with flexing properties which substantially reduce any tendency for the metal sheet to be locally displaced.

3,413,181

## PHOTOGRAPHIC PROCESSING WEB MATERIAL

Jerome S. Goldhammer, Barrington, and Alan Miller, Rosemont, Ill., assignors to Chicago Aerial Industries, Inc., Barrington, Ill., a corporation of Delaware

Filed Nov. 26, 1963, Ser. No. 325,849  
7 Claims. (Cl. 161—112)



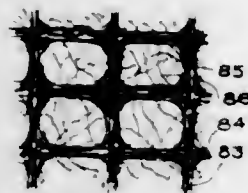
A three layered, strip-like, laminated carrier web for contact processing of photographic materials. Each of the three layers serves a different purpose so that together they provide a thin, strong, highly absorbent and adsorbent composite web which has a long shelf life by virtue of its mechanical construction. Also, the method of constructing such a three layered web by means of lamination while submerged in processing solution, subsequent edge-sealing of the two outer laminations, and winding of the composite web on a spool submerged in the processing solution.



3,413,182

**PATTERNED NON-WOVEN FABRICS COMPRISING ELECTRICALLY-SPUN POLYMERIC FILAMENTS**

Harold L. Simons, West Newton, Mass., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts  
Original application Jan. 15, 1963, Ser. No. 251,693, now Patent No. 3,280,229, dated Oct. 18, 1966, Divided and this application Feb. 21, 1966, Ser. No. 574,477  
6 Claims. (Cl. 161—112)



A textured non-woven fabric which may or may not be laminated to other non-conducting material, the fabric being formed of electrically-spun autogenously bonded filaments of an organic polymeric material wherein at least the majority of the filaments have a length-to-thickness ratio greater than about 10,000 to 1 and the filaments are aggregated into a pattern of intersecting and coalescing bundles integrated into a net-like arrangement and wherein the space between the bundles have substantially fewer filaments.

3,413,183

**SPONGEOUS SUPPORTED TRANSFER MEDIUM AND POLYCARBONATE EMBODIMENT**

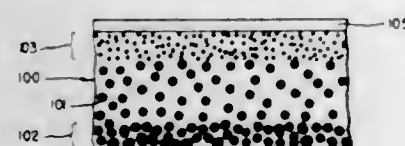
Hugh T. Findlay and William H. Horne, Lexington, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,402  
26 Claims. (Cl. 161—160)

A transfer medium is provided by a coating process whereby the transfer layer is a resin, for example a polycarbonate, having voids or discontinuities which hold an imaging material in the pores in the manner of a sponge. An ink depleted surface is formed at the writing surface by the correct control of the solubilities of the resin and imaging material components in the coating layer dispersant. When the dispersant is evaporated a crust of pure resin is formed at the writing surface which is substantially free of imaging material producing a transfer medium, for example carbon paper, having clean handling properties.

3,413,184

**TRANSFER MEDIUM AND METHOD FOR MAKING SAME**

Hugh T. Findlay and Kenneth H. Froman, Lexington, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Continuation-in-part of application Ser. No. 171,188, Feb. 5, 1962. This application Mar. 9, 1966, Ser. No. 536,557  
18 Claims. (Cl. 161—160)



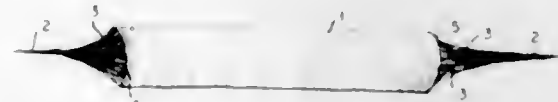
Transfer elements comprising a polymer film having a plurality of pores, a horizontal zone near one surface of the film having a significant relatively high density of

pores, a second horizontal zone near the opposite surface of the film having a significant relatively low density of pores, and globules of fluid transfer ink in the pores, the ink being expressible from the pores in response to pressure applied to the film. A particulate filler material present in an amount of at least 10% by weight improves the properties of the film. A process for producing transfer elements as described comprising mixing a fluid transfer ink with a solution of a film-forming polymer in a solvent for the polymer, the ink being relatively insoluble in the solvent, depositing a coating of the resulting dispersion onto a substrate, heating to evaporate the solvent so that as it migrates towards the surface of the coating away from the substrate it carries dissolved plastic towards the surface and produces a relatively high concentration of plastic near that surface and a relatively higher concentration of ink near the other surface of the film and then stripping the film from the substrate.

3,413,185

**YARN PACKAGE IN THE FORM OF A ROD-SHAPED BATT**

Thomas Wade Davis, Petersburg, and Robert John Gilardi, Richmond, Va., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
Filed Sept. 30, 1964, Ser. No. 400,353  
7 Claims. (Cl. 161—169)

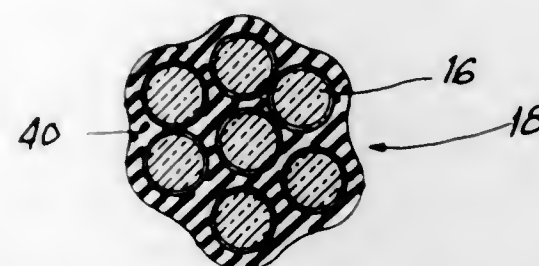


A back-windable yarn package in the form of a rod-shaped batt of longitudinally collapsed, continuous, plexifilamentary strand material. Process for forming the package by flash-spinning a polymer solution to produce a plexifilament, then causing the plexifilament to enter axially of an elongated passageway and to impinge at a right angle upon a yieldable surface. Apparatus for carrying out the process including a spinneret, a tubular-shaped perforated conduit extending out from the spinneret to define an elongated passageway, and means for restraining the forward movement of the batt in the passageway.

3,413,186

**ELASTOMERIC-GLASS FIBER PRODUCTS AND PROCESS AND ELEMENTS FOR USE IN SAME**

Alfred Marzocchi, Cumberland, R.I., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware  
Continuation-in-part of application Ser. No. 218,724, Aug. 22, 1962. This application Aug. 18, 1966, Ser. No. 573,267  
The portion of the term of the patent subsequent to Nov. 22, 1983, has been disclaimed and dedicated to the Public  
13 Claims. (Cl. 161—176)



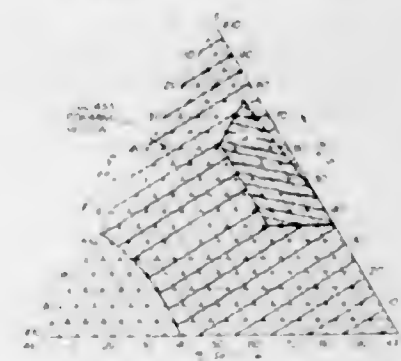
This invention is addressed to the glass fiber reinforcement of products formed of elastomeric materials wherein the glass fiber reinforcement is formulated of

the glass fibers having an anchoring agent applied onto the surfaces thereof after which the glass fibers are gathered together in the form of a bundle which is impregnated to apply a second coating onto the glass fiber surfaces with an elastomeric composition and wherein the impregnated bundle of glass fibers is provided with an overcoating in the form of a second coat of elastomeric material. The composite is then suitable for use in combination with the continuous phase elastomer in the fabrication of the glass fiber-elastomeric product.

3,413,187

**GLASS BONDING MEDIUM FOR ULTRASONIC DEVICES**

John T. Krause, New Providence, and William R. Northover, Westfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Mar. 31, 1966, Ser. No. 539,011  
1 Claim. (Cl. 161—192)



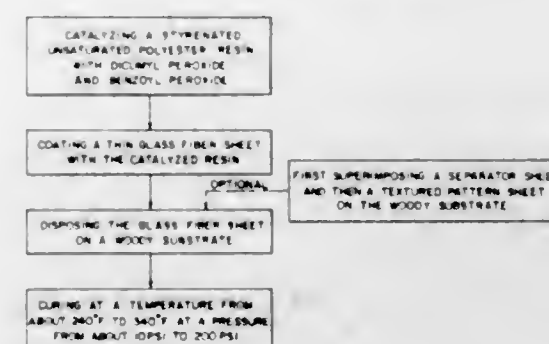
1. An ultrasonic device comprising a solid electrode metal film adhesively bonded to a member selected from the group consisting of quartz, fused silica and a lead-silica glass, said adhesive comprising a glass having a composition lying within a region of the ternary phase diagram for arsenic-sulfur-selenium which is bounded by lines joining the following points in sequence:

- 35% sulfur, 65% selenium
- 35% sulfur, 47% selenium, 18% arsenic
- 62% sulfur, 20% selenium, 18% arsenic
- 75% sulfur, 20% selenium, 5% arsenic
- 45% sulfur, 55% selenium.

3,413,188

**GLASS FIBER-WOOD LAMINATES AND METHODS OF PRODUCING SUCH LAMINATES**

John K. Allen, Varnville, S.C., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed June 14, 1963, Ser. No. 287,886  
11 Claims. (Cl. 161—195)



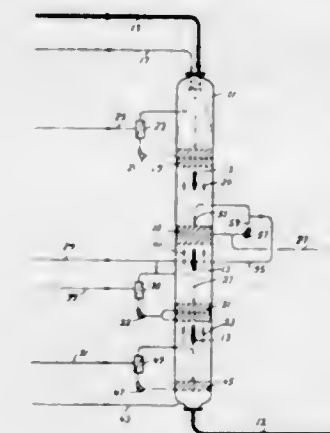
11. A laminated structure comprising a layer of fiber glass having a thickness less than about 40 mils bonded to a woody substrate by a cured styrenated-unsaturated polyester resin wherein the polyester is derived from the reaction of a dihydric alcohol and a dibasic acid, at least

about 25%, by weight, of said dibasic acid being unsaturated and the ratio of styrene to polyester being in the range of from 15:85 to 65:35 parts by weight, catalyzed with at least about 0.25 part of a mixture of dicumyl peroxide and benzoyl peroxide per 100 parts of resin and having a fiber glass to resin ratio in the range of 1:6 to 1:1 on a weight basis and a textured layer consisting essentially of cured polyester resin overlying the fiber glass.

3,413,189

**METHOD OF PERFORMING HYDROLYSIS AND ALKALIC DIGESTION OF CELLULOSIC FIBER MATERIAL WITH PREVENTION OF LIGNIN PRECIPITATION**

Ernst Åke Backlund, Karlstad, Sweden, assignor to Aktiebolaget Kamyr, Karlstad, Sweden, a company of Sweden  
Filed Jan. 25, 1965, Ser. No. 427,814  
Claims priority, application Sweden, Jan. 29, 1964, 1,060/64  
10 Claims. (Cl. 162—29)



The hydrolysis and subsequent digestion of cellulosic fiber material in a vessel through which the material is continuously advanced with the separation from the fiber material and discharge together of hydrolysate and spent liquor is disclosed, wherein a portion of the digesting liquor is introduced in the vicinity of the hydrolysate and spent liquor mixing, whereby precipitation of alkali lignin out of the spent liquor is minimized or prevented.

3,413,190

**PROCESS FOR MANUFACTURING PAPERBOARD WITH HIGH GREASE RESISTANCE BY APPLYING A PLURALITY OF STARCH COATINGS TO A WET BOARD**

Albert J. Aycock and Henry G. Booth, Augusta, Ga., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York  
Filed Dec. 30, 1964, Ser. No. 422,195  
1 Claim. (Cl. 162—175)

A process for manufacturing paperboard having high grease resistance wherein a plurality of starch coatings are applied to the surface of the paperboard sheet, the first of the coatings being applied at the breaker stack which is before the application of any other surface coatings.

3,413,191

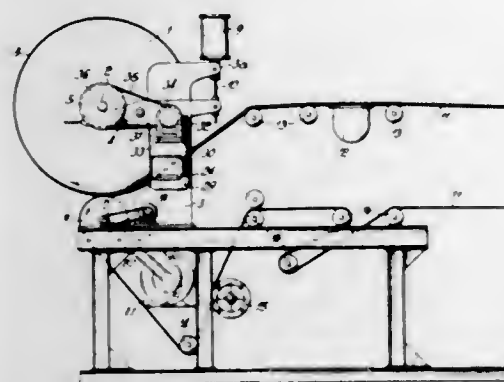
**DEVICES FOR PRODUCING SHEETS AND TUBES OF FIBROUS CEMENT OR THE LIKE BY WINDING A WEB OF PLASTIC MASS OF FIBROUS CEMENT ON TO A SIZING ROLL OR A MANDREL**

Karl Adolf Oesterheld, Luthé, Wunstorf, near Hannover, Germany  
Filed Feb. 18, 1965, Ser. No. 433,760  
Claims priority, application Germany, Feb. 19, 1964, O 9,958  
13 Claims. (Cl. 162—252)

This invention relates to devices for producing sheets



and tubes of fibrous cement or the like, in which a web of plastic mass of fibrous cement is wound in a plurality of layers on to a sizing roll or a mandrel, respectively, dewatered and compacted.

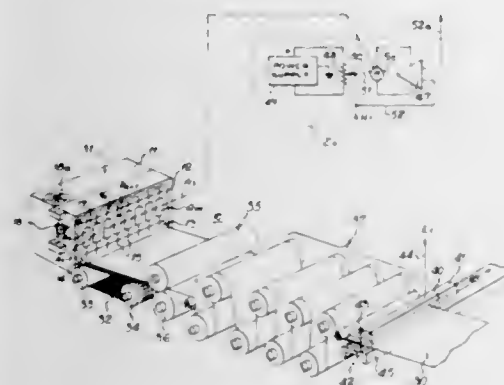


3,413,192

# AUTOMATIC MEASURING AND CONTROL APPARATUS FOR FORMING SHEET MATERIAL

Alfred E. Beecher, Tacoma, Wash., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York

Filed June 14, 1965, Ser. No. 463,487  
13 Claims. (Cl. 162—259)



1. Control apparatus for controlling a selected property of continuously fed sheet material, comprising: a series of actuator means disposed at intervals across the width of said sheet, said actuator means being individually adjustable for controlling said property over successive fractional widths of said sheet, scanning means for measuring said property over said fractional sheet widths and for generating electrical signals as a function thereof, separate servo-integrator means linked to each of said actuator means by respective positioner means for adjusting each of said actuator means in accordance with the actuation of the corresponding servo-integrator means, and means for impressing said electrical signals on said servo-integrator means for thereby adjusting said actuator means to minimize variations in said selected property of said sheet material.

3,413,193

# MODERATOR TANK FOR PRESSURE TUBE REACTOR

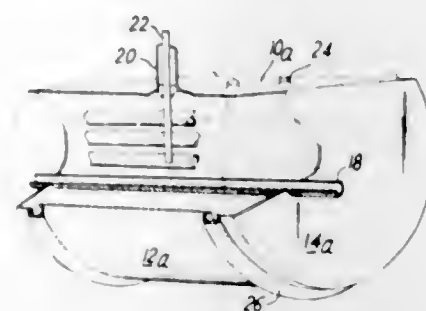
Jean Rigal, Firminy, France, assignor to Commissariat à l'Energie Atomique, Paris, France

Filed Mar. 27, 1967, Ser. No. 626,334  
Claims priority, application France, Apr. 6, 1966, 56,759

5 Claims. (Cl. 176—44)

The moderator calandria tank of a pressure tube reactor comprises a cylindrical casing having horizontal generator-lines and closed by two end-shields traversed

by the pressure tubes. The tank casing comprises a flat rigid top wall and a side wall which is more readily de-

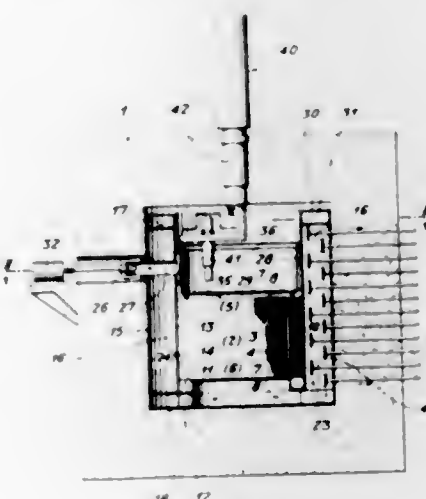


3,413,194

# NUCLEAR REACTOR AND SURROUNDING STEAM GENERATOR

Jakob Kägi, Wiesendangen, Zurich, Switzerland, assignor to Sulzer Brothers, Limited, Winterthur, Switzerland, a corporation of Switzerland

Filed Feb. 21, 1967, Ser. No. 617,569  
Claims priority, application Switzerland, Feb. 23, 1966, 2,625/66  
10 Claims. (Cl. 176—59)



The nuclear reactor plant pressure vessel houses a steam generator and a nuclear reactor in spaced relation with separating walls between the reactor and wall of the pressure vessel to define a flow duct for the reactor coolant wherein the steam generator is positioned. The coolant flows through the reactor and thence through the steam generator in a circuitous path.

3,413,195

# FUEL OR FERTILE ELEMENT FOR NUCLEAR REACTORS

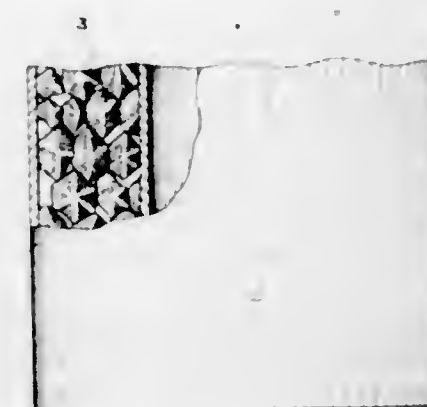
Alfred Boettcher, Aachen, Germany, assignor to Kernforschungsanlage Jülich Gesellschaft mit beschränkter Haftung Nordrhein-Westfalen-e.V., Jülich, Germany, a corporation of Germany

Filed June 28, 1966, Ser. No. 561,126  
Claims priority, application Germany, June 29, 1965, K 56,501

8 Claims. (Cl. 176—71)

Fuel or fertile element for a nuclear reactor core having a hermetically sealed metallic (e.g. Zircaloy) shell. The shell contains a loosely piled mass of coated particles having substantially uniformly spherical core with a diameter of 50–500 microns and a fuel or fertile substance. A coating of pyrolytic graphite, beryllium oxide, aluminum

oxide, magnesium oxide, zirconium oxide, zirconium carbide, silicon carbide or niobium carbide, surrounds the core and has a thickness of 50–150 microns. The particles have an irregular outer configuration with a plurality of



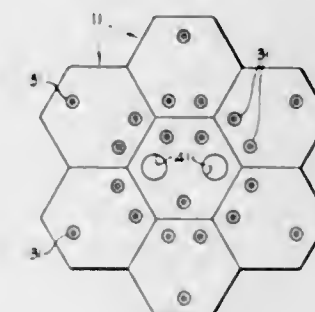
generally flat surfaces. Helium, at least at atmospheric pressure, constitutes an inert gas filling. The shell which has a generally cylindrical annular compartment receiving the coated particles.

3,413,196

# FUEL ELEMENT

Peter Fortescue, Rancho Santa Fe, and Francis R. Bell and Robert B. Duffield, San Diego, Calif., assignors, by mesne assignments, to the United States Atomic Energy Commission

Filed Sept. 8, 1965, Ser. No. 485,811  
7 Claims. (Cl. 176—73)



1. A nuclear reactor fuel element comprising a block of refractory material having relatively good thermal conductivity and neutron moderating characteristics which block has a pair of parallel flat end faces and a plurality of sides which are substantially perpendicular to said end faces, said sides being so arranged that the cross section of said block taken parallel to said end faces is a polygon of predetermined shape, said shape being such that a plurality of said blocks can be interfitted together side-by-side to provide a substantially continuous core array, said block containing a plurality of coolant holes which are arranged in a triangular array and which extend axially completely therethrough from end face to end face, said block also containing a plurality of integrally formed axially extending closed fuel chambers for holding nuclear fuel material, said fuel chambers being arranged in a triangular array of lesser pitch than the pitch of the coolant hole array so that a plurality of fuel chambers surround each coolant hole, said coolant holes being of larger diameter than said fuel chambers and each fuel chamber being equidistant from two coolant holes, and said block having at said end faces interengaging means for precisely axially aligning one of these fuel elements with another of these fuel elements disposed axially adjacent it, said means including a plurality of pins protruding from one end

face thereof and mating cavities at the other end face thereof proportioned to receive said pins.

3,413,197

# CONTROLLED SENSITIVITY GALACTOSE TEST COMPOSITION AND PROCESS

Joseph W. Fraser, Dunlap, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed June 30, 1966, Ser. No. 561,751

11 Claims. (Cl. 195—103.5)

5. A process for controlling the sensitivity of a galactose test composition for the detection of galactose in fluids which comprises adding a sensitivity controlling amount of an agent selected from the group consisting of propyl gallate and a mixture of up to about 0.05% by weight propyl gallate with about 0.06% to about 0.15% by weight ascorbic acid to a composition comprising:

- (A) galactose oxidase;
- (B) a material having peroxidative activity;
- (C) an indicator material which is responsive to the presence of hydrogen peroxide in the presence of the material having peroxidative activity; and
- (D) a buffer effective to maintain the above ingredients at a pH range of from about pH 5.5 to pH 8.0 when contacted with the fluid being tested.

3,413,198

# REAGENTS AND METHOD FOR ASSAYING BIOLOGICAL SAMPLES

Alfred Deutsch, Los Angeles, Calif., assignor to Calbiochem, Los Angeles, Calif., a corporation of California

No Drawing. Continuation-in-part of application Ser. No. 320,004, Oct. 30, 1963. This application June 30, 1966, Ser. No. 561,757

14 Claims. (Cl. 195—103.5)

Substantially anhydrous, solid assay materials for the determination, inter alia, of glucose, adenosine triphosphate, glucose-6-phosphate dehydrogenase, and creatine phosphokinase are rendered storage stable by the presence of certain polyhydric compounds, preferably mannitol, sorbitol, lactose or polyvinyl alcohol.

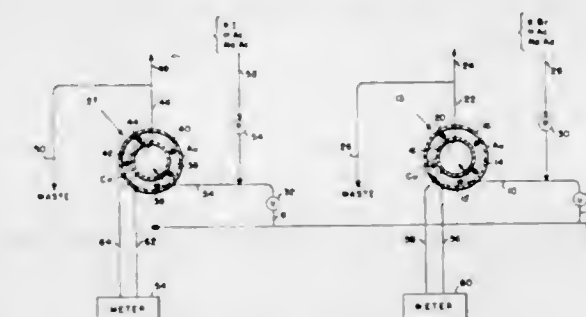
3,413,199

# METHOD FOR MEASUREMENT OF RESIDUAL CHLORINE OR THE LIKE

James J. Morrow, Jr., Norristown, Pa., assignor to Fischer & Porter Company, Warminster, Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 433,398, Feb. 17, 1965. This application Sept. 29, 1965, Ser. No. 491,205

2 Claims. (Cl. 204—1)



A method for determining free chlorine in distinction from chloramines in solution in an aqueous sample involves the addition of a soluble bromide to the sample followed by introduction of the sample as an electrolyte into a cell subject to cathodic polarization and measurement of the depolarizing action of the sample in the cell. If both free chlorine and chloramines are to be detected, the same sample or another sample of the original solution has added to it a soluble iodide followed by measurement of its depolarizing action in a second similar cell.

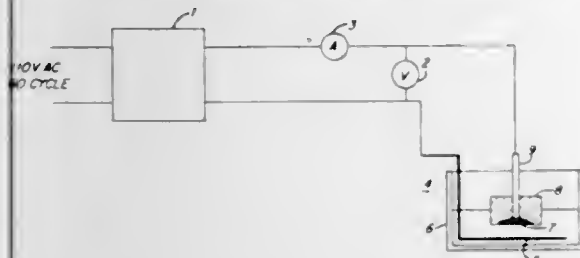


3,413,200

**A.C. ETCHING OF PLUTONIUM**

Kaye A. Johnson, Monroeville, Pa., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Oct. 22, 1965, Ser. No. 502,708  
8 Claims. (Cl. 204—1.5)



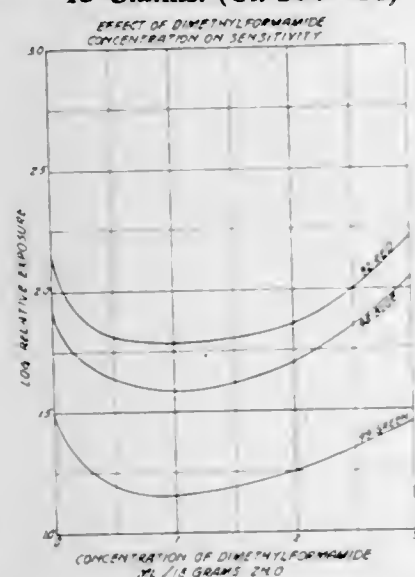
A method of etching plutonium in which alternating current is passed through an electrolytic solution containing an inorganic acid, the said plutonium being one of the electrodes.

3,413,201

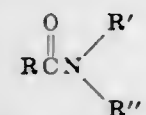
**ELECTROLYTIC RECORDING SHEETS**

Ralph Lewis Clausen, South St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Sept. 10, 1965, Ser. No. 486,510  
15 Claims. (Cl. 204—18)



1. An electrophotographic copysheet capable of electrolytic development and having a photoconductive layer comprising dye sensitized inorganic photoconductive particles in an electrically insulating binder on a continuous electrically conductive layer, said photoconductive layer containing for each 18 grams of said dye sensitized inorganic photoconductor particles from 0.25 to 2 milliliters of a carbonyl compound of the formula



where R is hydrogen or methyl, R' is hydrogen, methyl or ethyl, and R'' is methyl or ethyl.

3,413,202

**ELECTROLYSIS OF DI-OLEFINIC COMPOUNDS**

Manuel M. Balzer, St. Louis, and James D. Anderson, Bridgeton, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 416,129, Dec. 4, 1964. This application Nov. 24, 1965, Ser. No. 509,618

19 Claims. (Cl. 204—73)

1. The method of preparing cyclic compounds by electrolysis which comprises subjecting a solution in aqueous

salt electrolyte of olefinic compound containing two olefinic groups capable of reductive coupling by electrolysis, the two olefinic groups being in  $\alpha,\beta$ -position with respect to functional groups selected from the group consisting of carboxylate, carboxamide, carbonyl, nitrile, phosphonate, phosphinate, phosphine oxide, sulfone, 2-pyridine and 4-pyridine groups and the two olefinic groups being bound together by an organic chain, to electrolysis by passing an electric current through said solution in actual physical contact with a cathode, causing development of the cathode potential required to effect reductive coupling, and causing coupling of the compound at the  $\beta$ -position with saturation of the olefinic groups.

3,413,203

**ELECTROLYTIC OXIDATION OF CERIUM**

Alexander F. MacLean, Corpus Christi, Tex., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 18, 1965, Ser. No. 480,780  
8 Claims. (Cl. 204—79)

1. Process for the electrolytic regeneration of ceric salts from cerous salts in the presence of chloride ions which comprises providing an aqueous, acidic electrolyte solution comprising a cerous salt and an amount of a complexing anion sufficient to suppress the discharge potential of Ce (IV) relative to chlorine to a value allowing selective discharge of Ce (IV), and passing an electric current through said electrolyte solution, Ce (III) being continuously transformed into Ce (IV) at the anode.

3,413,204

**METHOD FOR DEFORMING METAL SINGLE CRYSTALS**

Ernst Rexer and Karl Schlaubitz, Dresden-bad, Weisser Hirsch, and Erich Zedler and Dieter Müller, Dresden, Germany, assignors to Deutsche Akademie der Wissenschaften zu Berlin, Berlin-Adlershof, Germany

No Drawing. Filed Dec. 21, 1964, Ser. No. 445,293  
6 Claims. (Cl. 204—140.5)

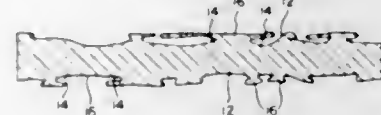
A method for deforming single crystals of body centered cubic metals by mechanical treatment, particularly by rolling, in appropriate crystallographic orientation, i.e. a favorable combination of the rolling direction and the plane of rolling, in small individual steps, whereby a deformed single crystal is obtained which will not recrystallize upon heating to a temperature near the melting point and will not tend to embrittlement.

3,413,205

**ELECTROLYTIC ETCHING OF CAPACITOR METAL**

Carl C. Hardman, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 28, 1966, Ser. No. 530,438  
10 Claims. (Cl. 204—141)



1. A solution suitable for etching a metal selected from the group consisting of titanium, tantalum, niobium and zirconium and alloys thereof, consisting essentially of (1) an anhydrous monohydric aliphatic alcohol having up to 7 carbon atoms, (2) at least about 2 grams of at least one soluble halide salt of ammonia per liter of solu-

tion, (3) up to 20 milliliters of water per liter of solution, and (4) at least about 0.5 milliliter of at least one soluble etching inhibitor agent selected from the group consisting of alkylamines, arylamines, alkanolamines, alkylamides and arylamides, per liter of solution.

6. The method of electrolytically etching a metal selected from the group consisting of titanium, niobium, tantalum and zirconium and alloys comprising at least one metal of this group, which method comprises the steps of making the metal the anode in a solution containing (1) an anhydrous monohydric lower aliphatic alcohol having up to 7 carbon atoms, (2) at least one halide salt soluble in the alcohol, and (3) at least about 0.5 milliliter of at least one etching inhibitor agent selected from the group consisting of alkylamines, arylamines, alkanolamines, alkylamides and arylamides per liter of solution, and applying a pulsating potential to the anode to dissolve the metal in a manner to produce a greatly increased surface area.

3,413,206

**PROCESS FOR THE MANUFACTURE OF 2,2,3-TRICHLOROBUTANE**

Kurt Sennewald and Wilhelm Vogt, Knapsack, near Cologne, and Herbert Baader, Hermulheim, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

No Drawing. Filed Oct. 12, 1965, Ser. No. 495,343  
Claims priority, application Germany, Oct. 21, 1964, K 54,305

12 Claims. (Cl. 204—163)

A process for producing 2,2,3-trichlorobutane by reacting 2,3-dichlorobutane with chlorine in the presence of light irradiation at a temperature of about 0° to -80° C.

3,413,207

**PROCESS FOR THE MANUFACTURE OF 2,2,3,3-TETRACHLOROBUTANE**

Kurt Sennewald, Knapsack, near Cologne, Herbert Baader, Hermulheim, near Cologne, and Helmut Reis, Hurth, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

No Drawing. Filed Mar. 29, 1966, Ser. No. 538,191  
Claims priority, application Germany, Apr. 24, 1965, K 55,910

4 Claims. (Cl. 204—163)

1. A process for the manufacture of 2,2,3,3-tetrachlorobutane which comprises reacting liquid 2,2,3-trichlorobutane with chlorine under radiation with ultraviolet light.

3,413,208

**PURIFICATION OF STREPTOKINASE BY ZONE ELECTROPHORESIS USING A DENSITY-GRADIENT COLUMN**

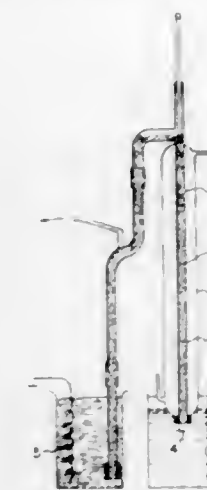
William Frederic Barg, Jr., Monsey, N.Y., Paul Hadley Bell, Ridgewood, N.J., Maurice Charles Davies, Tappan, N.Y., and Edward Clarence De Renzo, Hillsdale, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Feb. 19, 1963, Ser. No. 259,637  
5 Claims. (Cl. 204—180)

1. A process of purification of streptokinase comprising in combination,

- establishing an electrophoretic channel,
- maintaining in the channel a variable density-gradient solution in buffer from top to bottom, the solution being of inert non-electrolyte, producing a direct current flow from the cathode in the top to an anode in the bottom of the channel,
- introducing a solution of streptokinase composition, dissolved in a buffer, near the cathode, the buffer buffering to a pH of from about 7 to 8,

(d) continuing the flow of current to produce electrophoresis until substantial separation of protein constituents results, and



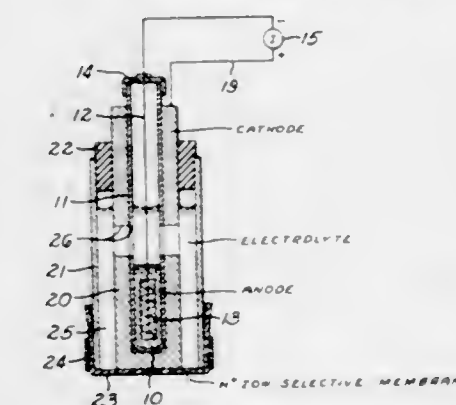
(e) identifying the zone of maximum streptokinase concentration and recovering it separately.

3,413,209

**CURRENTIMETRIC SENSOR**

Paul A. Hersch, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed Nov. 2, 1964, Ser. No. 407,996  
7 Claims. (Cl. 204—195)



A currentimetric cell for measuring the hydrogen ion activity of a solution wherein a nonreactive cathode and activated carbon anode are joined by an iodate electrolyte and are separated from the sample by a hydrogen ion permeable membrane. The current output of the cell is linear.

3,413,210

**HYDROCARBON CONVERSION PROCESS FOR PRODUCTION OF BENZENE AND SUBSTANTIALLY OLEFIN-FREE GASOLINE BLENDING STOCK**

Alan H. Peterson and Joe T. Kelly, Littleton, Colo., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

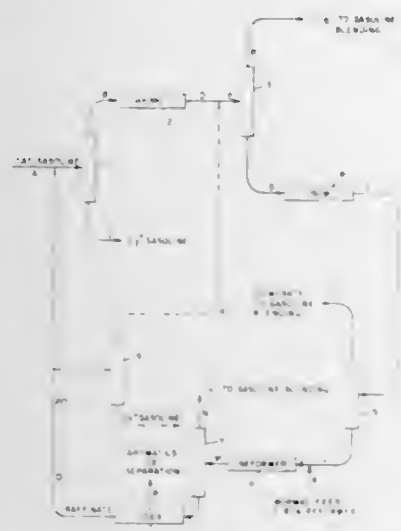
Filed May 29, 1967, Ser. No. 646,441  
9 Claims. (Cl. 208—79)

The present invention comprises a hydrocarbon conversion process for the production of both benzene and a substantially olefin free gasoline blending stock from a gasoline produced by cracking of hydrocarbons, and a raffinate from the extraction of a hydrocarbon stream from a catalytic reformer, the steps comprising in combination:

- Fractionating said gasoline and said raffinate either singly or commingled to remove hydrocarbons of about C<sub>7</sub> and higher;
- Hydrogenating at least a portion of the effluent from said fractionation step under conditions sufficient to hydrogenate substantially all of the olefins present in the effluent from said fractionation step;



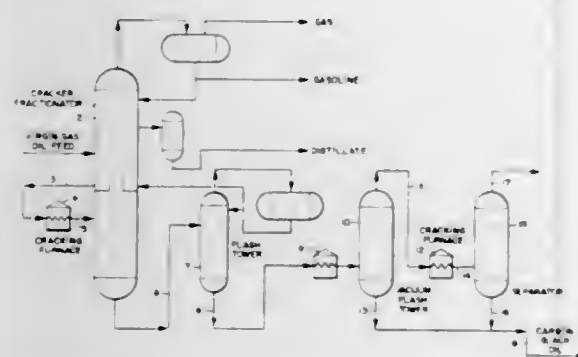
- (c) Isomerizing at least a portion of the effluent from said hydrogenation step in the presence of a catalyst to produce an isomerized stream having substantially more branching than does the feed to said isomerization step;
- (d) Fractionating at least a portion of said isomerized stream to separate out an isomerate suitable for gasoline blending;
- (e) Catalytically reforming a hydrocarbon stream to produce a reformat containing both aromatics and non-aromatics;



- (f) Separating a major portion of said aromatics from at least a portion of said reformat stream thus producing a predominantly paraffinic stream;
- (g) Combining at least a portion of said primarily paraffinic stream with said catalytic gasoline or the hydrogenated product therefrom prior to the isomerization step.

Benzene is useful for solvent application and as a starting material for various petrochemicals and other organic compounds. Gasoline blending stocks free of highly volatile olefins are preferred as fuels for motor vehicles because olefins tend to enter into certain photochemical reactions which may tend to cause atmospheric pollution.

**3,413,211**  
**PROCESS FOR IMPROVING THE QUALITY OF A CARBON BLACK OIL**  
Lloyd G. Becraft and Joseph R. Kivsky, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware  
Filed Apr. 26, 1967, Ser. No. 633,967  
4 Claims. (Cl. 208—93)



A low-quality carbon black oil (hydrocarbon feedstock for the manufacture of carbon black) is improved by the following process: (1) the oil is subjected to a vacuum flash distillation; (2) the overhead from the flash distillation is thermally cracked; (3) a thermal tar is recovered from the thermal cracking step and is blended with the bottoms from the vacuum flash distillation to produce the improved carbon black oil.

**3,413,212**  
**CRACKING OF HYDROCARBONS WITH A CRYSTALLINE ALUMINOSILICATE IN THE PRESENCE OF A HYDROGEN DONOR**  
Paul B. Weisz, Media, Pa., assignor to Mobil Oil Corporation, a corporation of New York  
No Drawing. Continuation of application Ser. No. 512,547, Dec. 8, 1965. This application July 28, 1967, Ser. No. 656,942  
18 Claims. (Cl. 208—120)

1. A method for cracking hydrocarbons boiling above about 400° F. to obtain fractions boiling in the motor fuel oil range which comprises contacting charge stock hydrocarbons in the presence of a hydrogen donor at a temperature of about 550° F. to 1100° F. with a catalyst composition comprising a crystalline aluminosilicate characterized by:

- (1) being substantially free of hydrogenation activity;
- (2) having a pore diameter greater than 5 Angstrom units;
- (3) having a relative hydrogen transfer selectivity of at least 1.25 times greater than that of an amorphous silica-alumina catalyst having an AI value of about 46;

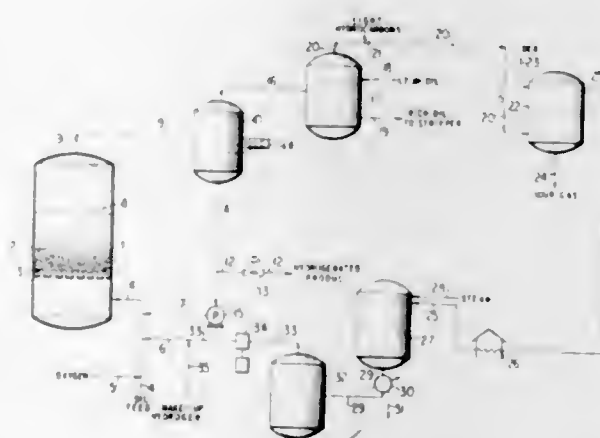
and thereafter recovering a hydrocarbon conversion product boiling in the motor fuel oil range, said hydrogen donor being a member selected from the group consisting of:

- (a) hydrogen donor materials added to the charge stock from external sources, and
- (b) hydrogen donor materials derived by partial hydrogenation of aromatic hydrocarbons in said charge stock.

**3,413,213**  
**REFORMING WITH A PLATINUM, HALOGEN, ALUMINA, SULFUR AND IRON CATALYST**  
John C. Hayes, Palatine, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware  
No Drawing. Filed Oct. 3, 1966, Ser. No. 583,962  
9 Claims. (Cl. 208—139)

Process for reforming a gasoline charge stock by contacting the charge stock, in admixture with hydrogen and at reforming conditions, with a sulfided Pt-Fe-halogen-Al<sub>2</sub>O<sub>3</sub> catalyst, the iron concentration of the catalyst being 50–5000 p.p.m. and the iron being uniformly distributed throughout the alumina support.

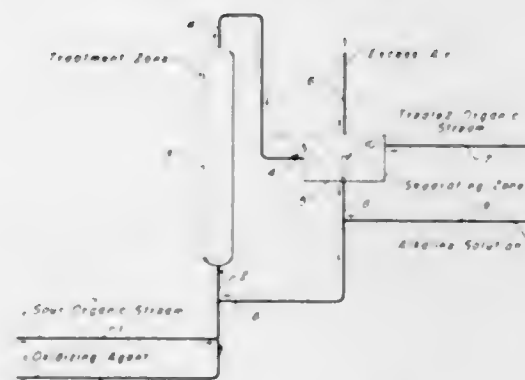
**3,413,214**  
**HYDROGENATION PROCESS**  
Richmond B. Galbreath, Fanwood, N.J., assignor to Cities Service Research and Development Company, New York, N.Y., a corporation of Delaware  
Filed Dec. 20, 1965, Ser. No. 514,845  
9 Claims. (Cl. 208—143)



Hydrogenation of liquid hydrocarbons is carried out in the presence of hydrogen and a controlled amount of

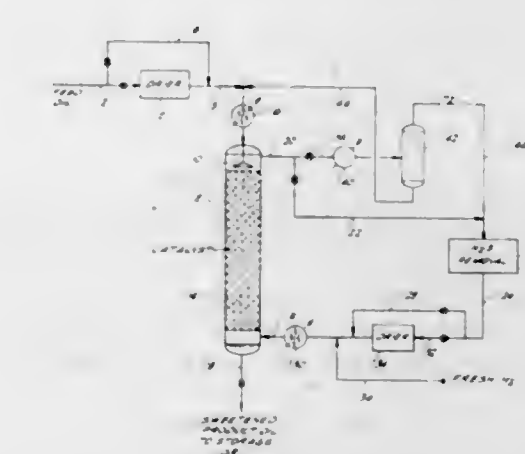
oxygen to hydrogenate a major portion of the liquid hydrocarbon feed and to oxidize a minor portion thereof, thereby producing a gaseous product containing carbon monoxide. The carbon monoxide content of the gaseous product is subsequently reacted with steam to form additional hydrogen which may be recycled to the hydrogenation zone.

**3,413,215**  
**OXIDATION OF MERCAPTO COMPOUNDS**  
Richard L. Beshears, Tarzana, Calif., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware  
Filed May 16, 1966, Ser. No. 550,491  
6 Claims. (Cl. 208—206)



In the process of oxidizing a mercapto compound with air in contact with a phthalocyanine catalyst in an alkaline environment, wherein the oxidation effluent is passed to a phase separation zone from which an alkaline phase containing the catalyst is recovered, it was observed that the phthalocyanine catalyst, in a complex form, accumulates at the phase separation interface between organic and alkaline phases. To improve catalyst recovery, the invention herein comprises withdrawing liquid directly from the interfacial region and admixing it with recovered alkaline phase whereby to increase catalyst concentration therein.

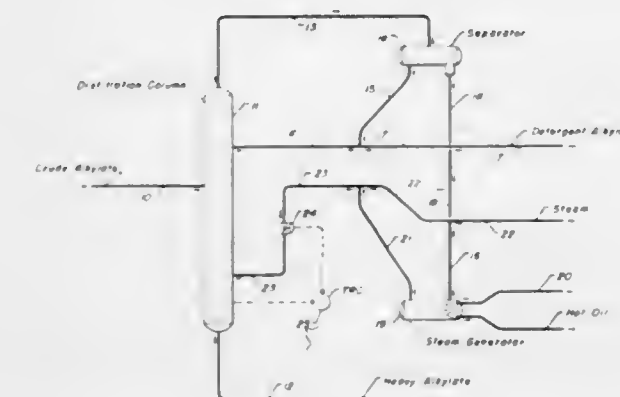
**3,413,216**  
**PROCESS FOR SELECTIVELY DESULFURIZING MERCAPTANS**  
Thomas F. Doumani, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California  
Filed Dec. 13, 1965, Ser. No. 513,419  
8 Claims. (Cl. 208—216)



Mercaptan-contaminated hydrocarbon oils are treated in a countercurrent-flow hydrotreating process wherein the oil is passed downwardly at low temperatures, counter-

currently to upflowing hydrogen, both hydrogen and feed being substantially dry in order to maintain adequate catalyst activity at the low temperatures used.

**3,413,217**  
**STEAM COOLING OF ALKYLATE FRACTIONATOR**  
John G. Kunesh, Arlington Heights, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware  
Filed Oct. 29, 1966, Ser. No. 588,133  
11 Claims. (Cl. 208—356)



Method for preventing excessive temperature increase during the distillation of crude alkylate. The crude alkylate is introduced into a distillation zone to separate products comprising detergent-grade alkylate and heavy alkylate. Steam is introduced into the distillation column only when the measured or desired temperature exceeds a predetermined level.

**3,413,218**  
**PROCESS OF DEODORIZING USING BIPHENYL**  
Ben Frank Miller Einsel, Joplin, Mo., assignor of one-third each to Johnney Cockburn, Lampasas, and Wilton E. Scott, Houston, Tex.  
No Drawing. Continuation-in-part of application Ser. No. 312,312, Sept. 30, 1963. This application Oct. 19, 1965, Ser. No. 498,080  
13 Claims. (Cl. 210—18)

A process of deodorizing odor producing material such as sewage or fats during rendering operations which includes adding to the odor producing material as a novel deodorizer, biphenyl in amounts of at least 0.5 part per million of the material.

**3,413,219**  
**COLLOIDAL HYDROUS OXIDE HYPER-FILTRATION MEMBRANE**  
Kurt A. Kraus and James S. Johnson, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission  
No Drawing. Filed May 9, 1966, Ser. No. 548,422  
2 Claims. (Cl. 210—23)

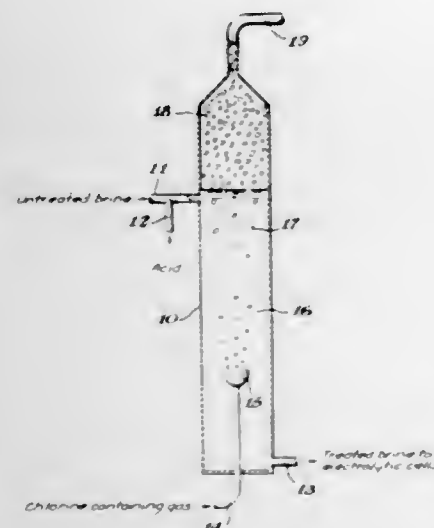
A method of making a solute-rejecting permeable membrane comprising passing an aqueous phase containing hydrous metal oxide colloidal particles through a permeable substrate having pores with diameters of 30 Å to 20 microns.

**3,413,220**  
**PROCESS FOR TREATING BRINE**  
Willie J. Sisco and Billy H. Simmons, Baton Rouge, La., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
Filed Jan. 30, 1967, Ser. No. 612,435  
5 Claims. (Cl. 210—44)

A process for reducing the foaming capacity of brines by passing a chlorine-containing gas through such brine



duce a brine having a significantly reduced foaming capacity.



### 3,413,221 WASH AGENTS

Ernst Gotte, Dusseldorf-Oberkassel, Werner Stein, Dusseldorf-Holthausen, and Herbert Weiss, Cologne-Deutz, Germany, assignors to Henkel & Cie, G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany. No Drawing. Continuation of application Ser. No. 171,283, Feb. 5, 1962. This application July 28, 1966, Ser. No. 568,677.

Claims priority, application Germany, Mar. 1, 1961, H 41,884.

14 Claims. (Cl. 252-138)

Wash agent including (1) as first component (e.g. 20-90% by weight)  $\alpha$ -sulfonated fatty acid ester salt which contains a  $C_{10-20}$  saturated fatty acid radical and a saturated monovalent aliphatic alcohol radical as ester group, and (2) as second component (e.g. 80-10% by weight)  $C_{10-20}$  sulfated fatty alcohol or  $C_{9-15}$  alkyl benzene sulfonate, having improved washing properties and versatile low foaming capacity, optionally contemplating foam improvement agents, wash alkalis, anhydrous phosphates, perborate, stabilizer therefor, weak acid reacting compounds, and/or soil removing agents.

### 3,413,222

#### GREASE COMPOSITIONS

Bruce W. Hotten, Orinda, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware.

No Drawing. Filed Dec. 27, 1965, Ser. No. 516,704.

5 Claims. (Cl. 252-351)

Grease composition thickened by aluminum alkyl or alkenylsuccinate in which the alkyl and alkenyl groups are straight chain and contain from 11 to 24 carbon atoms.

### 3,413,223

#### ESTER LUBRICANTS

Alan D. Forbes, Knapphill, Woking, and Patrick Gould, Weybridge, England, assignors to The British Petroleum Company Limited, London, England, a corporation of Great Britain.

No Drawing. Filed Jan. 17, 1966, Ser. No. 520,917. Claims priority, application Great Britain, July 22, 1965, 31,249/65.

7 Claims. (Cl. 252-37)

4. A lubricating composition comprising: a blend of two ester oil components, the first of said ester oil components being

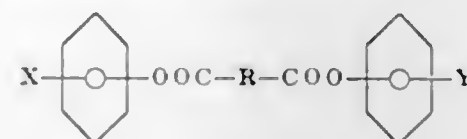
(1) a liquid aliphatic ester consisting of at least one neutral polyester prepared by reacting together under esterification conditions in at least one stage:

(a) an alcohol selected from the group consisting of a monohydric and polyhydric alcohol having from about 5 to about 15 carbon atoms per molecule and having no hydrogen atom attached to any carbon atom in a beta position with respect to any —OH group, and

(b) a carboxylic acid selected from the group consisting of monocarboxylic acids and polycarboxylic acids having from about 2 to about 14 carbon atoms per molecule,

said second ester oil component being

(2) a liquid aromatic ester consisting of at least one diester having the general formula

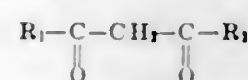


wherein R is a saturated hydrocarbon group having from 1 to 14 carbon atoms, X and Y are the same or different and each of said X and Y being selected from the group consisting of hydrogen, alkyl, aryl, alkyl-substituted aryl, diaryl, alkyl-substituted diaryl, aryloxy, alkyl-substituted aryloxy, diaryloxy, alkyl-substituted diaryloxy, and wherein the sum of the carbon atoms for X and Y does not exceed 14;

one ester component being present in amounts sufficient to exert a stabilizing effect upon the other ester component, and both ester components being present in an amount sufficient to form a mixture predominantly composed of said two esters, said composition also containing at least one organo-metallic compound selected from the group consisting of

(1) salts of carboxylic acids containing from 8 to 22 carbon atoms,

(2) chelates of beta di-ketones having the formula



wherein  $R_1$  and  $R_2$  are selected from the group consisting of alkyl, cycloalkyl, and aromatic groups containing from 1 to 10 carbon atoms, and

(3) metal phthalocyanines, wherein the metal component of said organo-metallic compound is selected from the group consisting of metals of the first transition series according to the Periodic Table of Mendeleeff and cerium, said organo-metallic compound being present in an amount which produces a metal content of up to 500 parts per million, based on the total weight of the lubricating composition.

### 3,413,224

#### ANTIOXIDANTS

Gordon G. Knapp, Southfield, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia.

No Drawing. Original application June 1, 1961, Ser. No. 114,003, now Patent No. 3,251,821, dated May 17, 1966. Divided and this application Feb. 4, 1966, Ser. No. 525,133.

6 Claims. (Cl. 252-47.5)

Dialkyl hydroxy thiobenzamides are prepared by reacting sulfur with the corresponding dialkyl hydroxy benzyl amine or by reacting the corresponding dialkyl hydroxy benzaldehyde with sulfur and a secondary amine. Compounds prepared in this manner are 2,6-di-tert-butyl-4-[morpholino(thiocarbonyl)]phenol and 3,5-di-tert-butyl-4-hydroxy-N,N-dimethylthiobenzamide. These compounds

and the reaction solvent remaining after their removal are antioxidants.

### 3,413,225

#### FUNCTIONAL FLUID CONTAINING AZO BENZENE DERIVATIVES AS ANTIOXIDANTS

Basil Dmuchovsky and Richard W. Weiss, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware.

No Drawing. Filed June 27, 1966, Ser. No. 560,790.

16 Claims. (Cl. 252-47.5)

Compositions of the class which exhibit improved oxidative resistance by the incorporation of an azo benzene compound into a class of base stocks representative of which are polyphenyl ethers, polyphenyl thioethers, mixed polyphenyl ethers-thioethers, phenylmercaptobiphenyls, phenoxybiphenyls and mixed phenoxyphenyl-mercaptobiphenyls. The compositions have many uses, among which are use as jet engine lubricants, heat transfer fluids and hydraulic fluids.

### 3,413,226

#### FLUORINE-CONTAINING COPOLYMERS

Lester E. Coleman, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio.

No Drawing. Filed May 9, 1966, Ser. No. 548,382.

7 Claims. (Cl. 252-51.5)

Copolymers and interpolymers of 100 parts (by weight) of an alkyl acrylate or an alkyl acrylamide with about 0.5-11 parts of a fluoroalkyl acrylate and, optionally, up to about 6 parts of an N-vinyl pyrrolidone or oxazolidone are useful as viscosity index improvers for lubricating oils. They are viscosity-temperature improvers, rather than thickeners, in that they contribute more to the lubricant viscosity at high temperatures than at low temperatures.

### 3,413,227

#### COMPOSITIONS CONTAINING SUBSTITUTED BENZOTRIAZOLES

Donald Kearey Howard, Levenshulme, and Donald Richard Randell, Stockport, England, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York.

No Drawing. Continuation-in-part of application Ser. No. 416,603, Dec. 7, 1964. This application Mar. 17, 1967, Ser. No. 623,826.

Claims priority, application Great Britain, Dec. 6, 1963, 48,223/63; Jan. 24, 1964, 3,084/64.

10 Claims. (Cl. 252-51.5)

Benzotriazoles substituted in the 5-position by  $C_{2-20}$  alkyl or  $C_{3-20}$  alkanoylamino are useful as (1) corrosion- or tarnish-inhibitors in metal polishes and (2) agents to act as metal deactivators and to inhibit the degradation of function in functional compositions such as lubricants and polypropylene coatings.

### 3,413,228

#### METHOD OF MANUFACTURING LITHIUM FERRITE MAGNETIC CORES

Cornelis Jacobus Esveldt, Ringenier Fluks, and Jozef Pleter Johannes Poels, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company Inc., New York, N.Y., a corporation of Delaware.

No Drawing. Filed Mar. 4, 1964, Ser. No. 349,499.

Claims priority, application Netherlands, Mar. 8, 1963, 290,065.

3 Claims. (Cl. 252-62.61)

A lithium ferrite core suitable as magnetic memory element having a rectangular hysteresis loop and a composition corresponding to  $Li_xFe_yO_z$  where  $(x+3y)$  is between 7.8 and 8.0,  $x/y$  is between 0.19 and 0.22 and  $z$  is between 3.9 and 4. The core has an outer diameter not exceeding

0.9 mm. and inner diameter of half the outer diameter. The switching time of the core does not exceed 0.7  $\mu$ sec.

### 3,413,229

#### POLYVINYL ALCOHOL COMPOSITIONS

Thomas S. Blanco, Hobart, and Edouard M. Kratz, Portage, Ind., assignors to Mono-Sol Division, Baldwin-Montrose Chemical Co., Inc., a corporation of Indiana.

No Drawing. Original application Mar. 3, 1964, Ser. No. 349,176. Divided and this application Nov. 13, 1967, Ser. No. 698,083.

4 Claims. (Cl. 252-90)

This invention relates to polyvinyl alcohol compositions containing a plasticizer and to plasticized polyvinyl alcohol films useful for laundry packets containing detergents and/or bleaches.

### 3,413,230

#### FLOATING SOAP CAKE WITH INCLUDED EDUCATIONAL FEATURES

Raymond P. Dupuis, Fairfield, Calif., assignor to Novelty Associates, Fairfield, Calif., a partnership of California.

Continuation-in-part of application Ser. No. 436,136, Mar. 1, 1965. This application July 14, 1965, Ser. No. 471,841.

1 Claim. (Cl. 252-92)

1. A bar of soap having partially embedded therein a hollow core body imparting buoyancy to the bar, said core body being formed of two separable facing outer and inner dished members having registering separable peripheral edges, the outer surface of the outer dished member being substantially flush with one exterior surface of the bar and being formed of transparent material to permit the inside of the core body to be visible from the outside, the inner dished member having an elongated narrow slot therein which is located centrally of the peripheral edge of the member to receive and support a figure in vertical position when the inner dished member is removed from the bar and positioned on its peripheral edge with its dished side and slot upward, and a separate figure within the hollow core body which is visible from the outside and which extends substantially between the peripheral edges of the two parts of the core body to prevent soap entering the core body through said slot during manufacture of the bar from entering the part of the core body between the figure and the outer dished member to thereby maintain a hollow chamber providing buoyancy to the bar of soap, said figure having a tab thereon constructed and intended to be received within the slot in the inner dished member.

### 3,413,231

#### METAL CLEANING AND ANTITARNISH COMPOSITIONS

Edwin Ralph Kolodny, Stamford, Martin Grayson, South Norwalk, and Robert Lee Myers, Greenwich, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine.

No Drawing. Filed July 23, 1965, Ser. No. 474,517.

10 Claims. (Cl. 252-171)

This invention relates to the provision of compositions useful as metal cleaning and antitarnish agents. It relates further to metal surfaces which are coated with a thin layer of an organic trivalent phosphorous compound which imparts tarnish resistance to the surface of the metal. It relates further to compositions containing a phosphine which is generally water or alcohol soluble, and a water and/or alcoholic solvent therefor, said composition containing an amount of phosphine which is capable of imparting tarnish resistance to a metal surface to which it is applied.



3,413,232

**HEAT-REACTION PRODUCT COMPRISING BARIUM OR MOLYBDENUM SULFIDES, METAL PHOSPHATES AND METAL DIOXIDES**

Frederic R. Quinn, Red Hook, N.Y., assignor to Zyrotron Industries, Inc., Red Hook, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 347,681, Feb. 27, 1964. This application June 1, 1967, Ser. No. 642,716

23 Claims. (Cl. 252—301.1)

Inorganic heat-reaction products are produced by heating a mixture of certain specified ingredients (in comminuted form) in a non-oxidizing atmosphere, preferably nitrogen, at about 1300°–1800° F. for a period sufficient to produce a sintered mass. The components of the mixture are: (A) barium sulfide and/or molybdenum disulfide; (B) at least one of the following: phosphates of aluminum, antimony, barium, calcium, iron, magnesium and zinc; (C) one or more of the dioxides of hafnium, thorium, uranium and zirconium; and, optionally, (D) chromic oxide.

3,413,233

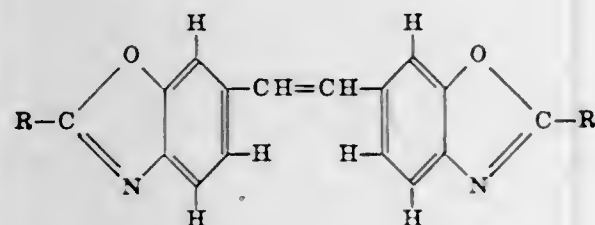
**OPTICAL BRIGHTENERS FOR SYNTHETIC ORGANIC MATERIAL AND PROCESS**

Adolf Emil Siegrist, Basel, Erwin Maeder, Aesch, Basel-Land, Leonardo Guglielmetti, Basel, and Peter Liechti, Binningen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Aug. 16, 1965, Ser. No. 480,169

8 Claims. (Cl. 252—301.2)

1. A process for the optical brightening of synthetic organic materials which comprises applying to said materials stilbene derivatives of the formula



in which R represents a benzene residue which may contain further substituents having non-chromophoric character and containing at most 20 carbon atoms.

3,413,234

**BENZO-β-NAPHTHOISOSPIROPYRANS AND COMPOSITIONS COMPRISING SAME**

John E. G. Taylor, David B. McQuain, Richard E. Fox, Richard E. Bowman, and Francis D. Thomson, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Mar. 28, 1966, Ser. No. 537,769

16 Claims. (Cl. 252—301.2)

1. A composition comprising
  - (a) a major portion of thermoplastic resin, having uniformly dispersed therein, in minor proportion,
  - (b) a compound selected from the group consisting of
    - (1) 7-nitro-2,3-diphenylbenzo-β-naphthoisospiropyran;
    - (2) 7-nitro-7-methoxy-2,3-diphenylbenzo-β-naphthoisospiropyran;
    - (3) 7-nitro-7-methoxy-2-phenyl-3-methylbenzo-β-naphthoisospiropyran; and
    - (4) 2-phenyl-3-(p-methoxyphenyl)-7-nitrobenzo-β-naphthoisospiropyran.

3,413,235

**THERMOLUMINESCENT RADIATION DOSIMETRIC MATERIAL**

Donald E. Jones and James R. Gaskill, Livermore, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed May 14, 1965, Ser. No. 456,012

2 Claims. (Cl. 252—301.4)

A thermoluminescent material for use in radiation dosimetry, consisting essentially of crystalline lithium fluoride doped with 0.4–0.6 mole percent of europium and 1.02–1.04 mole percent of magnesium, having high sensitivity to low radiation dose rates in the range of 10–100 milliroentgens for personnel dosimetry.

3,413,236

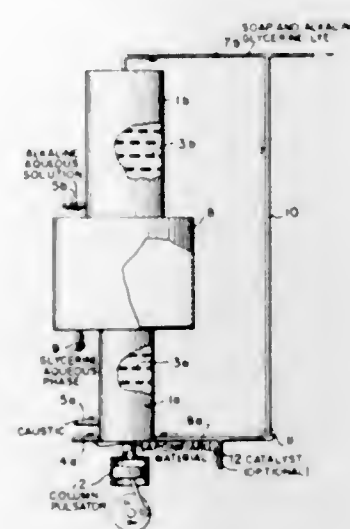
**PULSED COLUMN APPARATUS FOR SOAP MAKING**

Pierre Godet, L'Isle-Adam, and Jean-Louis Joux, Epinay-sur-Seine, France, assignors to Colgate-Palmolive Company, an American body corporate

Original application Apr. 25, 1963, Ser. No. 275,748, now Patent No. 3,287,385, dated Nov. 22, 1966. Divided and this application July 7, 1966, Ser. No. 571,673

Claims priority, application France, Apr. 27, 1962, 895,995

3 Claims. (Cl. 252—371)



1. An apparatus for producing soap and glycerine lye comprising a vertical column provided with packing means for improving the contacting efficiency thereof; means for introducing at one end thereof fatty material in an aqueous solution; means for introducing caustic at the same end of said column; means for giving to the liquid introduced in the column an alternative pulsation movement; and means for extracting from the column at its other end the reaction products of the fatty material and the caustic in aqueous solution; said column being divided into two sections separated by a middle decantation section, the latter being free of said means for improving the contacting efficiency and having a width which is wider than that of the other two sections, said means for introducing fatty material and caustic in aqueous solution being provided at the end of one of said sections remote from the decantation section and said means for extracting the reaction products being provided at the end of the other of said sections remote from the decantation section, the end of the other of said sections adjacent said decantation section including means for introducing into the column a caustic in aqueous solution, and means in the decantation zone for extracting the aqueous phase which builds up therein.

3,413,237

**AMINOPHENOL CORROSION INHIBITOR**

Zisis Andrew Foroulis, Morristown, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 17, 1965, Ser. No. 508,373

16 Claims. (Cl. 252—392)

Corrosion in metal surfaces contacting liquids, particularly hydrocarbonaceous liquids, can be inhibited by adding to said liquid a corrosion inhibiting amount of aminophenol or a derivative thereof.

3,413,238

**HYDROCARBON CONVERSION CATALYST**

Elroy Merle Gladrow and Warren Maxwell Smith, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed July 13, 1965, Ser. No. 471,733

18 Claims. (Cl. 252—455)

Adjustment of sodium salt concentration of siliceous hydrogel to 0.5 to 5 wt. percent results in improved faujasite-siliceous matrix (e.g. silica-alumina gel) cracking catalyst.

3,413,239

**VERMICULAR GRAPHITE STRUCTURES AND METHOD OF MAKING**

Franciszek Olstowski, Freeport, and Oliver Osborn, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 3, 1966, Ser. No. 531,338

11 Claims. (Cl. 252—506)

This invention relates to a method for producing novel thermally conductive structures capable of wicking non-viscous liquids. Such structures are produced by blending vermicular expanded graphite having a density of less than 3 pounds per cubic foot with a quantity of wicking fibers to provide a mixture containing from about 10 to about 80 weight percent graphite. The mixture is then compressed under a pressure of at least 200 p.s.i. to form a cohered thermally conductive wicking structure.

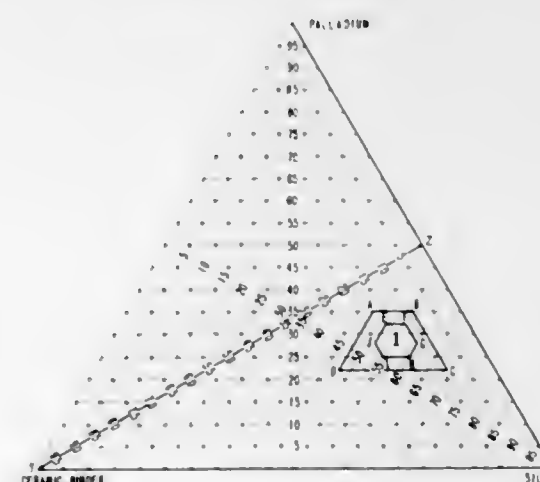
3,413,240

**COMPOSITIONS**

Oliver A. Short, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Mar. 25, 1965, Ser. No. 442,668

8 Claims. (Cl. 252—514)



Compositions suitable for the production of fired-on electrically conductive contacts to palladium-based resistor elements, said composition comprising, in critical proportionate amounts, (A) a substance in finely divided form from the group consisting of metallic palladium, palladium oxide, and palladium/silver alloys, (B) finely divided silver, and (C) finely divided ceramic binder.

3,413,241

**POLYHALOGENATED POLYMERIC (ARYL-ETHYLENE) DERIVATIVES**

William M. Le Suer, Cleveland, and Carl W. Stuebe, Euclid, Ohio, assignors to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 60,557, Oct. 5, 1960. This application Mar. 12, 1965, Ser. No. 439,427

5 Claims. (Cl. 260—2)

Polyhalogenated polymeric (α,α'-diarylethylene) derivatives are formed by reacting a poly(trihalomethyl)-substituted aromatic polymer with phosphorus in the presence of a halogen carrier such as hydrogen iodide. The polymers are useful as plasticizers and insecticides.

3,413,242

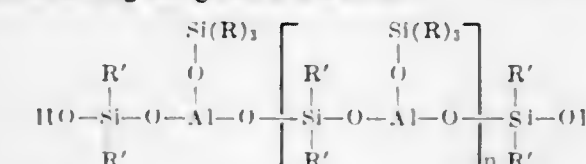
**ALUMINUM-OXYGEN-SILICON POLYMERS AND METHOD OF PREPARATION**

Charles B. Roberts, Midland, and Darell D. Toner, Sanford, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 24, 1967, Ser. No. 655,342

5 Claims. (Cl. 260—2)

This invention relates to new aluminum-oxygen-silicon polymers having the general formula



wherein R is an alkyl or aryl group, R' is an aryl or substituted aryl group and n is a number from 0 to 3. The invention likewise concerns a process for preparing such polymers by reacting a trialkyl or triaryl siloxy-aluminum dihydride with a diarylsilane diol in an inert atmosphere at a temperature of from about 0° C. to about 50° C.

3,413,243

**ORTHOPEDIC EXERCISING DEVICE AND COMPOSITION AND PROCESS FOR MAKING THE SAME**

Donald H. Griffin, Jamestown, N.C., assignor to The Fli-Back Company, Inc., High Point, N.C., a corporation of North Carolina

Filed Sept. 10, 1964, Ser. No. 399,958

3 Claims. (Cl. 260—2.5)

Orthopedic exercising device in the form of a ball formed of a mass of interconnected air cells defined by resilient wall membranes formed of an expanded blend of sheet natural rubber, styrene-butadiene rubber and ground cured rubber sponge scrap. The mass has a density of approximately 0.012 to 0.020 pound per cubic inch and requires an application of approximately 0.57 pound per square inch pressure for a 10 percent deflection. The cells at the periphery of the ball are normally maintained substantially closed to preclude passage of air from within the mass, and are opened for expelling and absorbing of air on compression of, and relaxation of pressure on, the mass.

3,413,244

**POLYOLEFINE CELLULAR PRODUCTS**

Yvan Landler, Sceaux, Pierre H. Lebel, Rueil-Malmaison, and Jack Benard, Paris, France, assignors to Pneumatiques, Caoutchouc Manufacture et Plastiques Kleber-Colombes, Colombes, Hauts-de-Seine, France, a French body corporate

No Drawing. Filed Apr. 29, 1965, Ser. No. 451,974

Claims priority, application France, Apr. 29, 1964, Patent 972,900

15 Claims. (Cl. 260—2.5)

Polyolefine cellular products consist of a polyolefine grafted and cross-linked by units of a compound containing two non-conjugated ethylenically unsaturated double



bonds. The compound is polymerised in the polyolefine at the moment when the polyolefine is cellularised. Low density (0.02 to 0.1) products are obtainable thereby. 2 to 50 (and preferably 2 to 10) parts by weight of the compound are used for 100 parts by weight of the polyolefine. The process may be conducted by heating a mould containing the mixture to a uniform temperature between 100° and 180° and maintaining a pressure of 10 to 200 kg./cm.<sup>2</sup> for 1 minute to 6 hours since the reaction is exothermic.

3,413,245

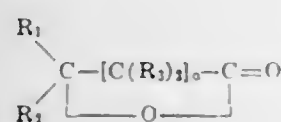
# PROCESS FOR RENDERING POLYURETHANE FOAMS HYDROPHILIC BY REACTING SAME WITH A LACTONE

Joerg Sambeth and Alexis Archipoff, both of Carouge, Switzerland

No Drawing. Continuation-in-part of application Ser. No. 332,250, Dec. 20, 1963. This application Jan. 31, 1967, Ser. No. 612,824

10 Claims. (Cl. 260—2.5)

A method of rendering a polyester or polyether based polyurethane foam hydrophilic is set forth which comprises (1) reacting at a temperature of from about 70 to 110° C. in the presence of a catalyst selected from the group consisting of potassium hydroxide, sodium hydroxide, potassium chloride, potassium acetate, potassium phenylate, potassium methylate and potassium isopropylate (a) a polyether or polyester based polyurethane foam and (b) at least one carboxylic hydroxyacid lactone having the general formula



wherein R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are selected from the group consisting of hydrogen, saturated alkyl radicals, unsaturated alkyl radicals, substituted aryl radicals and non-substituted aryl radicals, and wherein n is an integer of 1 to 10, (2) cooling the foam, and (3) washing the foam.

3,413,246

# PRESSURE-SENSITIVE ADHESIVE COMPOSITIONS BASED ON CYCLIC TERPENE-STYRENE COPOLYMERS

Henry P. Weymann and Yun Jen, Pensacola, Fla., assignors to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Aug. 26, 1965, Ser. No. 482,922

17 Claims. (Cl. 260—4)

Pressure-sensitive adhesive compositions that have an excellent combination of tackiness, cohesive strength, adhesive strength, and other valuable properties comprise a rubbery elastomer and a terpene copolymer. Particularly advantageous results have been obtained using compositions that contain styrene-butadiene rubber and/or natural rubber as the elastomer and a dipentene-styrene copolymer as the tackifier.

3,413,247

# ISOLATION OF A CHLOROPRENE POLYMER FROM A LATEX

Stanley Brian Schroeder, Muskegon, Mich., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 14, 1966, Ser. No. 533,800

3 Claims. (Cl. 260—17)

1. In the process of drum-drying a chloroprene polymer from a latex thereof, the improvement in drying rate which comprises adding to said latex from about 0.01 to 0.25 weight percent, based on said chloroprene polymer, of a hydroxyethyl cellulose wherein about 3 moles of eth-

ylene oxide are combined with each anhydroglucose unit in the cellulose.

3,413,248

# POLYGLYCIDYL ETHERS AND PROCESS FOR THEIR PRODUCTION

William M. Kraft, Verona, and Edward G. Janusz, Wallington, N.J., assignors to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 110,876, May 18, 1961. This application Apr. 23, 1965, Ser. No. 450,507

11 Claims. (Cl. 260—18)

Polyglycidyl ethers of terpene-phenol condensation products that have hydroxyl contents of 2.5% to 4.8%, oxirane contents of 1.5% and 2.7%, and combined hydroxyl and oxirane contents of 4.5% to 7.0% are reacted with dicarboxylic acids and optionally monocarboxylic acids to form resins that are valuable in the production of surface-coating compositions that are characterized by excellent gloss and gloss retention, hardness, flexibility, impact strength, and resistance to chemicals and to water.

3,413,249

# COLORING OF POLYSTYRENE

Murray A. Luftglass, Cheshire, and Jimmy E. McClary, Wallingford, Conn., assignors to Shell Oil Company of New York, N.Y., a corporation of Delaware

Filed June 22, 1964, Ser. No. 376,810

6 Claims. (Cl. 260—23)

A particulate toned masterbatch and process of making and using the same wherein the masterbatch consists of a single pigment uniformly dispersed in a thermoplastic polymer particle said particle having deposited on its surface toning pigments, dispersion agents and from 0.2–0.8% by weight of water.

3,413,250

# PRINTING INK COMPRISING PARTICULATE INTERPOLYMER, WAX-LIKE MATERIAL AND ROSIN ESTER

Arlene S. Varron, Wayne, and Paul D. Whyzmuzis, Clifton, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Oct. 26, 1964, Ser. No. 406,578

17 Claims. (Cl. 260—23)

A printing ink having as a vehicle a volatile hydrocarbon solvent having dissolved therein a polyterpene resin, copolymers of alpha-methylstyrene and vinyl toluene, or a pentaerythritol ester of rosin and having dispersed therein (A) an interpolymers of (1) acrylic alkyl esters, (2) acrylonitrile or methacrylonitrile, (3) acrylic, methacrylic, cinnamic, atropic, or crotonic acid, and (4) a monovinylidene aromatic hydrocarbon, the range of percentage composition being specified, and (B) polyethylene, polyethylene glycol, or polyethylene distearate.

3,413,251

# MATERIALS FOR THE MANUFACTURE OF FOUNDRY MOLDS AND CORES

Heinz Thämlitz, Kaarst, near Neuss, Germany, assignor to Gebr. Huttenes Kommanditgesellschaft, Dusseldorf-Heerdt, Germany

Filed Aug. 26, 1964, Ser. No. 392,190

Claims priority, application Germany, Sept. 20, 1963, H 50,314

6 Claims. (Cl. 260—24)

Method of producing mixtures suitable for the production of foundry molds and cores comprises adding to a mixture of wet foundry sand and hydrophilic binder of thermosetting synthetic resin such as furan resin a small amount of hydrophobic substance such as tall oil distillation residues, situmens, and fat acid pitches.

3,413,252

# FLOOR POLISH COMPOSITIONS

Daniel A. Lima, Westport, Conn., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 11, 1966, Ser. No. 549,188

1 Claim. (Cl. 260—28.5)

An improved polymer-emulsion floor polish containing from 0.1 to 1% of 3-methyl-2-oxazolidinone based on the solids content of the polish, to impart water resistance.

3,413,253

# STABILIZING DIENE RUBBERS

Harry W. Kilbourne, St. Albans, W. Va., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Oct. 27, 1965, Ser. No. 505,414

3 Claims. (Cl. 260—29.7)

Rubbers are stabilized against deterioration by the addition of a small amount of the higher condensation products obtained in the acid-catalyzed reaction of p-phenetidine and acetone.

3,413,254

# PRESSURE-SPRAYABLE ACRYLATE AND METHACRYLATE POLYMERS SOLUBLE IN PROPELLANT SOLVENT

Robert J. Gander, Whitehouse, N.J., assignor to Johnson & Johnson, a corporation of New Jersey

No Drawing. Filed Apr. 9, 1964, Ser. No. 358,647

14 Claims. (Cl. 260—33.2)

1. In a pressurized system for spray application a solution of a film-forming polymer in propellant said film-forming polymer being at least one of the group consisting of homopolymers and copolymers of alkyl acrylates and homopolymers and copolymers of alkyl methacrylates wherein the alkyl group has at least four carbon atoms and wherein said polymer has a relative viscosity of not over 1.60 said polymer being present in said solution in a concentration of not over 6.0% and said propellant containing at least one propellant solvent of the group consisting of trichlorofluoromethane, dichlorodifluoromethane, 1,1,2-trichloro-1,2,2-difluoroethane, 1,1-difluoro-1-chloroethane, vinyl chloride and dimethyl ether, the solvent for said film-forming polymer in said pressurized system consisting essentially of said propellant solvent and said pressurized system containing no other solvent for said film-forming polymer in amounts sufficient to completely dissolve said film-forming polymer in the absence of said propellant solvent.

3,413,255

# PIGMENTED COMPOSITIONS

John L. Gardon, Cheltenham, Michael Kalandiak, Ambler, and La Verne N. Bauer, Cheltenham, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Oct. 31, 1963, Ser. No. 320,550

6 Claims. (Cl. 260—33.6)

This invention is concerned with pigmented polymer dispersions in a hydrocarbon or halogenated hydrocarbon medium in which there is present a dispersing agent for the pigment formed of an oil-soluble copolymer containing 2 to 15% of an unsaturated acid or anhydride.

3,413,256

# HOT MELT INKS AND METHOD OF USING SAID INKS

Richard Bolstad, Bronx, N.Y., and Michael J. Tinghitella, Wayne, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Oct. 8, 1965, Ser. No. 494,251

4 Claims. (Cl. 260—33.8)

A novel hot melt printing ink composition comprising a pigment dispersed in a vehicle comprising a blend of an epoxy resin in para-dichlorobenzene.

3,413,257

# COLORATION PROCESS

Francis Bowman, Albert Charles Cooper, Francis Irving, Alistair Livingston, David Frederick White, and Donald Graham Wilkinson, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed July 11, 1966, Ser. No. 564,039

Claims priority, application Great Britain, July 19, 1965, 30,539/65

3 Claims. (Cl. 260—40)

Process for mass-coloring polyesters with polycyclic dyestuffs, in particular anthraquinone dyestuffs, containing from 1 to 4 anilino, phenylthio or benzoylamino groups each of which is substituted by a hydroxyalkyl radical which is either directly attached to the benzene ring present in said group or is attached through a bridging atom or group.

3,413,258

# ENHANCEMENT OF RESISTANCE OF OLEFIN POLYMERS TO HEAT DETERIORATION

Harry Braus, Springdale, and Jay R. Woltermann, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Oct. 20, 1966, Ser. No. 587,959

13 Claims. (Cl. 260—41)

Polyolefins are rendered heat-stable by the incorporation therein of a trialkylphenylmercaptoalkylene phosphite and, optionally, a hindered phenol and/or carbon black.

3,413,259

# STABILIZED UNSATURATED ETHYLENE-α-OLEFIN RUBBERS

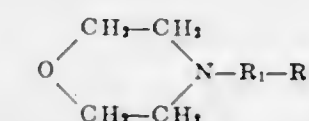
Harald Blümel, Marl, Germany, assignor to Chemische Werke Huels A.G., Marl, Germany

No Drawing. Filed Oct. 11, 1966, Ser. No. 585,749

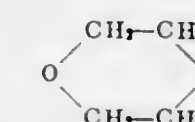
Claims priority, application Germany, Oct. 12, 1965, C 37,127

20 Claims. (Cl. 260—45.8)

For the stabilization of unsaturated ethylene-propylene copolymers, the incorporation of a stabilizing agent of the formula:



wherein R<sub>1</sub> represents an alkylene of 1–20 carbon atoms, aminoalkylene of 1–20 carbon atoms, hydroxyalkylene of 1–20 carbon atoms, hydrocarbon arylene of 5–16 carbon atoms, or hydrocarbon aralkylene of 1–10 carbon atoms in the alkyl portion and 5–16 carbon atoms in the aryl portion, and R<sub>2</sub> represents hydrogen or the residue



3,413,260

# STABILIZATION OF SOLID POLYMERS WITH QUATERNARY AMMONIUM BOROHYDRIDES

Joseph T. Arrigo, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 269,794, Apr. 1, 1963. This application May 25, 1966, Ser. No. 552,698

8 Claims. (Cl. 260—45.9)

Plastic normally subject to deterioration by ultraviolet light containing, as an inhibitor against such deterioration, a stabilizing concentration of from about 0.5% to about



10% by weight of a soluble quaternary ammonium borohydride inhibitor. For example, tricaprylmethylammonium borohydride is an effective inhibitor for polyethylene.

3,413,261

**POLYMERCAPTAN RESIN STABILIZATION**  
Edmund Schalin, Mentor, Kirsten V. Schou, Euclid, and Frank R. Volstadt, Painesville, Ohio, assignors to Diamond Shamrock Corporation, a corporation of Delaware

No Drawing. Filed June 30, 1966, Ser. No. 561,715  
6 Claims. (Cl. 260—45.9)

A polymercaptan resin and method of preparing said resin are presented, with the resin having storage stability from stabilizing amounts of an aromatic antioxidant which is soluble in the resin.

3,413,262

**STABILIZATION OF POLYPROPYLENE AGAINST DEGRADATIVE DETERIORATION ON LONG-TERM EXPOSURE TO ELEVATED TEMPERATURES**

Arthur C. Hecker, Forest Hills, N.Y., and Aaron Rosenbaum, Millburn, and Norman L. Perry, Wayne, N.J., assignors to Argus Chemical Corporation, New York, N.Y., a corporation of New York  
No Drawing. Continuation of application Ser. No. 111,449, May 22, 1961. This application Apr. 8, 1965, Ser. No. 446,725

13 Claims. (Cl. 260—45.75)

Stabilizer combinations are provided for use in improving the resistance of polypropylene to deterioration in physical properties upon exposure to temperatures as high as 525° F. and above. The stabilizer combinations contain oxalic acid and thiodipropionic acid esters and/or polyvalent metal salts of organic acids and optionally, phenols and/or organic phosphites.

Polypropylene compositions having improved resistance to deterioration upon exposure to temperatures as high as 525° F. and above are also provided. Such polypropylene compositions contain oxalic acid, and optionally phenols and/or thiodipropionic acid esters and/or polyvalent metal salts of organic acids and/or organic phosphites.

3,413,263

**ALKYLPHENONE STABILIZERS, STABILIZED COMPOSITIONS AND METHODS FOR MAKING SAME**

Albert F. Strobel, Delmar, and Sigmund C. Catino, Castleton, N.Y., assignors to GAF Corporation, a corporation of Delaware

No Drawing. Filed June 1, 1965, Ser. No. 460,527  
6 Claims. (Cl. 260—45.75)

Nickel complexes of certain alkylphenones useful as ultra violet light absorbers. Stabilized organic compositions such as solid synthetic polymers containing such nickel complex compounds.

3,413,264

**POLYMERIC STANNOIC ACID PRODUCTS**

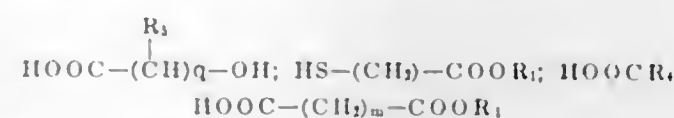
Ingenieur Hechenbleikner, Kenwood, Raymond S. Dalter, Cincinnati, and John F. Hussar, Loveland, Ohio, assignors to Carlisle Chemical Works, Inc., Reading, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 427,487, July 22, 1965. This application July 13, 1965, Ser. No. 471,718

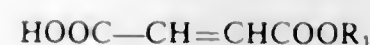
13 Claims. (Cl. 260—45.75)

A halogen containing resin selected from the group consisting of vinyl chloride homopolymers, vinyl chloride copolymers, vinylidene chloride homopolymers, vinylidene chloride copolymers, polyvinyl bromide, polyvinyl fluoride and chlorinated polyethylene containing

a stabilizingly effective amount of the condensation product of 1 mole of monohydrocarbyl stannic acid with (a) 1 or (b) 2 or 2.5 moles of a compound having a formula selected from the group consisting of



and



wherein  $R_1$  is hydrogen or methyl,  $R_1$  is hydrocarbyl,  $R_1$  is hydrogen or hydrocarbyl,  $m$  is 0 or a positive integer and  $q$  is an integer of at least 1.

3,413,265

**HYDROLYTIC SCISSION OF POLYMERS CONTAINING GEM DITHIOETHER LINKAGES**

Eugene R. Bertozzi, Yardley, Pa., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Aug. 31, 1965, Ser. No. 484,105  
12 Claims. (Cl. 260—46.5)

A process is provided for preparing polymercaptan polymers by reacting polymers containing gem dithioether linkages with water in the presence of a strong nonoxidizing acid.

3,413,266

**METHOD OF IMPROVING SOLVENT RESISTANCE OF POLYCARBONATES BY TREATMENT WITH F<sub>2</sub> GAS**

George S. Saines, Fishkill, and Ronald E. Jones, Glenham, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 22, 1966, Ser. No. 536,298  
3 Claims. (Cl. 260—47)

The solvent resistance of polycarbonates may be improved by contacting the surface of the polycarbonate with fluorine gas at a temperature of 20 to 65° C. between 0.1 and 5 hours, and a pressure of 100 to 300 mm.

3,413,267

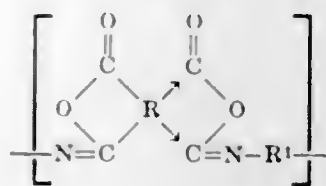
**COPOLYIMIDE-ISOIMIDE POLYMERS**

John A. Kreuz, Williamsville, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

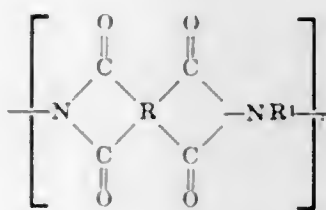
No Drawing. Continuation-in-part of application Ser. No. 325,441, Nov. 21, 1963. This application May 17, 1966, Ser. No. 550,647

1 Claim. (Cl. 260—47)

1. A linear polymer consisting essentially of 5-95 mole percent of recurring units of the formula

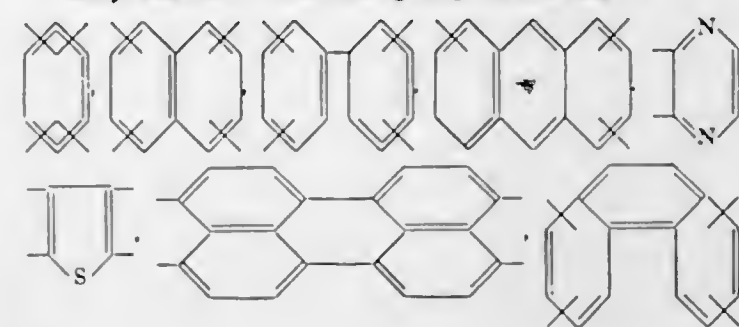


and 95-5 mole percent of recurring units of the formula

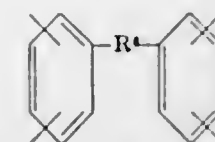


where the arrows denote isomerization;

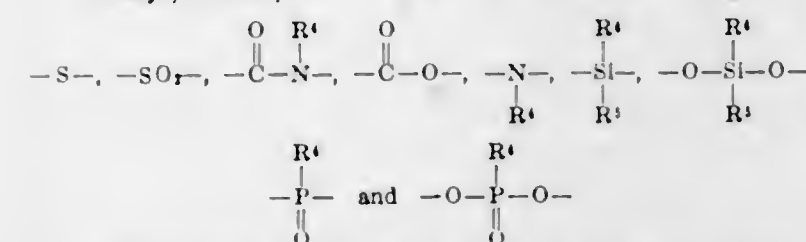
$R$  is an aromatic tetravalent organic radical, preferably selected from the group consisting of



and

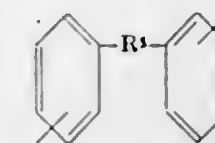


wherein  $R^5$  is selected from the group consisting of an alkylene chain having 1-3 carbon atoms, carbonyl, —O—,

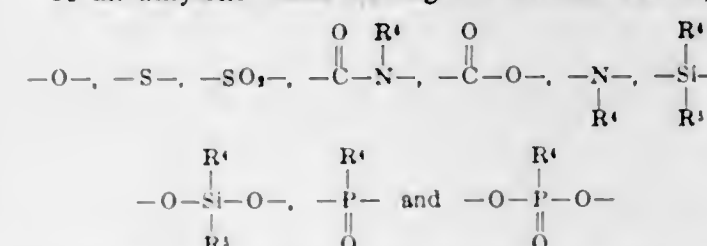


wherein  $R^4$  and  $R^5$  are selected from the group consisting of alkyl and aryl;

$R^1$  is a divalent aromatic radical, preferably selected from the group consisting of phenylene, naphthylene, biphenylene, anthrylene, furylene, benzofurylene, and



wherein  $R^3$  is selected from the group consisting of an alkylene chain having 1-3 carbon atoms,



wherein  $R^4$  and  $R^5$  are selected from the group consisting of alkyl and aryl; said polymer having an inherent viscosity of at least 0.1 as measured at 30° C. at a concentration of 0.5% by weight of the polymer in concentrated sulfuric acid.

3,413,268

**USE OF AMINOALKYLAMINO-s-TRIAZINES AS HARDENING AGENTS FOR EPOXY RESINS AND HARDENED EPOXY RESIN**

Hans Feichtinger, Dinslaken, and Werner Raudenbusch, Oberhausen-Sterkrade, Germany, assignors to Ruhrchemie Aktiengesellschaft, Oberhausen-Holten, Germany

No Drawing. Filed Nov. 29, 1966, Ser. No. 597,571  
Claims priority, application Germany, Dec. 3, 1965, R 42,127; Dec. 30, 1965, R 42,340

5 Claims. (Cl. 260—47)

1. Process of producing a hardenable epoxy resin composition which comprises combining an uncured epoxy resin having more than one 1,2-epoxide group per molecule and, as hardening agent therefor, aminoalkylamino-s-triazine of the formula:



wherein  $n$  is an integral number and is 1 or 2, each  $R^1$  is a hydrogen, lower alkyl, aryl, primary amino radical, mono-lower alkyl amino or di-lower alkyl amino radical, each  $R^2$  is a hydrogen, alkyl of up to 12 carbon atoms, or aryl radical, and  $R^3$  and  $R^4$  is each an alkyl radical or both are alkylene radicals with the proviso that when  $R^3$  and  $R^4$  are alkylene radicals, the terminal free bonds of said radical are joined by  $\text{CH}_2=$ ,  $\text{O}=\text{}$ , or  $\text{N}=\text{}$ .

3,413,269

**PROCESS FOR PRODUCING HIGH MOLECULAR WEIGHT POLYOXYMETHYLENE**

Shinichi Ishida and Hiromichi Fukuda, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed Dec. 23, 1964, Ser. No. 420,772  
Claims priority, application Japan, Dec. 28, 1963, 38/70,495

12 Claims. (Cl. 260—67)

A process in which paraformaldehyde is irradiated with ionizing or ultra-violet rays in a closed system to produce a modified polyoxymethylene of higher molecular weight which is pyrolyzed to form formaldehyde, which in turn is polymerized to produce a high molecular weight polyoxymethylene.

3,413,270

**POLYMERIZATION OF FORMALDEHYDE**

Walter Ernest Heinz, New Providence, N.J., and Karl Frederick Kumll, Chico, Calif., assignors to Celanese Corporation, a corporation of Delaware

No Drawing. Continuation of application Ser. No. 514,701, Dec. 17, 1965. This application Oct. 31, 1967, Ser. No. 679,575

11 Claims. (Cl. 260—67)

Polymerizing formaldehyde by introducing formaldehyde vapors into a superjacent acetone vapor zone located above a liquid acetone reaction medium, whereby the formaldehyde vapors are entrained into the liquid acetone reaction medium and polymerized.

3,413,271

**FLUORINE-CONTAINING POLYURETHANE POLYMERS**

William E. Weesner, Kettering, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application Apr. 28, 1966, Ser. No. 545,856, now Patent No. 3,330,872, dated July 11, 1967. Divided and this application Oct. 31, 1966, Ser. No. 632,460

1 Claim. (Cl. 260—77.5)

The specification discloses polyurethanes prepared from organic diisocyanates and novel fluorine-containing hemiketals. The polyurethanes are useful as functional fluids for hydraulic systems, or as lubricants. Foamed polyurethanes are also disclosed.

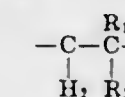
3,413,272

**PROCESS AND PRODUCT OF ACYL HALIDE COPOLYMERS REACTED WITH AN IMINE COMPOUND**

Richard Watkin Rees, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 18, 1965, Ser. No. 508,580  
7 Claims. (Cl. 260—78.5)

1. A copolymer containing polymerized alpha-olefin units having the formula



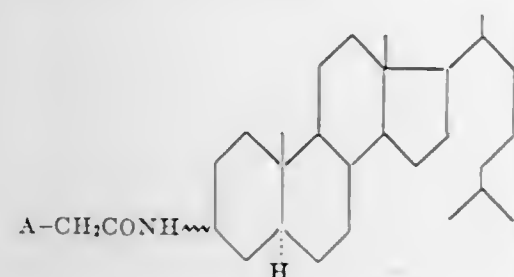
where  $R_1$  is selected from the class consisting of hydrogen, halogen and hydrocarbon radicals having 1 to 8







ternary ammonium derivatives, including those of the formula



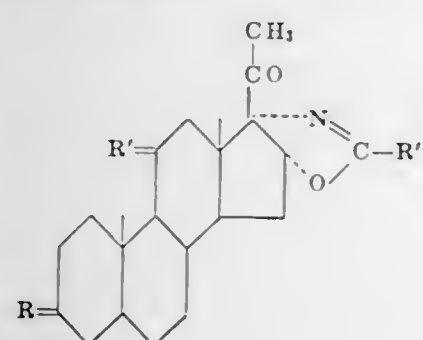
in which A is an aliphatic substituted amino group are provided, possessing tumor-inhibiting properties.

3,413,286

### [17 $\alpha$ ,16 $\alpha$ -d]OXAZOLINE PREGNANES AND PROCESS THEREFOR

Giorgio Nathansohn and Giorgio Winters, Milan, Italy, assignors to Lepetit S.p.A. Milan, Italy  
No Drawing. Filed Mar. 30, 1966, Ser. No. 538,555  
Claims priority, application Great Britain, Apr. 22, 1965, 17,027/65; Aug. 20, 1965, 35,865/65  
3 Claims. (Cl. 260—239.55)

2. A compound selected from a steroid-[17 $\alpha$ ,16 $\alpha$ -d]-oxazoline of the formula



wherein R is a member of the class consisting of O, H( $\beta$ -OH) and H( $\beta$ -O-acyl)

R' is a member of the class consisting of H<sub>2</sub> and O, R'' is a member of the class consisting of hydrogen, lower alkyl, aralkyl and aryl groups, and its  $\Delta^4$  and  $\Delta^5$  derivatives.

3,413,287

### (OPTIONALLY 17-ALKYLATED) 7 $\alpha$ -METHYLANDROSTONE-3 $\beta$ ,17 $\beta$ -DIOLS, $\Delta^4$ AND 19-NOR DERIVATIVES CORRESPONDING AND ETHERS AND ESTERS THEREOF

Raymond E. Counsell, Ann Arbor, Mich., and Paul D. Klimstra, Northbrook, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware  
No Drawing. Filed May 2, 1966, Ser. No. 546,492  
2 Claims. (Cl. 260—239.55)

3,17-bisoxxygenated 7 $\alpha$ -methyl steroids, optionally alkylated at the 17-position and useful in view of their hormonal and anti-hormonal properties, e.g. anabolic, androgenic, estrogenic and anti-estrogenic.

3,413,288

### PROCESS FOR THE PRODUCTION OF STEROIDAL C-17 SPIROLACTONES

Paul L. Creger, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan  
No Drawing. Filed July 7, 1965, Ser. No. 470,250  
8 Claims. (Cl. 260—239.57)

Process for the production of 3-steroidal-propionic acid lactones, in which the steroidal grouping is 3 $\beta$ ,17 $\beta$ -dihydroxyandrost-5-en-17 $\alpha$ -yl or 17 $\beta$ -hydroxy-3-oxoandrost-4-en-17 $\alpha$ -yl, by reacting 17 $\beta$ ,20-epoxy-17 $\alpha$ -methylandrost-

5-en-3 $\beta$ -ol or a 3-enamine derivative of 17 $\beta$ ,20-epoxy-17 $\alpha$ -methylandrost-4-en-3-one with an alkali metal salt derivative of acetic acid, such as lithium lithioacetate, and subsequently hydrolyzing and acidifying the reaction mixture. The products of the process are useful as intermediates in the synthesis of spironolactone.

3,413,289

### PREPARATION OF ANDROSTADIENE PROPIONIC ACID LACTONE AND INTERMEDIATES THEREOF

George Gal, Summit, and Meyer Sletzinger, North Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey  
No Drawing. Filed Apr. 21, 1966, Ser. No. 544,077  
8 Claims. (Cl. 260—239.57)

The invention disclosed herein is generally concerned with the preparation of 3-(4,6-androstadien-17 $\beta$ -ol-3-one-17 $\alpha$ -yl)-propionic acid lactone and to intermediate steroids which are useful in the preparation thereof. This lactone is prepared by reacting 3 $\beta$ -hydroxy-5,6-dibromo-20-spiroxane with N-bromosuccinimide, and dehydrobrominating the resulting 5,6-dibromoandrostane compound. 3-(4,6-androstadien-17 $\beta$ -ol-3-one-17 $\alpha$ -yl)-propionic acid lactone possesses useful therapeutic properties as an aldosterone inhibitor. Aldosterone inhibitors block the salt-retaining effects of aldosterone and other salt-retaining steroids and thereby have utility in the treatment of diseases such as congestive heart failure, nephrosis, and cirrhosis of the kidney in which aldosterone secretion is increased.

More particularly this invention relates to 3-(5,6-dibromoandrostane-17 $\beta$ -ol-3-one-17 $\alpha$ -yl)-propionic acid lactone and a method for the preparation thereof and to a method for the preparation of 3-(4,6-androstadien-17 $\beta$ -ol-3-one-17 $\alpha$ -yl)-propionic acid lactone.

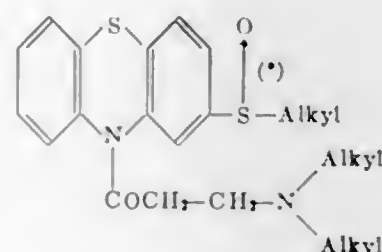
3,413,290

### PHENOTHIAZINE DERIVATIVES

Jany Renz, Basel, Jean-Pierre Bourquin, Magden, and Gustav Schwarb, Allschwil, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Nov. 21, 1966, Ser. No. 595,585  
Claims priority, application Switzerland, Nov. 23, 1965, 16,101/65, 16,102/65  
4 Claims. (Cl. 260—243)

3-alkylsulphonyl-10-(3-dialkylaminopropionyl)phenothiazines of the formula



(each alkyl of which has from 1 to 4 carbon atoms) and their acid addition salts are antidepressants.

3,413,291

### HYDROCARBYLAMINO PHENOXAZINES AND PHENAZINES

Allen K. Sparks, Des Plaines, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Jan. 28, 1965, Ser. No. 428,877  
6 Claims. (Cl. 260—244)

Hydrocarbylamino phenoxazine or phenazine useful as an antioxidant for plastics, lube oils and other organic

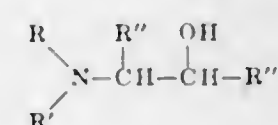
substrates. Exemplary compounds include 3-(N-isopropylamino)-phenoxazine, 3-(N-cyclohexylamino)-phenoxazine, and 2-(N-secoctylamino)-phenazine.

3,413,292

### PROCESS FOR MAKING TERTIARY AMINO KETONES FROM THE CORRESPONDING ALCOHOLS

Fred L. Johnson, Jr., and George P. Speranza, Austin, Tex., assignors to Jefferson Chemical Company, Inc., a corporation of Delaware  
No Drawing. Filed Dec. 27, 1965, Ser. No. 516,734  
6 Claims. (Cl. 260—247.7)

Amino ketones can be produced from the corresponding secondary alcohol by contacting the alcohol in the vapor phase with a copper-containing catalyst. The secondary alcohol feedstock is represented by the formula



where R, R' and R'' each is an organic group and R'' is hydrogen or an organic group, the organic groups being alkyl, aromatic or heterocyclic groups having 1 to 18 carbon atoms.

3,413,293

### METHOD FOR PRODUCING 2,3,4,6,7,12-HEXAHYDROINDOLO-[2,3-a]QUINOLIZINE

Robert Norman Schut, Edwardsburg, Mich., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed Feb. 14, 1966, Ser. No. 527,070  
1 Claim. (Cl. 260—296)

1. A process for the preparation of 2,3,4,6,7,12-hexahydroindolo-[2,3-a]quinolizine which comprises reacting tryptamine and furfural to form N-(2-furfurylidene)tryptamine, reacting the latter compound with a strong acid followed by neutralization with a base to form 1-(2'-furyl)-1,2,3,4-tetrahydro- $\beta$ -carboline, hydrogenating the latter compound to form 1-(2'-tetrahydrofuryl)-1,2,3,4-tetrahydro- $\beta$ -carboline, cleaving the tetrahydrofuran ring with hydrogen bromide to form 1-(4-boromobutyl)-1,2,3,4-tetrahydro- $\beta$ -carboline hydrobromide and treating the latter compound with an aqueous base to form 2,3,4,6,7,12-hexahydroindolo-[2,3-a]quinolizine.

3,413,294

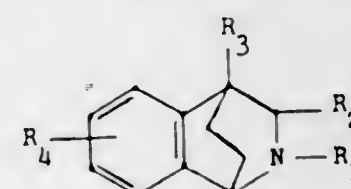
### TETRAHYDRO-1,4-ETHANO-ISOQUINOLINES

Gordon Northrop Walker, Morristown, N.J., assignor to Ciba Corporation, Summit, N.J., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 388,722, Aug. 10, 1964. This application May 1, 1967, Ser. No. 634,891

10 Claims. (Cl. 260—286)

1,2,3,4-tetrahydro-1,4-ethano-isoquinolines of the formula



R<sub>1</sub>=H, aliphatic or araliphatic radical or acyl  
R<sub>2</sub>=H, aliphatic or araliphatic radical  
R<sub>3</sub>=H, aliphatic, araliphatic or aromatic radical  
R<sub>4</sub>=H, alkyl, alkoxy, halogeno, CF<sub>3</sub> or amino

the N-oxide, quaternaries and salts thereof exhibit diuretic effects.

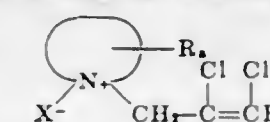
3,413,295

### CERTAIN 1,2-DICHLORO-PROPENE PYRIDINIUM AND QUINOLINIUM HALIDE DERIVATIVES

Frank Passal, Detroit, Arthur J. Tomson, Novi, and Warren R. Doty, Clawson, Mich., assignors to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware  
No Drawing. Original application Feb. 1, 1963, Ser. No. 255,692, now Patent No. 3,218,244, dated Nov. 16, 1965. Divided and this application Feb. 25, 1965, Ser. No. 444,482

13 Claims. (Cl. 260—290)

1. A compound having the structure



wherein a is 0 to 3; R is selected from the group consisting of alkyl radicals having 1-4 carbon atoms, halide, and hydroxyalkyl radicals having 1-4 carbon atoms; X is a bath soluble, bath compatible anion; and



is selected from the group consisting of pyridine and quinoline.

3,413,296

### CERTAIN 11-(3-TROPANYLOXY)-6,11-DIHYDRO-DIBENZO[b,e]THIEPIN DERIVATIVES

Ernst Jucker, Ettingen, Adolf Lindenmann, Basel, and Fulvio Gadiant, Birsfelden, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed June 21, 1966, Ser. No. 559,100  
Claims priority, application Switzerland, June 28, 1965, 9,025/65; Mar. 24, 1966, 4,286/66

3 Claims. (Cl. 260—292)

The 11-(3-tropanyloxy)-6,11-dihydro-dibenzo[b,e]thiepin derivatives of this invention show pronounced peripheral anticholinergic properties based on inhibitory reactions of acetylcholine and excitation of cholinergic nerves in experimental animals. They also have histamine inhibiting and moderate serotonin inhibiting properties.

3,413,297

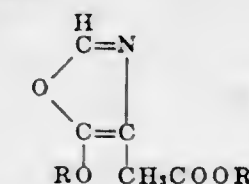
### PROCESS FOR THE PREPARATION OF 2-METHYL-3-HYDROXY-4,5-DISUBSTITUTED-PYRIDINES VIA 5-LOWER ALKOXYOXAZOLYL-(4)-ACETIC ACID ESTERS

Takuichi Miki, Amagasaki, and Taisuke Matsuo, Suita, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Continuation of application Ser. No. 483,309, Aug. 27, 1965. This application May 22, 1967, Ser. No. 640,334  
Claims priority, application Japan, Sept. 2, 1964, 39/50,128; Oct. 16, 1964, 39/59,012; Dec. 16, 1964, 39/71,160; Mar. 11, 1965, 40/14,357

5 Claims. (Cl. 260—294.9)

New 5-lower-alkoxyoxazolyl-(4)-acetic acids and their esters of the formula:



wherein R is a lower alkyl radical having up to 4 carbon atoms and R' is hydrogen or a lower alkyl radical having up to 4 carbon atoms show interesting activities with respect to the central nervous system, for example, sedative effect, anticonvulsive effect, etc. These compounds are also useful as valuable intermediates in the improved synthesis of 2-methyl-3-hydroxy-4,5-disubstituted-pyridines, which are themselves useful intermediates in the preparation of vitamin B<sub>6</sub>.



The aforesaid new compounds are prepared by intimately admixing lower alkyl N-formylaspartate with an acidic dehydrating agent.

3,413,298

## SUBSTITUTED PYRIDINES

John H. Biel and Edward J. Warawa, Milwaukee, Wis., assignors to Aldrich Chemical Company, Inc., Milwaukee, Wis., a corporation of Wisconsin  
No Drawing. Filed Sept. 15, 1964, Ser. No. 396,734  
5 Claims. (Cl. 260—295)

Substituted pyridines having hypocholesteremic activity are useful for lowering blood cholesterol levels.

3,413,299

## 3,3'-DI-SUBSTITUTED[SPIRO-INDOLINE-3,2'-OXIRAN]-2 ONES AND DERIVATIVES

William C. Anthony, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 294,230, July 11, 1963. This application Oct. 16, 1964, Ser. No. 404,493

12 Claims. (Cl. 260—295)

Certain new 3,3'-disubstituted-spiro[indoline-3,2'-oxiran]-2-ones active as sedatives are prepared by epoxidation of a 3-(di-substituted-methylene)oxindole with hydrogen peroxide in the presence of a basic catalyst. The indole nitrogen may have a lower alkyl group substituent and the 3' carbon of the oxiran ring is substituted by lower alkyl, aryl, aralkyl, or pyridyl groups.

3,413,300

## BUTOXYBUTYLAMINE SALTS OF CHLORINATED HERBICIDAL ACIDS

Edwin J. Haertl, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Filed Jan. 19, 1966, Ser. No. 521,559  
5 Claims. (Cl. 260—295)

The present disclosure is directed to the butoxybutylamine salts of herbicidal acids and in particular, to the butoxybutylamine salts of trichloroacetic acid, 2,2-dichloropropionic acid, 2,4-dichlorophenoxyacetic acid and 4-amino-3,5,6-trichloropicolinic acid. These salts are highly soluble in both water and oil, and stable even when dissolved in herbicidally-active concentrations. The method of preparation as well as the use of the salts as herbicides is taught.

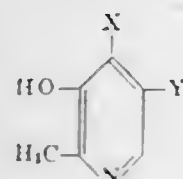
3,413,301

## PROCESS FOR PRODUCING PYRIDINE DERIVATIVES

Tetsuo Maruyama, Toyonaka, Osaka, and Noriaki Toukai, Mishima-gun, Osaka, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan  
No Drawing. Continuation of application Ser. No. 381,517, July 9, 1964. This application July 29, 1966, Ser. No. 568,974  
Claims priority, application Japan, July 12, 1963, 38/38,096

6 Claims. (Cl. 260—295.5)

This invention relates to a process for producing pyridine (vitamin B<sub>6</sub>) or intermediates that are used to produce pyridine. More specifically, this invention relates to a process for the production of a compound of the formula:



in which each of X and Y is carboxyl, alkoxycarbonyl, formyl, hydroxymethyl or halogenomethyl which comprises reacting a compound of the formula:



with a compound of the formula:



in which R is a hydrocarbon residue of 1 to 7 carbon atoms.

3,413,302

## PHTHALOYL-PYRROCOLINE COMPOUNDS

Walter R. Demler, Hamburg, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York  
No Drawing. Filed May 17, 1965, Ser. No. 456,503  
15 Claims. (Cl. 260—296)

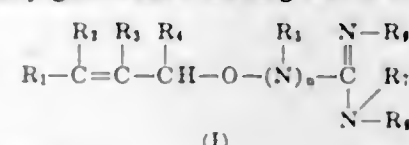
Production of water insoluble 1-(N-arylbenzimidazolyl)-2,3-phthaloylpyrrocoline compounds having an aryl radical as N-substituent of the benzimidazolyl radical, which aryl radical has a maximum of two condensed nuclei and a maximum of 16 nuclear carbon atoms. These pyrrocoline compounds dye polyethylene terephthalate fiber from aqueous dispersions deep shades characterized by outstanding fastness to light.

3,413,303

## ARALKENYLOXYGUANIDINES

Robert Paul Mull, Florham Park, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 544,124, Apr. 21, 1966, which is a continuation-in-part of application Ser. No. 490,670, Sept. 27, 1965. This application Dec. 22, 1966, Ser. No. 603,749  
3 Claims. (Cl. 260—309.6)

Aralkenyloxy-guanidines having the formula



R<sub>1</sub>=carbocyclic aryl  
R<sub>2</sub>-R<sub>3</sub>=H or lower alkyl  
R<sub>4</sub>, R<sub>5</sub>=also amino  
R<sub>6</sub>+R<sub>7</sub>=also lower alkylene  
n=integer 1 or 2

and acid addition salts thereof, particularly the cis- and trans-cinnamyloxy-guanidine hemisulfates, exhibit anorexigenic effects.

3,413,304

## 13-ALKYL-17β-HYDROXY-A-NOR-5α-GONANYL-[2,3-c]-PYRAZOLES

David B. R. Johnston, Fords, and Thomas B. Windholz, Westfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey  
No Drawing. Filed Feb. 28, 1966, Ser. No. 530,336  
3 Claims. (Cl. 260—310)

The invention disclosed herein relates to 3-hydroxy-methylene-10-hydrogen or methyl-13-lower alkyl-17β-hydroxy-A-nor-5α-gonan-2-one steroids, novel derivatives and novel methods for the preparation thereof. More particularly, this invention relates to 13-alkyl-17β-hydroxy-A-nor-5α-gonany-[2,3-c]-pyrazoles and the process for preparing them starting with the corresponding 13-alkyl-17β-hydroxy-A-nor-5α-gonan-2-one. In this process, as applied to the preparation of the 13-methyl embodiment of the invention, 17β-hydroxy-A-nor-5α-androstan-2-one (which may also be referred to as 13-methyl-17β-hydroxy-A-nor-5α-gonan-2-one) is reacted with dihydropyran in the pres-

(I)

ence of p-toluenesulfonyl chloride to form 17β-tetrahydropyranyloxy-A-nor-5α-androstan-2-one; the latter is then reacted with a lower alkyl formate in the presence of an alkaline reagent thereby forming the corresponding 3-hydroxymethylene derivative which, in turn, is reacted with a hydrazine compound and the reaction mixture is acidified thus forming the pyrazole ring and hydrolyzing the tetrahydropyranyloxy group to produce the corresponding 17β-tetrahydropyranyloxy-A-nor-5α-androstan-2-one [2,3-c]pyrazole compound. The compounds of the invention are inhibitors of progesterone.

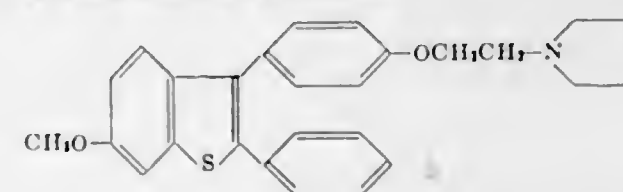
3,413,305

## 2-PHENYL-3-PARA(β-PYRROLIDINO ETHOXY)-PHENYL-6-METHOXY BENZO(b)THIOPHENE

Ronnie R. Crenshaw, De Witt, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 457,827, May 21, 1965. This application Feb. 12, 1968, Ser. No. 704,544

4 Claims. (Cl. 260—326.5)

The compound of the formula



and the pharmaceutically acceptable nontoxic salts thereof exhibit antifertility activity and are useful as oral antifertility agents in mammals.

3,413,306

## ALKYLENE SULFOXIDES

Gordon E. Hartzell, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Filed Feb. 7, 1966, Ser. No. 525,321  
10 Claims. (Cl. 260—327)

Alkylene episulfides are made by oxidizing the corresponding episulfides with metaperiodate ion. The products are useful as herbicides and chemical intermediates.

3,413,307

## DESULFURIZATION PROCESS

Barry N. Heimlich, Union, and Thomas J. Wallace, Elizabeth, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 434,643, Feb. 23, 1965. This application May 10, 1965, Ser. No. 454,693

2 Claims. (Cl. 260—329.3)

Organic sulfur is oxidized by means of a mixture of an organic carboxylic acid, an oxy-mineral acid and an oxidizing agent. The oxidation serves to convert the sulfur to a form from which desulfurization may take place more readily. This serves to reduce pollution problems.

3,413,308

## SUBSTITUTED BENZO(b)THIOPHENE-2-CARBOXANILIDES

Earl R. Bockstahler, Acton, Ind., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Filed Sept. 2, 1966, Ser. No. 576,860  
4 Claims. (Cl. 260—330.5)

Substituted 3-hydroxybenzo(b)thiophene-2-carboxanilides are prepared by the reaction of a methyl 3-hydroxybenzo(b)thiophene-2-carboxylate with a substituted aniline. The compounds are useful as pesticides for the control of various fungal, fish, mollusk and schistosome organisms.

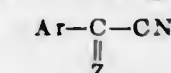
3,413,309

## PROCESS FOR PREPARING NITRILES OF CYCLOALIPHATIC OR HETEROCYCLIC ACIDS

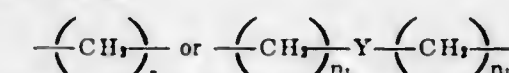
Mieczyslaw J. Makosza, Jelonki, Osiedle Przyjazn 148; Barbara J. Serafin, Bobola Str. 6; and Tadeusz L. Urban-ski, Nowowiejska Str. 22, all of Warsaw, Poland  
No Drawing. Filed Feb. 18, 1964, Ser. No. 345,797  
Claims priority, application Poland, Feb. 18, 1963, P 100,789

9 Claims. (Cl. 260—333)

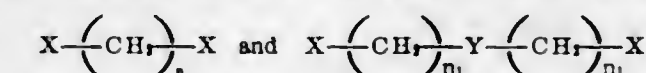
1. A process for preparing substituted cycloaliphatic or heterocyclic acid nitriles of the general formula



in which Ar is a phenyl, p-tolyl or p-methoxyphenyl group and Z is a



group, n being an integer from 2 to 6, each n<sub>1</sub> being the same integer of from 1 to 3, and Y being —O—, —S— or —N-CH<sub>3</sub>—, comprising condensing at a temperature in the range of 20 to 100° C. a nitrile of the formula Ar-CH<sub>2</sub>-CN, Ar being as defined above, with a compound selected from the group consisting of



X being a chlorine or a bromine atom and the other symbols being as defined above, in the presence of an alkali metal hydroxide, which acts as a condensing agent, and less than 0.1 mol per mol of the Ar-CH<sub>2</sub>-CN of a compound selected from the group consisting of tetraethyl ammonium hydroxide, tetramethyl ammonium iodide and trimethyl benzyl ammonium hydroxide, which acts as a catalyst.

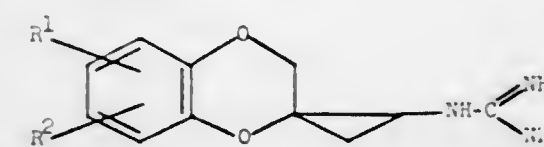
3,413,310

## 2'-GUANIDINO-SPIRO-(1,4-BENZODIOXANE-2,1'-CYCLOPROPANES)

Joachim Augstein and Alastair M. Monro, Canterbury, and Geoffrey Wilfred Hassey Potter, Ramsgate, England, assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware  
No Drawing. Filed Mar. 21, 1966, Ser. No. 535,691  
Claims priority, application Great Britain, Mar. 26, 1965, 12,886/65

6 Claims. (Cl. 260—340.3)

1. A compound selected from the group consisting of 2'-guanidino-[spiro-(1,4-benzodioxane-2,1'-cyclopropanes)] of the formula:



and the pharmaceutically acceptable acid addition salts thereof, wherein R<sup>1</sup> and R<sup>2</sup> each represent a member selected from the group consisting of hydrogen, chlorine, bromine, and alkyl and alkoxy containing from one to four carbon atoms.

3,413,311

## 4-OXA PREGNANE DERIVATIVES

Alexander D. Cross, Mexico City, Mexlco, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama  
No Drawing. Filed Mar. 5, 1965, Ser. No. 437,583  
23 Claims. (Cl. 260—340.5)

Novel 3-keto-4-oxa derivatives of the pregnane series having anti-inflammatory, glycogenic and thymolytic activities.

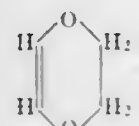


3,413,312

**PROCESS FOR PREPARING 2,3-DIHYDRO-PARA-DIOXIN**

Rodney D. Moss, Indianapolis, Ind., and Janet N. Paige, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Filed May 26, 1966, Ser. No. 553,061  
4 Claims. (Cl. 260—340.6)

1. A process for producing 2,3-dihydro-para-dioxin having the formula



which comprises contacting, at a temperature above about 200° C., diethylene glycol in the liquid phase with a copper chromite catalyst having from about 15% to about 80% by weight of copper and from about 10% to about 45% by weight chromium, each based upon the total weight of catalyst, and a promoter for said catalyst selected from the group consisting of alkali metal acid sulfate, alkali metal pyrosulfate, calcium fluoride and aluminum oxide, said promoter being present in from about 10 to about 60% by weight based on the total weight of catalyst and promoter, said catalyst being employed in amounts of from about 0.1 gram to about 4.5 grams per mole of glycol.

3,413,313

**ANTHRANILIC ACID COMPOUNDS AND METHODS FOR THEIR PRODUCTION**

Robert A. Scherrer, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed June 18, 1964, Ser. No. 376,208  
6 Claims. (Cl. 260—340.9)

N-arylthranilic acids and salts and esters thereof, in which the N-aryl group is phenyl, substituted in the 2-position by methyl or chlorine, optionally substituted in the 6-position by methyl or chlorine, and substituted in the 1-position by hydroxyalkyl, substituted carbonyl, ketoxime, cyclic ketal, tertiary amido, or cyano, useful as anti-inflammatory, anti-pyretic and anti-allergic agents; and their production by (a) reacting a o-halo- or o-aminobenzoic acid derivative with a suitably substituted aniline or halobenzene compound, (b) reacting one of the carbonyl compounds with hydroxylamine to produce one of the ketoxime compounds, (c) reacting one of the ketoxime or cyclic ketal compounds with aqueous acid to produce one of the carbonyl compounds, (d) reducing one of the carbonyl compounds to produce one of the hydroxyalkyl compounds, and (e) esterifying the free acids to produce a lower alkyl or di-lower alkyl-amino-alkyl ester.

3,413,314

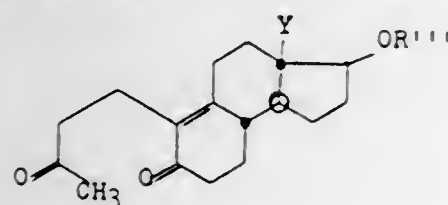
**PROCESS FOR THE SYNTHESIS OF 4,5-SECO-Δ<sup>9</sup>-STEROIDS AND INTERMEDIATES**

Gaston Amiard and Gerard Nomine, Noisy-le-Sec, France, assignors to Roussel-Uclaf, S.A., Paris, France, a corporation of France

No Drawing. Continuation-in-part of application Ser. No. 262,263, Mar. 1, 1963. This application Apr. 22, 1964, Ser. No. 361,872

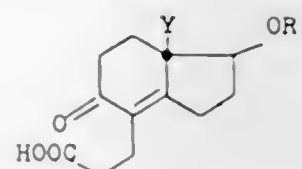
Claims priority, application France, Mar. 6, 1962, 890,184; Dec. 17, 1963, 957,460  
60 Claims. (Cl. 260—343.2)

1. The process of producing a 4,5-seco-Δ<sup>9</sup>-gonene steroid of the formula



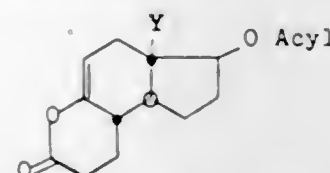
wherein Y represents lower alkyl and R''' is selected from the group consisting of hydrogen and the acyl radical of an organic carboxylic acid having from 1 to 18 carbon atoms which comprises the steps of:

- condensing a lower alkyl ester of 5-oxo-6-heptenoic acid with 2-lower alkyl-cyclopentane-1,3-dione in the presence of an alkaline condensation agent,
- treating the condensation product with an acidic compound selected from the group consisting of mineral acids, organic acids and Lewis-type acids,
- treating the racemic 1,5-dioxo-4-(2'-carboxyethyl)-7a-lower alkyl-5,6,7,7a-tetrahydro-indane with an optically active base,
- separating the salt of the optically active base with the dextrorotatory 1,5-dioxo-4-(2'-carboxyethyl)-7aβ-lower alkyl-5,6,7,7a-tetrahydro-indane,
- acidifying and recovering said dextrorotatory 1,5-dioxo-4-(2'-carboxyethyl)-7aβ-lower alkyl-5,6,7,7a-tetrahydro-indane,
- reacting the dextrorotatory 1,5-dioxo-4-(2'-carboxyethyl)-7aβ-lower alkyl-5,6,7,7a-tetrahydro-indane with a mixed metal hydride,
- hydrogenating the indane compound of the formula



wherein Y has the above-noted meaning and R' is selected from the group consisting of hydrogen and the acyl radical of an organic carboxylic acid having from 1 to 7 carbon atoms in the presence of a hydrogenation catalyst consisting essentially of elemental palladium,

- lactonizing the 1β-hydroxy-5-oxo-4-(2'-carboxyethyl)-7aβ-lower alkyl-3α,4β,5,6,7,7a-hexahydro-indane by the action of lactonizing agent selected from the group consisting of lower alkanolic acid chloride and lower alkanolic acid anhydride,
- reacting the δ-lactone of the formula



wherein Y has the above-noted meaning and acyl represents the acyl radical of a lower alkanolic acid derived from said lactonizing agent with a 4-ketal of 4-oxo-pentyl-magnesium halide in an inert organic solvent,

- treating the reaction product with an alkaline agent,
- hydrolyzing the reaction product by the action of an aqueous acidic solution, and
- recovering said 4,5-seco-Δ<sup>9</sup>-gonene steroid.

42. The δ-lactone of 1β-acetoxy-4-(2'-carboxyethyl)-5-hydroxy-7aβ-methyl-3α,4β,7,7a-tetrahydro-indane.

3,413,315

**NOVEL CYCLOPENTAPYRANONES AND BENZOPYRANONES**

Reinhardt P. Stein, Conshohocken, George C. Buzby, Jr., Philadelphia, and Herchel Smith, Wayne, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 9, 1966, Ser. No. 548,406  
8 Claims. (Cl. 260—345.2)

This invention relates to 2,3,6,7-tetrahydro-1',2',3',4'-tetrahydrospiro[cyclopenta(b)pyran-2(4H),1'-naphthalen]-5-ones and 2,3,5,6,7,8-hexahydro-1',2',3',4'-tetrahydrospiro[4H-benzopyran-2,1'-naphthalen]-5-ones which are pharmacologically active as depressant and anticonvulsant agents.

3,413,316

**TRICYCLO[4.2.2.0<sup>2,5</sup>]-9-R-DEC-9-ENE-3,4,7,8 TETRA-CARBOXYLIC ACID DIANHYDRIDES**

Jerald S. Bradshaw, Richmond, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Oct. 12, 1965, Ser. No. 495,345  
The portion of the term of the patent subsequent to Jan. 16, 1984, has been disclaimed

1 Claim. (Cl. 260—346.3)

This invention relates to tricyclo[4.2.2.0<sup>2,5</sup>]-9-R-dec-9-ene-3,4,7,8 tetracarboxylic acid dianhydride wherein R is an alkyl group containing from 7 to 20 carbon atoms.

3,413,317

**BICYCLOHEPTANE TRICARBOXYLIC ACIDS, ANHYDRIDES AND ALKYL ESTERS THEREOF**

Morris Dunkel, Paramus, N.J., assignor to Unversal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Apr. 25, 1966, Ser. No. 544,692  
5 Claims. (Cl. 260—346.3)

Tricarboxylic bicyclo-(2.2.1)-heptane compounds exemplified by bicyclo-(2.2.1)-heptane-2,3,5-tricarboxylic acid, 5-carboxy-bicyclo-(2.2.1)-heptane-2, 3-dicarboxylic anhydride, and trialkyl-bicyclo-(2.2.1)-heptane-2,3,5-tricarboxylate.

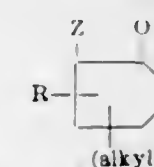
3,413,318

**2-OXO-TETRAHYDROFURANYL COMPOUNDS**

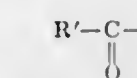
Joseph W. Baker, Kirkwood, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Apr. 21, 1960, Ser. No. 23,650  
5 Claims. (Cl. 260—343.6)

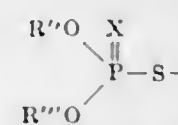
1. An S-(2-oxo-tetrahydrofuryl)phosphorothioate of the formula



wherein n is an integer from 0 to 3, inclusive;  
wherein the term "alkyl" means alkyl of not more than 2 carbon atoms;  
wherein Z is



wherein R' is hydrocarbyl of from 1 to 6 carbon atoms selected from the group consisting of phenyl, cycloalkyl and alkyl;  
wherein R is



wherein X is a chalcogen of atomic weight less than 40 and wherein R'' and R''' are selected from the group consisting of lower alkyl of from 1 to 5 carbon atoms and lower alkoxyalkyl of from 1 to 5 carbon atoms.

3,413,319

**REMOVING ALUMINUM ALKOXIDES FROM ESTERS**

Arthur Ibbotson and Harry James Twitchett, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain  
No Drawing. Filed Apr. 14, 1965, Ser. No. 447,963  
Claims priority, application Great Britain, Apr. 21, 1964, 16,501/64

5 Claims. (Cl. 260—345.8)

Process for the purification of organic compounds, particularly esters and alcohols, contaminated with aluminum in the form of an alkoxide or an alkoxy aluminosilane which comprises agitating said organic compound with an

aqueous solution of a water soluble sulphate and removing by physical means the precipitated aluminum compound thereby produced. The process is particularly applicable to organic compounds prepared by methods employing the use of aluminum alkoxide as catalyst.

3,413,320

**HIGH PURITY DIEPOXIDE**

Kenneth B. Cofer, Pasadena, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 14, 1960, Ser. No. 14,497  
2 Claims. (Cl. 260—348)

1. As a manufacture, free-flowing crystals of 2,2-bis-(2,3-epoxypropoxyphenyl)propane.

3,413,321

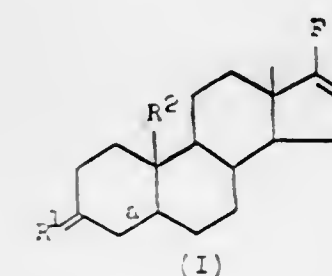
**SELECTED 17-FLUORO-Δ<sup>16</sup> STEROIDS**

George A. Boswell, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

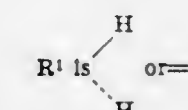
No Drawing. Filed June 3, 1966, Ser. No. 554,968  
12 Claims. (Cl. 260—397)

Described and claimed are

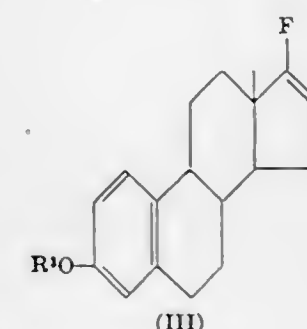
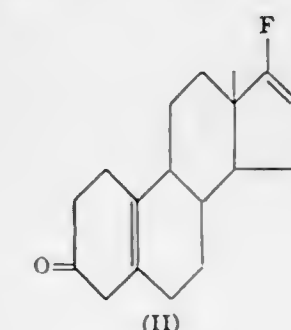
(1) the 17-fluoro-Δ<sup>16</sup>-steroids of the formulas



wherein



R<sup>2</sup> is hydrogen or methyl; and  
a, the bond between carbons 4 and 5, is a single or a double bond;



wherein

R<sup>3</sup> is hydrogen, lower alkyl or lower alkanoyl, lower alkyl referring to an alkyl group of 1-6 carbon atoms or a 5-6 carbon cycloalkyl group and lower alkanoyl referring to an acyl group of 1-6 carbon atoms;

(2) the process of preparing the 17-fluoro-Δ<sup>16</sup>-steroids of this invention which comprises dehydrofluorinating



a suitable 17,17-difluorosteroid by contacting it with at least ten times its weight of neutral anhydrous alumina at a temperature of at least 0° C.

The 17-fluoro- $\Delta^4$ -steroids of this invention possess useful and anti-androgenic and anti-gonadotrophic activities.

3,413,322

### TRIFLUOROACETATE SALTS OF ESTERAMINES AS PAINT ADDITIVES

Joseph A. Vasta, Woodbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 414,434, Nov. 27, 1964. This application Dec. 21, 1967, Ser. No. 692,309

2 Claims. (Cl. 260-404)

A certain type of salt compound is disclosed which is useful as an additive in paints and other film-forming compositions to improve pigment-wetting and flow properties, and especially useful to render many paints suitable for application by electrostatic spray techniques; it is disclosed that the novel salt compound can be made by reacting trifluoroacetic acid with a tertiary amine compound obtained from the reaction between a primary



amine (e.g., lauryl amine) and an ester of the formula wherein R is a branched chain  $\text{C}_8$ - $\text{C}_{10}$  alkyl group.

3,413,323

### PROCESS FOR THE PREPARATION OF CARBOXYLIC ACIDS FROM HYDROCARBONS

Currie B. Berry, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed July 6, 1965, Ser. No. 469,899  
4 Claims. (Cl. 260-413)

The invention disclosed is a step-wise process for producing saturated aliphatic acid soaps from normal hydrocarbon oxidate by saponification to convert acid groups to soaps, separating the soaps from the unsaponifiables, mildly hydrogenating the soaps to saturate the olefinic groups and convert carbonyls to hydroxyl groups, then dehydrating the hydroxyl groups to produce olefinic soaps which are mildly hydrogenated to obtain saturated soaps free of hydroxyl groups, carbonyl groups, esters and lactones.

3,413,324

### PROCESS FOR ALKALI REFINING OF GLYCERIDE OILS AND FATTY ACID ESTERS

Paulus Johannes Seip, Zwijndrecht, Netherlands, assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

Filed Mar. 14, 1966, Ser. No. 541,436  
Claims priority, application Luxembourg, Mar. 19, 1965, 48,221; Dec. 20, 1965, 50,100  
12 Claims. (Cl. 260-425)

A process for the alkali refining of glyceride oils and other fatty acid esters containing free fatty acid which gives unexpectedly low refining losses comprises mixing the ester with an ester (of the same or different chemical constitution) containing a lower percentage of free fatty acid in such proportions that the percentage of free fatty acid in the mixture is not greater than 4% and substantially less than in the first-mentioned esters, and the free fatty acid in the mixture is then substantially neutralized by the action of aqueous alkali thereon. Continuous methods for carrying out the invention are described, in one of which part of the neutralized oil issuing from a reaction

space in which neutralization has been effected is recirculated to that space.

3,413,325

### ALKOXYALKOXY VANADIUM-IV COMPOUNDS AND THEIR PREPARATION

Henry Edward Berkhelmer, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 30, 1966, Ser. No. 561,765  
7 Claims. (Cl. 260-429)

1. Alkoxyalkoxy vanadium compounds having the formula:



wherein R is a  $\text{C}_1$  to  $\text{C}_6$  alkyl radical, Y is an alkylene radical having from 2 to 3 carbon atoms in the chain linking oxygen atoms and having a total of up to 10 carbon atoms, X is chlorine or bromine and b is an integer from 1 to 4 inclusive.

3,413,326

### ADDITION COMPOUNDS OF AMINO ACIDS AND HYDROFLUORIC ACID OR SOLUBLE FLUORIDES, AND METHOD OF PREPARING THE SAME

Hans Schmid, Muttens, near Basel, Switzerland, assignor to Gaba, A.G., Basel, Switzerland

No Drawing. Original application Apr. 20, 1964, Ser. No. 361,245. Divided and this application June 9, 1966, Ser. No. 591,044

Claims priority, application Switzerland, Oct. 3, 1956, 38,139/56

20 Claims. (Cl. 260-429.3)

Addition compounds of lower aliphatic amino acids with hydrogen fluoride or soluble metal fluoride are effective in the prophylactic treatment of caries. The novel compounds are prepared by reacting amino acid with HF, and recovering the addition compound from the reaction mixture. It is also possible to hydrolyze an albuminous substance such as egg albumen, wheat gluten or the like by heating with conc. HF, neutralizing the reaction mixture with metal hydroxide, and evaporating to dryness.

3,413,327

### PREPARATION OF CRYSTALLINE GROUP II METAL SALTS OF LOWER ALKYL PHOSPHORODITHIOIC ACID

Curtis L. Gordon, Euclid, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 27, 1966, Ser. No. 523,245

7 Claims. (Cl. 260-429.9)

Crystalline metal salts of lower alkyl phosphorodithioic acids are prepared by reacting the acid, in solution in an aromatic solvent such as benzene or toluene, with a Group II metal base in the presence of a catalytic amount of a metal salt of a lower aliphatic carboxylic acid, preferably acetic acid, and subsequently isolating the crystalline salt by adding water and flashing off the organic solvent.

3,413,328

### TETRAMETHYL LEAD PROCESS

Richard H. Feehs, Woodstown, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed June 1, 1966, Ser. No. 554,419

3 Claims. (Cl. 260-437)

1. In the process for the production of tetramethyl lead in which methyl chloride and sodium-lead alloy are reacted in a pressure reactor, the reactor is vented thereby removing unreacted methyl chloride, the residual reaction mass is steam distilled, and the distillate containing tetramethyl lead is condensed and collected in a receiver which is vented, the method of improving the yield of tetramethyl

lead which comprises recovering additional quantities of tetramethyl lead from the gases vented from the distillate receiver by

- (1) contacting said gases at a temperature of 20° to 80° C. and a pressure of 0.75 to 1.25 atmospheres with an absorbent oil which
  - (a) dissolves at least one part of tetramethyl lead per 100 parts of oil at said temperature and pressure,
  - (b) is chemically inert to tetramethyl lead and any carrier gas, and
  - (c) has a boiling point of at least 2000° C.,
- (2) separating the tetramethyl lead-containing absorbent oil from the residual gas stream,
- (3) distilling tetramethyl lead from the oil at a temperature not in excess of 110° C., and
- (4) recovering tetramethyl lead from the distillate.

3,413,329

### CHLOROMETHYLATED ARALKYL SILANES AND SILOXANES

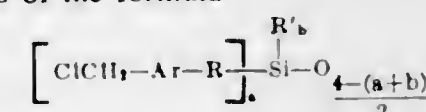
Enrico J. Pepe, Kenmore, and Bernard Kanner, Williams-ville, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 31, 1964, Ser. No. 422,495  
30 Claims. (Cl. 260-448.2)

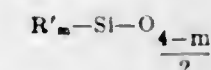
Silanes of the formula



wherein Ar is an arylene radical; R is an alkylene radical; R' is a monovalent hydrocarbon radical; X is halogen or OR' where R' is as defined above, a is 1 to 3; b is 0 to 2; provided that the sum of (a+b) does not exceed 3, except when X is chlorine in which case it does not exceed 2; as well as, siloxanes comprising (1) 5 to 95 mole percent of units of the formula



wherein Ar, R, R', a, b and (a+b) are the same as defined above, and (2) 5 to 95 mole percent of units of the formula



wherein m is 1 to 3 and R' is the same as above defined; as well as a process for producing the above silanes by chloromethylation of the corresponding aralkylsilanes with chloromethyl methyl ether and thionyl chloride. The siloxanes find utility as lubricants, hydraulic fluids, and elastomers.

3,413,330

### CYCLOALKYLALKYLOXY-ALKYLAMINOETHYL THIOSULFATES AND SALTS THEREOF

Roger D. Westland, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Oct. 14, 1966, Ser. No. 586,646  
6 Claims. (Cl. 260-453)

Cycloalkyloxy- and cycloalkylalkyloxy-alkylaminoethyl thiosulfates and salts thereof that are useful as antiradiation agents, and their production by (a) reacting a cycloalkyloxy- or cycloalkylalkyloxy-alkyl halide with an alkali metal salt of S-2-aminoethyl thiosulfate; (b) reacting a 2-[(cycloalkyloxy- or cycloalkylalkyloxy-alkyl)amino]-ethyl disulfide or a mineral acid salt thereof with a salt of sulfuric acid in the presence of an oxidizing agent; (c) reacting a hydrohalide salt of an N-(cycloalkyloxy- or cycloalkylalkyloxy-alkyl)-aminoethyl halide with a thiosulfate salt in an aqueous solvent medium; and (d) reacting a 1-(cycloalkyloxy- or cycloalkylalkyloxy-alkyl)aziridine with thiosulfuric acid or a salt thereof.

3,413,331

### SULFATION OF A MIXTURE OF PRIMARY AND SECONDARY ALCOHOLS

Arthur L. Belser, Jackson Heights, N.Y., and Peter Leenders, Allendale, N.J., assignors to Standard Chemical Products, Inc., Hoboken, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of applications Ser. No. 443,064, Mar. 26, 1965, and Ser. No. 508,598, Nov. 18, 1965. This application Jan. 26, 1966, Ser. No. 523,036  
11 Claims. (Cl. 260-458)

A process of direct sulfation comprising the steps of reacting a mixture of (1) from about 0.15 to about 0.9 mol equivalent of an alcohol selected from the group consisting of a polyethylene glycol alkyl ether, where the alkyl is derived from a primary alcohol, and a polyethylene glycol alkylaryl ether, and (2) from about 0.1 to 0.85 mol equivalent of an alcohol selected from the group consisting of a secondary alkanol and a secondary alkanol ethoxylate, with about 1 mol equivalent of anhydrous chlorosulfonic acid and recovering a mixture of sulfated alcohols having a sulfation degree of at least 80%.

3,413,332

### CONDENSATION OF POLYCHLOROOLEFINS WITH CARBOXYLIC ACID ESTERS

Louis Schmerling, Riverside, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Jan. 2, 1964, Ser. No. 335,423  
20 Claims. (Cl. 260-468)

Condensation of certain polychloroolefins, such as tetrachloroethylene, with certain carboxylic acid esters, such as isopentyl acetate, at about 50-300° C. in the presence of organic peroxide or other free radical generating compound.

3,413,333

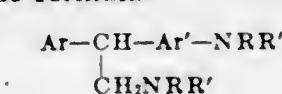
### AROMATIC AMINES

Ralph B. Davis, Notre Dame, Ind., assignor to University of Notre Dame, Notre Dame, Ind.

Original application Feb. 7, 1961, Ser. No. 87,569. Divided and this application Sept. 23, 1964, Ser. No. 401,757

18 Claims. (Cl. 260-471)

This disclosure relates to new aromatic amine compounds having the formula



wherein Ar is a phenyl or naphthyl radical or derivative; Ar' is a 1,4-phenylene or 1,4-naphthylene radical or derivative thereof; R is hydrogen or an aliphatic or aromatic hydrocarbon group or derivative thereof; R' is one of the groups defined for R or one of a number of other groups defined hereinafter; and R and R' can be combined as a divalent group having both valencies attached to the same nitrogen atom. These compounds are characterized by the combination of aromatic and aliphatic amine functional groups.

3,413,334

### PROCESS FOR THE PREPARATION OF ESTERS OF AROMATIC N,N-DIALKYLAMINOCARBOXYLIC ACIDS

Rudolf Burkhardt and Helmut Wulff, Witten (Ruhr), Germany, assignors to Chemische Werke Witten G.m.b.H., Witten (Ruhr), Germany

No Drawing. Filed Oct. 25, 1965, Ser. No. 505,196  
Claims priority, application Germany, Dec. 9, 1964, C 34,595

8 Claims. (Cl. 260-471)

A process for preparing alkyl esters of aromatic N,N-dialkylaminocarboxylic acids which comprises reacting the



corresponding aminocarboxylic acid esters with aliphatic alcohols having from 1 to 3 carbon atoms at about 150–250° C. in the presence of catalytic amounts of iodine or a lower alkyl iodide. The resultant dialkylamino derivatives are useful for modifying polyesters. They may also be used for their properties of luminescence or of absorbing ultraviolet rays.

## 3,413,335

## ALKYL SUCCINATE ESTER PROCESS

Seymour J. Lapporte, Berkeley, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,698

16 Claims. (Cl. 260—485)

Butenedioate esters are alkylated by heating a mixture of the ester and a substituted acetaldehyde to a temperature in the range 200–350° C. in a decarbonylative reaction in which carbon monoxide is eliminated from the aldehyde, thereby producing the corresponding substituted succinate ester. Free radicals catalyze the reaction.

## 3,413,336

## PROCESS FOR THE PREPARATION OF ARYL ESTERS OF AROMATIC DICARBOXYLIC ACIDS

Hans-Leo Hülsmann, Witten-Rudinghausen, and Gustav Renckhoff, Witten (Ruhr), Germany, assignors to Chemische Werke Witten G.m.b.H., Witten (Ruhr), Germany

No Drawing. Filed July 31, 1964, Ser. No. 386,728

Claims priority, application Germany, Aug. 3, 1963, C 30,618

17 Claims. (Cl. 260—475)

Process for the preparation of diaryl esters of carbocyclic aromatic dicarboxylic acids which comprises heating a meta- or para-benzene dicarboxylic acid or an alkyl ester thereof with a phenolic compound and acetic anhydride in the presence of a suitable ester radical interchange catalyst, preferably butyl titanate, to above 140° C., and removing the acetic acid and/or alkyl acetate formed during the reaction as soon as possible from the reaction mixture. The process is particularly applicable to the preparation of diaryl esters of iso- and terephthalic acids, giving yields in excess of 90%.

## 3,413,337

## SULFOXIDATION PROCESS

Howard W. Bost, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Oct. 18, 1965, Ser. No. 497,472

10 Claims. (Cl. 260—513)

Sulfoxidation of saturated hydrocarbons is carried out in the presence of SO<sub>2</sub>, oxygen and a reaction initiator plus a silver, platinum, palladium or cadmium catalyst.

## 3,413,338

## 2-NITROCYCLOPENT-1-ENECARBOXYLIC ACID

Brian Frederick Burrows and William Brian Turner, Macclesfield, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Feb. 12, 1965, Ser. No. 432,372

Claims priority, application Great Britain, Apr. 21, 1964, 16,500/64

1 Claim. (Cl. 260—514)

The compound 2-nitrocyclopent-1-enecarboxylic acid is disclosed. It is used, by reaction with ammonia, to

prepare the plant growth regulant 1-amino-2-nitrocyclopentanecarboxylic acid. The 2-nitrocyclopent-1-enecarboxylic acid may be prepared in various ways, for example, by reacting 1-iodo-2-nitrocyclopentanecarboxylic acid with pyridine at about 18–22° C. for about 4–6 hours.

## 3,413,339

## AMINE COMPOUNDS AND METHODS FOR THEIR PRODUCTION

Robert A. Scherrer, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed June 18, 1964, Ser. No. 376,265

6 Claims. (Cl. 260—518)

N-arylanthranilic acids and salts and esters thereof in which the N-aryl group is phenyl, substituted in the 2-position by methyl, chlorine, or primary amino, optionally substituted in the 6-position by methyl, chlorine, or primary amino, and substituted in the 3-position by chlorine, primary amino, or a tertiary amino group, such as dimethylamino, diethylamino, or pyrrolidino, provided that one and only one of the said substituents is an amino group. The compounds are useful as anti-inflammatory, anti-pyretic, and anti-allergic agents and are produced by (a) reduction of an appropriately substituted N-(nitrophenyl)anthranilic acid compound to produce one of the N-(primary aminophenyl)anthranilic acid compounds; (b) reaction of an N-(primary aminophenyl)anthranilic acid compound, substituted with bromine or iodine in addition to the substituents named above, with hydrogen to remove the halogen substituent and produce one of the N-(primary aminophenyl)anthranilic acid compounds; (c) condensation of an o-halo- or o-aminobenzoic acid derivative with an appropriately substituted aniline or halo-benzene compound; (d) alkylation of an appropriately substituted N-(3-primary aminophenyl)anthranilic acid compound to produce one of the N-(3-tertiary aminophenyl)anthranilic acid compounds; (e) hydrolysis of an appropriately substituted N-acylated diphenylamine compound substituted at the position ortho to the N-acyl group by a carboxy group or a group hydrolyzable to a carboxy group; and (f) esterification of the free acids to produce a lower alkyl or di-lower alkyl-aminoalkyl ester.

## 3,413,340

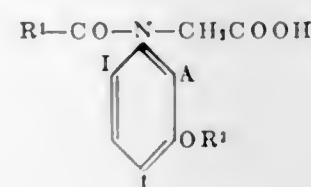
## N-(CARBOXYMETHYL)-3-ALKOXY-POLY-IODOANILIDE COMPOUNDS

Vernon H. Wallingford, Ferguson, Mo., assignor to Mallinckrodt Chemical Works, St. Louis, Mo., a corporation of Missouri

No Drawing. Continuation-in-part of application Ser. No. 242,083, Dec. 4, 1962. This application Sept. 19, 1966, Ser. No. 580,179

11 Claims. (Cl. 260—519)

1. A compound selected from compounds of the general formula:



where R<sup>1</sup> and R<sup>2</sup> are selected from the group consisting of lower alkyl and allyl hydrocarbon radicals and A is selected from the group consisting of hydrogen and iodine, lower alkyl esters of such compounds and salts of such compounds with pharmaceutically acceptable cations.

## 3,413,341

## HYDROLYSIS OF HALOAROMATICS

Kenneth F. Bursack, Herbert J. Moltzan, and Earnest L. Johnston, Wichita, Kans., assignors to Frontier Chemical Company, Division of Vulcan Materials Company, Wichita, Kans., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 374,144, June 10, 1964. This application July 19, 1965, Ser. No. 473,203

12 Claims. (Cl. 260—521)

Hydroxy-substituted aromatic compounds are made by hydrolysis of the corresponding halogenated compound in an aqueous medium in the presence of a hydrolyzing agent such as sodium acetate and a catalyst such as copper oxide at a temperature between about 200° and 350° C. and a pressure sufficient to maintain the reactants essentially in liquid phase. Initially adjusting the acidity of the mixture to a pH below 7 causes a desirable increase in the reaction rate.

## 3,413,342

## REMOVAL OF DISCOLORANTS FROM CHROMATE OXIDATION PRODUCTS

Joe T. Kelly, Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

Filed Feb. 16, 1965, Ser. No. 433,081

9 Claims. (Cl. 260—524)

The present invention comprises: A process for the preparation of chromate oxidation products by the oxidation of alkyl aromatic hydrocarbons in the presence of CO<sub>2</sub> and soluble inorganic dichromate salts, the steps comprising in combination adjusting the pH of the product mixture obtained from the oxidation to from about 8 to about 12 and adjusting the temperature to from about 150 to about 350° F., thereafter adding to the product mixture from the oxidation reactor about 1 to 3 moles per mole of chromium (VI) in the product mixture of a soluble sulfur-oxygen compound in which sulfur has a valence of IV, and removing the precipitate.

## 3,413,343

## PROCESS FOR REMOVING DISCOLORING AGENTS FROM THE PRODUCTS OF CHROMATE OXIDATION

Joe T. Kelly, Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

Filed Apr. 1, 1965, Ser. No. 444,713

12 Claims. (Cl. 260—524)

1. A process for the production of chromate oxidation products of alkyl aromatic hydrocarbon free from discoloring heavy metal impurities comprising in combination the steps of adjusting the pH of the product mixture obtained by the oxidation of alkyl aromatic hydrocarbons in the presence of chromates as necessary to obtain a pH of at least about 7, thereafter treating said product mixture with a soluble metal bisulfite to form a precipitate, separating out said precipitate and treating the remaining liquid with sulfur dioxide, thereafter recovering the alkyl aromatic oxidation product thus formed and recycling a portion of the metal bisulfite thus produced for treatment of additional oxidation products.

## 3,413,344

## PENTAHYDROXY HEXANEDIOIC ACIDS

Lawrence A. Quigley, Far Hills, and Henry Zak, Great Notch, N.J., assignors to Industrial Biochemicals, Inc., Edison, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 21, 1965, Ser. No. 489,051

4 Claims. (Cl. 260—535)

Novel pentahydroxyhexanedioic acids having the formula:



wherein one R is hydrogen and the other R is COOH

and salts of such acids, and processes for preparing such acids and salts.

## 3,413,345

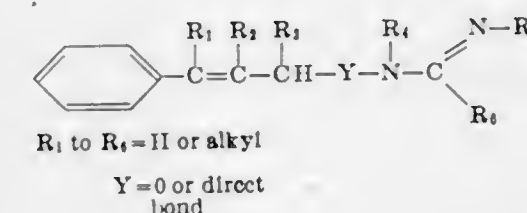
## N-ARALKENYL-LOWER ALKANOIC ACID AMIDINES

Robert Paul Mull, Florham Park, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 27, 1965, Ser. No. 490,669

5 Claims. (Cl. 260—564)

N-aralkenyl-lower alkanolic acid amidines, e.g. those of the formula



and salts thereof exhibit hypotensive effects.

## 3,413,346

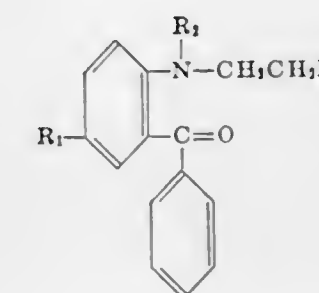
## 2-(2-HALOETHYLAMINO)-5-HALO-BENZOPHENONES

Rodney Ian Fryer, North Caldwell, Earl Reeder, Nutley, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Jan. 19, 1966, Ser. No. 521,539

3 Claims. (Cl. 260—570)

1. A compound selected from the group consisting of compounds of the formula



wherein:

- R<sub>1</sub> is selected from the group consisting of chlorine and bromine;
- R<sub>2</sub> is selected from the group consisting of hydrogen and methyl; and
- X is selected from the group consisting of chlorine, bromine and iodine.

## 3,413,347

## MANNICH REACTION PRODUCTS OF HIGH MOLECULAR WEIGHT ALKYL PHENOLS, ALDEHYDES AND POLYAMINOPOLYALKYLENEAMINES

Calvin J. Worrel, Detroit, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Jan. 26, 1966, Ser. No. 523,022

5 Claims. (Cl. 260—570.5)

Reaction products of high molecular weight alkyl-phenols, aldehydes and N,N-dialkyl, hydroxyalkyl or aminoalkyl-alkylene diamines are ashless dispersants for lubricating oils.

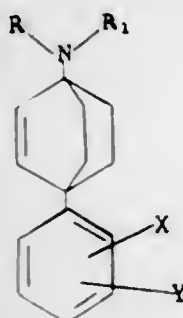


3,413,348

**4-PHENYLBICYCLO[2.2.2]OCT-2-ENE-1-AMINE AND SALTS THEREOF**

Walter A. Gregory and James C. Kauer, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Filed June 28, 1965, Ser. No. 467,753  
9 Claims. (Cl. 260—570.5)

1. A compound selected from the group consisting of:  
(a) compounds of the formula



where:

R and R<sub>1</sub> are selected from the group consisting of hydrogen, alkyl of 1 through 3 carbon atoms or allyl; and

X and Y are selected from the group consisting of hydrogen, methyl, ethyl, chlorine, bromine, fluorine, trifluoromethyl, nitro, amino, monoalkylamino wherein the alkyl group has 1 through 4 carbon atoms, dialkyl amino where alkyl group has 1 through 4 carbon atoms, hydroxy, methoxy, and ethoxy; and

- (b) non-toxic salts of the compounds of (a).

3,413,349

**PROCESS FOR PREPARING PHENYLHYDROXYLAMINE AND CUPFERRON**

Hugh C. Bertsch, St. Louis, and Charles R. Conard, Ferguson, Mo., assignors to Mallinckrodt Chemical Works, St. Louis, Mo., a corporation of Missouri  
No Drawing. Filed May 21, 1965, Ser. No. 457,843  
12 Claims. (Cl. 260—580)

Cupferron is prepared by zinc reduction of nitrobenzene followed by nitrosation of the resulting phenylhydroxylamine with an alkyl nitrite in the presence of ammonia. The preferred reaction medium comprises a mixture of (1) a lower alkanol or dioxane and (2) water. The nitrobenzene and phenylhydroxylamine are both soluble in the medium while cupferron is insoluble. As the same medium serves for both reactions, isolation of the intermediate phenylhydroxylamine is unnecessary.

3,413,350

**PURIFICATION OF AROMATIC DIAMINES**  
James M. Cross, New Martinsville, Clyde D. Campbell, Wheeling, and Sidney H. Metzger, Jr., New Martinsville, W. Va., assignors to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware  
No Drawing. Filed Mar. 9, 1965, Ser. No. 438,390  
7 Claims. (Cl. 260—582)

Reaction of o-aromatic diamines with carbon dioxide to produce benzimidazolinones. Removal of o-aromatic diamines from diamine mixtures by selective reaction of the o-aromatic diamines with carbon dioxide.

3,413,351

**1,1-DIMETHYL-2-(3-OXO-BUTYL-1) CYCLOPROPANE**

Albert Eschenmoser and Dorothea Felix, Zurich, and Max Stoll, Geneva, Switzerland, assignors to Firmenich et Cie, Geneva, Switzerland  
No Drawing. Filed Feb. 12, 1964, Ser. No. 356,996  
1 Claim. (Cl. 260—586)

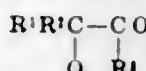
1. 1,1-dimethyl-2-(3-oxo-butyl-1)-cyclopropane.

3,413,352

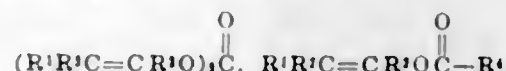
**PREPARATION OF SUBSTITUTED ALDEHYDES AND KETONES FROM VINYL ESTERS**

Richard F. Heck, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware  
No Drawing. Filed Aug. 13, 1965, Ser. No. 479,649  
11 Claims. (Cl. 260—590)

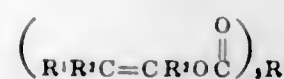
A carbonyl compound of the formula



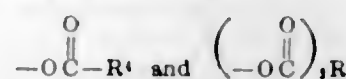
is produced by contacting in the liquid state at a temperature in the range of 0° C. to 150° C. until reaction is complete, an organometallic compound of a metal of Group VIII with water and a vinyl alcohol ester of a formula of the group consisting of



and



in which R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> are members of the group consisting of hydrogen and hydrocarbon groups having neither ethylenic nor acetylenic unsaturation and the total carbon of said hydrocarbon groups is less than 15, and the ester group represented by



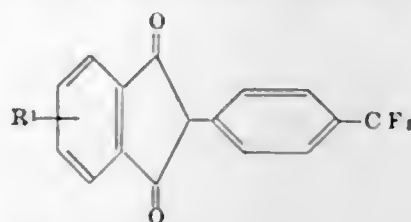
is a carboxylic ester group in which formulas R<sup>4</sup> is a monovalent hydrocarbon group having less than 18 carbon atoms and no ethylenic or acetylenic unsaturation, and R is a divalent hydrocarbon radical having 2 to 6 carbon atoms and no ethylenic or acetylenic unsaturation, and X is an anion of the group consisting of halides, nitrates, chlorates, perchlorates, sulfates, acylates and acetylacetonates, and Q is the organo group of said organometallic compound and is a carbon bonded organo group selected from the group consisting of aryl radicals and hydroxy-, chloro-, methoxy-, nitro-, phenyl-, and diethylamino-substituted aryl radicals where the aryl radical is a member of the group consisting of phenyl, naphthyl, anthracenyl, phenanthryl, fluorenyl, and furyl, thienyl; and benzothienyl.

3,413,353

**2-(4-TRIFLUOROMETHYLPHENYL)-INDAN-1,3-DIONES**

Wybe T. Nauta, 233 Nieuw Loosdrechtse dijk, Nieuw Loosdrecht, Netherlands  
No Drawing. Filed Aug. 25, 1965, Ser. No. 482,617  
Claims priority, application Great Britain, Aug. 27, 1964, 35,212/64  
6 Claims. (Cl. 260—590)

New compounds are provided which have the formula



wherein R<sup>1</sup> is hydrogen, halogen, alkyl, nitro or alkoxy. The new compounds may be prepared by reaction of a phthalic containing the appropriate R<sup>1</sup> substituent with p-trifluoromethyl benzaldehyde. The new compounds may also be obtained by treatment of a p-trifluoromethylbenzylidene-R<sup>1</sup>-substituted phthalide with an alkali metal alkoxide and also by reaction of an R<sup>1</sup> substituted dialkylphthalate with an alkyl ester of p-trifluoromethylphenylacetic acid.

3,413,354

**METHOD OF PREPARING ARYL SULFOXIDES**

Louis De Vries, Richmond, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware  
No Drawing. Filed Jan. 4, 1966, Ser. No. 518,548  
7 Claims. (Cl. 260—607)

Diaryl sulfoxides are prepared by condensing sulfur dioxide with an aromatic hydrocarbon in the presence of aluminum chloride-hydrogen chloride catalyst.

3,413,355

**THIOL AND/OR SULFIDE DERIVATIVES OF 1,2-BIS(3-CYCLOHEXEN-1-YL)ETHYLENES**

Rector P. Louthan, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,547  
6 Claims. (Cl. 260—609)

1,2-bis(3-cyclohexen-1-yl)ethylene and derivatives thereof are converted to thiols and/or sulfides by reacting with a thiol. These compounds are useful as polymerization agents for conjugated dienes.

3,413,356

**PROCESS FOR THE PREPARATION OF ORTHOARYLPHENOLS**

Leo Vollbracht, Arnhem, Albert H. Bijkerk, Rheden, and Jan Jedema, Ede, Netherlands, assignors to N.V. Polychemie Adu-Ge, Arnhem, Netherlands, a corporation of the Netherlands  
No Drawing. Filed May 10, 1966, Ser. No. 548,831  
Claims priority, application Netherlands, May 20, 1965, 6506397  
4 Claims. (Cl. 260—620)

1. A process for the preparation of orthophenylphenols comprising the step of heating a member selected from the group consisting of phenol and methyl substituted phenols having at least one free ortho position in the presence of tetraphenyllead at a temperature ranging between 150 and 250° C. for a time sufficient to form the orthophenylphenol up to a maximum of 100 minutes.

3,413,357

**PRODUCTION OF ALPHA-NAPHTHOL**

Kenneth F. Bursack and Ernest L. Johnston, Wichita, Kans., and Herbert J. Moltzan, Dallas, Tex., assignors to Frontier Chemical Company, Division of Vulcan Materials Company, Wichita, Kans., a corporation of New Jersey  
No Drawing. Filed July 21, 1965, Ser. No. 473,849  
15 Claims. (Cl. 260—629)

Chloronaphthalene is preferentially hydrolyzed under reaction conditions which have been found to produce a naphthol product consisting of alpha- and beta-naphthol in which the weight ratio of alpha-naphthol to beta-naphthol is greater than the weight ratio of alpha-chloronaphthalene to beta-chloronaphthalene initially present in the chloronaphthalene reactant. The reaction is conducted in the presence of a catalyst combination comprising metallic copper and cuprous oxide.

3,413,358

**PROCESS FOR PREPARING HIGHER ALIPHATIC ALCOHOLS**

Teruzo Asahara, Tokyo, Japan, assignor to Mitsubishi Petrochemical Co., Ltd., Tokyo, Japan  
No Drawing. Filed Mar. 15, 1966, Ser. No. 534,321  
Claims priority, application Japan, Mar. 26, 1965, 17,235/65  
6 Claims. (Cl. 260—642)

Selective preparation of aliphatic alcohols having 10–20 carbon atoms by telomerization of ethylene and a

lower alkanol in the presence of a lower alkyl bromide or iodide and at least one metal selected from the group consisting of magnesium, zinc, tin, lead, copper, chromium, molybdenum, manganese, iron, cobalt and nickel.

3,413,359

**PRODUCTION AND/OR RECOVERY OF PRIMARY HALOALKANES**

Van C. Vives and Carl W. Kruse, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware  
Filed Dec. 26, 1963, Ser. No. 333,433  
7 Claims. (Cl. 260—652)

1. A process for the separation of a primary monohaloalkane containing from 3 to 20 carbon atoms per molecule from a mixture containing same and other haloalkanes selected from the group consisting of secondary and tertiary haloalkanes containing substantially the same number of carbon atoms per molecule as said primary monohaloalkane; which process comprises, in combination, the steps of: contacting an alkylatable aromatic hydrocarbon selected from the group consisting of benzene, toluene, xylene, naphthalene, diphenyl, phenanthrene, anthracene, pyrene, chrysene, and ethylbenzene with said mixture in an alkylation zone, in the presence of substantially anhydrous hydrogen fluoride as an alkylation catalyst, under sufficient pressure to maintain said aromatic hydrocarbon, said haloalkanes, and said catalyst in liquid phase, and at a temperature within the range of from 0 to 125° C. and recovering unreacted primary monohaloalkane from the resulting reaction mixture; the halogen in said haloalkanes being selected from the group consisting of chlorine and bromine.

3,413,360

**HYDROFLUORINATION AND DEHYDROFLUORINATION AND CATALYSTS THEREFOR**

Lloyd E. Gardner, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
No Drawing. Filed Sept. 22, 1964, Ser. No. 398,442  
4 Claims. (Cl. 260—653.4)

Hydrofluorination and dehydrofluorination reactions are accomplished over a catalyst bed formed by heating a bed of particles of porous alumina to a temperature of at least 220° F. and flowing therethrough a gaseous mixture of HF and an inert diluent until the hot zone of chemical reaction has passed completely through said bed.

3,413,361

**PROCESS FOR THE PRODUCTION OF VINYL FLUORIDE**

Louis Foulletier, Lyon, France, assignor to Ugine Kuhlmann, Paris, France, a French company  
No Drawing. Filed Aug. 10, 1965, Ser. No. 478,751  
Claims priority, application France, July 28, 1964, 983,231  
5 Claims. (Cl. 260—653.4)

Vinyl fluoride is produced by passing a gaseous mixture of HF and acetylene containing above about 1 mole of HF to each mole of acetylene over a cadmium salt catalyst such as cadmium sulfate, cadmium nitrate, cadmium acetate or a mixture thereof at a temperature in the range between 100° C. and 600° C. The catalyst may be supported by a carrier such as activated carbon, zirconia and the like. The process, due to the extremely high selectivity of the catalyst, provides a conversion rate above about 98% and the product stream contains only a negligible amount of difluoroethane by-product.



3,413,362

**PROCESS FOR THE PREPARATION OF 1-CHLORO-1-FLUOROETHANE**

Hitoshi Otaku, Kawasaki, Japan, assignor to Denki Kagaku Kogyo Kabushiki Kaisha, Tokyo, Japan  
No Drawing. Filed June 2, 1967, Ser. No. 643,070  
Claims priority, application Japan, June 4, 1966, 41/35,692

8 Claims. (Cl. 260—653.6)

A process for producing 1-chloro-1-fluoroethane by the vapor phase reaction of vinyl chloride with anhydrous hydrogen fluoride using fluorosulfonic acid carried on an active carbon as a catalyst.

3,413,363

**PROCESS USING AN IMPROVED FORM OF GUIGNET'S GREEN FLUORINE EXCHANGE CATALYST**

Daniel Pindzola, Pennsville, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Filed Mar. 2, 1966, Ser. No. 531,032

1 Claim. (Cl. 260—653.7)

Process of fluorinating aliphatic halogenated compounds by reacting them with hydrogen fluoride in the presence of an activated chromium (III) oxide catalyst which is prepared by extraction of water until the water-soluble solids content is less than 0.5% of the weight of solids.

3,413,364

**HYDROHALOGENATION OF MYRCENE**

Jack H. Blumenthal, Oakhurst, N.J., assignor to International Flavors & Fragrances, Inc., New York, N.Y., a corporation of New York  
No Drawing. Filed Mar. 9, 1966, Ser. No. 532,842

9 Claims. (Cl. 260—654)

This invention has to do with a process for the selective production of myrcenyl halides by reacting myrcene with hydrogen halides in the presence of certain Lewis acids and/or a high surface area catalysts. The Lewis acid catalysts which are useful in the practice of this process are antimony trichloride, mercuric chloride, bismuth trichloride, stannous chloride, tin, zinc acetate, zinc octanoate, and arsenic oxide. The high surface area materials which are useful as catalysts in this process are silica gel, silicic acid, activated carbon, and activated alumina.

3,413,365

**PROCESS FOR THE MANUFACTURE OF DICHLOROBUTENE MIXTURES FOR DEHYDROCHLORINATION INTO 2-CHLOROBUTADIENE-(1,3)**

Kurt Sennewald, Knapsack, near Cologne, Herbert Baader, Hermulheim, near Cologne, Klaus Gehrman, Knapsack, near Cologne, Laszlo Lugosy, Frankfurt am Main, Wilhelm Vogt, Knapsack, near Cologne, and Günther Viertel, Bruhl, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany  
No Drawing. Filed Oct. 18, 1966, Ser. No. 587,434

Claims priority, application Germany, Nov. 17, 1965, K 57,687

7 Claims. (Cl. 260—654)

Preparing dichlorobutenes by heating 1,2,3-trichlorobutane in the presence of at least one catalyst comprising trialkyl phosphine, triarylphosphine, their corresponding hydrochlorides and quaternary phosphonium chlorides to a temperature varying between about 130 and 170° C.

and removing the resulting hydrogen chloride and the dichlorobutene products by distillation.

3,413,366

**CHLORINATION OF BUTADIENE**

Howard Emil Holmquist, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Filed Oct. 23, 1965, Ser. No. 504,166

4 Claims. (Cl. 260—655)

Process for preparing 1-chloro-1,3-butadiene from butadiene in a single step in which process butadiene is contacted and reacted with cupric chloride in the presence of an inert, organic diluent which is liquid under reaction conditions, said cupric chloride being the sole reactive chlorine-yielding agent, substantially pure 1-chloro-1,3-butadiene being recovered from the resulting reaction mixture.

3,413,367

**MANUFACTURE OF CARBON TETRACHLORIDE**

Ulrich Kopsch, Widnes, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain  
No Drawing. Filed Jan. 16, 1964, Ser. No. 338,024

Claims priority, application Great Britain, Jan. 28, 1963, 3,439/63

8 Claims. (Cl. 260—664)

1. A process for the manufacture of carbon tetrachloride which comprises bringing phosgene into intimate contact in a reactor with an unsupported catalyst at a temperature above the melting point of the catalyst, but not greater than 500° C. and at pressure above atmospheric pressure, said catalyst containing a chloride selected from the group consisting of tungsten hexachloride and molybdenum pentachloride and mixtures thereof, and where the catalyst further contains an oxychloride selected from the group consisting of tungsten oxychloride and molybdenum oxychloride and mixtures thereof, and where the catalyst further contains a chloride of a metal selected from the group consisting of iron and aluminium, whereby the oxychloride content of the catalyst is maintained at less than 7% by weight of the chloride content of the catalyst.

3,413,368

**DEHYDROGENATION OF ORGANIC COMPOUNDS**

William L. Fierce, Crystal Lake, Ill., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California  
No Drawing. Filed Aug. 13, 1965, Ser. No. 479,637

2 Claims. (Cl. 260—666)

1. A method for dehydrogenating cyclohexane to produce cyclohexene, which consists in reacting cyclohexane with a dehydrogenating agent consisting essentially of nitrogen dioxide at a temperature of about 547–551° C., the mole-ratio of cyclohexane/NO<sub>2</sub> being about 1.5/1 and 2/1.

3,413,369

**SATURATED HYDROCARBON ISOMERIZATION PROCESS**

Armand J. de Rosset, Clarendon Hills, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware  
No Drawing. Filed Aug. 30, 1966, Ser. No. 575,943

10 Claims. (Cl. 260—666)

Isomerization of saturated hydrocarbons in contact with a Group VIII metal, such as platinum, on a re-

fractory inorganic oxide, such as alumina, which has been chemically combined with aluminum monofluoride vapor or silicon difluoride vapor at about 650–1200° C.

3,413,370

**SATURATED HYDROCARBON ISOMERIZATION PROCESS**

Norman A. Fishel, Lansing, Mich., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware  
No Drawing. Filed June 30, 1967, Ser. No. 650,206

10 Claims. (Cl. 260—666)

A saturated hydrocarbon is isomerized utilizing a catalyst comprising a crystalline aluminosilicate containing at least 1 metal from a Group VIII of the Periodic Table chemically combined with a metal subfluoride vapor.

3,413,371

**AROMATIC HYDROGENATION PROCESS**

Norman A. Fishel, Lansing, Mich., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware  
No Drawing. Filed June 30, 1967, Ser. No. 650,229

10 Claims. (Cl. 260—667)

An aromatic compound is hydrogenated utilizing a catalyst comprising a crystalline aluminosilicate chemically combined with a metal subfluoride vapor.

3,413,372

**PROCESS FOR THE SYNTHESIS OF MESITYLENE**

Edward Hurley, Jr., Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio  
No Drawing. Filed Sept. 29, 1966, Ser. No. 583,071

9 Claims. (Cl. 260—668)

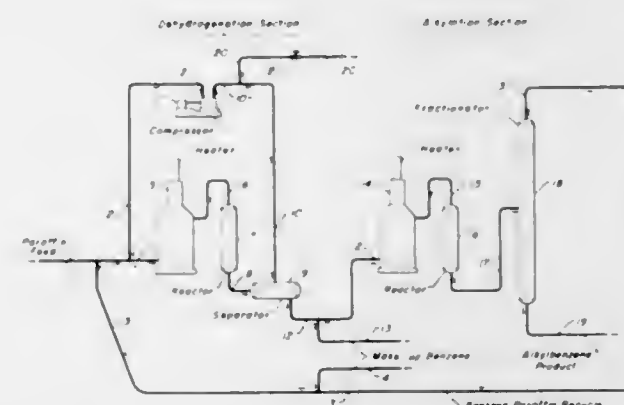
The present invention comprises processes for the synthesis of mesitylene from acetone comprising heating acetone in the conjoint presence of a catalytic amount of an acid and an aprotic solvent.

3,413,373

**PROCESS FOR PRODUCING ALKYLAROMATIC HYDROCARBONS**

Herman S. Bloch, Skokie, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware  
Filed Sept. 12, 1966, Ser. No. 578,766

10 Claims. (Cl. 260—671)



Production of alkylaromatic hydrocarbons via a combination process involving (1) dehydrogenation of a paraffin, (2) alkylation of a mono-nuclear aromatic with the resulting olefin and (3) separation and recycle of unreacted paraffinic and aromatic hydrocarbons to the dehydrogenation step.

3,413,374

**DISPROPORTIONATION OF TOLUENE**

Masaki Sato, Takeshi Sonoda, Yukio Kinoshita, Toshio Mizushima, and Michio Kashiwagi, Kamakura-shi, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan  
No Drawing. Filed Apr. 28, 1967, Ser. No. 634,445  
Claims priority, application Japan, May 4, 1966, 41/27,927; Oct. 28, 1966, 41/70,757; Dec. 30, 1966, 41/85,830

12 Claims. (Cl. 260—672)

A method of disproportionating toluene by contacting toluene in the vapor phase with a catalyst containing aluminum fluoride and alumina.

3,413,375

**PROCESS OF THE MANUFACTURE OF BUTINE-2**

Kurt Sennewald and Wilhelm Vogt, Knapsack, near Cologne, and Herbert Baader, Hermulheim, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany  
No Drawing. Filed Apr. 2, 1965, Ser. No. 445,268

12 Claims. (Cl. 260—678)

A process for producing butine-2 by catalytic dehydrohalogenation of a feed consisting essentially of 2-chlorobutene-2 by subjecting to 200–600° C. in the presence of an oxide or chloride of potassium, copper, beryllium, magnesium, calcium, strontium, barium, zinc, cadmium, aluminum, cerium, lead, tin, chromium, manganese, iron, cobalt and nickel.

3,413,376

**CATALYSTS AND METHOD FOR THE PREPARATION OF LIQUID OLEFIN POLYMERS**

James W. Cleary, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
No Drawing. Filed Sept. 14, 1964, Ser. No. 396,425

13 Claims. (Cl. 260—683.15)

Mono-olefins having from 2 to 4 carbon atoms are polymerized by contact with a catalyst which forms by mixing a transition metal subhalide, an alkyl aluminum compound, and certain organo mono-halides in an unsymmetrical polar solvent selected from methylene chloride, chloroform, 1,1-dichloroethane, and 1,1,2-trichloropropane.

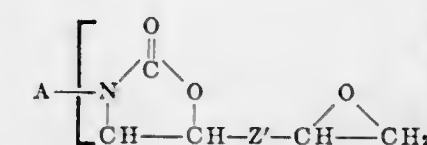
3,413,377

**RESINS OF POLY(EPOXYALKYL-2-OXAZOLIDINONE), PHENOLIC BASED POLYEPHXIDES AND MONOEPHX COMPOUNDS**

Charles H. Schramm and Morris Zief, Easton, Pa., assignors to J. T. Baker Chemical Company, Phillipsburg, N.J., a corporation of New Jersey  
No Drawing. Continuation-in-part of application Ser. No. 515,439, Dec. 21, 1965. This application Apr. 28, 1966, Ser. No. 545,874

10 Claims. (Cl. 260—830)

Polymerizable compositions may be prepared from polyepoxyoxazolidinone of the formula



wherein A is a divalent hydrocarbon having 4 to 12 C, Z<sup>n</sup> is an alkylene group of 1 to 18 C, divalent polyalkylene, or chloro-substituted polyoxyalkylene.

These polyepoxyoxazolidinones are reacted with polyglycidyl ethers of polyhydric phenols, and monoepoxy flexibilizers.



From 0.2 to 4 pts. of the polyepoxyoxazolidinone is used for each pt. of the polyglycidyl ether, and 3% to 70% of the monoepoxy flexibilizer is used based on the total of the other 2 components.

Oxazolidinone diepoxides may be prepared from the reaction of polypropylene glycol, and epichlorohydrin, followed by further reaction with toluene diisocyanate.

3,413,378

### GRAFT COPOLYMERS OF NITRILE GROUPS ON POLYAMIDE SUBSTRATES

Eugene Edward Magat, Spring Valley, Wilmington, Del., and David Tanner, Charlottesville, Va., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 578,414, Sept. 9, 1966, which is a continuation of application Ser. No. 863,047, Dec. 30, 1959. This application Nov. 14, 1966, Ser. No. 593,659

6 Claims. (Cl. 260—857)

Shaped structures of a graft copolymer comprising a polyamide and side chains bearing nitrile radicals, grafted thereto, by carbon to carbon bonds. Structures have improved light durability, resistance to soiling, crease recovery, dyeability, and resistance to caustic attack and wrinkling, as compared to unmodified polymer.

3,413,379

### PROCESS FOR THE PREPARATION OF LINEAR THERMOPLASTIC MIXED POLYESTERS HAVING SOFTENING POINTS ABOVE 100° C.

Gerhard Schade, Witten-Bommern, and Franz Blaschke, Witten (Ruhr), Germany, assignors to Chemische Werke Witten G.m.b.H., Witten (Ruhr), Germany  
No Drawing. Filed Jan. 14, 1965, Ser. No. 425,626  
Claims priority, application Germany, Jan. 17, 1964, C 31,908

The portion of the term of the patent subsequent to Jan. 17, 1984, has been disclaimed  
9 Claims. (Cl. 260—860)

Linear thermoplastic polyesters having softening points above 100° C. are prepared by transesterification and polycondensation of diaryl terephthalate and/or diaryl isophthalate, and optionally, up to 10 mole percent of a diaryl carbonate or oxalate, with dihydric phenols. As soon as the melt viscosity reaches a value of from about 2000 to 4000 poises, about 15 to 120% by weight, based on the total amount of diaryl esters employed, of a linear polyester having a viscosity of 0.1 to 0.5 dl./g. and based upon terephthalic and/or isophthalic acid and diprimary alcohols are added thereto. The condensation is subsequently continued until the reaction mixture attains a viscosity of 0.5 dl./g.

3,413,380

### REACTION PRODUCT OF AN AMMONIA/PHOSPHORUS PENTOXIDE CONDENSATE WITH AN AMINE OR HYDROXY COMPOUND AND PROCESS

Edward W. Snyder, Iselin, N.J., assignor to Union Carbide Corporation, a corporation of New York  
No Drawing. Filed Dec. 18, 1964, Ser. No. 419,602  
17 Claims. (Cl. 260—920)

Flame retardant adducts for synthetic resins are prepared by reacting an ammonia/phosphorus pentoxide condensation product with a functional compound of the formula  $R-[Q(H)_n]_m$  wherein R is a hydrocarbon moiety having from 1 to 30 carbon atoms and Q is an atom having an atomic weight from 13.8 to 16.1 and n is a value of 1 or 2. Illustrative of the functional compounds are hydroxyl and amino hydrocarbons such as alcohols, phenols, polyols, amines and the like.

3,413,381

### ALPHA-SUBSTITUTED PHOSPHATYL OR THIO- PHOSPHATYL HALOKETONE, KETAL OR THIO- KETAL DERIVATIVES THEREOF

Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 238,773, Nov. 19, 1962. This application June 13, 1966, Ser. No. 556,885

6 Claims. (Cl. 260—929)

Alpha-substituted phosphatyl and thiophosphatyl halo-ketones and ketal and thioketal derivatives thereof having the structures hereinafter given and suitable for use as insecticides.

3,413,382

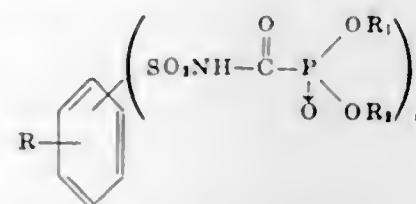
### ARYLSULFONYLCARBAMOYLPHOSPHONATES

Henri Ulrich, North Branford, Conn., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Jan. 10, 1966, Ser. No. 519,466

10 Claims. (Cl. 260—943)

1. A compound having the formula:



wherein  $R_1$  and  $R_2$  taken individually represent lower hydrocarbyl and  $R_1$  and  $R_2$  taken together represent alkylene from 2 to 10 carbon atoms, inclusive, bridging the oxygen atoms to which  $R_1$  and  $R_2$  are attached, n is an integer from 1 to 3 and R represents from 0 to 3 substituents selected from the group consisting of halo, lower-alkyl, lower-alkenyl, lower-alkoxy, lower-alkenyl-oxo, lower-alkylmercapto, nitro, cyano, and benzo.

3,413,383

### VIBRATORY COMPACTION METHOD FOR THE FABRICATION OF CERAMIC NUCLEAR FUEL ELEMENTS

Yasuo Hirose and Seiji Takeda, Hitachi-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed Oct. 12, 1965, Ser. No. 495,346

Claims priority, application Japan, Oct. 28, 1964, 39/60,772

4 Claims. (Cl. 264—5)

The present disclosure relates to a method for solidifying ceramic nuclear fuel powders which comprises introducing a ceramic nuclear fuel powder into a metal cladding tube, compacting said powder by reducing the pressure in the cladding tube and heating the powder to a temperature less than its sintering temperature, e.g., less than about 300° C., while concurrently vibrating said powder until a maximum packed density is achieved and further heating the cladding tube to a temperature sufficient to solidify the packed ceramic nuclear fuel powder, e.g., higher than about 300° C., but not so high as to be detrimental to the cladding tube.

3,413,384

### METHOD OF OBTAINING UNIDIRECTIONAL ORIENTATION OF MONOFILAMENTS IN CURABLE ELASTOMERIC MATERIALS

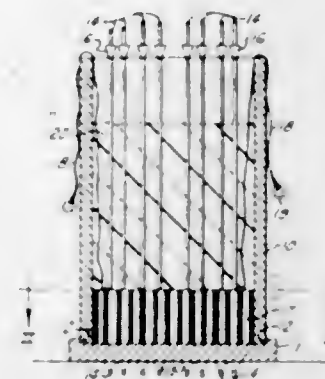
Martin T. Olliff, Jr., Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed Apr. 24, 1967, Ser. No. 633,180

3 Claims. (Cl. 264—3)

A method of directionally orienting monofilaments in

an uncured solid propellant or other curable materials mold cavity and the "cork" is pressed into a sealing fit within a container, so that the monofilaments extend with the open top of the mold cavity, curing the liquid



longitudinally of the container in spaced relation to each other and parallel to the center line of the container.

3,413,385

### PROCESS FOR REPAIRING REFRACTORY WALLS

Thomas Komac, Garfield Heights, and Edward J. Spirko, Cleveland, Ohio, assignors to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey  
Filed Oct. 13, 1965, Ser. No. 495,400  
5 Claims. (Cl. 264—30)



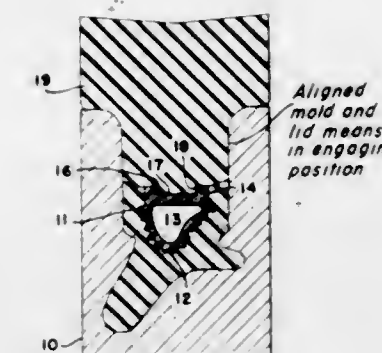
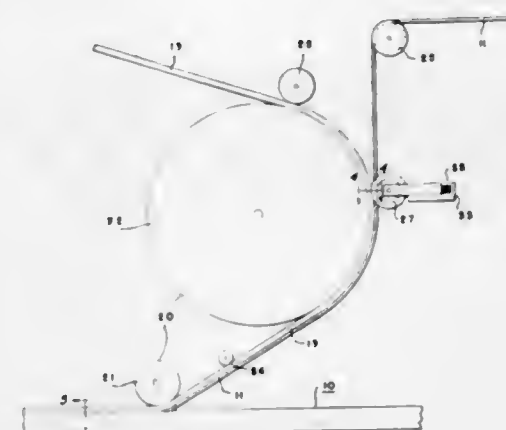
The process disclosed herein comprises a method of applying to an interior refractory wall of a coke oven which is at an extremely high temperature, a mixture for repairing said interior wall comprising a dry aggregate fed through a rigid supporting pipe at least 6 feet in length into the mixing chamber of a spray gun where it makes initial contact with a mixed phosphate solution of specific composition, the initial contact of the dry aggregate with the phosphate solution being at a point in the spray gun which is in the range 9-32 inches from the area of the wall to be repaired, the specific mixed phosphate solution being one which dries particularly fast and is therefore mixed at a point close to the wall to which the mixture is to be applied.

3,413,386

### WEATHERSTRIP MANUFACTURING

Clarence W. Lahmon, Fairborn, and Charles E. Fontaine, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed May 7, 1965, Ser. No. 454,092  
1 Claim. (Cl. 264—45)

A method for manufacturing a weatherstrip assembly consisting of a resilient foam material joined to a flexible extrusion of a dense elastomeric material having a longitudinal extending key shaped groove comprising the steps of forcing the key shaped groove of the extrusion into complementary interfit with a key shaped rib on a continuous mold "cork," passing the interfit extrusion and mold "cork" between a pressure roller and a continuous mold having a longitudinal mold cavity filled with liquid foam material whereby the extrusion is forced into the

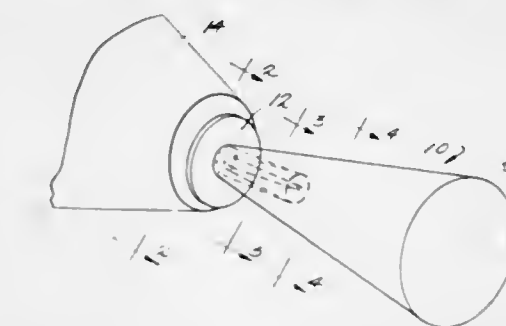


foam material and separating the weatherstrip assembly from the continuous mold "cork."

3,413,387

### CONCENTRIC EXTRUSION

Ernest O. Ohsol, Wilmington, Del., assignor to Haveg Industries, Inc., Wilmington, Del., a corporation of Delaware  
Filed June 4, 1965, Ser. No. 461,351  
5 Claims. (Cl. 264—46)



Thick foam plastic shapes, free from surface irregularities and density variations, are formed by extruding radially spaced-apart concentric tubes of foamable plastic in such a manner that upon foaming of the plastic the walls of the tubes expand to close the radial spaces. The shape may then be slightly compressed at right angles to the direction of extrusion.

3,413,388

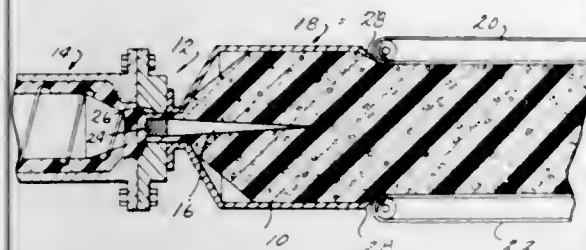
### RECTANGULAR EXTRUSION

John H. Lux and Ernest O. Ohsol, Wilmington, Del., assignors to Haveg Industries, Inc., Wilmington, Del., a corporation of Delaware  
Filed May 24, 1965, Ser. No. 458,191  
9 Claims. (Cl. 264—46)

Thick foamed plastic shapes, such as sheets, having uniform density in the transverse dimension are made by extruding the initial shape as a tubular body having one or more holes extending in the direction of extrusion



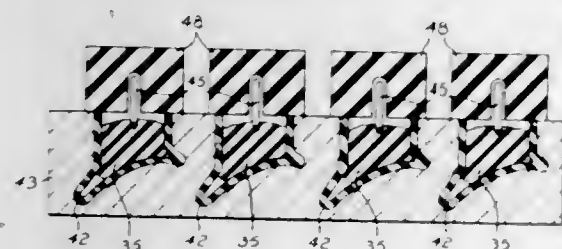
and then allowing the plastic to foam so as to expand at right angles to the direction of extrusion and fill the holes.



The shape may also be compressed to insure coalescence of the walls of the holes.

### 3,413,389 METHOD OF MANUFACTURING A COMPOSITE SEALING STRIP

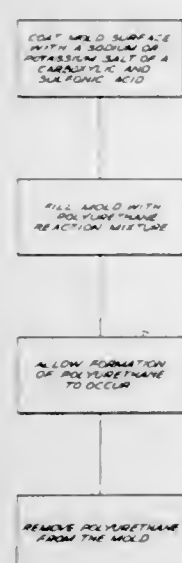
Robert A. Footner, Edwardstown, South Australia, Australia, assignor to S.A. Rubber Mills Pty. Ltd., Edwardstown, South Australia, Australia  
Filed July 21, 1965, Ser. No. 473,735  
9 Claims. (Cl. 264-46)



A sealing strip formed from a layer of sponge material having low water absorption properties disposed over an inner core of sponge material having plastic memory properties.

### 3,413,390 PROCESS OF MOLDING POLYURETHANE PLASTICS

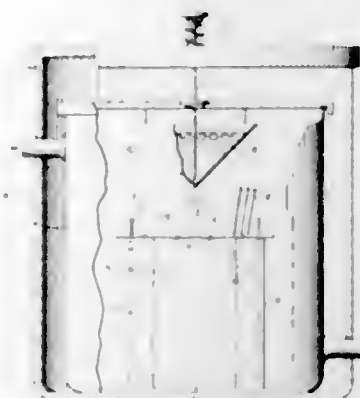
Herbert L. Heiss, New Martinsville, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware  
Filed Aug. 19, 1963, Ser. No. 303,165  
8 Claims. (Cl. 264-54)



1. A method for molding polyurethane plastics comprising coating a mold surface with a mold release agent, said mold release agent being an amide containing a member selected from the group consisting of sodium and potassium salts of carboxylic and sulfonic acids, inserting a polyurethane reaction mixture into said mold coated with said mold release agent, allowing the reaction mixture to react and easily releasing the resulting polyurethane from the said mold.

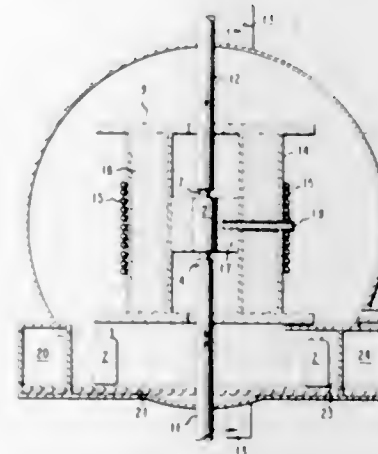
### 3,413,391 METHOD OF DEGASSING IN AN IMPREGNATING PROCESS

Ben Carroll and James R. Smith, Winston-Salem, N.C., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Apr. 26, 1966, Ser. No. 545,503  
10 Claims. (Cl. 264-102)



1. In a process for impregnating a device with molten material wherein the impregnation is performed by steps including the mounting of the device in a mold and covering it with said molten material while being situated within a heated evacuated chamber, the improvement which comprises removing gaseous matter that is fortuitously entrapped in said device and in said molten material, said removal being accomplished by the steps of employing a mold which fits tightly around the sides of said device, inserting a number of nucleation sites into that portion of said molten material which is at the bottom of said mold thereby creating the formation of bubbles of said gaseous matter in this area of said mold, and drawing said bubbles upward by the evacuation procedure whereby said bubbles combine with said entrapped gaseous matter at higher locations within said mold and sweep upward to the surface of said molten material where they break and their gaseous contents are removed by the evacuation procedure.

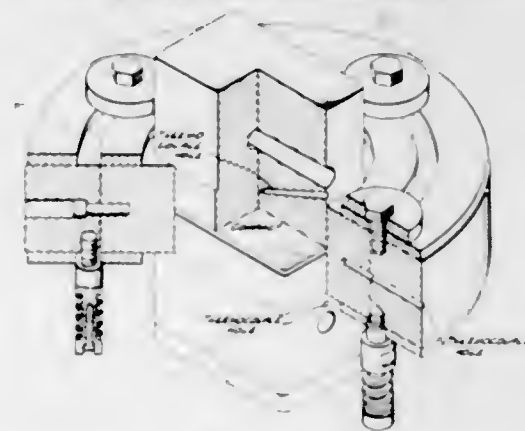
3,413,392  
HOT PRESSING PROCESS  
Geoffrey W. Meadows, Kennett Square, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
Continuation-in-part of application Ser. No. 500,609, Oct. 22, 1965. This application Oct. 17, 1966, Ser. No. 594,643  
5 Claims. (Cl. 264-102)



Oxygen-sensitive refractory materials are rapidly hot-pressed by a repetitive procedure in which a refractory material is loaded into reusable shells. The loaded shells

positioned in a repetitive sequence are introduced into a housing containing an atmosphere essentially free of oxygen, in turn positioned in a preheated susceptor and heated to from 500 to 2500° C. When the refractory material has reached the desired temperature, a pressure of from 200 to 30,000 pounds per square inch is applied for a sufficient time to compact the refractory material to at least 95% of theoretical density. The shell is then immediately withdrawn from the susceptor and the refractory material is rapidly cooled in an atmosphere essentially free of oxygen, before or after being removed from the shell.

3,413,393  
FABRICATION OF CONTROLLED-  
POROSITY METALS  
Roger R. Turk, Woodland Hills, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware  
Filed Apr. 28, 1965, Ser. No. 451,596  
2 Claims. (Cl. 264-111)



This disclosure provides for compact metal bodies of predetermined controlled porosity prepared from metal powders and an improved method of compacting same, sintering, machining and finishing to provide the desired porosity.

3,413,394  
PROCESS OF PREPARING SHAPED  
POLYMERIC ARTICLES  
Thomas F. Jordan, West Chester, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 376,255, June 18, 1964. This application Feb. 16, 1965, Ser. No. 433,205  
3 Claims. (Cl. 264-126)

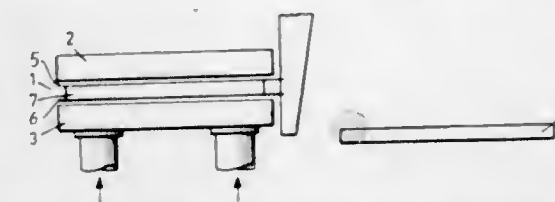
A process for coalescing powders of aromatic polyimides and other essentially linear polymeric resins having second order transition temperatures above 250° C. by subjecting said powders to a compressive force of at least 10,000 p.s.i. while maintaining the temperature of the resin between room temperature and the temperature at which the resin will coalesce at the applied pressure. After releasing the pressure, the resin powder is then heated in the substantial absence of pressure to coalesce the powder into a high strength article.

3,413,395  
METHOD OF MAKING PRESSED CHIP PLATES  
Erwin Schnitzler, Kopernikusstr. 16, and Ulrich Schnitzler, Albring 10, both of Karlsruhe-West, Germany  
Continuation-in-part of application Ser. No. 392,803, Aug. 28, 1964. This application July 12, 1966, Ser. No. 564,675  
Claims priority, application Germany, Dec. 30, 1965, Sch. 38,269  
2 Claims. (Cl. 264-120)

A process and a press for fabricating compressed plates out of precut blanks comprising shavings or chips and a known binding or cementing material.

The press includes an upper and lower heated punch and a pair of insulating plates which can be selectively moved between said upper and lower punch.

The process comprises the following steps:  
The pre-pressing of a blank between said pair of insulating plates after the latter together with the blank have been positioned between said upper and lower punch.

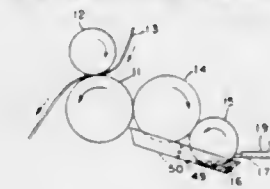


The lower insulating plate may also function as a transport plate for the blank.

Opening the press after the pre-pressing has been completed and removing the pair of insulating plates while leaving the pre-pressed blank on the lower punch.

Closing the press and conventionally compressing the pre-pressed blank.

3,413,396  
PIGMENT MARKING GELATIN CAPSULES  
Carl Louis Stearns, Orangeburg, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine  
Filed June 14, 1963, Ser. No. 287,826  
1 Claim. (Cl. 264-132)



A method of marking a gelatin strip to be formed into capsules, with a fluid composed of a pigment, polyacrylamide, glycerine, a surfactant and water; forming capsules from the marked strip and thereafter drying the capsules.

3,413,397  
PROCESS FOR STRETCHING POLYPROPYLENE  
FILAMENTS  
Robert E. Bierbaum and Emmett V. Martin, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
No Drawing. Continuation-in-part of abandoned application Ser. No. 649,004, Mar. 28, 1957. This application Aug. 17, 1961, Ser. No. 132,017  
2 Claims. (Cl. 264-290)

1. A process for treating polypropylene filamentary material having a molecular weight of at least 5,000 and including:

drawing said filamentary material to at least four times its original undrawn length in an atmosphere of steam at a temperature of at least about 100° C.; and thereafter

heat-setting said filamentary material in a hot gaseous atmosphere at a temperature of from between about 120° C. and the melting point of said filamentary material.

3,413,398  
PURIFICATION OF POLYMYXIN  
Raymond Weddle, London, England, assignor to Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y., a corporation of New York  
No Drawing. Filed May 18, 1964, Ser. No. 368,406  
Claims priority, application Great Britain, Aug. 30, 1963, 34,394/63  
13 Claims. (Cl. 424-123)

This invention relates to a method of purifying polymyxin B, polymyxin E, to the antibiotic described as



colistin or colimycin which, for the purposes of this invention, is considered to be identical with polymyxin E. In particular, this invention relates to introducing a chelating agent while polymyxin is precipitated with an alkaline agent from an aqueous medium, or for combining a chelating agent to a precipitate of polymyxin. The presence of the chelating agent not only causes the polyvalent inorganic cations to remain in solution or to redissolve again, if already precipitated, but the appearance and quality of the precipitate is surprisingly much more improved than expected. According to this invention, the chelating agents are selected from the class consisting of polyaminopolycarboxylic acids and their salts, glycine derivatives and their salts, mixtures of aminocarboxylic acids derived from diethylene-triamine and nitrilotriacetic acid.

3,413,399

#### WATER-REPELLENT AND PRESERVATIVE COMPOSITION AND METHOD OF USE

Donald Clifford Wehner, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Nov. 23, 1965, Ser. No. 509,406  
6 Claims. (Cl. 424-131)

A water-repellent and preservative mixture, for ap-

plication to textiles and cellulose products, of an aluminum or zirconium salt and the terephthalic, isophthalic or malic acid salt of an alkyl guanidine.

3,413,400

#### COLORED PHARMACEUTICAL COATING COMPOSITIONS

Samuel Lee, Fair Lawn, N.J., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 27, 1964, Ser. No. 392,633  
8 Claims. (Cl. 424-365)

Pharmaceutical dosage unit forms are coated with a solution comprising about .0001 to about 5% of a dispersing agent, about .01 to about 10% of a hydrophilic protective colloidal agent, from about 50 to 99% of a sugar base syrup vehicle, from about .0001 to about 5% of a water soluble F.D. and C. or D. and C. dyes, and from about .001 to about 15% of a water insoluble salt derived from an acid and a cation with an atomic number under 40 which serves as a pseudo laking agent. Upon drying of the coating composition, the pseudo lake is formed. Premature laking is prevented by the presence of the edible hydrophilic protective colloid.

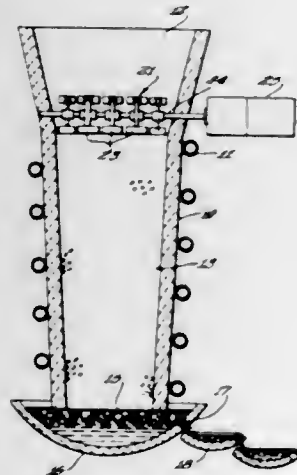
### ELECTRICAL

3,413,401

#### METHOD AND APPARATUS FOR MELTING METALS BY INDUCTION HEATING

Paul W. Dillon and Charles G. Robinson, Sterling, Ill., assignors to Northwestern Steel and Wire Company, Sterling, Ill., a corporation of Illinois

Filed Feb. 2, 1966, Ser. No. 524,556  
16 Claims. (Cl. 13-9)



1. A method of continuously melting meltable metals comprising the steps of:

providing a melting chute of a non-conducting non-magnetic material having an inlet at one end thereof and a reduced cross-sectional area outlet at the opposite end thereof,

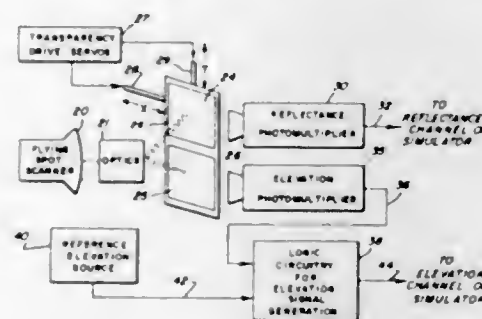
introducing a meltable metal into the chute to a compacting level and continuing the introduction of meltable metal into the chute and continuously exerting an external force on the meltable metal as introduced and thereby compacting the meltable metal, melting the meltable metal by the eddy currents in the charge induced by high frequency induction power, and continuously flowing the melted metal from the discharge end of the chute.

3,413,402

#### RADAR LANDMASS SIMULATOR

Michael T. Marrero, Orlando, Fla., assignor to the United States of America as represented by the Secretary of the Navy

Filed May 25, 1967, Ser. No. 642,669  
5 Claims. (Cl. 35-10.4)



A system for providing elevation data in a landmass radar simulator and comprising a three shades of gray transparency representative of predetermined increments of elevation change, flying spot scanner means and phototube means for providing voltage signals representative of said gray levels, differentiator means for differentiating said signals with respect to time to provide trigger signals various combinations of which are indicative of up or down increments of elevation change, logic circuit means responsive to the trigger signals to provide a continuous voltage output which is analogous to the elevation represented by the scanned transparency.

3,413,403

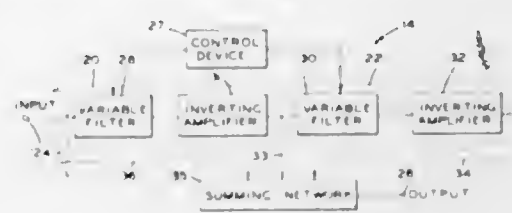
#### VIBRATO AND TREMOLO SYSTEM

Keith D. Jacob, Ann Arbor, Mich., assignor to Berry Industries, Inc., Birmingham, Mich., a corporation of Michigan

Filed Apr. 28, 1965, Ser. No. 451,512  
11 Claims. (Cl. 84-1.25)

A vibrato system for an electrical musical instrument or the like wherein an audio signal from the instrument is summed with two phase-shifted versions of the audio signal in a summing network to provide a vibrato output. One phase-shifted version of the audio signal is

developed by a variable phase-shifting circuit whose input is the audio signal and the other phase-shifted version of the gasket. The gasket is highly flexible and resilient and particularly suitable for use with the closure assembly



sion of the audio signal is developed by a second variable phase shift circuit whose input is the output of the first phase shifting circuit. A vibrato control signal varies the phase shift introduced in the first and second phase-shifting circuits substantially in unison.

3,413,404

#### ELECTRICAL APPARATUS AND DIELECTRIC MATERIAL THEREFOR

Kenneth W. MacFadyen, Lenox, Mass., Edward F. Perlowski, Syracuse, N.Y., and Thomas L. Sherer, Richmond, Mass., assignors to General Electric Company, a corporation of New York

Filed Feb. 16, 1965, Ser. No. 433,105  
20 Claims. (Cl. 174-17)

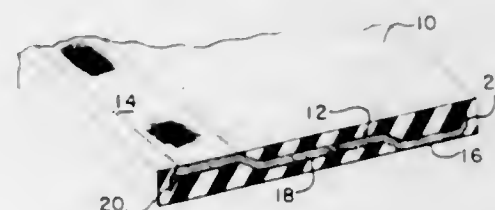
The thermal stability of cellulosic insulation in electrical apparatus, such as transformers, is improved by adding to the dielectric liquid of the apparatus a moisture removing compound composed of an organic compound of ethereal type having two to four ether groups and characterized by at least two ether groups linked to a common carbon atom.

3,413,405

#### ELECTRICAL SHIELDING TAPE

James Albert Myers, Toledo, Ohio, assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

Filed Oct. 10, 1966, Ser. No. 585,436  
6 Claims. (Cl. 174-36)



A tape product is provided which is particularly adapted for electrical shielding. In use, the tape prevents intermixing of signals in adjacent circuits. The tape structure is distinguished in that the conductor is in the form of a ribbon having two exposed areas extending the length of the tape and located one at either side of the tape and of the center line thereof making electrical contact when the tape is wrapped, with overlapping, about an electric cable or the like.

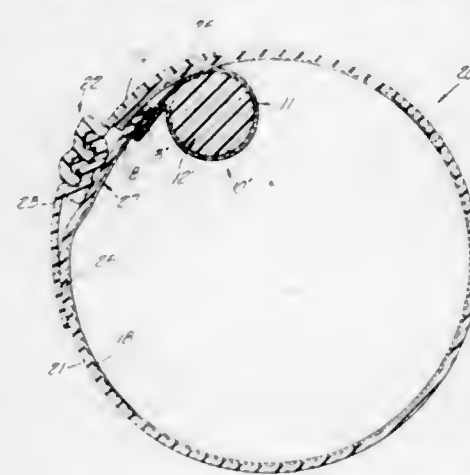
3,413,406

#### SHIELDED GASKETING AND SEAMED JACKETING UTILIZING THE SAME

Walter A. Plummer, 3546 Crownridge Drive, Sherman Oaks, Calif. 91403

Filed Apr. 10, 1967, Ser. No. 629,551  
6 Claims. (Cl. 174-3)

A resilient gasket for use in shielding against passage of electrical fields featuring a spongy core of air-charged cells enclosed by closely-spaced flexible wires and preferably including a mounting strip for the gasket formed by the wire covering and projecting laterally from one side



of seamed shielded jacketing for conductors, cabling and the like.

3,413,407

#### CONNECTOR FOR UNDERWATER CABLE

Rossiter Raymond Potter, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.,

Filed Dec. 30, 1965, Ser. No. 517,553  
10 Claims. (Cl. 174-89)



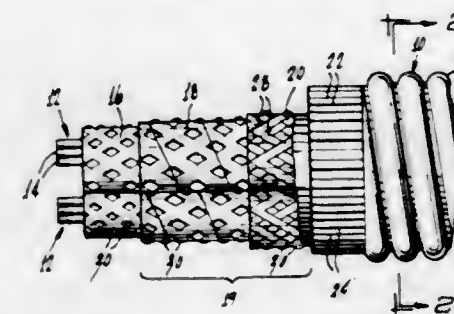
A waterproof splice is provided for use with underwater cables. Two cables may be joined end-to-end, or three cables may be joined in T-shaped relation. The splices are adapted to cables having tensile wires, an inner conductor, and an outer braid. An effective seal is provided between the splice and the outer insulating cover of the cables and the splices are easily applied by simple tooling. The internal surfaces of the splices are provided with cooperating tapering surfaces which interact upon relative axial movement between various parts of the splice. Alternative forms of sealing means are provided for accommodating various cable configurations and outer cover materials.

3,413,408

#### ELECTRIC CABLE FOR HIGH TEMPERATURE OPERATION

Edmund L. Robinson, Morrisville, Pa., assignor to Crescent Insulated Wire & Cable Company, Trenton, N.J., a corporation of New Jersey

Filed Aug. 15, 1967, Ser. No. 660,738  
10 Claims. (Cl. 174-121)



A mechanically strong, radially expansible barrier impervious to liquid and gaseous contaminants, interposed between the jacket and electrical insulation of cable subject to high heat conditions. An inner covering of poly-

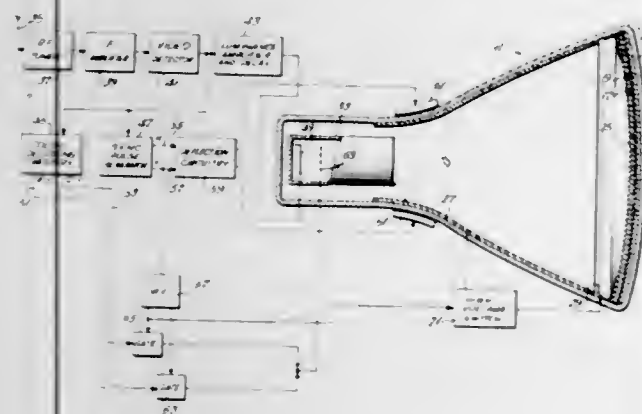


vinyl fluoride tape is wrapped about the insulation and is enclosed by a braided, continuous filament glass fiber outer covering. The inner covering stretches upon expansion of the insulation under high heat conditions, but remains impervious to the liquid and gaseous contaminants. The outer covering is stable and non-deteriorating under such conditions to mechanically reinforce the insulation, and has interstices into which the inner covering and insulation expand without loss of the barrier and reinforcement characteristics.

3,413,409

**COLOR TELEVISION SYSTEM WITH MEANS FOR PREVENTING KINESCOPE MISREGISTRATION**  
Charles L. Giles, Wilmington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Dec. 27, 1965, Ser. No. 516,319  
17 Claims. (Cl. 178—5.4)



This specification discloses a color television system employing a penetration type kinescope adapted to produce red and white images in response to different electron beam velocities. The images produced by the high and low velocity electron beams are brought into registration by electrostatic lens effect, which is generated by means of an electrically conducting coating on the inner surface of the kinescope and electrically conducting film on the face of the kinescope. The coating and the film are separated to define an annular gap therebetween and different high voltage potentials are applied to the film and the coating. The resulting electrostatic field acts as an electrostatic lens operating on the electron beam to change the amount of its deflection. The potentials applied to the film and the coating are cyclically switched to change the effect of the electrostatic lens and also the velocity of the electrons in synchronism with the gating of different color video signals to the electron gun of the picture tube. In this manner, the electron velocity is cyclically switched to different levels to produce a different color image and the effect of the electrostatic lens is cyclically switched so that resulting images are brought into registration.

3,413,410

**COLOR TELEVISION SYSTEM WITH MEANS FOR REDUCING KINESCOPE MISREGISTRATION**  
Zane M. Farmer, Arlington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Feb. 4, 1966, Ser. No. 525,218  
14 Claims. (Cl. 178—5.4)

This specification discloses a color television receiver employing a picture tube of the penetration type, which produces images of different colors in response to different electron beam velocities. The velocity of the electron beam is cyclically varied to produce different colored images on the screen of the picture tube. The images produced by the different velocities are brought into registra-

tion by changing the amplitudes of the current waveforms applied to the deflection coils of the picture tube in syn-

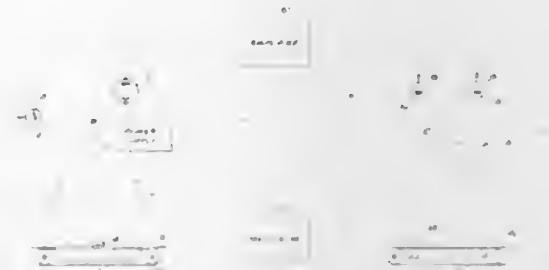


chronism with the switching of the electron beam velocities.

3,413,411

**FACSIMILE TRANSMISSION WITH GALVANOMETER SCANNING AND MODULATION**  
Norman L. Stauffer, Englewood, Colo., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Feb. 8, 1965, Ser. No. 430,811  
3 Claims. (Cl. 178—6)



A facsimile recording system is arranged with a transmitting and a receiving station. The transmitting station includes a galvanometer for scanning a document to be copied at a uniform rate and reflecting the image formed thereby upon a photoelectric cell. The resulting signal is applied to a first galvanometer within the receiving station. The first galvanometer reflects a light beam, formed from a light source, upon a mirror and then toward a second galvanometer. The second galvanometer is synchronized with the scanning galvanometer in the transmitting station for sweeping a light sensitive recording medium at the same uniform rate. A light area on the document causes the photoelectric cell to produce a signal which displaces the first galvanometer for reducing the amount of light reflected upon the recording medium by the second galvanometer and, thereby, creating a light area thereon.

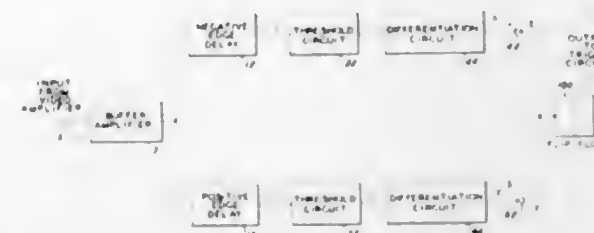
3,413,412

**PULSE WIDTH DISCRIMINATOR CIRCUIT FOR ELIMINATING NOISE PULSES BELOW A PREDETERMINED MINIMUM WIDTH**  
Stephen E. Townsend, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Dec. 30, 1964, Ser. No. 422,271  
7 Claims. (Cl. 178—7.1)

Apparatus in a facsimile system operable to define the noise and intelligence levels of a facsimile video signal. The apparatus includes a transistorized pulse width discriminator circuit wherein a predetermined minimum

pulse width corresponding to the pulse width of the white and black signals in the video signal is set so that un-

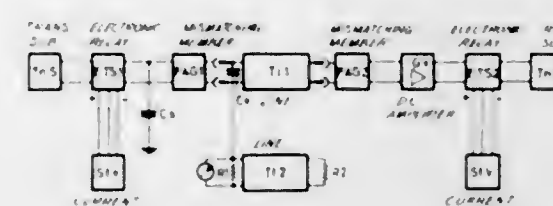


wanted noise pulses below the minimum width are eliminated from the video signal.

3,413,413

**SWITCHING ARRANGEMENT FOR THE TRANSMISSION OF DIRECT CURRENT TELEGRAPH SIGNAL UNITS**  
Anton J. Peisl, Munich-Pasing, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany

Filed Sept. 22, 1964, Ser. No. 398,454  
Claims priority, application Germany, Sept. 23, 1963, S 87,452  
8 Claims. (Cl. 178—69)

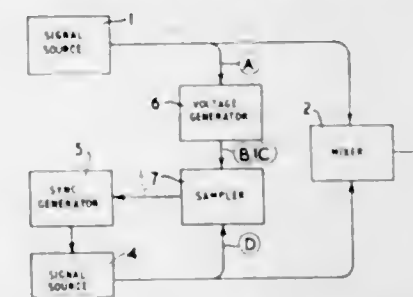


A circuit arrangement for the line transmission of direct current telegraph signal elements in which a transmitting device and a receiving device is connected by a symmetrical conductive line extending therebetween in which a low resistance mismatching is effected at each end of the line between such end and the adjacent associated device.

3,413,414

**TELEVISION FRAME SYNCHRONIZING APPARATUS**  
John Lewis Edwin Baldwin, Croydon, Surrey, and John David Millward, Orpington, Kent, England, assignors to Rank-Bush Murphy Limited

Filed Apr. 9, 1965, Ser. No. 446,930  
Claims priority, application Great Britain, Apr. 13, 1964, 15,101/64  
9 Claims. (Cl. 178—69.5)



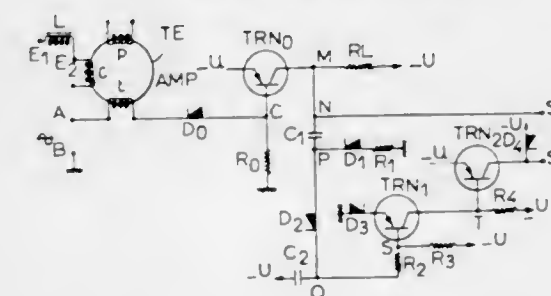
A television synchronizing apparatus for producing a predetermined phase relation between two sets of television synchronizing signals in which individual sources for first and second television synchronizing signals comprise horizontal frequency and vertical frequency components and define alternate odd-line and even-line fields. Voltage controlled phasing means vary the relative phases of the signals, and sample means generate a control voltage representing the value of an applied signal at instants fixedly related in time to controlling pulse signals. A sawtooth

voltage wave repetitive at half the frequency of the vertical synchronizing component and having a predetermined rate of rise is generated by a sawtooth generator in response to an applied synchronizing signal. The vertical synchronizing component is used for synchronizing the generator producing the sawtooth voltage wave which is then applied to the sampling means. The sampling means, in turn, are controlled by applying the second vertical synchronizing component thereto.

3,413,415

**ELECTROMAGNETIC DELAY DEVICE**  
Claude Monin, Villennes-sur-Seine, and Pierre Moch, Sucy-en-Brie, France, assignors to C.I.T. Compagnie Industrielle des Telecommunications, Paris, France

Filed June 2, 1965, Ser. No. 460,663  
Claims priority, application France, June 3, 1964, 976,970  
18 Claims. (Cl. 178—70)

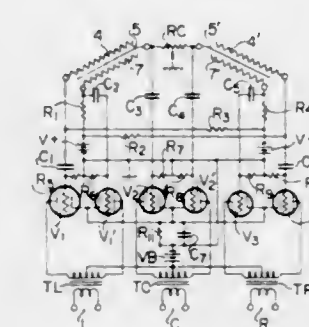


1. A detection and control arrangement, particularly for use as a control for a monitoring relay in telegraph exchanges, capable of controlled delayed operation of said relay comprising:

detection means including a magnetic amplifier means and a transistor switching circuit connected in series for generating a control signal in response to detection of a predetermined condition of a circuit of said telegraph exchange, release delay means connected to said detection means and including capacitor means and electronic switching means for generating an output signal in response to actuation by said control signal and being capable of maintaining said output signal a predetermined time after extinction of said control signal.

3,413,416

**STEREOPHONIC MICROPHONE**  
Motoyoshi Nakanishi, 1-511 5-chome, Honcho, Funabashi-shi, Chiba Prefecture, Japan  
Filed June 16, 1965, Ser. No. 464,295  
Claims priority, application Japan, June 19, 1964, 39/34,595  
11 Claims. (Cl. 179—1)



A stereophonic microphone comprising, substantially, a pair of sonic receptors, each having a vibrating plate disposed between an opposed pair of electrode plates adapted to be applied with voltages of opposite polarity with respect to each other. The pair of sonic receptors are combined in a unit, so that sounds from central sources



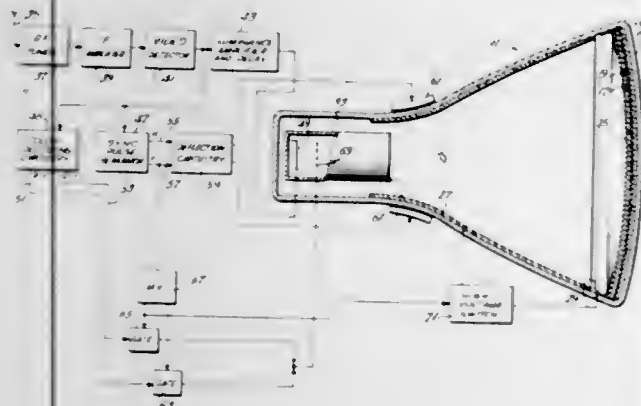
vinyl fluoride tape is wrapped about the insulation and is enclosed by a braided, continuous filament glass fiber outer covering. The inner covering stretches upon expansion of the insulation under high heat conditions, but remains impervious to the liquid and gaseous contaminants. The outer covering is stable and non-deteriorating under such conditions to mechanically reinforce the insulation, and has interstices into which the inner covering and insulation expand without loss of the barrier and reinforcement characteristics.

3,413,409

### COLOR TELEVISION SYSTEM WITH MEANS FOR PREVENTING KINESCOPE MISREGISTRATION

Charles L. Giles, Wilmington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Dec. 27, 1965, Ser. No. 516,319  
17 Claims. (Cl. 178—5.4)



This specification discloses a color television system employing a penetration type kinescope adapted to produce red and white images in response to different elec-

tion by changing the amplitudes of the current waveforms applied to the deflection coils of the picture tube in syn-



chronism with the switching of the electron beam velocities.

3,413,411

### FACSIMILE TRANSMISSION WITH GALVANOMETER SCANNING AND MODULATION

Norman L. Stauffer, Englewood, Colo., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Feb. 8, 1965, Ser. No. 430,811  
3 Claims. (Cl. 178—6)



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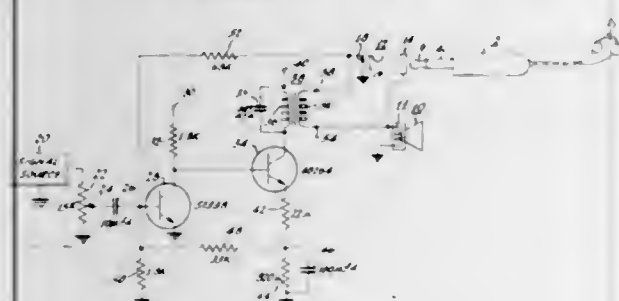


facing the microphone are emitted as signal voltages of the center sounds by way of the two vibrating plates and sounds from sources left and right to the microphone are emitted as signal voltages separately of the left and the right sounds by way of the two pairs of electrode plates.

3,413,417

# AUXILIARY EARPHONE CIRCUIT FOR A HIGH VOLTAGE TRANSISTOR AMPLIFIER

Allan W. Cornell, Midland, Mich., assignor to Radio Corporation of America, a corporation of Delaware  
Filed Mar. 30, 1965, Ser. No. 443,799  
8 Claims. (Cl. 179-1)

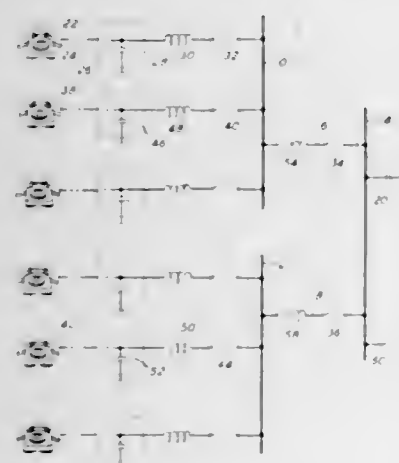


Degenerative feedback is made operative by the insertion of the earphone jack to reduce the gain of the amplifier.

3,413,418

# TIME-DIVISION MULTIPLEX TELEPHONE SYSTEM WITH INSERTION LOSS EQUALIZATION

Wilmer B. Gaunt, Jr., New Shrewsbury, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Nov. 23, 1965, Ser. No. 509,356  
9 Claims. (Cl. 179-15)



A time-division multiplex system in which groups of lines are connected together through an intergroup bus is described. The insertion losses of signal transmission between lines within a group and lines of two different groups are equalized by connecting an inductance between the common bus of each group and the intergroup bus. The added circuit elements permit complete resonant transfer without increasing the resonant transfer sampling period.

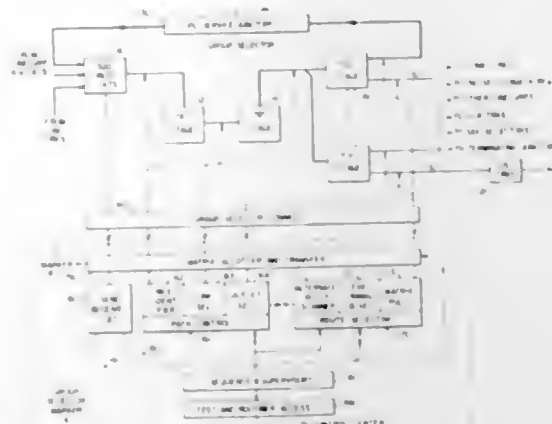
3,413,419

# ARRANGEMENTS IN A COMMUNICATION SWITCHING SYSTEM USING SIGNAL EQUIPMENT BETWEEN SENDERS AND SELECTOR SWITCHING UNITS

William B. Klees, Chicago, and William R. Wedmore, Glen Ellyn, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware  
Filed Nov. 27, 1964, Ser. No. 414,174  
11 Claims. (Cl. 179-18)

A system is disclosed in which all routing digits for

all possible routes are supplied from the translator to register storage before a selector is seized so that it not

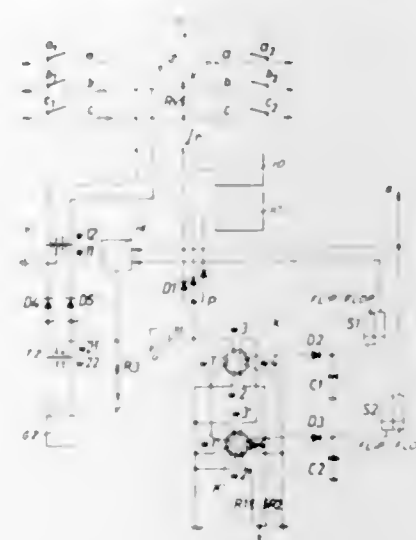


necessary to recall the translator if an alternate route must be used.

3,413,420

# TELEPHONE SYSTEM HAVING HIGH-PRIORITY AND LOW-PRIORITY STATIONS

Kuno Radius and Julius Geler, Backnang, Wurttemberg, Germany, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany  
Filed Apr. 14, 1965, Ser. No. 448,160  
Claims priority, application Germany, Apr. 14, 1964, T 26,009; June 26, 1964, T 26,449  
14 Claims. (Cl. 179-18)



A telecommunication system having both high-priority and low-priority stations, wherein the users of busy stations are apprised of the percentage of full capacity at which the system as a whole is operating and wherein, after the system has reached a predetermined percentage of full capacity, new calls may be originated only from the high-priority stations.

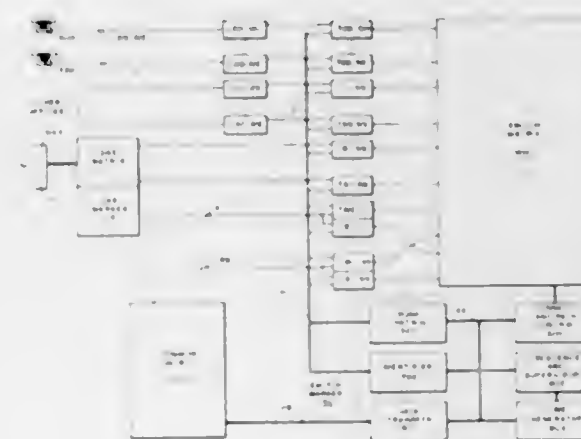
3,413,421

# APPARATUS TO SELECT AND IDENTIFY ONE OF A POSSIBLE PLURALITY OF TERMINALS CALLING FOR SERVICE IN A COMMUNICATION SWITCHING SYSTEM

Alfred S. Cochran, Elmhurst, and Frank B. Sikorski, Des Plaines, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware  
Filed June 14, 1965, Ser. No. 463,587  
15 Claims. (Cl. 179-18)

Each inlet terminal of the exchange has an individual identification conductor which is connected to two diodes, one diode being connected to one of a set of group identification conductors, and the other diode being connected to one of a set of trunk identification conductors. A terminal calling for service connects a source of negative potential to its identification conductor, the potential be-

ing transmitted via the diodes to the group and the trunk identification conductor. The apparatus includes group tens and units scanners, and trunk tens and units scanners, with output relays, for selecting one marked input and recording respectively the four digits of the calling terminal number. After selection and recording of the group tens and units digits of a group conductor having a negative potential, a positive blanking potential is applied via break contacts of the unoperated group scanner output relays to all group identification conductors except those in the group identified by the two digits. This prevents a

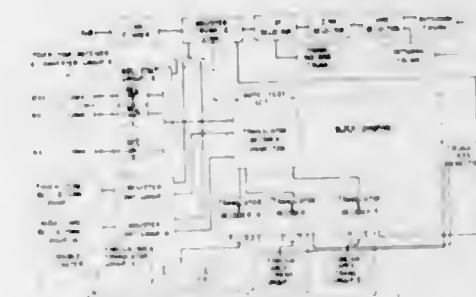


negative call-for-service potential from a terminal identification conductor except for calls actually in the identified group. The trunk tens and units scanners are then operated in turn to select and record the trunk tens and units digits. Contacts of the scanner output relays are also used to apply operate potentials to a connect relay in a selected terminal circuit, to connect the selected terminal circuit to a plurality of common conductors used in establishing a connection in the switching network and supplying call information to and from the terminal circuit.

3,413,422

# STAGE BY STAGE SWITCHING SYSTEM HAVING TRANSLATING MEANS FOR DERIVING SWITCHING CODES

George Riddell, Lincroft, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Sept. 24, 1965, Ser. No. 489,807  
27 Claims. (Cl. 179-18)

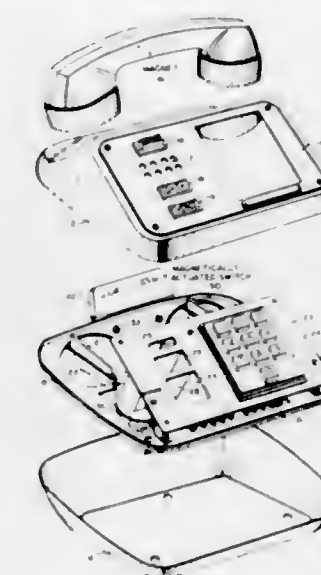


A stage by stage switching system having a plurality of registering means and translator means wherein serially related switching stages are settable under control of a plural digit address code to establish a tandem connection through to a terminating stage. Apparatus is provided which permits initial switching digits to set initial switching stages independently of the complete address code registration and to prevent the last switching digit from setting the last switching stage until the address code registration is completed.

3,413,423

# SPECIAL PURPOSE TELEPHONE SUBSET

Martin J. Stevko, Addison, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware  
Filed June 30, 1965, Ser. No. 468,243  
3 Claims. (Cl. 179-100)

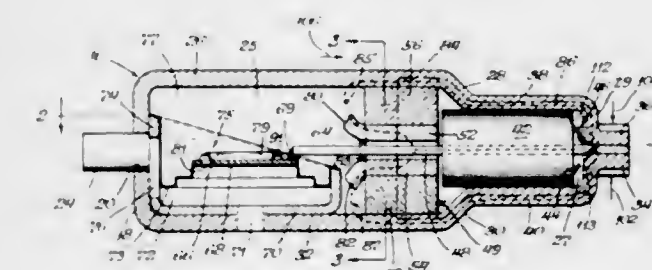


A desk type telephone subset for use in the transmission of both voice and data. Switching from the voice to data mode is accomplished by placing the telephone handset on a second hook-switch that operates in response to a permanent magnet located within the handset.

3,413,424

# ELECTRO-ACOUSTIC TRANSDUCER

Elmer V. Carlson, Prospect Heights, Ill., assignor to Industrial Research Products, Inc., Franklin Park, Ill., a corporation of Delaware  
Filed Sept. 6, 1961, Ser. No. 136,220  
7 Claims. (Cl. 179-115)



An electro-acoustic transducer in a flux conductive envelope which is in contact with the armature and forms part of the magnetic circuit of the transducer.

3,413,425

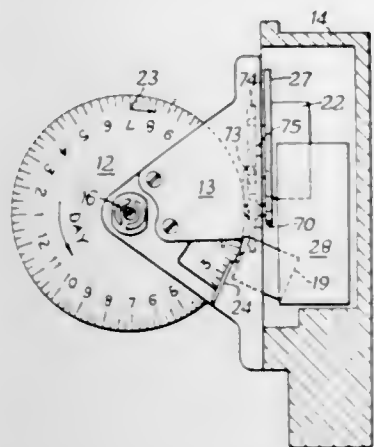
# ELECTRIC TIME SWITCHES

Henry Joseph Lovegrove, Hadley Wood, Barnet, England, assignor to Sangamo Electric Company, Springfield, Ill., a corporation of Delaware  
Filed Oct. 27, 1965, Ser. No. 505,327  
Claims priority, application Great Britain, Oct. 30, 1964, 44,417/64  
12 Claims. (Cl. 200-38)

A switch mechanism for controlling one or more electric circuits in timed relation comprising a plurality of continuously rotatable annular tracks disposed in axially paired relation, a plurality of switch operating abutments disposed in selected spaced relation about the peripheries of the tracks, first switch means operatively associated with each pair of tracks through lever rockers movable by the abutments, second switch means associated with the



first switch means for controlling an electric load circuit, and an electric selector switch operative through pawl and ratchet means for selectively establishing electrical connection between the first and second switch means.

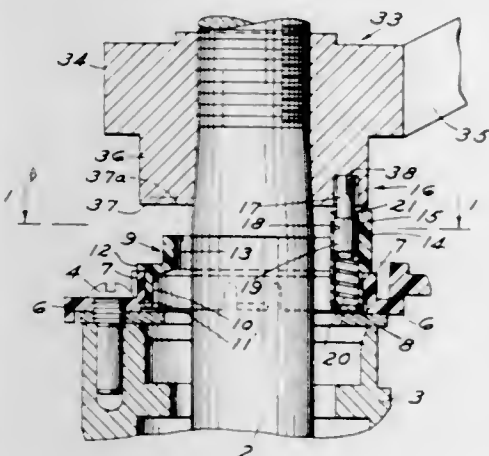


3,413,426

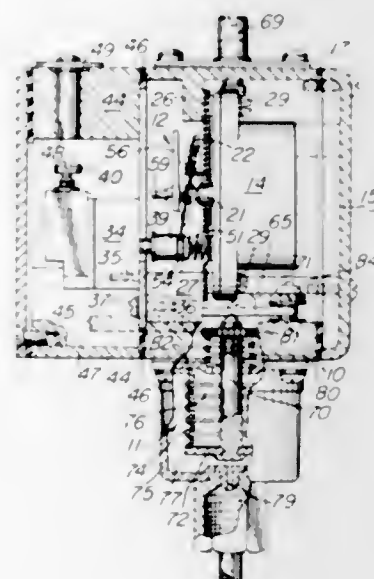
**DIRECTION SIGNALING APPARATUS**

Gerald McClure, Warren, and Ray F. Winogrocki, East Detroit, Mich., assignors, by mesne assignments, to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan

Filed June 17, 1966, Ser. No. 558,433  
15 Claims. (Cl. 200—61)



3,413,428  
**PRESSURE SWITCH WITH TIME DELAY**  
Myron A. Noth, Asheville, N.C., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan  
Filed Oct. 17, 1966, Ser. No. 587,065  
9 Claims. (Cl. 200—83)



Direction signaling apparatus for a vehicle having a rotatable steering member and a rotatable cam member operable to effect automatic canceling of the vehicle's direction signals, rotation of the cam member being caused by a driving pin interconnecting the steering member and the cam member. The driving pin is slideable in a bore formed in one of the members and is projected yieldably toward the other member in which there is a socket for reception of the driving pin.

3,413,427

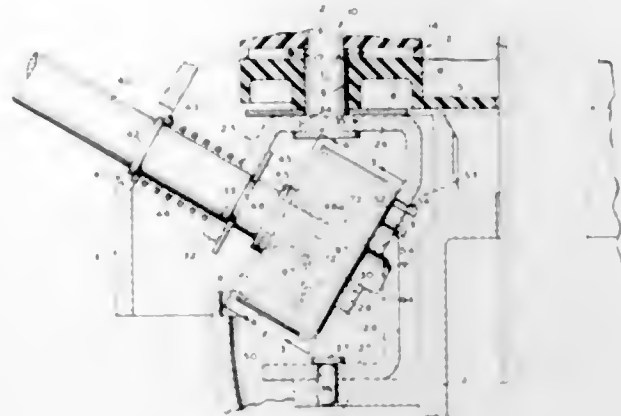
**DIRECTION SIGNAL SWITCH INCORPORATING WINDSHIELD WIPER AND WASHER OPERATING MECHANISM**

Richard S. Radomski and Robert A. Verbaeghe, Warren, Mich., assignors, by mesne assignments, to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan

Filed Feb. 23, 1965, Ser. No. 434,391  
13 Claims. (Cl. 200—61.34)

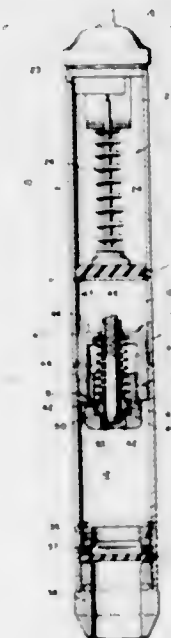
A direction signal switch mechanism having oscillatable switching elements for indicating selectively a left-hand or right-hand turn in response to left or right rocking of an actuating lever, the actuating lever being rotatable about its own axis and having rotatable switch means for energizing and deenergizing a windshield

1. A pressure switch comprising means responsive to a change of fluid pressure to provide displacement of an operating means between a first and a second position at a rate directly related to the rate of the change in pressure, an actuating means movable between a first and a second position and effective in said first position to produce one controlling effect and in a second position to produce another controlling effect, resilient means urging said actuating means from said first position toward said second position and normally, regardless of the position of said operating means, into engagement with said operating means, spring means tending to maintain said operating means in its first position, and damping means connected to said actuating means to limit the speed of movement



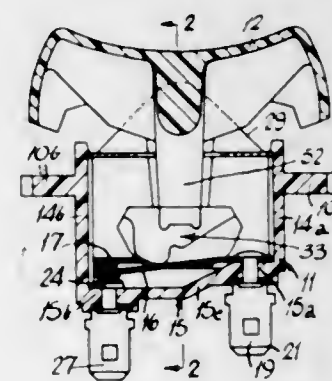
of said actuating means toward its second position when movement thereof is permitted by displacement of said operating means from one of its positions to its other position, whereby when said change of pressure exceeds a predetermined rate, movement of said actuating means occurs more slowly than said operating means to delay said controlling effect.

3,413,429  
**AUTOMATIC PUMP CONTROL**  
Clyde E. Yost, 700 S. Villa Drive,  
Evansville, Ind. 47714  
Continuation-in-part of application Ser. No. 439,324,  
Mar. 12, 1965. This application May 8, 1967, Ser.  
No. 636,764  
3 Claims. (Cl. 200—83)



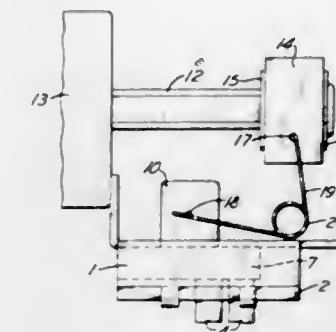
An automatic pressure control unit for turning on and off a pump for a well when the fluid in a well is above a predetermined maximum level and below a predetermined minimum level respectively. The pressure of the head of fluid is transmitted through a diaphragm to a valve system in a sealed chamber in the device to operate an electrical switch which, in turn, controls the pump.

3,413,430  
**ELECTRIC ROCKER SWITCHES**  
Richard Colin Sharples, Burnley, England, assignor  
to Joseph Lucas (Industries) Limited, Birmingham,  
England  
Filed Feb. 2, 1967, Ser. No. 613,655  
Claims priority, application Great Britain, Feb. 17, 1966,  
7,076/66  
5 Claims. (Cl. 200—153)



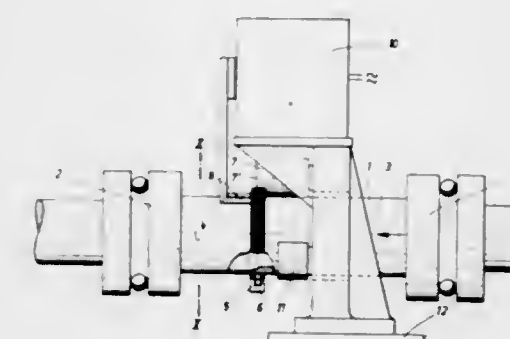
A rocker switch having contacts operated in response to movement of the operating member of the switch, through a cam member detachably supported in the body of the switch.

3,413,431  
**SNAP ACTION SLIDE SWITCH**  
Mogens W. Bang, Ridgway, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania  
Filed June 29, 1967, Ser. No. 649,936  
5 Claims. (Cl. 200—172)



Switch control means is mounted beside the movable contact carrier of a slide switch for movement parallel to the movement of the carrier. An over-center snap spring connected to the control means and the carrier at predetermined anchor points normally holds those points their maximum distance apart. When the control means is moved in either direction, the spring will snap the contact carrier in the opposite direction.

3,413,432  
**APPARATUS FOR THE FORMATION OF LOCAL, CIRCUMFERENTIAL ENLARGEMENTS ON HOLLOW CYLINDRICAL BODIES**  
Erich Hörmann, Dusseldorf, Germany, assignor to Gesellschaft für Fertigungstechnik und Maschinenbau Gesellschaft m.b.H., Steyr, Austria  
Filed Nov. 22, 1966, Ser. No. 596,296  
Claims priority, application Germany, Feb. 9, 1966,  
P 38,734  
6 Claims. (Cl. 219—7.5)

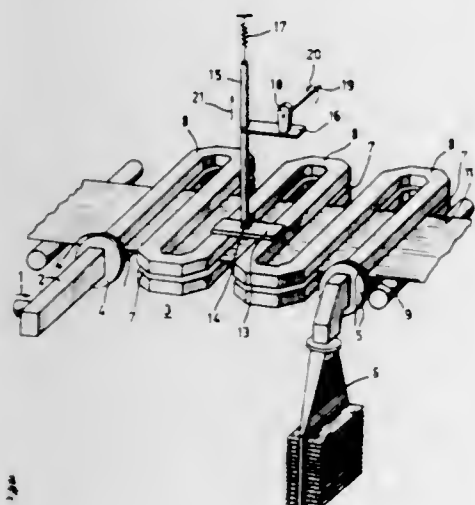


1. Apparatus for the formation of local, circumferential enlargements on hollow cylindrical bodies, which comprises mounting means defining an axis of rotation and adapted to mount said hollow cylindrical body for coaxial rotation about said axis, means for rotating said body about said axis of rotation when said body is thus mounted, force-applying means for applying an axial upsetting pressure to said body when the same is thus mounted and rotated, an arcuate heating inductor which concentrically surrounds said axis of rotation in a plane which intersects a press-forming roll means, said arcuate heating inductor having ends defining an angular gap with respect to said axis of rotation, press-forming roll means which extend parallel to said axis of rotation and are radially movable with respect to said axis of rotation in said angular gap, heating conductor means electrically connected to said arcuate heating inductor and by-passing



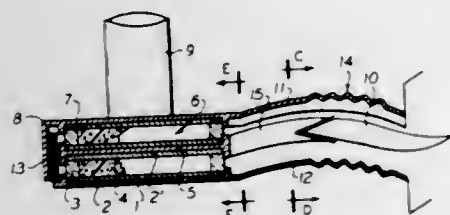
said press-forming roll means in axial and circumferential directions with respect to said axis of rotation, and traversing means for moving said press-forming roll means, arcuate heating inductor, and heating conductor means in unison along said axis of rotation.

**3,413,433**  
**HIGH-FREQUENCY HEATING DEVICES COMPRISING A WAVEGUIDE FOR HEATING THIN WIDTHS OF MATERIAL**  
 Franciscus Timmermans, Harksheide, and Werner Golombek, Quickborn, Germany, assignors to North American Phillips Company, Inc., New York, N.Y., a corporation of Delaware  
 Filed Mar. 28, 1966, Ser. No. 537,727  
 Claims priority, application Germany, Mar. 27, 1965, P 36,396  
 17 Claims. (Cl. 219—10.61)



A high frequency heating device for heating strip dielectric material comprises a folded waveguide having a continuous longitudinal slot through which the strip material is passed. High frequency energy is propagated through the waveguide. The wavelength in the waveguide is varied during the heating operation by effectively varying the cross-sectional dimensions of the waveguide, e.g., by means of a driving rod attached to the top of the waveguide and reciprocally driven vertically by a cam arrangement.

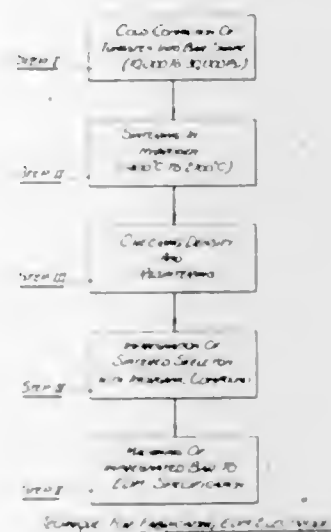
**3,413,434**  
**PRODUCTION OF STRUCTURAL ELEMENTS HAVING A FOAM-PLASTIC CORE IN AN ELECTRIC HIGH FREQUENCY FIELD**  
 Helmut Mandel, Reibach über Dieburg, Germany, assignor to Dorplastex A.G., Zug, Switzerland, a corporation of Switzerland  
 Filed Sept. 14, 1965, Ser. No. 487,245  
 5 Claims. (Cl. 219—10.67)



An apparatus, for producing structural units containing a plastic foam core in an electric high frequency field, has an outer, grounded electrode in two-part overlapping formation that surrounds an inner counter electrode entirely screened by the outer electrode and being

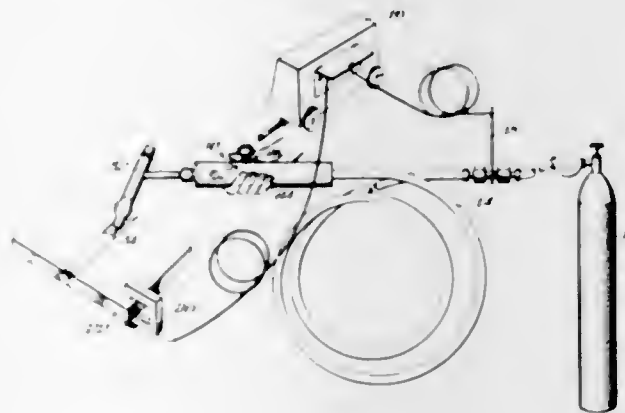
fed by high frequency voltage. The structural units to be produced are placed between one part of the outer electrode and the counter electrode.

**3,413,435**  
**ELECTRICAL DISCHARGE MACHINE ELECTRODES IMPREGNATED WITH INORGANIC COMPOUNDS**  
 John Sam Holtzclaw, Clermont, Fla., assignor to Rametco, Inc., Clermont, Fla.  
 Filed Oct. 2, 1964, Ser. No. 401,071  
 5 Claims. (Cl. 219—69)



An electrical discharge machining electrode in which a porous skeleton shaped to the desired electrode configuration is formed of a sintered refractory metal such as tungsten, molybdenum, tantalum and columbium, the pores of the skeleton being filled with an inorganic compound, preferably of lower ionization potential, such as barium tungstate.

**3,413,436**  
**ARC WELDING APPARATUS**  
 Clifford S. Tallman, New City, N.Y., assignor to Eutectic Corporation, Flushing, N.Y., a corporation of New York  
 Filed Jan. 12, 1965, Ser. No. 424,934  
 10 Claims. (Cl. 219—75)



A hand torch for arc welding utilizing a handle section, an inert gas conduit connected to a supply of inert gas, a gas throttling valve and a flow meter in said handle section, the flow meter also being in the handle section but downstream of the valve. The valve utilized being a manually rotated globe type valve. The flow meter utilized being a calibrated plunger moveable under a transparent section of the handle.

**3,413,437**  
**APPARATUS FOR THE CONTINUOUS MANUFACTURE OF LIGHTWEIGHT AND COMPOSITE METALLIC I-BEAMS**  
 Kineo Hamamoto and Shuji Uchida, Tokyo, Japan, assignors to Nippon Kokan Kabushiki Kaisha, Tokyo, Japan  
 Filed Apr. 13, 1966, Ser. No. 542,268  
 Claims priority, application Japan, Apr. 15, 1965, 40/22,041  
 6 Claims. (Cl. 219—81)



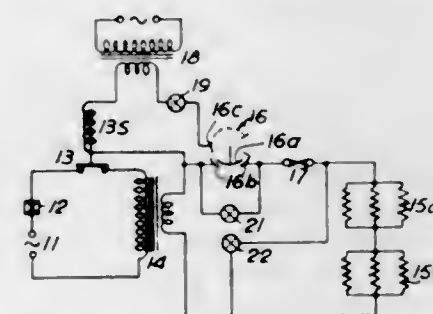
Apparatus for continuous manufacturing of light weight and composite I-beams, wherein a wide strip of steel and two narrow strips of steel are simultaneously uncoiled and fed in superimposed relation with each other with an edge of each narrow strip being disposed in alignment with an opposite edge of the wide strip. The narrow strips are then welded to the wide strip inwardly of the outermost edge of the wide strip and the unwelded portions of the superimposed strips are separated and bent apart from each other to form oppositely extending flanges on opposite edges of the wide strip to form an I-beam.

**3,413,438**  
**SOLID STATE TEMPERATURE CONTROL CIRCUIT**  
 Frederick H. Gardner and Ferenc Pankotay, Rochester, N.Y., assignors to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware  
 Filed Aug. 3, 1966, Ser. No. 569,984  
 2 Claims. (Cl. 219—210)



A heating and temperature regulating circuit for a crystal oven. A transistor is the main heat source and is controlled by a thermally responsive amplifier. A feedback circuit is connected between the transistor and the amplifier for limiting current applied to the transistor especially during warm-up. The feedback path includes a diode polarized in the forward direction to reduce low level feedback and permit strong response to high level feedback.

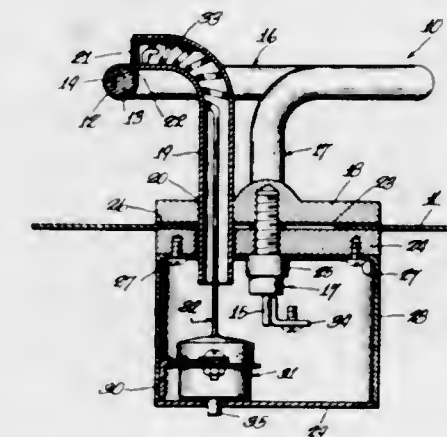
**3,413,439**  
**ELECTRIC CIRCUIT CONNECTIONS**  
 Paul Eisler, 57 Exeter Road, London NW. 2, England  
 Filed May 26, 1965, Ser. No. 458,913  
 Claims priority, application Great Britain, May 26, 1964, 21,688/64; Aug. 11, 1964, 32,665/64  
 19 Claims. (Cl. 219—213)



A space heating system for a plurality of rooms comprises large area, low voltage electric resistance films distributed over the internal boundary surfaces of the

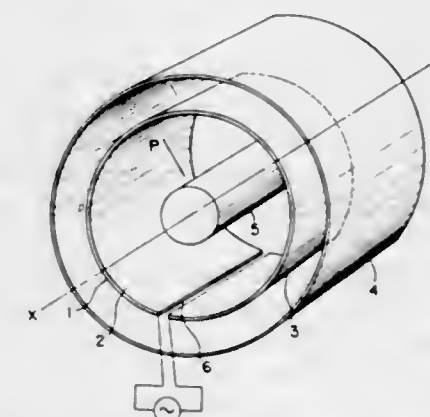
rooms, a transformer for supplying the films, accessible, thin, pressure contact interconnections whereby the films can be adapted to local conditions, and switching means on the secondary side, the interconnections and switch contacts being of such area that overheating is avoided. The interconnections may be a strip conductor held in contact by suitable means with the switching in series parallel either of the films or secondary on the transformer and may also involve a time sequence and be under thermostatic control, and the primary supply may be automatically opened during switching.

**3,413,440**  
**THERMAL RESPONSIVE ASSEMBLY, PARTICULARLY FOR ELECTRIC HEATERS**  
 Lester D. Drugmand, Pittsburgh, Pa., assignor to Edwin L. Wiegand Company, Pittsburgh, Pa.  
 Filed Aug. 23, 1965, Ser. No. 481,604  
 1 Claim. (Cl. 219—331)



An immersion-type electric heater assembly has a thermally responsive device in proximity to the heat generating portion of the heating element. The thermally responsive device includes a flexed convolutely coiled capillary tube within a sharply curved housing, wherein the housing terminates adjacent the heating element. The capillary tube convolutions effect good thermal contact with the housing to effect reliable control of electric power applied to the heating element.

**3,413,441**  
**LONG WAVELENGTH (FAR INFRARED) RADIATION HEATING DEVICE**  
 Kosaku Isobe, Hajime Inuma, Yukio Tanaka, Katsuji Soya, and Hitoshi Yamagishi, Tokyo-to, Japan, assignors to Kokusai Denki Kabushiki Kaisha (also known as Kokusai Electric Co., Ltd.), Tokyo-to, Japan, a joint-stock company of Japan  
 Filed Nov. 22, 1965, Ser. No. 508,941  
 Claims priority, application Japan, Dec. 14, 1964, 39/70,018  
 3 Claims. (Cl. 219—390)



1. A long wavelength radiation heating device comprising a hollow cylindrical heating element adapted to heat within its hollow interior articles to be heated with

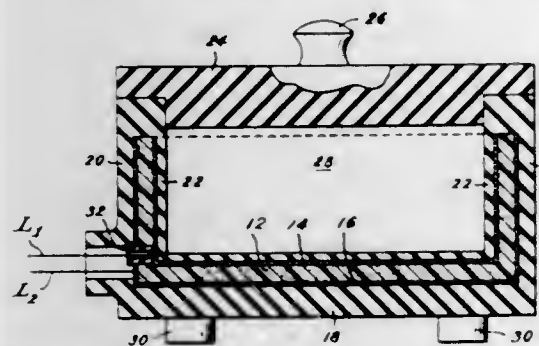


long wavelength infrared radiation rays, power supply means connected to the heating element to supply electrical power thereto, and an outer hollow cylinder disposed concentrically around the heating element and having low emissivity and excellent reflecting characteristic with respect to short wavelength radiation rays, said cylindrical heating element being coated over its entire inner surface with a first substance having high emissivity and long wavelength radiation characteristics and over its entire outer surface with a second substance having low emissivity and short wavelength radiation characteristics.

3,413,442

**SELF-REGULATING THERMAL APPARATUS**  
Francis Peter Bulting, Plainville, and Joseph William Waseleski, Jr., Mansfield, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Texas

Filed July 15, 1965, Ser. No. 472,108  
5 Claims. (Cl. 219—390)



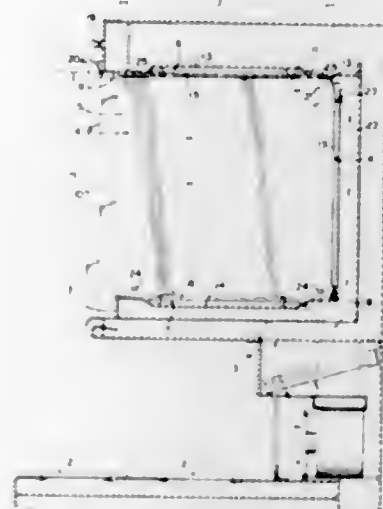
Electrical heating devices and methods of making same employing polymeric materials which display a steep-sloped positive temperature-resistivity coefficient (PTC) which serves to self-regulate the amount of heat produced. The materials are ductile and can be molded, extruded, machined and formed in complex shapes including the following embodiments: A utensil formed of a PTC heater element defining a cavity therein; the heating element encapsulated in an electrical insulating jacket preferably formed of material having the same thermal coefficient of expansion and also serving as thermal insulation where desired. Another embodiment employs a plurality of PTC elements having different anomaly temperatures to provide a choice in temperature selection. Yet another embodiment shows either open or closed passages formed in a PTC heating element.

3,413,443

**RESTRICTED VOLUME SELF-CLEANING OVEN**  
Ronald L. Britt, Lombard, Ill., assignor to General Electric Company, a corporation of New York  
Filed July 28, 1966, Ser. No. 568,425  
5 Claims. (Cl. 219—393)

1. A cooking oven comprising:
  - (a) top, bottom and rear walls, a pair of side walls, and a front access doorway;
  - (b) door means for closing said doorway;
  - (c) a first electric heating element positioned beneath the top wall in a plane adjacent and parallel thereto;
  - (d) a second electric heating element positioned above said bottom wall in a plane adjacent and parallel thereto;
  - (e) a back liner member substantially coextensive with said back wall and hingedly mounted along one horizontal edge thereof;
  - (f) a pair of side liner members substantially coextensive with said pair of side walls respectively, each said side liner member being hingedly mounted along one horizontal edge thereof oppositely positioned in said oven in a vertical sense with respect to said one horizontal edge of said back liner member;

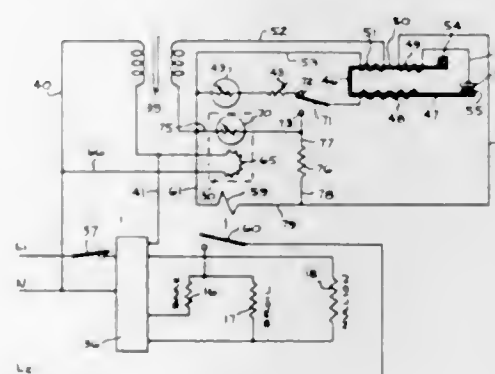
(g) said side liner members having a height about half the distance between them, whereby said side liner members may be swung into cooperatively covering relation to one of said elements and said back liner member may be swung into covering relation to the other of said elements so that said elements are respectively substantially enclosed in small volumes formed primarily by said top and bottom walls and by said liner members; and



- (h) means for releasably retaining each liner member which cooperates with said top wall in the position providing said small volume;
- (i) whereby food soils on said top and bottom walls and said liner members are degraded into gaseous products by pyrolysis when said elements are energized and said small volumes are provided.

3,413,444

**THERMOSTATIC CONTROL SYSTEM WITH SMOKE OVERLOAD PROTECTION**  
Henry J. Heit, Louisville, Ky., assignor to General Electric Company, a corporation of New York  
Filed Nov. 12, 1965, Ser. No. 507,415  
5 Claims. (Cl. 219—398)

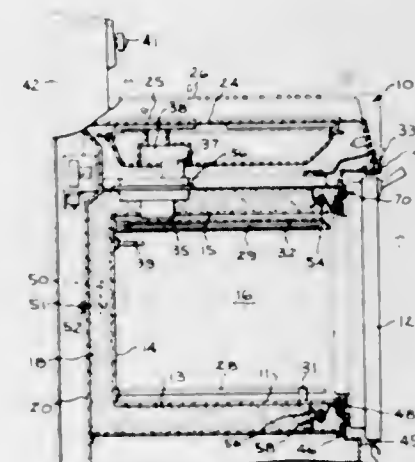


1. An oven comprising walls defining a cooking compartment, heating means for said compartment for establishing cooking operations as well as a high temperature self-cleaning operation, control means for said heating means selectively operable to control the heating means to effect either a cooking operation or a self-cleaning operation, temperature control means for said heating means settable to control the heating means when in a cooking operation to hold selected temperatures within a temperature range between about 150° F. and 550° F. and within a self-cleaning temperature range between about

750° F. and 950° F., and an oven exhaust outlet in one wall of the housing, an oxidation unit mounted in the said exhaust outlet, said temperature control means including a first temperature sensor located within the cooking compartment for detecting the oven air temperature during the cooking operation, while said temperature control means includes a second temperature sensor located downstream of the oxidation unit for alternately detecting oven exhaust temperatures during the self-cleaning operation so as to prevent the oxidation unit from becoming overloaded while the oven is being cleaned of a heavy soil load.

3,413,445

**FRONT HEATING AND THERMAL BREAKER MEANS FOR SELF-CLEANING OVEN**  
Raymond L. Dills, Louisville, Ky., assignor to General Electric Company, a corporation of New York  
Filed Sept. 26, 1966, Ser. No. 581,891  
4 Claims. (Cl. 219—406)

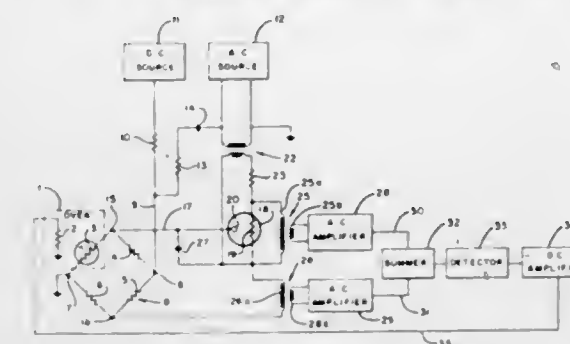


1. An oven comprising an oven liner of box-like construction with a front opening for gaining access thereto, an oven housing surrounding the oven liner and including a layer of thermal insulation to insulate the housing from the oven liner, the oven housing also having a front opening for receiving the oven liner therethrough, an oven door mounted at the front of the oven for closing the front opening of the oven liner, an outwardly extending annular lip formed on the oven liner near the front thereof, tension means at the back of the oven housing for pulling against the oven liner so that the said annular lip of the oven liner is drawn toward the edge of the said opening in the front of the oven housing, heating means for raising the temperature within the oven; the invention comprising a combined breaker strip and door gasket member and a wire-like member threaded therethrough whereby the said combined member is fastened to the oven liner behind the said annular lip by tying the wire-like member around the oven liner, the breaker strip portion of said member being sandwiched between the annular lip of the oven liner and the peripheral edge of the opening in the oven housing, while the door gasket portion of the combined member is disposed against the front of the oven housing and adapted to bear against the inside of the oven door so as to substantially close the gap therebetween, and a supplementary heating means encircling the front portion of the oven liner but separate therefrom for supplying heat energy to the front of the oven liner to replenish the heat lost through and around the oven door, said supplementary heating means including a heat reflecting shield directing its heat energy toward the nearest portion of the oven liner, and support means for supporting both the supplementary heating means and its heat reflecting shield from the oven housing.

3,413,446

**PROPORTIONAL AND INTEGRATING TEMPERATURE CONTROLLER**  
Robert G. Rogers, Los Altos, Calif., assignor to Automatic Electric Laboratories, Inc., a corporation of Delaware

Filed Apr. 25, 1967, Ser. No. 633,595  
9 Claims. (Cl. 219—501)

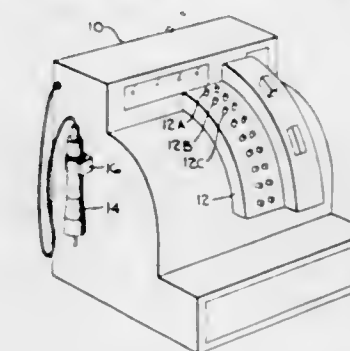


Deviation of oven temperature from a desired value is sensed by a Wheatstone bridge which has three resistance arms which may be located external to the oven and one temperature sensitive variable resistance arm located in the oven. The bridge is energized by AC and DC power and produces both DC and AC error signals when the bridge is unbalanced. The DC error signal is applied to an integrating device such as a memistor which has a resistance equal to the integral of that error signal. An AC signal that is applied to a voltage divider network that includes the resistance of the memistor is used to derive an integrating error signal. The AC error signal is directly proportional to the temperature error and is used to derive a proportional control signal. The integrating and proportional control signals are combined to produce a correction signal which is applied to the oven heater to maintain the desired temperature.

3,413,447

**INFORMATION-BEARING LABEL AND READING METHOD AND APPARATUS THEREFOR**  
Herbert La Mers, Van Nuys, Calif., assignor to The Monarch Marking System Company, Dayton, Ohio, a corporation of Ohio

Filed Feb. 25, 1963, Ser. No. 260,748  
34 Claims. (Cl. 235—61.6)



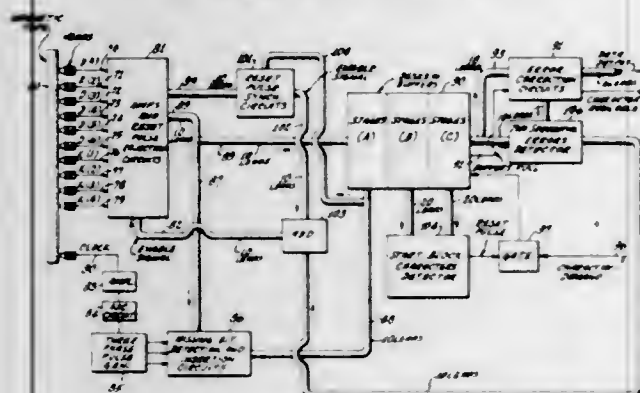
A label is disclosed which is adaptable for a variety of uses, such as, attachment to articles offered for sale in a department store or food market to indicate the price, department concerned, or the like. The label includes an aligner, for example, a hole formed in the label stock about which are symmetrically positioned concentric circular rings or patterns of machine readable information, such as timing and pricing data. The provision of a hole in the center of concentrically arranged data enables alignment of the label with a suitable reader by merely engaging the hole with an appropriately positioned cooperating member formed on the reader, for example, a protruding probe. Also disclosed is a label scanning device or reader. The reader includes a probe engageable in the label hole for alignment purposes and once engaged axially shiftable.



to bring the label into scanning position and commence the reading operation. The reader further includes transducers radially displaced about the probe in registration with the information rings of a properly aligned label and movable in circular patterns for scanning the data in the respective information rings with which they are associated when the probe has been axially shifted and the label brought into scanning position.

3,413,448

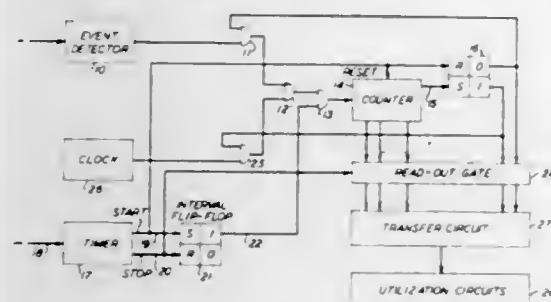
**INFORMATION HANDLING APPARATUS**  
Murray Rosenblatt, Haddonfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware  
Filed May 25, 1961, Ser. No. 124,748  
32 Claims. (Cl. 235—61.11)



15. In a system for reading a magnetic record having a plurality of tracks and bits constituting characters of digital information recorded separately on different ones of said tracks, certain of said characters being key characters, said system including a register having a plurality of successive stages for successively storing bits read from each of said tracks, the improvement comprising means for reading the bits of successive ones of said characters into said register, means for recognizing the absence and presence of each bit constituting a key character of said information in the final stage of said register and for storing signals in response thereto, means responsive to the presence of the first of said bits constituting said key character to provide a signal for resetting all said storing means after a given period of time, whereby to permit recognition of subsequently recorded ones of said key characters, and means responsive to the storage of all of the bits constituting said key character in said storing means for inhibiting the operation of said resetting means.

3,413,449

**RATE REGISTERING CIRCUIT**  
Walter L. Brown, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Apr. 26, 1965, Ser. No. 450,986  
8 Claims. (Cl. 235—92)

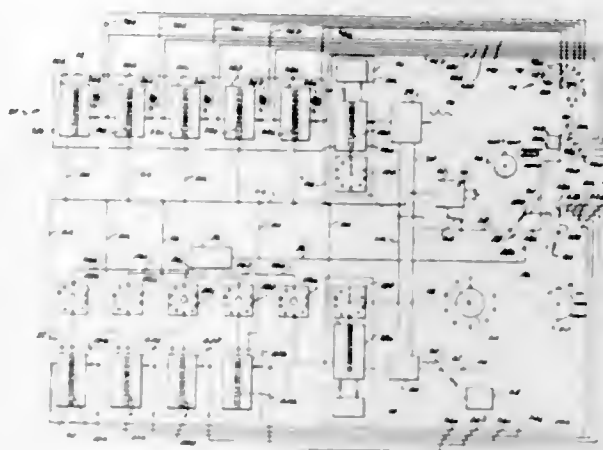


A time controlled counter for counting events having unknown rates of occurrence is disclosed. The counter's operation is such that, if during a selected counting interval, the number of occurrences being counted exceed the counter's capacity, the counter will be cleared and begin counting clock pulses of a known repetition rate to provide an indication of the point in the interval at which a counter overflow occurred.

vide an indication of the point in the interval at which a counter overflow occurred.

3,413,450

**COMPUTER-SCALER**  
Clifton W. Reed, 5016 Calvin Ave.,  
Tarzana, Calif. 91356  
Continuation of application Ser. No. 137,572, Sept. 12, 1961. This application Mar. 25, 1965, Ser. No. 454,230  
5 Claims. (Cl. 235—92)



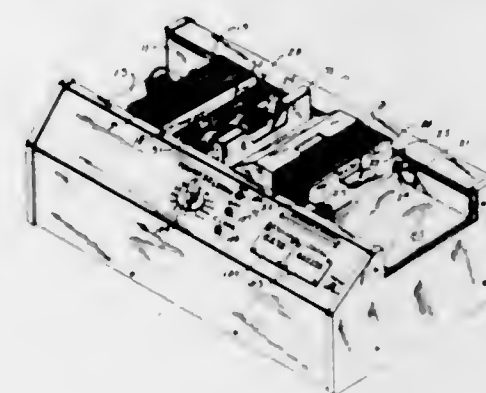
A computer-scaler is provided for numerically displaying a quotient or ratio resulting from the division of a total number of pulses counted in a dividend count channel divided by a total number of pulses counted in a divisor count channel. The dividend and divisor count channels each include input terminals for receiving independent trains of pulses the ratio of which is to be determined. These trains of pulses may be of unknown frequencies which frequencies themselves may be either periodic or aperiodic. The divisor count channel includes means for generating an electrical control pulse in response to a predetermined accumulated pulse count constituting an integral multiple of  $10^n$  where  $n$  is any positive integer. The dividend count channel includes means for generating an electrical carry pulse in response to each  $N$ th count or pulse received where  $N$  is a preselected integer equal to the said integral multiple. A digital carry pulse counter is included for counting the carry pulses and this carry pulse counter is terminated in response to generation of the control pulse from the divisor counter. The count displayed by the carry pulse counter upon termination is then equal to the quotient of the two trains of pulses times the factor  $10^n$ . A decimal position may be indicated in accord with the value of  $n$  so that the carry pulse counter reads directly the ratio. In addition, a storage means may be provided in the divisor count channel for defining a time interval corresponding to the total time lapse necessary to accumulate the predetermined total pulse count in the divisor counter and this storage means may then operate at a subsequent time to start and terminate the counting by the dividend count channel such that again the displayed count by the carry pulse counter will indicate the desired ratio but wherein the two trains of pulses need not occur simultaneously.

3,413,451

**PREDETERMINED COUNT MEANS FOR PAPER CURRENCY COUNTER**  
Arnold R. Buchholz and Arnold J. Krause, Watertown, Wis., and George V. Johnson, Aurora, Ill., assignors to Brandt Automatic Cashier Company, Watertown, Wis., a corporation of Wisconsin  
Original application June 20, 1963, Ser. No. 289,348, now Patent No. 3,214,096, dated Oct. 26, 1965. Divided and this application Oct. 22, 1965, Ser. No. 501,668  
5 Claims. (Cl. 235—92)

1. In a paper currency counter, the combination comprising: a counting section having means for feeding

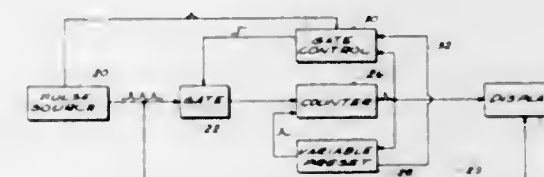
separated bills therethrough; a receiving compartment for receiving bills as a stack; feed means for removing bills singly from the stack within said receiving compartment and delivering separated bills to said counting section; feed stop means engageable with the stack of bills to move the stack out of engagement with said feed means to prevent the removal of bills from the stack; a feed stop solenoid adapted when energized to actuate said feed stop means; a counting switch actuated by the passage of each separated bill through said counting section; a delivery compartment for receiving bills from said counting section; means for conveying counted bills singly into said delivery compartment; a source of electric current; and predetermined count means comprising



a selector switch settable to a plurality of predetermined counts of multiples of ten bills and connected to said feed stop solenoid, electro-mechanical units and tens count accumulators, and a circuit including said counting switch connecting said source to said units accumulator to energize said units accumulator upon each actuation of said counting switch, said units accumulator completing a circuit from said source to said ten accumulator for energization thereof upon the count of each tenth bill, and said tens count accumulator completing a circuit from said source through said selector switch when the count accumulated in said tens count accumulator matches the setting of said selector switch to thereby energize said feed stop solenoid.

3,413,452

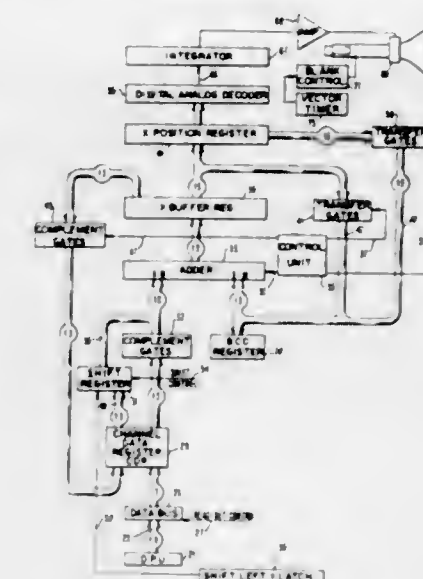
**VARIABLE PRESETTING OF PRESET COUNTERS**  
Helmar Schlein, Reseda, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware  
Filed Jan. 14, 1966, Ser. No. 520,768  
5 Claims. (Cl. 235—92)



1. A system for generating pulses in preselected groups of increasing or decreasing numbers comprising a source of input pulses, a plurality of counting means responsive to said source for counting said input pulses, each of said counting means having a plurality of counting units, one of said counting means generating an output signal after  $m$  input pulses, at least one other of said counting means generating an output signal after  $n$  input pulses, and control means responsive to the outputs of said counting means for selectively connecting said source of input pulses to an output so that the number of pulses appearing at said output is a function of the difference between  $n$  and  $m$ .

3,413,453

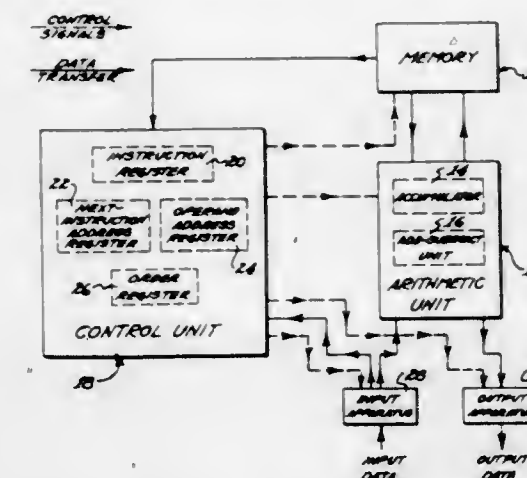
**HYBRID RAMP FUNCTION GENERATOR TO DEFLECT ELECTRON BEAM**  
Robert A. Thorpe, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Continuation-in-part of application Ser. No. 397,187, Sept. 11, 1964. This application Jan. 15, 1965, Ser. No. 425,799  
11 Claims. (Cl. 235—150.53)



In a constant time display for deflecting a cathode ray tube beam between two specified coordinate addresses, an overdrive signal corresponding to a predetermined multiple of the relative deflection signal is combined with the initial coordinate address in digital form, decoded to analog form and the corresponding analog signal applied to an integrating circuit. By attempting to charge toward the simulated overdrive level, the linearity of the ramp generated by the integrator is increased during the specified interval to provide a precise linear beam displacement. When terminated after the specified interval, the resultant location of the CRT beam corresponds to the location identified by the endpoint coordinate address.

3,413,454

**HIGH SPEED DATA PROCESSING SYSTEM**  
Stanley P. Frankel, Long Beach, Calif., assignor to General Electric Company, a corporation of New York  
Filed Oct. 24, 1958, Ser. No. 769,348  
35 Claims. (Cl. 235—176)



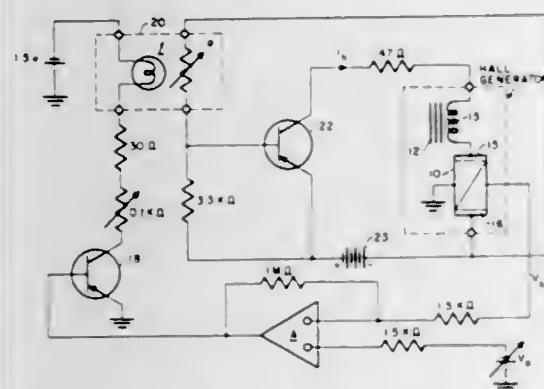
4. In a data processing system, a loop storage element for recirculating a digital instruction, a portion of said instruction comprising a pair of digital numbers and a portion of said instruction comprising an order to be executed, first means coupled to said storage element and responsive to one of said numbers for generating a con-



trol signal for directing execution of said order when said one number has a predetermined value, second means coupled to said storage element and responsive to the other of said numbers for generating a control signal for directing the insertion of a new instruction into said storage element when said other number has a predetermined value, and third means coupled to said storage element for altering the value of each of said numbers each time said instruction recirculates therein.

### 3,413,455 ANALOG SQUARE ROOT COMPUTER USING HALL GENERATOR

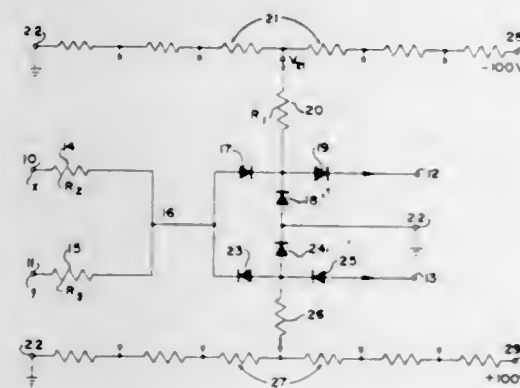
Harry H. Wiedner, Riverside, Calif., and David A. Collins, Ontario, Calif., assignors to the United States of America as represented by the Secretary of the Navy  
Filed Aug. 27, 1963, Ser. No. 305,018  
6 Claims. (Cl. 235-193.5)



A semiconductor Hall generator is used in conjunction with additional devices and circuitry to obtain an electrical output signal proportional to the square root of an applied input potential. The circuit is of importance for analog computers which may be the sum of the squares of any arbitrary junctions.

### 3,413,456 QUARTER SQUARE MULTIPLIER

Alan John Sutton, Frimley, Aldershot, England, assignor to The Solartron Electronic Group Limited  
Filed July 20, 1965, Ser. No. 473,308  
23 Claims. (Cl. 235-194)



1. A gating circuit for providing selective coupling between an input voltage source and an output load only after the input voltage reaches a predetermined break-point, comprising:

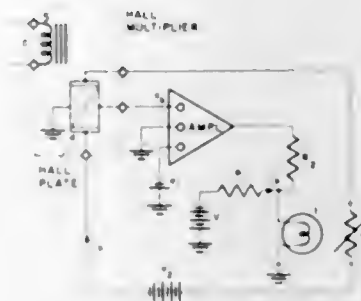
- a point of substantially constant reference voltage;
- a variable source of bias voltage;
- a junction point;
- means providing a unidirectional flow of current between said point of reference voltage and said source of said voltage via said junction point;
- means connecting said input voltage source to said junction point to provide current flow between said input voltage source and said junction point, said

break-point occurring when said current flowing between said input voltage source and said junction point equals said unidirectional flow of current; and means connecting said junction point to said output load to provide current flow between said junction point and said load only after said input voltage reaches said break-point.

### 3,413,457 ANALOG RATIO COMPUTER USING HALL GENERATOR

Harry H. Wiedner, Riverside, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Aug. 27, 1963, Ser. No. 305,019  
6 Claims. (Cl. 235-196)



1. A circuit for performing analog division comprising:
  - (a) a Hall plate,
  - (b) a first voltage source for applying a Hall current to said Hall plate,
  - (c) controlled means for subjecting said Hall plate to a magnetic field whereby a Hall current applied to said plate at right angles to said magnetic field will generate a Hall voltage across said Hall plate, said Hall voltage being directly proportional to the product of the Hall current and the effective magnetic field,
  - (d) a differential amplifier having an arbitrary input signal fed thereto,
  - (e) said Hall voltage also being fed to said differential amplifier which produces an output signal proportional to the difference between said Hall voltage and said arbitrary input signal,
  - (f) an electro-optic transducer, consisting of a lamp and a photoresistor, used as a feedback element,
  - (g) a resistance, to which the output of said differential amplifier is fed, in series with said lamp,
  - (h) a bias voltage source connected to the junction of said resistance and lamp for setting said lamp at a maximum closed loop power gain and a minimum control power requirement,
  - (i) the light intensity of said lamp controlling the magnitude of said photoresistor,
  - (j) said photoresistor being connected in series with said first voltage source and consequently controlling said Hall current,
  - (k) said electro-optic transducer completing a feedback loop around said differential amplifier and also isolating the Hall current input from the output circuit of the Hall plate.

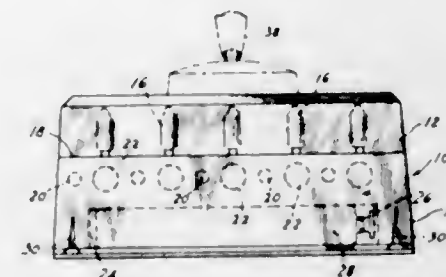
### 3,413,458 ORNAMENTAL ELECTRICAL NOVELTY

William E. Barefoot, 1434 Whiteford Road, York, Pa. 17402

Filed May 27, 1966, Ser. No. 553,479  
7 Claims. (Cl. 240-10)

1. An ornamental electrical novelty comprising in combination, a block-like body formed from synthetic resin, cavities within the normally upper part of said body, low capacity electrically energizable lamp bulbs mounted re-

spectively in said cavities, said resin in at least said normally upper part of said body being sufficiently transparent to transmit the glow of said lamp bulbs therethrough and the normally lower part of said body having a relatively large cavity extending therein from the bottom of said body, battery means mounted within said battery cavity, means masking said batteries from view within



said bottom cavity, and current control means mounted within said body in circuit with said lamp bulbs and battery means and operable automatically to continuously and intermittently cause said lamp bulbs to flash momentarily out of sequence with each other and such flashing being observable as a blinking of said bulbs through the normally upper part of said body.

### 3,413,459 COUNTERPOISE LAMP Robert Sonneman, 210 E. 68th St., New York, N.Y. 10021 Filed May 31, 1967, Ser. No. 642,469 3 Claims. (Cl. 240-69)



A lamp having an arcuate body member which is mounted for rotative movement and, in turn, rotatably and pivotally mounts a counterpoise boom having a light means thereon, so that the light means is movable into a wide range of positions.

### 3,413,460 OPTICAL ANTI-DAZZLING DEVICE Karl Lennart Ingemar Sjölander, Dahlerusvagen 5, Kallhall, Sweden Filed Nov. 22, 1965, Ser. No. 508,961 Claims priority, application Sweden, Dec. 28, 1964, 15,723/64 2 Claims. (Cl. 240-78)



An anti-dazzling device has a reflecting surface below a light source of substantial diameter. The generatrix of the reflecting surface is in the form of a curve or chord

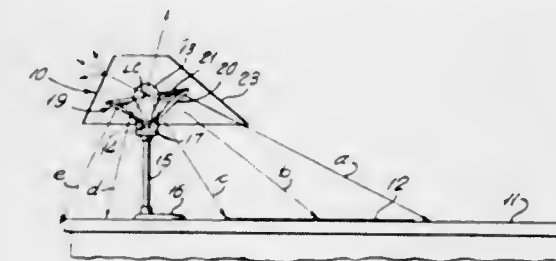
of a curve of such a character that the light falling from the source of light on the surface and reflected thereby passes below a plane that makes an angle of about 45° with a vertical through the center of the light source. The shape of the curve is defined by the equations

$$x = \frac{dy}{dx}(c - 2r\phi_r) - r$$

$$y = \frac{1}{2} \left[ x \left( \frac{dy}{dx} - \frac{dx}{dy} \right) - r \left( \frac{dy}{dx} + \frac{dx}{dy} \right) \right]$$

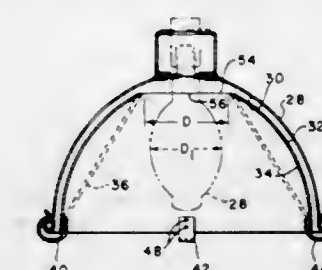
The device is in the form of parallel strips, two opposite sides of each strip being shaped in accordance with the above curve, and the top edge of the strip having an upper cylindrical surface concentric with the light source.

### 3,413,461 DESK LAMP Vearl S. Wince, Newark, Ohio, assignor to Holophane Company, Inc., a corporation of Delaware Filed Jan. 28, 1966, Ser. No. 523,633 5 Claims. (Cl. 240-81)



A refractor and desk lamp combination wherein the optical axis of the refractor is tilted toward a predetermined work area. Light from the source is intercepted by the refractor at higher angles on the side nearest the work area and lower angles on the side farther away from the work area. Concentric prisms on the upper portion of the refractor provide for light lowering action while concentric prisms on the lower portion of the refractor provide for light lifting action, but only on the side toward the work area. Generally vertical prisms having varying angles of light incidence provide for an asymmetric light distribution toward the work area. A base on the lamp extends in the direction of the work area and in the direction of the tilted axis to provide an indication for the user of the proper orientation of the lamp.

### 3,413,462 LIGHTING FIXTURE REFLECTOR SURFACING DEVICE Manny Spero, Cleveland Heights, Ohio, assignor to Spero Electric Corporation, a corporation of Ohio Filed Sept. 29, 1966, Ser. No. 582,988 3 Claims. (Cl. 240-103)



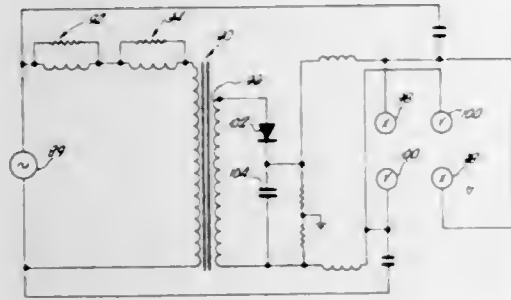
A disposable light reflecting unit used with a lighting fixture having a reflector and bulb. The unit is removably mounted by spring clips within the reflector in light reflecting relation to the bulb, and provides a new light re-



reflective surface for the fixture. This eliminates dismantling the lighting fixture to remove and replace the reflector.

### 3,413,463 RESOLUTION CONTROL IN MULTIPOLE MASS FILTER

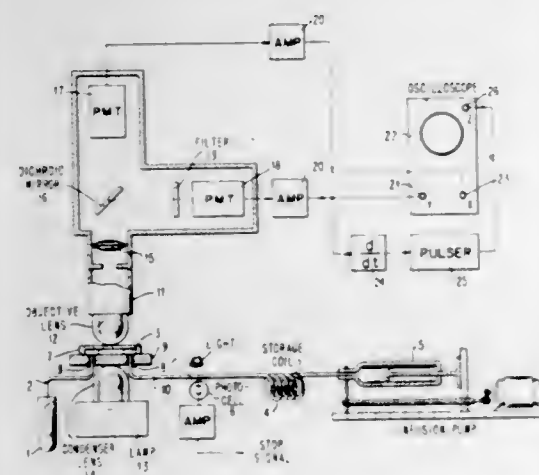
Wilson M. Brubaker, Arcadia, Calif., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois  
Filed May 6, 1966, Ser. No. 548,131  
1 Claim. (Cl. 250-41.9)



A mass filter utilizing combined AC and DC electric fields to achieve mass separation provided with automatic resolution control. The invention is applicable to the various types of mass filters including the monopole, dualpole and quadrupole filters and provides a modification of the energizing circuitry whereby the ratio of the DC component to the AC component of the combined fields is varied automatically thereby maintaining the width of mass peaks constant for all masses.

### 3,413,464 METHOD FOR MEASURING THE NUCLEIC ACID IN BIOLOGICAL CELLS AFTER ENHANCEMENT IN AN ACIDIC SOLUTION

Louis A. Kamentzky, Briarcliff Manor, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Apr. 29, 1965, Ser. No. 451,947  
12 Claims. (Cl. 250-43.5)

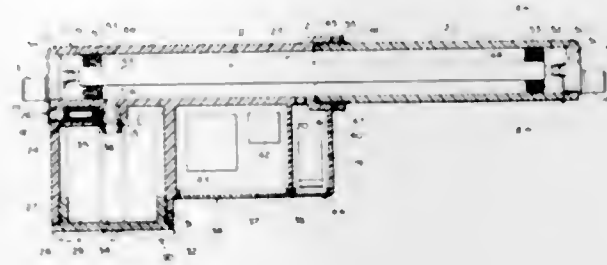


A method for high speed measurements of the nucleic acid per unit volume of biological cells in which the cells to be measured are prepared to enhance the radiant energy absorption difference between cells with large and small amounts of nucleic acid by suspending the cells in an acetic acid solution having a pH near 2, specifically 2.1. The cells are then individually irradiated with energy from a light source and a measurement of the loss in incident energy at least two wavelengths is made to provide a discrete electrical output relating to each wavelength. One of the wavelengths is within the range of wavelengths

which is absorbed by a nucleic acid while the other wavelength is outside the range which is substantially absorbed by a nucleic acid. The losses measured are due, at one wavelength, to absorption by nucleic acids and, at the other wavelength, to absorption by nucleic acids and to scattering of the incident light. The signals resulting from the measurement (obtained from a photomultiplier tube) are applied to the orthogonally disposed electrodes of an oscilloscope and a display is generated which represents the amount of nucleic acid per unit volume of a specific cell. Apparatus used to accomplish the method is also disclosed which consists of a broad band source of radiant energy; a capillary tube for interposing individual cells in the path of the radiant energy, sensors for detecting the changes in intensity due to absorption and light scattering by the cells and a display device for visually indicating the nucleic acid per unit volume of a cell.

### 3,413,465 ULTRAVIOLET STERILIZATION APPARATUS FOR DRINKING WATER HAVING AUTO- MATIC SHUTOFF MEANS

James William Harrison, Box 329, R.R. 2, 43 Halborn Ave., Ottawa, Ontario, Canada, and Raymond N. Foxgord, 17267 Parthenia, Northridge, Calif. 91324  
Continuation-in-part of applications Ser. No. 310,615, Sept. 23, 1963, and Ser. No. 569,652, Aug. 2, 1966.  
This application July 14, 1967, Ser. No. 653,441  
Claims priority, application Canada, May 10, 1963, 875,243; Great Britain, Apr. 24, 1967, 18,854/67  
8 Claims. (Cl. 250-43.5)



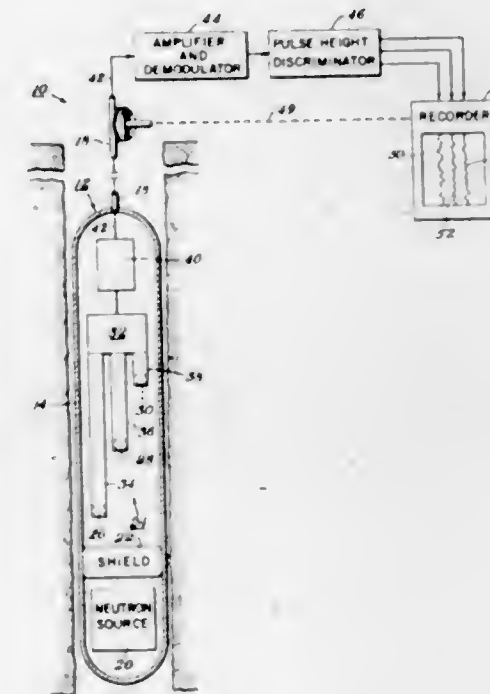
An apparatus for sterilizing fluids, particularly drinking water, through the use of ultraviolet rays. The apparatus includes a cylindrical housing surrounding an ultra-lamp, the ends of which are provided with silicone rubber seals bonded to the tube, and an electrically operated valve adapted to be closed by fluid pressure in the event of electrical failure, or a decrease in ultraviolet detected by photoelectric means.

### 3,413,466 WELL LOGGING SYSTEM HAVING A PLURALITY OF LIGHT CONDUCTING RODS OF DIFFERENT LENGTHS

Linus S. Allen, Jr., Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York  
Filed Aug. 28, 1964, Ser. No. 392,875  
14 Claims. (Cl. 250-71.5)

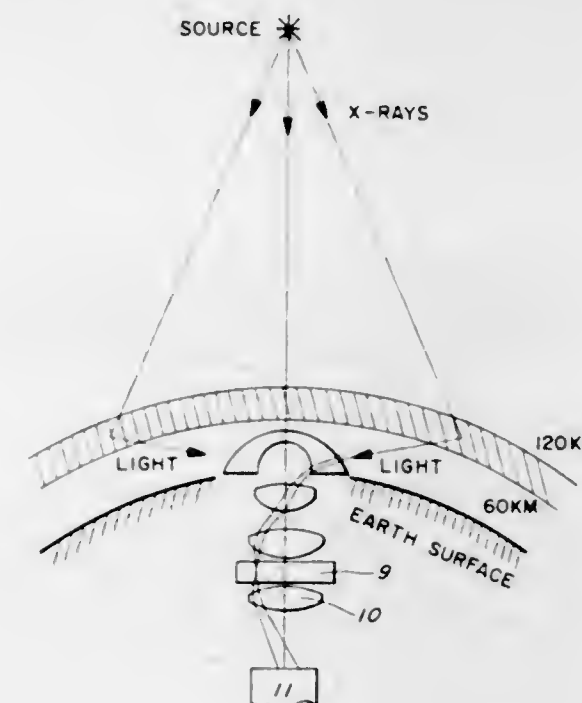
1. A radiation detection and telemetering system comprising:  
a plurality of detector means each adapted to produce a pulse of light energy when struck by radiation, modulation means connected to each detector means for continuously attenuating the intensity of the pulses of light energy from the respective detector means by predetermined factors such that the pulses from the respective detector means will have a distinctively characteristic intensity,  
means for converting the modulated pulses of light energy from the plurality of detector means into

electrical pulses on a single transmission channel having amplitudes corresponding to the intensities of the respective pulses of light energy,  
discriminator means for distinguishing between the electrical pulses of different amplitudes and separating



the pulses into groups as originated by the respective detector means, and  
means for counting the number of pulses originated by each detector means.

3,413,467  
ATMOSPHERIC NITROGEN FLUORESCENCE  
DETECTION APPARATUS  
Donald R. Westervelt, Los Alamos, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission  
Filed Dec. 9, 1965, Ser. No. 512,831  
6 Claims. (Cl. 250-71.5)



A fluorescence detection apparatus for the detection of nuclear explosions in space comprising a wide angle optical system, a wavelength selector for selection of a

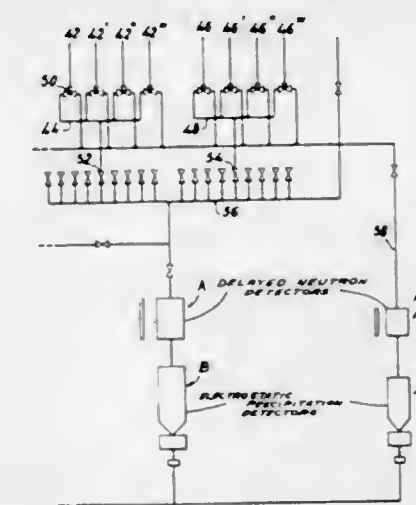
strong nitrogen molecular emission, a photo cell for transforming said emission into an electrical signal and amplification of said signal.

3,413,468  
MEANS FOR IMPROVING THE OPTICAL GAIN OF  
AN INFRARED DETECTOR  
Robert W. Astheimer, Westport, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware  
Filed Feb. 14, 1966, Ser. No. 527,163  
2 Claims. (Cl. 250-83)



A hollow, truncated, internal reflecting cone is closed on its truncated end by a truncated, conical plug of material which has a high refractive index and transmits the wavelengths of infrared radiation desired to be detected. An infrared detector is immersed on the truncated end of the plug, and the detector is separated from the reflecting cone by the length of the plug.

3,413,469  
BURST CAN DETECTION SYSTEM  
FOR NUCLEAR REACTOR  
Michel Guyonvarh, Bagneux, Roger Le Meur, Verrieres-le-Buisson, and André Roguin, Antony, France, assignors to Commissariat a l'Energie Atomique, Paris, France  
Filed May 11, 1965, Ser. No. 454,948  
Claims priority, application France, May 13, 1964, 974,403  
7 Claims. (Cl. 250-83.1)



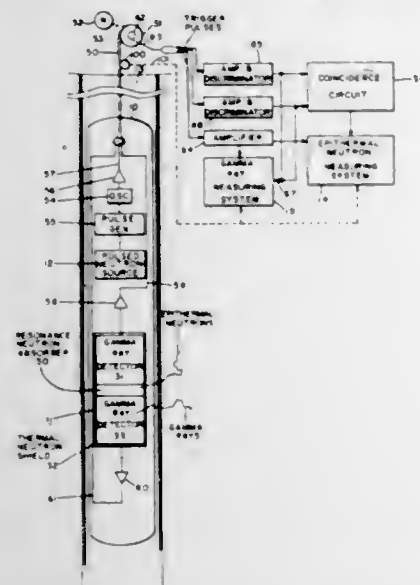
Fuel element can failure in a gas cooled nuclear reactor are located by a number of detection units each having a delayed neutron detector and an electrostatic collection detector. The fuel channels of the reactor are grouped into assemblies and into sub-assemblies and through a valve system to a scanning circuit having a detection unit. Each assembly can be connected to a burst can follower circuit having a detection unit for electrostatic collection of solid fission products.



### 3,413,470 EPITHERMAL NEUTRON AND GAMMA RAY DETECTOR

Linus S. Allen, Jr., and William R. Mills, Jr., Dallas, Tex.,  
assignors to Mobil Oil Corporation, a corporation of  
New York

Filed June 18, 1965, Ser. No. 465,078  
3 Claims. (Cl. 250—83.1)

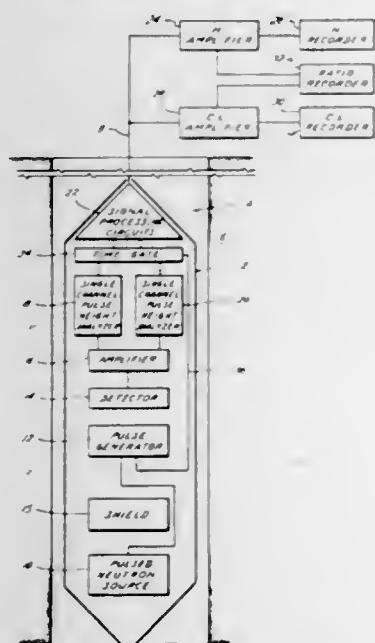


The specification discloses an epithermal neutron and gamma ray detector comprising a neutron-gamma ray reactive material sandwiched between two gamma ray detectors, the latter of which are coupled to a common coincidence circuit. The neutron-gamma ray reactive material has a resonance peak for reaction with neutrons of epithermal energy. A single shield having a relatively low absorption cross section for gamma rays and epithermal neutrons and a high absorption cross section for thermal neutrons surrounds the neutron-gamma ray reactive material and the two gamma ray detectors. In the preferred embodiment, the neutron-gamma ray reactive material is of indium while the shield is of boron-10 or lithium-6.

### 3,413,471 CHLORINE LOGGING METHODS

Jay Tittman, Danbury, Conn., assignor, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Aug. 28, 1962, Ser. No. 219,970  
10 Claims. (Cl. 250—83.3)



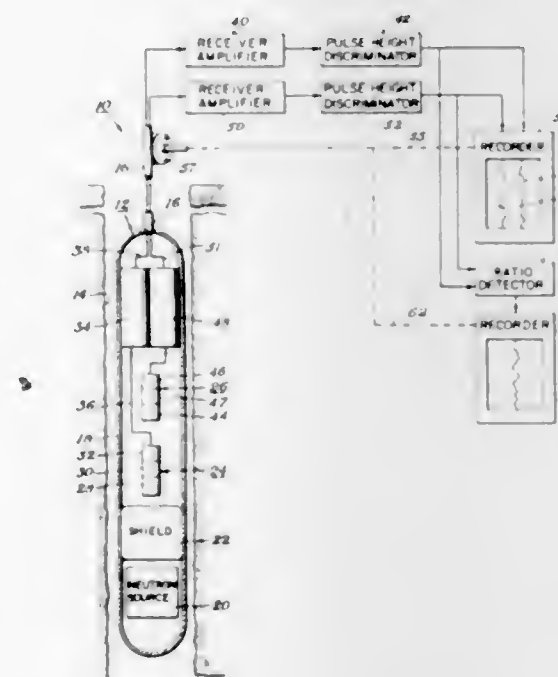
1. A method of determining the characteristics of earth formations traversed by a well comprising the steps of irradiating said formations with bursts of fast neutrons,

selectively detecting prompt gamma rays resulting from thermal neutron capture interactions with chlorine nuclei in said formations only during first relatively short time intervals following the slowing down of said neutrons to thermal energy after respective bursts, selectively detecting prompt gamma rays resulting from thermal neutron capture interactions with hydrogen nuclei in said formations only during second relatively long time intervals extending beyond the respective first time intervals and intermediate successive neutron bursts, and recording indications which vary as a function of the capture gamma rays from chlorine and from hydrogen detected in the respective time intervals.

### 3,413,472 LOGGING SYSTEM AND METHOD FOR IDENTIFYING ANHYDRITES

Richard L. Caldwell, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed Aug. 28, 1964, Ser. No. 392,845  
8 Claims. (Cl. 250—83.3)



Sulfurous formations are distinguished from porous formations containing hydrogenous fluid by irradiating the formation with fast neutrons and measuring the returning count rate of the neutrons and 5.43 mev. gamma rays. Measurements indicating the presence of sulfur and hydrogen in the formation indicate an anhydrite formation.

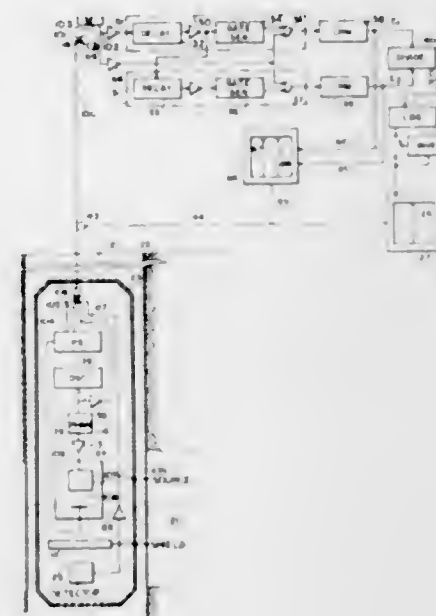
### 3,413,473 RADIATION MEASURING SYSTEM

William R. Mills, Jr., Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed Nov. 29, 1963, Ser. No. 326,791  
4 Claims. (Cl. 250—83.3)

1. A well logging system for logging the formations traversed by a borehole comprising:  
a borehole unit movable through said borehole,  
a neutron source of primary radiation supported by said borehole unit for periodically irradiating the formations with pulses of primary radiation to produce secondary radiation from said formations,  
a detector supported by said borehole unit for detecting secondary radiation passing from said formations into said borehole,  
a selection circuit including:  
first and second gate generators,  
first and second gating circuits, the output of said detector being applied to said first and second gating circuits,

means for actuating said first gate generator, the output of said first gate generator being applied to said first gating circuit to produce at the output thereof first signals representative of secondary radiation detected within a first time period following each pulse of primary radiation,  
means for actuating said second gate generator, the output of said second gate generator being applied to said second gating circuit to produce at the output thereof second signals representative of secondary radiation detected within a second time period following each pulse of primary radiation,

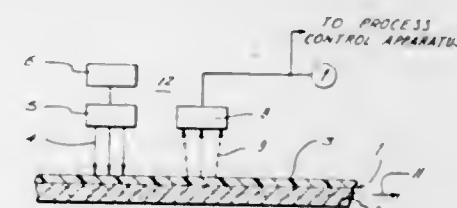


means including a control circuit responsive to said first and second signals for producing an output representing the decay of said secondary radiation, and  
a recorder driven in correlation with the movement of said logging unit in said borehole, the output of said control circuit being applied to said recorder to continuously record while logging a log related to the decay of said secondary radiation detected as a function of the position of said logging unit in said borehole.

### 3,413,474 COATING THICKNESS DETERMINATION BY MEANS OF MEASURING BLACK-BODY RADIATION RESULTANT FROM INFRARED IRRADIATION

Edward J. Freeh, Tucson, Ariz., assignor to the Industrial Nucleonics Corporation, a corporation of Ohio

Filed Feb. 3, 1965, Ser. No. 429,982  
8 Claims. (Cl. 250—83.3)

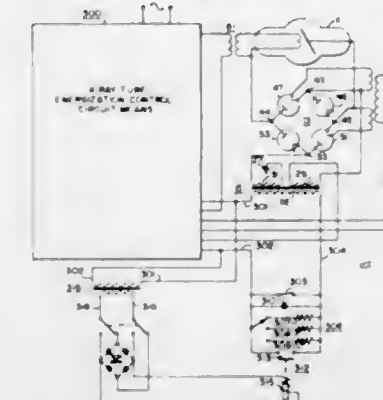


A coating thickness gauge measures the black-body radiation from a coated substrate irradiated by infrared radiation which is at least partially absorbed by the coating. The black-body radiation is a function of the coating thickness.

### 3,413,475 X-RAY TUBE POWER SUPPLY FOR PRODUCING A SERIES OF SELECTED NUMBERS OF CON- SECUTIVE ALTERNATING CURRENT VOLT- AGE CYCLES

George H. Russ, Baltimore, and Robert L. Wright, Jr., North Linthicum, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 29, 1965, Ser. No. 517,281  
2 Claims. (Cl. 250—100)

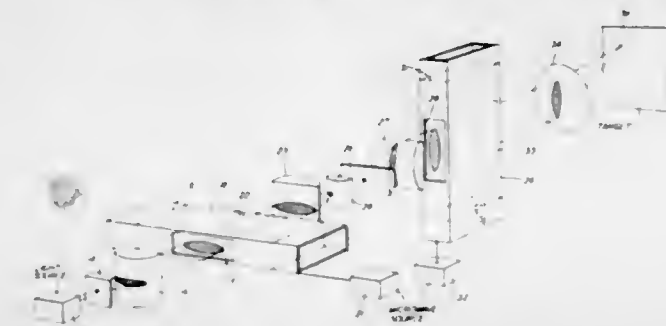


Described is an X-ray apparatus which includes the usual X-ray tube, full-wave rectifier and high tension transformer secondary in series together with a well-known energization control circuit means that produces a series of selected numbers of consecutive alternating current voltage cycles to the transformer's primary. A selector switch is operable to cut in an impedance means for damping the first half cycle pulse of any given series of voltage cycles from the control circuit means, and a diode and relay arrangement automatically ineffectuates the impedance means during all succeeding half cycle pulses of such series.

### 3,413,476 LIGHT BEAM CONTROLLING SYSTEM

Eugene I. Gordon, Convent Station, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed June 23, 1964, Ser. No. 377,353  
11 Claims. (Cl. 250—199)



A light beam deflection system comprises a waveguide containing an electro-optic material. The waveguide has apertured sides to permit passage of a light beam through the material, and microwaves propagate through the material. The width of the light beam is greater than a microwave wavelength so that the material acts as a diffraction grating to deflect the light beam at an angle depending on the frequency of the microwaves.

### 3,413,477 LIGHT FOLLOWER SYSTEM UTILIZING MONOCHROMATIC FILTER MEANS

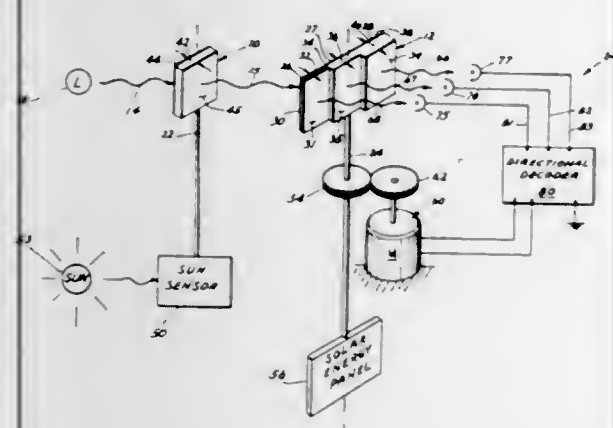
Israel L. Fischer, Harrington Park, and Walter W. Lee, Allendale, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed Dec. 21, 1965, Ser. No. 524,669  
12 Claims. (Cl. 250—203)

An optical shaft follower system including a light source and an interference filter means angular movable relative



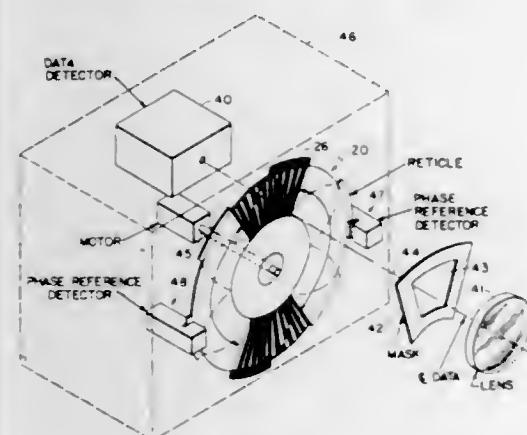
one to the other for transmitting monochromatic light of a wave length corresponding to its position relative to the light source, together with an element movable with one of said means, another filter means angularly movable relative to the interference filter means for selectively



passing the monochromatic light received from the interference filter depending on the relative angular position of the other filter means to the interference filter means, and positioning means for positioning the other filter means relative to the interference filter means in a sense to follow the movement of the element.

3,413,478

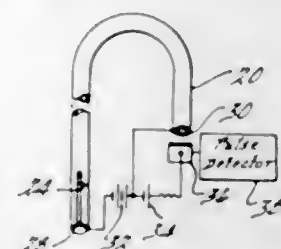
**BIPHASE SYSTEM WITH RETICLE MODULATING BIPHASE DATA BURSTS ON INFRARED BEAM**  
Frank M. Gettelinger and William S. Tulloss, Cincinnati, Ohio, assignors to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware  
Filed Jan. 14, 1966, Ser. No. 520,709  
2 Claims. (Cl. 250-203)



This is a system for tracking targets by emitted radiant energy. An optical system impinges on an infrared detector a beam of radiation from an object within a field of vision. A reticle chops the beam, the reticle being formed to modulate on the beam biphasic data bursts characterized by a signal frequency high with respect to the rate of phase reversal. A first phase reference detector in combination with spaced formation on the reticle modulates reference signals on the beam. The relative widths of the data burst outputs of the infrared detector are indicative of the elevation of the target and the positional relationships of the phase reversals to the reference signals are indicative of the azimuth of the target. A synchronized demodulator converts the data burst outputs into two-level wave forms from which target azimuth and elevation data may be derived. Synchronizing means is coupled to the demodulator. This means includes means for deriving the second harmonic of the reference signals, whereby the polarity of the two-level wave forms is ambiguous, and means for resolving that ambiguity.

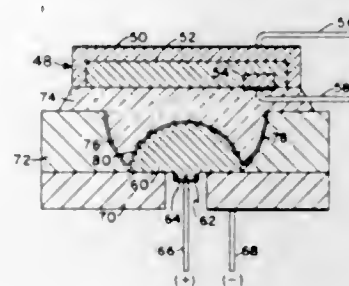
The reticle comprises a circular arrangement of angularly spaced radially extending intercepting spokes formed in alternate patterns, with the same plural number of spokes in each pattern. One of these patterns is generally lobar in form with apex directed outwardly toward the periphery. The other of said patterns is generally triangular with apex directed radially inwardly. The spokes are of the same proportions and shape but of varying lengths as defined by phase shift lines separating the patterns, whereby the spokes chop the beam of radiation alternately into waves of one phase and waves of the opposite phase.

**3,413,479**  
**RADIATION DETECTOR AND AMPLIFIER HAVING AN INPUT AXIAL SLOT**  
Charles F. Hendee, Farmington, Mich., assignor to The Bendix Corporation, a corporation of Delaware  
Filed July 14, 1966, Ser. No. 565,261  
18 Claims. (Cl. 250-207)



1. Apparatus comprising a channel having an input end, an output end and having a continuous secondary electron emissive resistive surface along the channel, said channel being adapted to carry a current flow resulting in an establishment of a field from the input channel end to the output channel end along the channel length, a slot being formed at the input channel end, said slot being essentially parallel to the channel axis, said slot having a dimension parallel to the channel axis which is substantially larger than the dimension which is transverse to the channel axis, for receiving radiation along a narrow beam of a width up to the length of said larger dimension of said slot.

**3,413,480**  
**ELECTRO-OPTICAL TRANSISTOR SWITCHING DEVICE**  
James R. Biard and Edward L. Bonin, Richardson, and Jack S. Kilby and Gary E. Pittman, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware  
Filed Nov. 29, 1963, Ser. No. 327,136  
4 Claims. (Cl. 250-211)

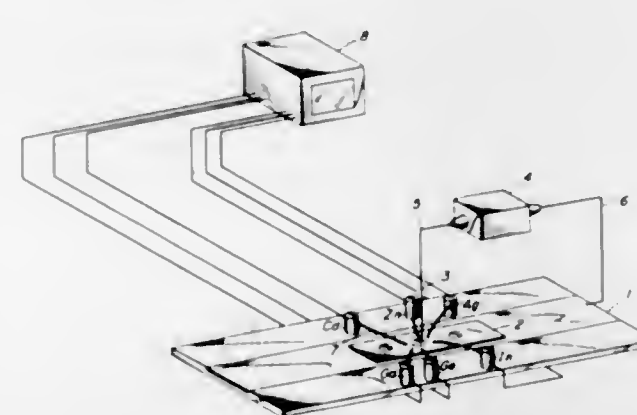


1. An electro-optical coupling system comprising:  
(a) a transistor comprised of a first semiconductor material having a collector region, a base region and an emitter region,  
(b) contacts connected to said collector region and said emitter region,  
(c) said transistor being characterized by the absorption of optical radiation incident thereon which has a photon energy greater than the band gap energy of

said first semiconductor material for generating excess minority carriers therein and being responsive to said excess minority carriers to alter the characteristics of the collector-base and base-emitter junctions thereof when said optical radiation is absorbed within a minority carrier diffusion length from at least one of said collector-base and base-emitter junctions,

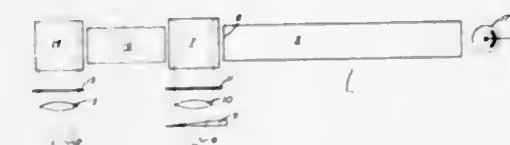
- (d) a light emitting semiconductor device electrically isolated from but optically coupled to said transistor and having a first region of one conductivity type and a second region of an opposite conductivity type contiguous to and forming a rectifying junction with said first region, said first region and a portion of said second region of said light emitting device are comprised of a second semiconductor material having a band gap energy greater than that of said first semiconductor material, and the rest of said second region is comprised of a third semiconductor material having a band gap energy greater than that of said second semiconductor material with said second region being disposed between said first region and said transistor,  
(e) said light emitting device being characterized by the generation of said optical radiation when a forward current is caused to flow through the rectifying junction thereof,  
(f) said optical radiation generated by said light emitting device being characterized by a photon energy greater than the band gap energy of said first semiconductor material in which at least a portion thereof is absorbed in said transistor within a minority carrier diffusion length from at least one of said collector-base and base-emitter junctions.

**3,413,481**  
**SPECTRAL EMISSION CODING**  
John William Berry, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine  
Filed Feb. 9, 1966, Ser. No. 526,191  
5 Claims. (Cl. 250-226)



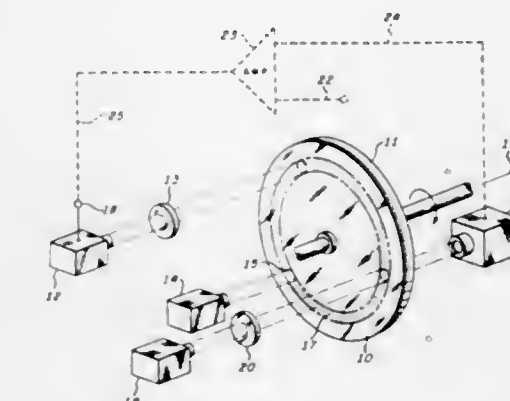
Coded symbols are produced, the coding representing presence or absence of metals having sharp emission lines under spark discharge. The symbols, on a suitable substrate, are read out by passing each symbol through a spark discharge at a repetitive rate of sparks, detecting the sharp lines in a plurality of detectors, one for each metal, and sending the signals from the detectors through readout circuits responding to the presence or absence of the coded components. The detectors may be photomultiplier tubes or solid state detectors with limitations to the line to be detected, for example, sharp cutting interference filters. Preferably the light from the spark discharge is led to the detectors by fiber optics to permit a wider physical separation of detectors.

**3,413,482**  
**ATOMIC ABSORPTION SPECTROPHOTOMETRY**  
Clement Ling, North Baldwyn, Victoria, Australia  
Filed Mar. 2, 1967, Ser. No. 619,991  
12 Claims. (Cl. 250-226)



Spectrophotometric apparatus for detecting a particular element in a sample by atomic absorption effects in the presence of impurities which cause non-atomic absorption tending to mask the atomic absorption. The intensity of monochromatic light from a spectral "line" source corresponding to a known atomic resonance frequency of the element is compared, after both have passed through the sample, with that of a reference beam of light of preferably broader, overlapping, spectral characteristics, the percentage absorption of which by the impurities is substantially the same as that of the light from the line source, but the transmitted intensity of which is relatively insensitive to the presence of the element itself.

**3,413,483**  
**ELECTRO-OPTICAL EXPONENTIAL WEIGHTING INTEGRATOR**  
Stephen G. McCarthy, Dobbs Ferry, N.Y., assignor to Sperry Rand Corporation, a corporation of Delaware  
Filed Apr. 3, 1967, Ser. No. 627,727  
10 Claims. (Cl. 250-226)



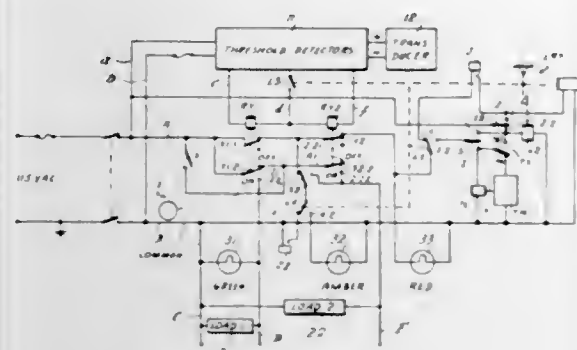
An electro-optical exponential weighting integrator utilizing a bistable recording medium that is movable in succession past write, read and erase mechanisms which may be operated either separately or in combination with accessory electronic components to feedback a fractional amount of the recorded signal in synchronism with an instant input signal so as to produce an updated recorded signal consisting of the instant input signal and an amplitude attenuated replica of the previously recorded signal.

**3,413,484**  
**CLOSED-LOOP CONTROL APPARATUS**  
Ludwig Luft, Lincoln, Mass. (% Luft Instruments, P.O. Box 411a, South Lincoln, Mass. 01773)  
Filed Jan. 28, 1965, Ser. No. 428,624  
7 Claims. (Cl. 307-38)

An electrical control apparatus establishes a desired condition or state of a simple or combined variable characteristic of a controlled system or process. The apparatus

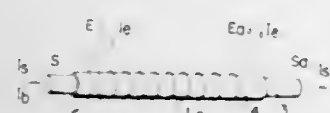


is basically a digital logic circuit with manually and electrically operated on-off switches. It accepts the output of threshold detectors responsive to respective system variables, and has as output two power lines leading to control loads, permitting bidirectional action or unidirectional



action on two levels. A control termination arrangement with variable time delay assures steady-state conditions on completion of batch operation. Auxiliary lines become activated on termination, permitting automatic sequencing control by activation of peripheral devices and remote command to resume control action.

**3,413,485**  
**REGULABLE REACTORS AND GATE CIRCUITS USING THEM**  
Shintaro Oshima, 426, 2-chome, Higashi-machi, Kichijoji, Musashino-shi, Tokyo-to, Japan  
Filed Feb. 24, 1965, Ser. No. 434,977  
Claims priority, application Japan, Mar. 2, 1964, 39/11,344  
18 Claims. (Cl. 307—88)

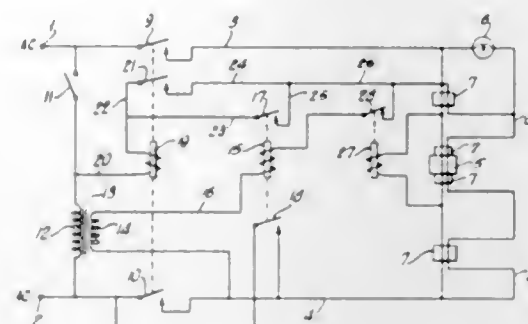


1. A combination comprising: first and second conductors and a ferromagnetic film having an easy direction of magnetization, said conductors being magnetically connected to said film, one of said conductors being provided with said film deposited thereon; means connected to one of said conductors to apply an appropriate small signal, thereby magnetizing said film in the easy direction, said small signal being less than the intensity producible of a magnetomotive force which is equal to the coercive force of the magnetic film viewed in the easy direction; means for applying an energizing signal to the other of said conductors to magnetize said film in a hard direction of magnetization; and means for applying an appropriate bias signal to said one of said conductors to saturate the film in the easy direction while said small signal and said energizing signal are terminated, whereby the impedance of said one of the conductors with respect to the small signal applied thereto is increased by application of the energizing signal.

**3,413,486**  
**ELECTRICAL INTERLOCK SYSTEM**  
Robert A. Flieder, Fords, N.J., and Maksymilian A. Michalski, Woodside, N.Y., assignors to Berkey Photo, Inc., New York, N.Y.  
Filed Oct. 4, 1965, Ser. No. 492,577  
6 Claims. (Cl. 307—125)

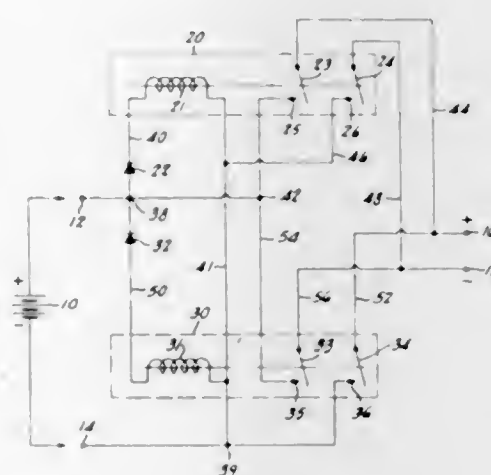
1. An interlock system for switching a high voltage power supply to a load, the system comprising sources

of high and low voltages, the load adapted to be supplied by the high voltage, at least one disconnect fitting, the high voltage current passing through the disconnect fitting to the load, an interlock circuit paralleling the high voltage circuit at least through said disconnect fitting, first switching means including control means actuated by the low voltage completed through the interlock circuit, second switching means including control means actuated



by the high voltage completed through the first switching means for connecting high voltage to the load, and third switching means including control means responsive to load potential for deenergizing said control means for said first switching means, whereby said interlock circuit is energized by low voltage until the system senses that the interlock circuit is closed whereupon the interlock circuit is energized with high voltage.

**3,413,487**  
**AUTOMATIC POLARITY SELECTOR**  
Bernard J. Gershen, Edison, N.J., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Oct. 21, 1965, Ser. No. 499,476  
1 Claim. (Cl. 307—127)



An automatic polarity selector circuit having first and second input circuit terminals across which a direct current potential source may be connected and positive and negative polarity output terminals having a consistent relative polarity. The operating coil of each of two double pole-single throw electric relays is connected in series with a respective diode across the input terminals, the diodes being oppositely poled. A stationary contact of each relay is connected to one input terminal and the other stationary contact of each relay is connected to the other input terminal. The movable contact of each relay corresponding to the respective stationary contact connected to the same input terminal is connected to a dif-

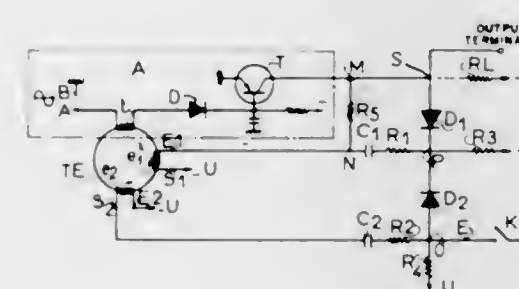
ferent output terminal and the other movable contact of each relay is connected to the other output terminal.

**3,413,488**  
**COMPLEMENTARY COINCIDENCE DETECTOR FOR PRODUCING A GIVEN OUTPUT SIGNAL ONLY WHEN ALL INPUT SIGNALS HAVE THE SAME BINARY VALUE**  
Seening Yee, Whitestone, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy  
Filed Apr. 14, 1965, Ser. No. 448,002  
2 Claims. (Cl. 307—216)



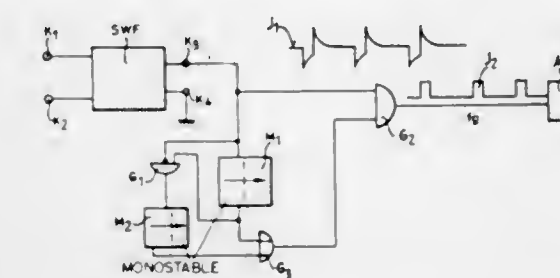
A logic circuit employs first and second pairs of serially connected complementary transistors. The two pairs are connected in parallel with each other and to a source of energy through load resistance means. A first input signal drives one transistor in the first pair and the opposite conductivity type transistor in the second pair. A second input signal drives the two remaining transistors. Output signals are taken from the junction between the load resistance means and the transistors.

**3,413,489**  
**FREQUENCY DIVIDER ARRANGEMENT**  
Claude Monin, Villennes-sur-Seine, France, assignor to CIT—Compagnie Industrielle des Telecommunications, Paris, France, a corporation of France  
Filed June 8, 1965, Ser. No. 462,198  
Claims priority, application France, June 19, 1964, 978,963  
12 Claims. (Cl. 307—225)



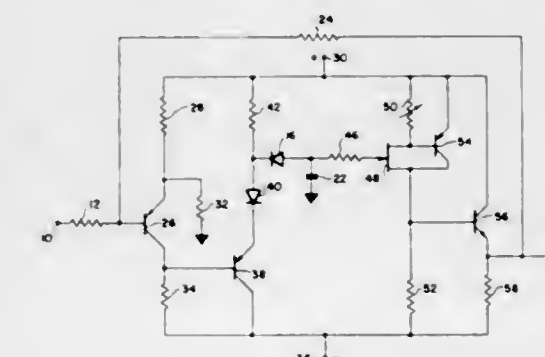
Frequency divider having a magnetostatic relay controlled by an electronic divider circuit to operate in a binary manner, the electronic divider circuit including a pair of capacitor charge and discharge circuits having matched impedance characteristics and being respectively coupled to said magnetostatic relay by first and second control windings having a ratio of turns which provides an excess of control of said first control winding over said second control winding sufficient to actuate the magnetostatic relay, and means for selectively completing connection of said capacitor charge and discharge circuits to a common source of potential.

**3,413,490**  
**CIRCUIT ARRANGEMENT FOR SUPPRESSING OUTPUT PULSES IN CONVERTING MEASURING VALUES WITH THE AID OF A VOLTAGE-FREQUENCY CONVERTER**  
Hans Breunig, Karlsruhe-Hagsfeld, and Hans Kurner, Karlsruhe, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany  
Filed Jan. 21, 1964, Ser. No. 339,129  
Claims priority, application Germany, Jan. 28, 1963, S 83,453  
4 Claims. (Cl. 307—233)



1. A frequency-responsive impulse-conduction circuit operative to effect a suppression of such impulses when the frequency of such impulses attains a given value, comprising input terminal means at which the impulses to be controlled are received, output terminal means at which signals, of the same frequency as the input impulses, are to be available, circuit means operatively connecting the input and output terminal means for conducting impulses from the input to the output terminal means, impulse-suppressing means interposed in said circuit means for selectively suppressing the passage of impulses to said output terminal means, and means operatively connected to said circuit means for energizing said suppressing means to suppress the delivery of impulses to the output terminal means when the frequency of the input impulses attains said given value, wherein said circuit means comprises a mono-stable flip-flop stage operating with a given time constant, to which the impulses appearing at said input terminal means are conducted, said suppressing means comprising a coincidence circuit controlled by said impulses for suppressing all the impulses the temporal spacing of which is greater than the time constant of said flip-flop stage.

**3,413,491**  
**PEAK HOLDER EMPLOYING FIELD-EFFECT TRANSISTOR**  
George I. Reeves, Fullerton, and David M. Reed, La Habra, Calif., assignors to Beckman Instruments, Inc., a corporation of California  
Filed Sept. 21, 1964, Ser. No. 397,903  
5 Claims. (Cl. 307—235)



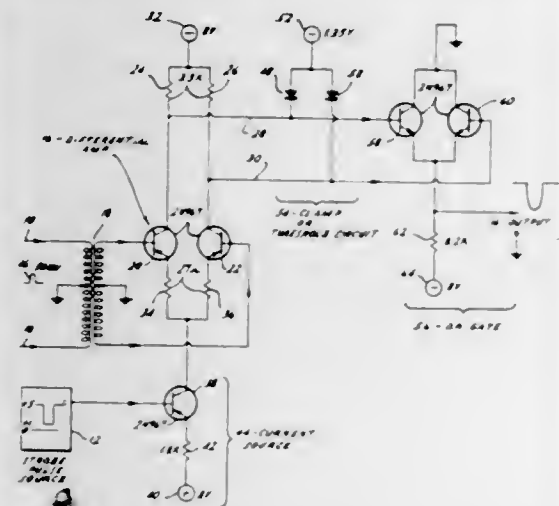
The specification describes a peak holder incorporating a high-gain preamplifier connected in series with a diode arranged to pass the signal to be detected and held, and a post-amplifier having a high input impedance. A capacitive storage device is connected from the point between



the diode and the post-amplifier to a reference point, which may be an output terminal of the post-amplifier. A feedback resistor is connected from the output of the post-amplifier to the input of the preamplifier.

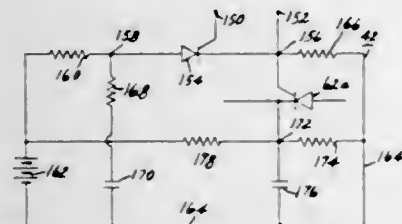
**3,413,492**  
**STROBE AMPLIFIER OF HIGH SPEED TURN-ON AND TURN-OFF TYPE HAVING INFINITE NOISE REJECTION IN ABSENCE OF STROBE PULSE**  
Robert P. Schneider, King of Prussia, Pa., assignor to Philco-Ford Corporation, a corporation of Delaware  
Filed Oct. 11, 1965, Ser. No. 494,716  
5 Claims. (Cl. 307—235)

Strobe amplifier comprising two-transistor differential amplifier and two-diode threshold circuit for passing am-



plifier's output only when variable impedance in series with collector-emitter circuits of transistors assumes low value in response to strobe pulse.

**3,413,493**  
**TRIGGERING CIRCUIT FOR A CONTROLLED RECTIFIER**  
Thomas M. Corry, Goleta, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed May 20, 1965, Ser. No. 457,329  
6 Claims. (Cl. 307—252)

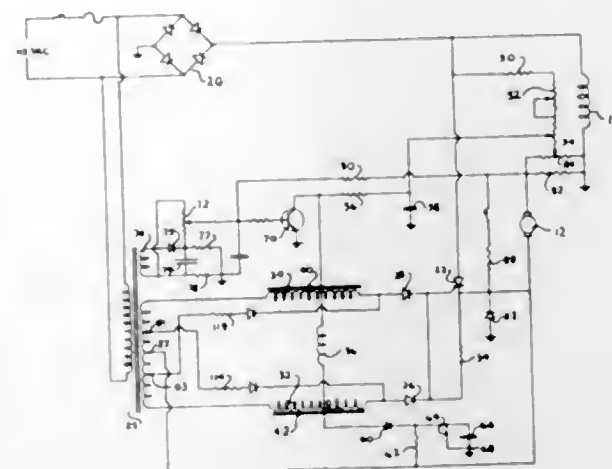


This invention relates to a power supply system for an induction motor which is fed from a source of direct current through an inverter. The inverter includes a plurality of controlled rectifiers and the system includes means for triggering the controlled rectifiers to control the output frequency of the inverter. The system includes a circuit for gating a controlled rectifier on by the discharge of a capacitor and a circuit which maintains a forward bias on the controlled rectifier after the capacitor has discharged.

**3,413,494**  
**MAGNETIC AMPLIFIER CONTROL SYSTEM**  
Franklin O. Wisman, South Bend, Ind., assignor to The Reliance Electric and Engineering Company, a corporation of Ohio  
Filed June 28, 1966, Ser. No. 561,270  
12 Claims. (Cl. 307—252)

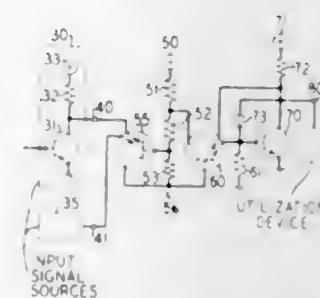
A motor control system having a transformer, a magnetic amplifier with two load windings, a silicon controlled

rectifier, and leads connected to the transformer and to the leads from the load windings and having in series



a resistor and a diode, which reset the flux in one load winding while the flux to the other load winding is increasing in response to the current from the transformer.

**3,413,495**  
**HIGH NOISE MARGIN LOGIC CIRCUIT FEEDBACK RESISTOR**  
Bernard T. Murphy, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Jan. 6, 1965, Ser. No. 423,694  
8 Claims. (Cl. 307—272)



A logic circuit exhibiting high noise margins includes an emitter-input transistor having a feedback element connected between the base and collector electrodes thereof. When the transistor is in its energized state, the value of the current that flows through this element is relatively large. Associated circuitry characterized by a predetermined breakdown voltage is connected to the collector electrode of the transistor. When the voltage applied to the emitter electrode of the transistor is increased to a predetermined value sufficient to break down the associated circuitry, the transistor is thereby de-energized and current flow through the feedback element is reduced to a relatively low value. To re-energize the transistor, and thereby de-energize the associated circuitry, the voltage applied to the emitter electrode of the transistor must be reduced to a value that is less than the predetermined value.

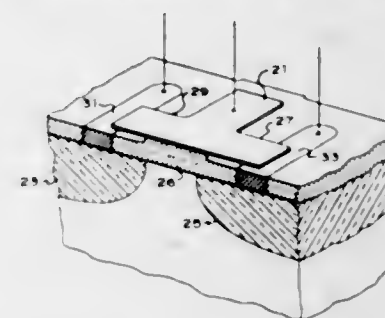
**3,413,496**  
**STATIC CONTROL CIRCUITS EMPLOYING RELAY CHARACTERISTIC CURVE SHAPING MEANS**  
John Baude, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.  
Filed Jan. 5, 1961, Ser. No. 80,913  
28 Claims. (Cl. 307—293)

15. An electric circuit for producing an output between two output terminals varying as a function of the level of a source of electrical energy, said electric circuit comprising a first series connected resistance-capacitance circuit connected across the source; a second series con-

nected resistance-capacitance circuit connected across the capacitance of the first series circuit; and one of said output terminals connected to the side of the second series circuit.



**3,413,497**  
**INSULATED-GATE FIELD EFFECT TRANSISTOR WITH ELECTROSTATIC PROTECTION MEANS**  
Martin M. Atalla, Portola Valley, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California  
Filed July 13, 1966, Ser. No. 564,925  
1 Claim. (Cl. 307—304)

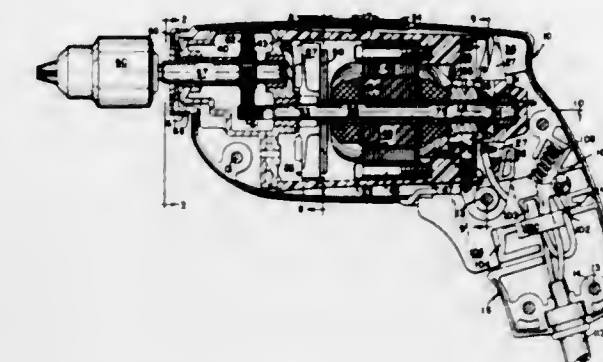


1. In combination, an insulated gate field-effect transistor and protection means therefore comprising: a body of semi-conductor material, spaced source and drain regions within said body at one major surface thereof, source and drain electrodes on said surface connected to said regions respectively, an insulating layer on said surface between said source and drain electrodes, a gate electrode on said insulating layer, said gate electrode extending outwardly from an edge of said insulating layer parallel to said surface and being cantilevered directly over one of said source and drain electrodes but normally spaced therefrom, and bias means connected between said gate electrode and said one of said source and drain electrodes for electrostatically deflecting said gate electrode into contact with said one of said source and drain electrodes for electrically connecting said gate electrode and said one of said source and drain electrodes to protect said insulating layer from rupture.

**3,413,498**  
**ELECTRICALLY POWERED HAND TOOL**  
Lawrence Harris Bowen III, North Syracuse, and Charles R. Stelljes, Fayetteville, N.Y., assignors to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Aug. 9, 1965, Ser. No. 478,039  
7 Claims. (Cl. 310—47)

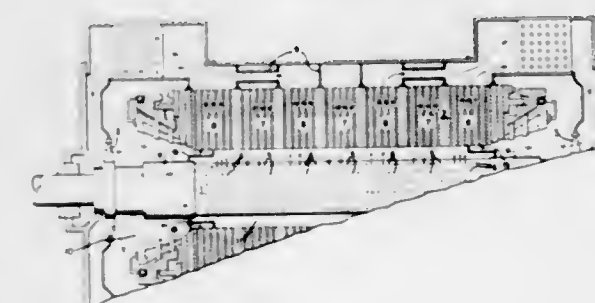
1. An electrically powered hand tool comprising a hollow casing consisting of a pair of complementary mating sections formed of insulating material, means for securing said sections together, a power unit mounted in said

casing, said unit including a frame formed of insulating material, a gear housing fixed to the forward end of said frame, a motor field fixedly mounted in said frame, an armature shaft journaled at one end in the rear portion of said frame and being journaled at its opposite end in said gear housing and extending therein, an armature mounted on said shaft, an insulating sleeve positioned be-



tween said shaft and armature, an output shaft journaled in said gear housing, gearing journaled in said housing and operatively connecting said armature shaft to said output shaft, the rear end of said frame and said casing being formed with interlocking portions, and means connecting said gear housing to said casing and operable to permit limited relative movement between said gear housing and said casing.

**3,413,499**  
**GENERATOR AIR GAP ENTRANCE Baffle FOR COOLING STATOR CORE END PORTIONS**  
Sterling C. Barton, Scotia, N.Y., assignor to General Electric Company, a corporation of New York  
Filed June 20, 1966, Ser. No. 558,940  
4 Claims. (Cl. 310—58)



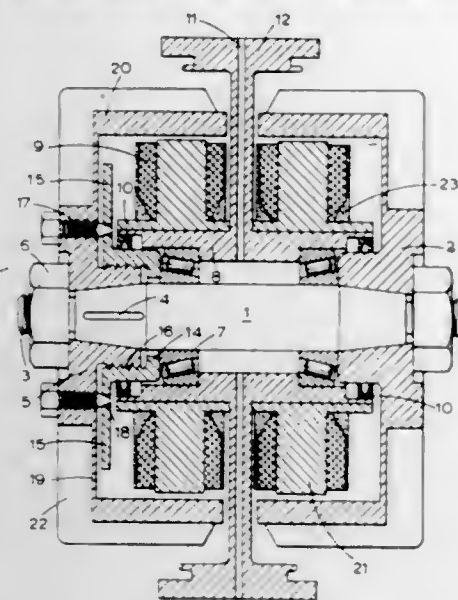
1. A dynamoelectric machine including a stator and a rotor, said stator defining end spaces and including a laminar core defining axially spaced radial passages therethrough, said rotor being of the radial-flow type, said rotor being disposed within said core and defining an air gap therewith, baffle means near the axial ends of said core restricting communication between said end spaces and said air gap, the radial passages in the end portions of said core being in communication with said end spaces.

**3,413,500**  
**ELECTRICALLY-OPERATED BRAKE**  
Emilio R. Gomez, Madrid, Spain, assignor to Technical Aid Consultants Limited, London, England, a British company  
Filed Apr. 14, 1966, Ser. No. 542,616  
5 Claims. (Cl. 310—93)

A braking system for a drive shaft includes a tubular cylindrical stationary member through which the drive shaft axially extends and is journaled and two axially spaced sets of circumferentially spaced radially spaced stator defining fixed magnetic cores projecting radially from the cylindrical member and provided with windings for connection to an electric power source. A drum, open



at its inner end and formed of a magnetic material, surrounds each of the core sets and is affixed to the drive



shaft so that braking is effected by energizing the stator coils.

### 3,413,501 ELECTRIC MOTORS

Gianni A. Dotto, Dayton, Ohio, assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware  
Filed May 31, 1966, Ser. No. 553,966  
12 Claims. (Cl. 310-172)

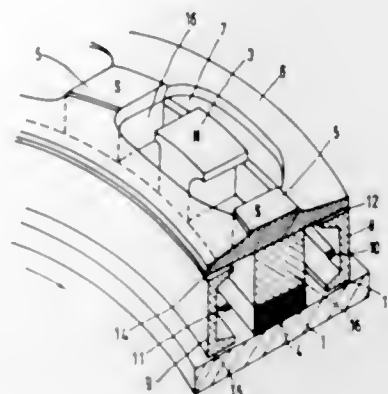


1. A motor comprising: A stator; a pair of field coils disposed on said stator so as to provide a pair of distinct magnetic fields; a plurality of shading rings disposed on said stator so as to define a magnetic flux path associated with each of said distinct magnetic fields; a rotor rotatably mounted on said motor between said field coils and in the path of each of said magnetic flux paths; and means for connecting said field coils to an alternating current power source so as to change the polarity of said magnetic fields with each half-cycle, thereby causing said rotor to rotate.

3,413,502  
ROTOR STRUCTURE OF ALTERNATING  
POLARITY SYNCHRONOUS MACHINE  
Erich Schwab, Nuremberg-Eibach, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany  
Filed Mar. 25, 1966, Ser. No. 537,543  
Claims priority, application Germany, Mar. 27, 1965, S 96,235  
9 Claims. (Cl. 310-181)

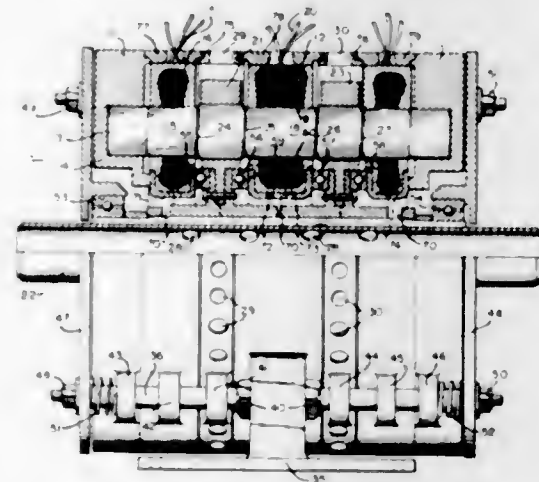
1. In a synchronous machine having a rotor shaft having an axis, rotor structure comprising an inner member

of substantially hollow cylindrical configuration coaxially positioned around said rotor shaft, a plurality of spaced poles of one polarity uniformly positioned at equiangular distances from each other on said inner member and extending radially equidistantly from said inner member,



and a plurality of permanent magnets of the other polarity supported by said inner member in alternate relation with said poles with one of said permanent magnets positioned between each adjacent pair of said poles and extending radially.

3,413,503  
AXIAL AIRGAP MOTORS  
Louis W. Parker, 2040 N. Dixie Highway,  
Fort Lauderdale, Fla. 33305  
Filed Jan. 13, 1966, Ser. No. 520,340  
10 Claims. (Cl. 310-268)



An axial air gap machine is provided with axially movable rotors and stators. Spring means urge the rotors and stators toward one another, and thrust bearing means hold the rotors and stators in spaced relation against the magnetic attraction between them as well as the force of the spring means.

3,413,504  
ELECTROMAGNETIC PUMP HAVING AN  
IMPROVED HELICAL ROTOR  
Richard S. Baker, Northridge, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware  
Filed Feb. 1, 1966, Ser. No. 524,161  
10 Claims. (Cl. 310-269)

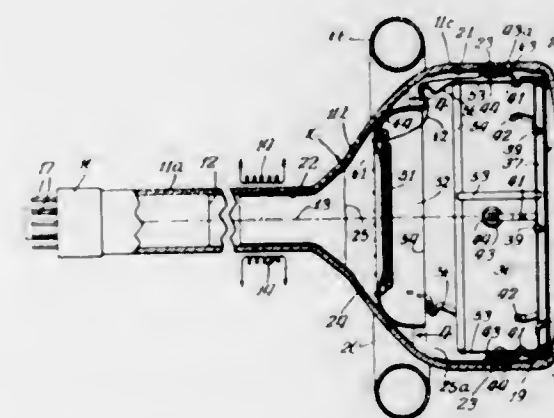
1. In a helical rotor electromagnetic pump for pumping fluids, an improved rotor comprising:  
(a) at least a first core member,  
(b) a plurality of adjustable rotor pole shoes cooperating with said core member,  
(c) selected ones of said rotor pole shoes suitably arranged in juxtaposition,

(d) at least first and second rotor pole surfaces developed by said juxtaposed pole shoes,  
(e) said first and second pole surfaces defining a variable helix angle, and



(f) adjustable means cooperating with said pole shoes so that the adjustment of selected ones of said pole shoes changes the position of said rotor pole surfaces and thereby defines a predetermined helix angle.

3,413,505  
DARK TRACE CATHODE-RAY TUBE WITH  
IMPROVED ERASING MEANS  
Bill J. Hart, Bloomington, and Earl R. Ewald, Normal, Ill., assignors to National Union Electric Corporation, Bloomington, Ill., a corporation of Delaware  
Filed May 31, 1966, Ser. No. 554,025  
10 Claims. (Cl. 313-91)

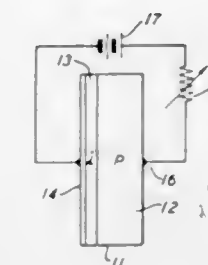


This disclosure deals with a dark trace cathode-ray tube including a scotophor screen and improved means for erasing an image from the screen. The erasing means is located behind the screen and includes an annular heating coil and an annular generally parabolic reflector. The coil is located approximately at the focal line of the reflector, and heat generated by the coil is reflected by the reflector to the screen to erase an image from the screen.

3,413,506  
ZnTe:O ELECTROLUMINESCENT DEVICE  
John D. Cuthbert, Mount Freedom, John J. Hopfield, Princeton, and David G. Thomas, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York  
Filed July 6, 1966, Ser. No. 563,169  
5 Claims. (Cl. 313-108)

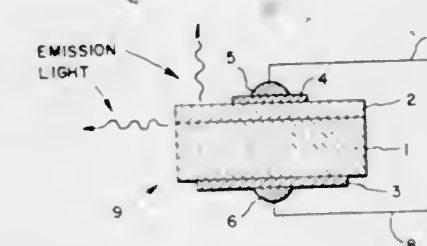
An electroluminescent device comprises an M-i-p ZnTe crystal structure having an oxygen concentration of  $10^{17}$  or more atoms per cubic centimeter. The oxygen substitutes isoelectronically for Te in the crystal, providing

traps for free electrons injected into the crystal when a voltage is applied. The trapped electrons attract holes,



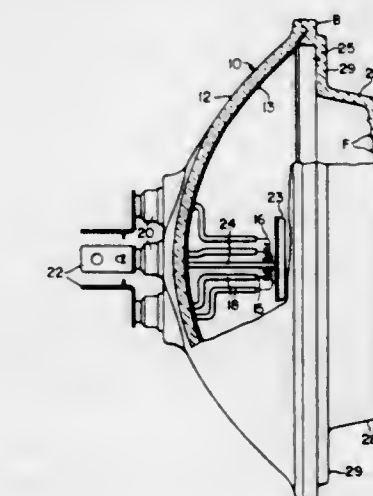
and red light is emitted, at room temperature, when the hole and electron recombine.

3,413,507  
INJECTION EL DIODE  
Kohji Itoh, Kadoma-shi, Osaka-fu, Ryoichi Yamamoto, Neyagawa-shi, Osaka-fu, Masasi Inoue, Nara-shi, and Hisanao Sato, Ibaraki-shi, Osaka-fu, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan  
Filed Nov. 1, 1966, Ser. No. 591,264  
9 Claims. (Cl. 313-108)



3. An injection EL diode comprising a p-n junction consisting of an n-type solid solution of CdTe and MgTe and a p-type solid solution of CdTe and MgTe.

3,413,508  
SEALED-BEAM TYPE ELECTRIC LAMP WITH  
NON-CIRCULAR LENS COMPONENT  
Elam Pitkjaan, Cedar Grove, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Dec. 19, 1966, Ser. No. 602,653  
8 Claims. (Cl. 313-113)



The reflector component of a conventional circular sealed-beam lamp is closed by a vitreous cover plate that

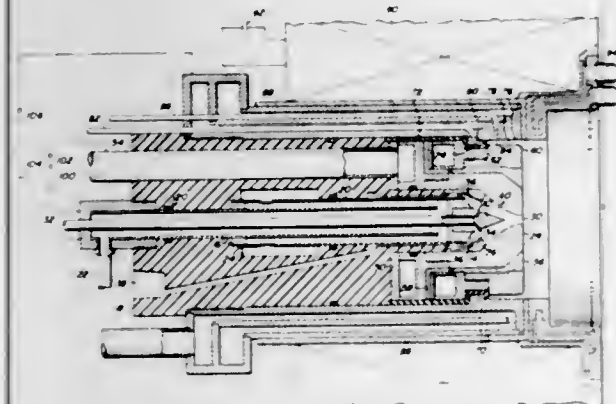


has a circular flange and a non-circular outwardly-protruding hollow refractor that includes a lens portion. The circular flange of the plate is fused to the matching rim of the reflector to form a hermetically sealed envelope. The construction gives the lamp a non-circular appearance when it is mounted on the vehicle but permits it to be manufactured on standard equipment designed for circular-shaped lamps.

3,413,509

**ELECTRODE STRUCTURE WITH BUFFER COIL**  
Gordon L. Cann, Laguna Beach, Fla., and Robert L. Harder, Altadena, Calif., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York  
Continuation-in-part of application Ser. No. 458,837, May 20, 1965. This application Apr. 27, 1966, Ser. No. 545,703

4 Claims. (Cl. 313-161)



1. A high voltage plasma arc electrode assembly adapted to operate in an evacuated chamber having an axial magnetic field comprising:

- (a) an axial cathode tip;
- (b) an electrically floating cathode buffer electrode surrounding said cathode tip and defining an axial channel;
- (c) means to introduce gas into said axial channel at said cathode tip;
- (d) a series of alternating buffer electrodes and insulating segments defining an extension of said axial channel;
- (e) an anode electrode having an internal aperture and terminating said channel; and,
- (f) magnetic coil means surrounding said cathode tip having an inside diameter only slightly larger than said channel diameter and having an axial length small compared to its radial length whereby a strong axial magnetic field is produced in the region of said cathode tip and a diverging magnetic field having a substantial radial component is formed in said channel in the region of said alternating buffer electrodes and insulating segments whereby arcing between said buffer segments is minimized.

3,413,510

**ELECTRONIC CATHODE HAVING A BRUSH-LIKE STRUCTURE AND A RELATIVELY THICK OXIDE EMISSIVE COATING**  
William R. Kerslake, Middleburg Heights, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Jan. 24, 1966, Ser. No. 522,794

2 Claims. (Cl. 313-231)

A cathode electrode formed by a twisted wire stem having bristles extending radially therefrom. The wire

and bristles may be of iridium and/or tungsten, tantalum, molybdenum, or platinum. The bristles and stem are coat-

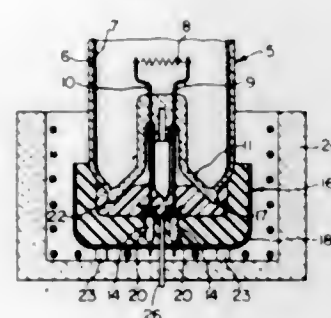


ed with barium oxide or preferably a mixture of barium-strontium-calcium oxides.

3,413,511

**ELECTRIC LAMP HAVING IN SITU MOLDED BASE OF FOAMED PLASTIC**  
Vernon L. Plagge, East Orange, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Continuation-in-part of application Ser. No. 473,028, July 19, 1965. This application June 1, 1966, Ser. No. 554,493

6 Claims. (Cl. 313-318)



An electric incandescent or fluorescent lamp is provided with a base composed of foamed plastic that is molded in situ on and bonded directly to the end of the lamp envelope. The lead-in conductors are partly embedded in the foamed plastic base and constitute, or are connected to, contact members anchored in the plastic. In the case of an incandescent lamp and a screw type base, one of the lead-in conductors is located at the bottom of the base threads and constitutes an engagable side contact. A mold is placed in surrounding and abutting relationship with the end of the envelope, a foamable plastic resin is introduced into the mold cavity and is activated by heat, and the mold is removed after the resulting foamed plastic base has cured and rigidified.

3,413,512

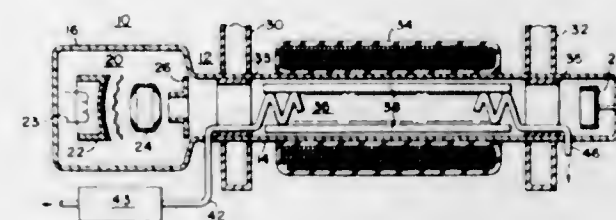
**UNDULATING, SLOW WAVE STRUCTURE FOR AN ELECTRON DISCHARGE DEVICE**  
Daniel C. Buck, Horseheads, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 20, 1965, Ser. No. 498,919

1 Claim. (Cl. 315-3.5)

This disclosure relates to a slow wave structure including at least first and second electrically conductive mem-

bers having an undulating or substantially sinusoidal configuration. Corresponding points of maximum excursion of the first and second electrically conductive members are connected by transverse electrically conductive bars to form the electrical equivalent of at least two counter-wound helices. Further, this disclosure describes a slow wave structure and a method of forming this structure in which first and second substantially sinusoidal conduc-

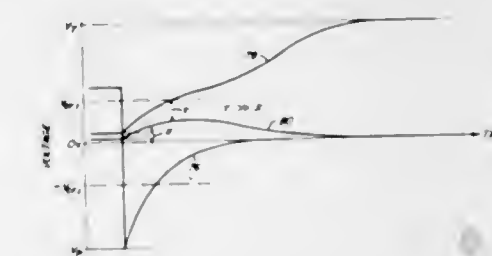
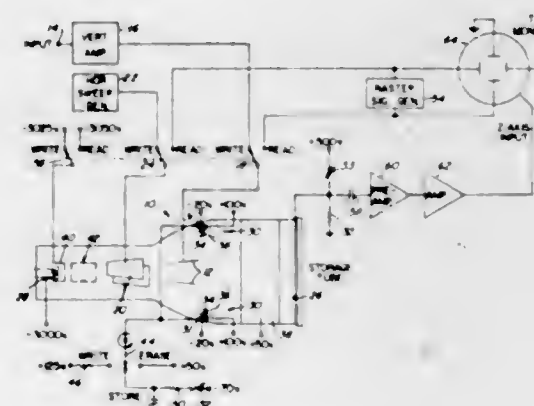


tive members are disposed in a surface and are connected at their points of maximum excursion. Then the surface is disposed in an undulating or sinusoidal configuration to provide a slow wave structure which is the equivalent of at least two counter-wound helices. In a second method, the surface is formed about a mandrel and the other set of points of maximum excursion are electrically connected to form a slow wave structure.

3,413,513

**METHOD AND APPARATUS FOR INCREASING WRITING RATE OF STORAGE TUBE**  
James J. Donoghue, Portland, and Richard B. McMillan, Jr., Tigard, Oreg., assignors to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon  
Continuation of application Ser. No. 337,370, Jan. 13, 1964. This application Apr. 7, 1967, Ser. No. 659,826

14 Claims. (Cl. 315-11)

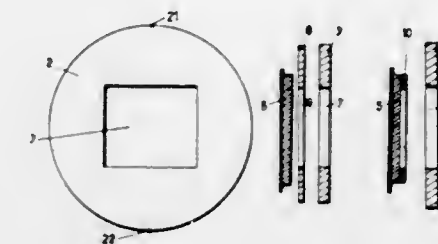


A bistable storage tube and a method of operating the same to increase its "writing rate." An enhancement pulse is applied to the flood gun cathode which is much greater than the first crossover voltage to enable storage of written charge images of initially low voltage. The pulse is terminated at such time as to prevent the potential of the unwritten background areas of the storage dielectric from increasing above the first crossover voltage. This is possible because the more positive voltage portions of the storage dielectric charge at a faster rate than the more negative unwritten background target areas.

3,413,514

**STORAGE TUBE**  
Claude Guillard, Georges Morillot, and Georges Sud, Paris, France, assignors to CSF—Compagnie Generale de Telegraphie Sans Fil, Paris, France  
Filed Jan. 28, 1965, Ser. No. 428,634  
Claims priority, application France, Feb. 4, 1964, 962,555

14 Claims. (Cl. 315-12)

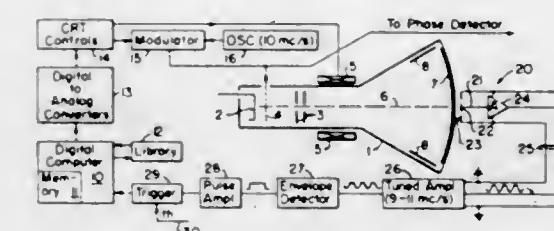


An image analyzing storage tube wherein a rectangular picture is inscribed upon a circular target the surface of which is only in part occupied by the picture, and having a plane secondary electron collector in front of the target. In that case a shading effect arises in the picture, and the invention corrects this effect by uniformizing the rest current in the target, especially by introducing in the structure of the collector and/or its neighbouring electrodes some modifications of geometrical and/or electrical nature, in view of establishing a dissymmetry in the structure.

3,413,515

**ELECTRON BEAM POSITION SENSOR**  
Donald R. Haring, Concord, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts  
Filed Apr. 29, 1966, Ser. No. 546,363

16 Claims. (Cl. 315-18)



This invention is concerned with back and forth communications or "conversations" between a man and a digital computer in relation to information items in graphical form which, under control of the computer, are visibly displayed on the screen of a cathode ray tube and which, with the aid of a hand-held sensor for the detection of the point of impact of the beam on the screen, may be altered under control of the man. More specifically, it deals with an improved hand-held sensor which is of high sensitivity and high speed of response.

3,413,516

**CROSSED-FIELD DISCHARGE DEVICES AND OSCILLATORS AND AMPLIFIERS INCORPORATING THE SAME**

James E. Staats, Louisville, Ky., assignor to General Electric Company, a corporation of New York  
Filed Aug. 30, 1965, Ser. No. 483,488

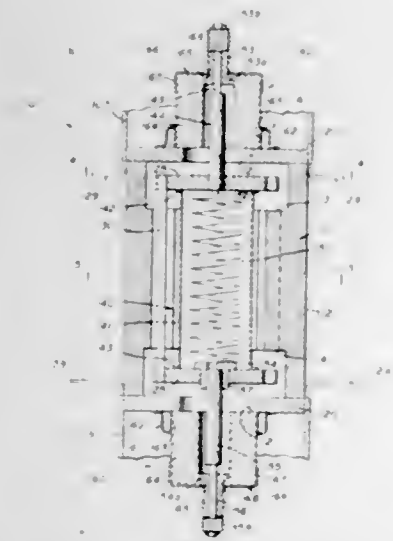
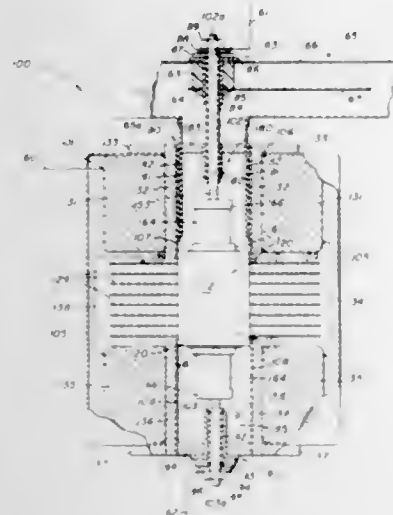
20 Claims. (Cl. 315-39.77)

There is disclosed a crossed-field discharge device including a hollow anode structure and a cathode structure disposed therein and cooperating therewith to define an axially extending interaction space, the anode structure having axially extending anode recesses therein in which are mounted rods supported by and electrically connected to the cathode structure, and a pair of end structures joining respectively the opposite ends of the anode structure



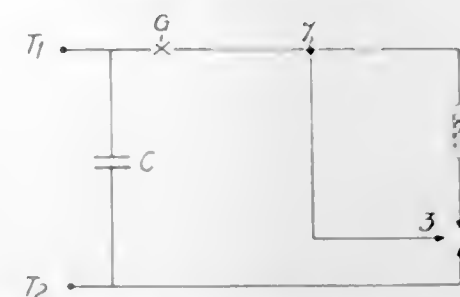
and the cathode structure for mechanically supporting the same while providing electrical insulation therebetween; there also is disclosed a form of the device utilizing a

tected and compared with a reference signal for setting the filament current at a value always to operate the filament at a point just below the knee of the filament current vs. beam emission curve.



**3,413,518**  
**SLIDING SPARK IGNITION SYSTEM WITH AN INDUCTANCE AND CAPACITOR IN SERIES WITH A THREE ELECTRODE SPARK PLUG**  
Henry James Chafer, Rugby, England, and Denis Stone, Levin, North Island, New Zealand, assignors to Associated Electrical Industries Limited, London, England, a British company

Filed Jan. 31, 1967, Ser. No. 612,972  
7 Claims. (Cl. 315—180)

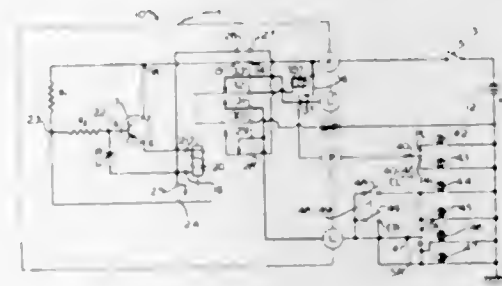


A third electrode of a surface discharge plug which has two main electrodes connected in series with a chargeable capacitor is connected to a point between the said inductance and switching device to complete a path whose impedance at the start of capacitor discharge is above, and during the capacitor discharge automatically decreases below the total actual impedance of the capacitor and discharge device. The three electrodes can form part of a plug device which may also include the inductance. The switching device can be a spark gap, or a controlled semiconductor or rectifier.

**3,413,519**  
**FLASHING LAMP CIRCUIT USING A TRANSISTOR OSCILLATOR**

Harry A. Leeder, Jr., Skaneateles, N.Y., assignor to R. E. Dietz Company, Syracuse, N.Y., a corporation of New York

Filed Feb. 18, 1966, Ser. No. 528,499  
15 Claims. (Cl. 315—209)

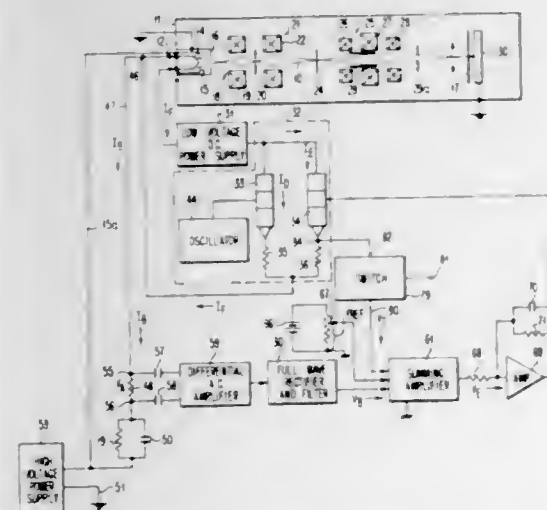


1. A lamp flasher and outage indicator circuit comprising: a source of direct current having one side connected to ground; a transistor oscillator having a voltage build-up circuit including the collector and emitter electrodes of a transistor and a timing relay coil connected in that order to the source and through a return switching circuit to ground; the oscillator having a charging circuit including first resistance means, second resistance means, and a capacitor connected in series across the transistor and coil, the junction point of the second resistance means and capacitor being connected to the base electrode of the transistor; the timing relay having a first set of normally open contacts adapted to close upon the operation of the relay to connect the junction point of the first and second resistance means to the ground return circuit; and a second set of double throw load switching contacts on the timing relay adapted to switch signal lamp loads across the source

tapered electron emissive surface; finally there are disclosed oscillators and amplifiers incorporating the crossed-field discharge devices therein.

**3,413,517**  
**FILAMENT CURRENT CONTROL BY A SUPERPOSED DITHERING VOLTAGE**

Robert Russell Barber, Paul Chialin Lang, and Karl Heinz Loeffler, San Jose, and Fred Kurzweil, Jr., Saratoga, Calif., assignors to International Business Machines Corporation, a corporation of New York  
Filed Jan. 13, 1967, Ser. No. 609,224  
8 Claims. (Cl. 315—106)

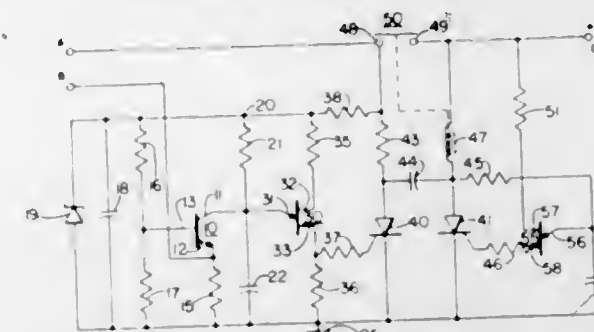


A cathode filament current control system for an electron beam generating device wherein the filament current is dithered and the change in electron emission is de-

alternately through a first selected lamp load and then through a second selected lamp load for alternating flashing of the loads.

**3,413,520**  
**SOLID STATE MOTOR CONTROL CIRCUIT**  
Lowell V. Westbrook, Excelsior, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Nov. 10, 1966, Ser. No. 593,432  
8 Claims. (Cl. 317—13)

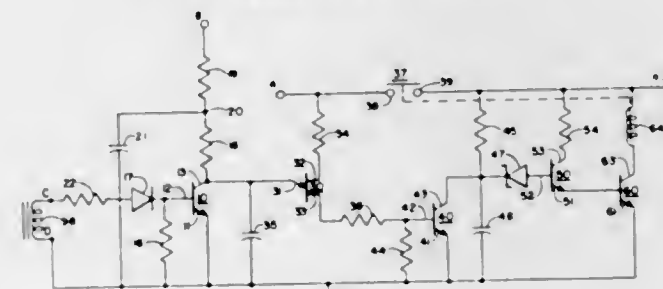


1. A pulse sensing and failure protection circuit comprising:

a source of electric potential;  
pulse generating means;  
switching means having a first terminal connected to said source of electric potential and a second terminal connected to said pulse generating means, and further having a control means responsive to an electric signal to close and open the electric path between said first and second terminals;  
pulse detecting means connected to said pulse generating means for sensing the pulsing signal; and  
means connected to said pulse detecting means and to said control means of said switching means to open the current path between said first and second terminals to interrupt the power flow from said source when the signal produced by said generating means is not pulsing and to automatically close the switch and reapply the power after a predetermined period of time.

**3,413,521**  
**SOLID STATE MOTOR CONTROL CIRCUIT**  
Lowell V. Westbrook, Excelsior, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Nov. 10, 1966, Ser. No. 593,566  
2 Claims. (Cl. 317—13)



2. An overload and failure protection circuit for a DC motor pulse controlled by a solid state motor controller logic, said circuit comprising:

a first terminal for connection to a source of electric potential, a second terminal for connection to said motor, and a common terminal;  
a relay having a first end of a contact connected to said first terminal and having a second end of said contact connected to said second terminal, said relay having a control means including a winding;  
semiconductor switching means having a control electrode and a pair of output electrodes, one of said out-

put electrodes being connected to said common terminal and the other of said output electrode being connected to one end of said relay control winding; means connecting the other end of said relay control winding to said first terminal;

bias means connected to said semiconductor switching means for normally maintaining said switching means conductive, thereby energizing said control winding and maintaining said relay closed;

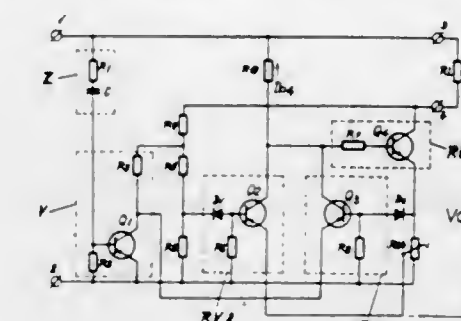
pulse detecting means connected to said motor controller logic for sensing the current through said motor and providing an output signal when said current to the motor is not pulsed;

means connecting the output of said pulse detecting means to said semiconductor switching means for turning said switching means into its nonconductive state when the current to the motor is not pulsed, thereby opening said relay and removing the power from the motor; and

further means for automatically closing the relay after a predetermined period of time, said further means including a series combination of a capacitor and resistor connected between said first and common terminals and a Zener diode connected between the control electrode of said semiconductor switching means and the junction of said capacitor and said resistor.

**3,413,522**  
**ELECTRONIC FUSE**  
Geza Beszedics and Heinz Loreck, Vienna, Austria, assignors to International Standard Electric Corporation

Filed Mar. 8, 1966, Ser. No. 532,728  
Claims priority, application Austria, Mar. 10, 1965, A 2,121/65  
4 Claims. (Cl. 317—20)



An electronic overload protection device, or circuit breaker, incorporating provisions for limiting make transient current is provided. The device employs a final control element which is responsive to two different feedback loops. Each feedback loop includes a sensing element which senses the controlled system behind the final control element and a control amplifier which couples the sensing element to a selector. The selector is common to both loops and provides a signal to the final control element. A timer is connected to the controlled system before the final control element and provides additional control for the selector.

**3,413,523**  
**PROTECTIVE RELAY FOR AN ELECTRICAL SYSTEM**  
Hans Hoel, Oslo, Norway, assignor to The English Electric Company Limited, London, England, a British company

Filed Apr. 16, 1965, Ser. No. 448,638  
Claims priority, application Great Britain, Apr. 28, 1964, 17,643/64  
8 Claims. (Cl. 317—27)

This invention relates to a protective relay for determining fault conditions by comparing the phase sequence

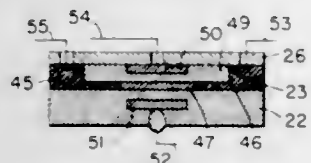






3,413,531

**HIGH FREQUENCY FIELD EFFECT TRANSISTOR**  
 Frank A. Leith, Arlington, Mass., assignor to Ion Physics Corporation, Burlington, Mass.  
 Filed Sept. 6, 1966, Ser. No. 577,434  
 5 Claims. (Cl. 317-235)

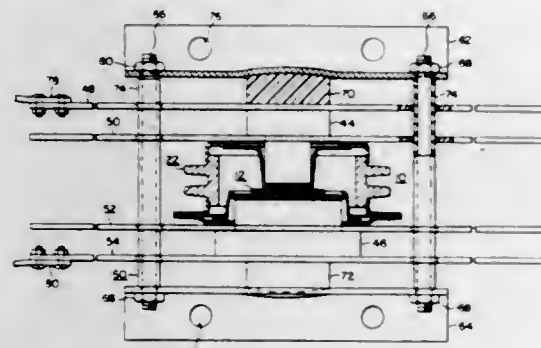


A method of making a field effect transistor having a buried gate therein and the devices created thereby which consists of clearing the semiconductor surface, forming of an oxide layer thereon, converging selected regions in the body by bombarding the body with selected ions of an energy sufficient to penetrate the body to a predetermined depth and of a number sufficient to modify the conductivity and/or resistivity of the region of the body where the ions eventually come to rest.

3,413,532

**COMPRESSION BONDED SEMICONDUCTOR DEVICE**

John L. Boyer, El Segundo, Calif., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
 Continuation of application Ser. No. 431,022, Feb. 8, 1965. This application Aug. 4, 1967, Ser. No. 662,260  
 6 Claims. (Cl. 317-235)



This invention provides a semiconductor device in which compression bonding is utilized to electrically connect a wafer of semiconductor material and electrical contacts with electrical leads. The compressive force is applied from outside of the device.

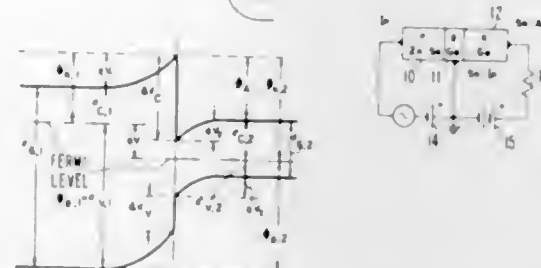
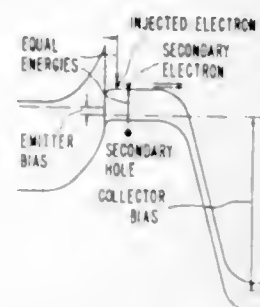
3,413,533

**HETEROJUNCTION SEMICONDUCTOR DEVICES EMPLOYING CARRIER MULTIPLICATION IN A HIGH GAP RATIO EMITTER-BASE HETEROJUNCTION**

Herbert Kroemer, Sunnyvale, and Robert D. Fairman, Newark, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California  
 Filed Mar. 28, 1966, Ser. No. 538,071  
 10 Claims. (Cl. 317-235)

There is disclosed a three layer or element semiconductor junction transistor which exhibits the speed of a conventional triode semiconductor transistor and a current amplification factor  $\alpha$  greater than unity. Current amplification occurs in the base region by virtue of energy and momentum exchange resulting when emitter injected carriers collide with like carriers in the base region. An emitter energy band gap at least twice as large as the base energy band gap and either a conduction or valence band gap edge discontinuity larger than the base energy band gap are necessary for n-p-n or p-n-p operation, respectively. Heavy base doping relative to the emitter in the

range of 10-100 tends to reduce the energy notch at the emitter-base interface thus avoiding the trapping of minority carriers in the base region and insuring that the current amplification factor  $\alpha$  will be greater than unity.

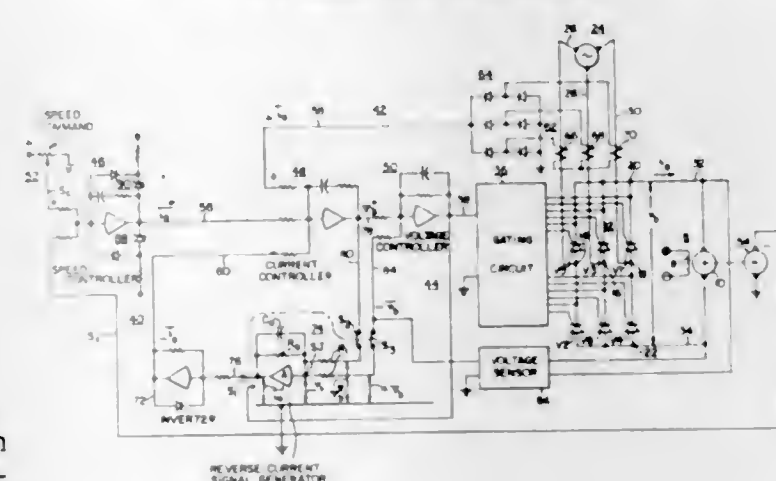


nority carriers in the base region and insuring that the current amplification factor  $\alpha$  will be greater than unity.

3,413,534

**NON-REGENERATING DC MOTOR REGULATING CIRCUIT HAVING IMPROVED STABILITY**  
 Loren F. Stringer, Clarence, Buffalo, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

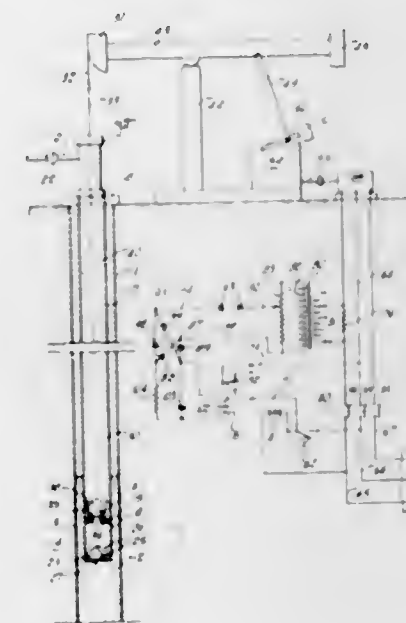
Filed Mar. 14, 1966, Ser. No. 533,924  
 5 Claims. (Cl. 318-308)



1. In a system for regulating the speed of a DC motor having a field and an armature, a controllable non-regenerating DC supply source connected to supply said armature, means for providing a first signal that is a function of the difference between actual and desired speeds of the motor, means for providing a second signal that is a function of the actual voltage across said armature, current controller means for producing in response to signals applied to its input a third signal representing desired voltage across said armature, voltage controller means responsive to said second and third signals for producing a fourth signal which is a function of the difference between desired and actual armature voltages, means for controlling said DC supply source in response to said fourth signal, means for applying said first signal to the input of said current controller means, means for supplying to the input of said current controller means in negative feedback relation to said first signal a signal component that is a function of armature current when the motor is motoring, and eighth means for supplying to the input of said current controller means in negative feedback relation to said first signal a signal component that is a function of the difference between desired and actual armature voltages.

3,413,535

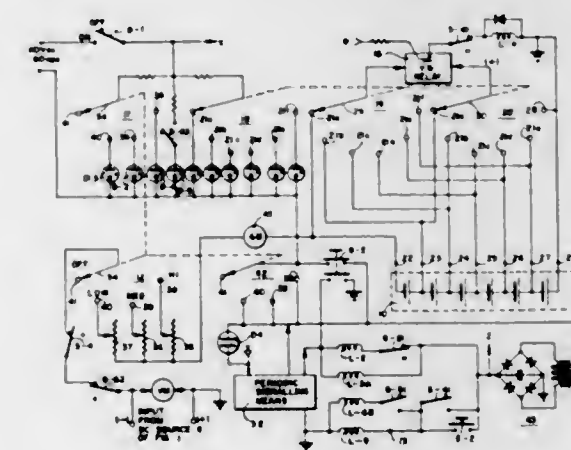
**ELECTRIC MOTOR CONTROL UTILIZING ZENER DIODE AND INTEGRATING MEANS IN A LOSS OF LOAD PROTECTION SYSTEM**  
 Lawrence M. Hubby, Bellaire, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware  
 Filed Oct. 15, 1965, Ser. No. 496,406  
 5 Claims. (Cl. 318-447)



An electric motor control circuit for shutting down the motor under certain abnormal load conditions. The motor drives a beam type deep well pump or the like having a cyclic load variation between an average maximum and an average minimum amplitude, under normal load conditions. By integrating the load above the minimum and using a desired time constant, a switch is controlled to shut down the motor after a given number of cycles that fail to exceed the minimum.

3,413,536

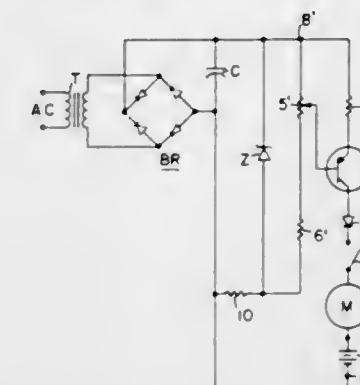
**AUTOMATIC BATTERY CHARGER**  
 James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of David K. Warkentine, La Puente, Calif.  
 Filed June 10, 1966, Ser. No. 557,861  
 5 Claims. (Cl. 320-17)



A plurality of series connected batteries are successively charged automatically from a charging current source. The battery charge, as measured by its output potential, is compared with a reference, and stepping-switch means are provided for adjusting the charge accordingly and, further, to indicate the charging state of the battery. When the battery is fully charged, the charging current is discontinued.

3,413,537

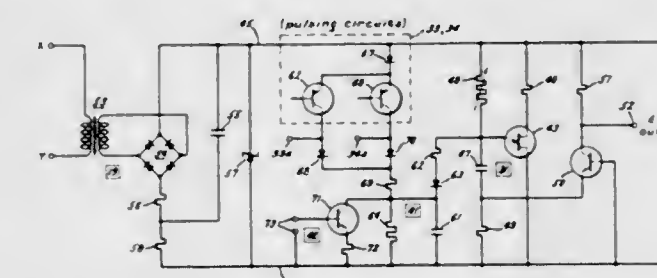
**CONSTANT CURRENT BATTERY CHARGER**  
 Robert L. Sharp, 5850 Beaumont, El Paso, Tex. 79912; Merrill E. Smith, 255 Madrid, Apt. 8, Las Cruces, N. Mex. 88001; and Otis Dale Embree, P.O. Box 3, Mesilla Park, N. Mex. 88047  
 Filed Jan. 21, 1965, Ser. No. 427,193  
 1 Claim. (Cl. 320-27)



A constant-current battery charger that takes advantage of the fact that a transistor, in a common emitter configuration, maintains a substantially constant collector current despite variations of the collector-to-emitter voltage. The transistor is connected in series with the battery, and maintains a substantially constant current to the battery, despite variations in the battery voltage as it becomes charged.

3,413,538

**CONTROL MEANS FOR STARTING ELECTRIC POWER CONVERTERS AT REDUCED OPERATING FREQUENCIES**  
 Merwyn E. Hodges, Broomall, Pa., assignor to General Electric Company, a corporation of New York  
 Filed Apr. 15, 1965, Ser. No. 448,399  
 7 Claims. (Cl. 321-2)



To ensure successful start-up of a capacitor-commutated controlled-rectifier inverter having D-C supply terminals connected to a substantially constant-current source, the control circuitry that determines operating frequency of the inverter is arranged to effect a subnormal frequency when the D-C supply terminals are originally energized.

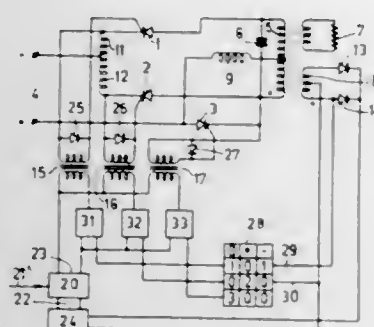
3,413,539

**DIRECT CURRENT-ALTERNATING CURRENT INVERTERS HAVING A PAIR OF CONTROLLED RECTIFIERS**  
 Karl Heinz Gustav Lopitzsch, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York N.Y., a corporation of Delaware  
 Filed Nov. 23, 1966, Ser. No. 596,619  
 Claims priority, application Netherlands, Nov. 24, 1965, 6515205  
 4 Claims. (Cl. 321-45)

1. A direct current-alternating current inverter comprising, a pair of controlled rectifiers each having a control electrode and first and second electrodes that define a main current path therein, a source of direct voltage, a winding and a capacitor connected in a symmetrical parallel resonant circuit, means connecting the main current paths of said rectifiers in the forward direction between a first terminal of said direct voltage source and the

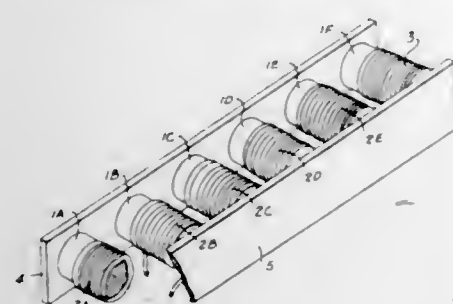


respective ends of said winding, a load coupled to said parallel resonant circuit, a choke coil, means connecting said choke coil between a centre tap of said winding and the other terminal of the direct voltage source, a source of pulses coupled to said control electrodes for controlling the pair of rectifiers, said choke coil being chosen so that the inductance thereof is large with respect to the inductance of each half of the winding so that the frequency of the alternating voltage produced across the parallel resonant circuit is substantially equal to the natural frequency of said circuit, a third controlled rectifier connected in the forward direction between the end of the



choke coil remote from the winding and one end of the winding, and means coupled to the control electrode of said third controlled rectifier for controlling current flow therein so that, when starting the inverter, said third controlled rectifier becomes conductive together with one controlled rectifier of the pair of rectifiers the main current part of which is connected to the other end of the winding and thus strongly accelerates the first charging of the capacitor of the parallel resonant circuit by the direct voltage source.

**3,413,540**  
**MAGNETIC TEMPERATURE SENSOR**  
Carl A. Vansant, 3306 Glenway Drive,  
Kensington, Md. 20795  
Filed July 14, 1966, Ser. No. 565,326  
8 Claims. (Cl. 323-44)

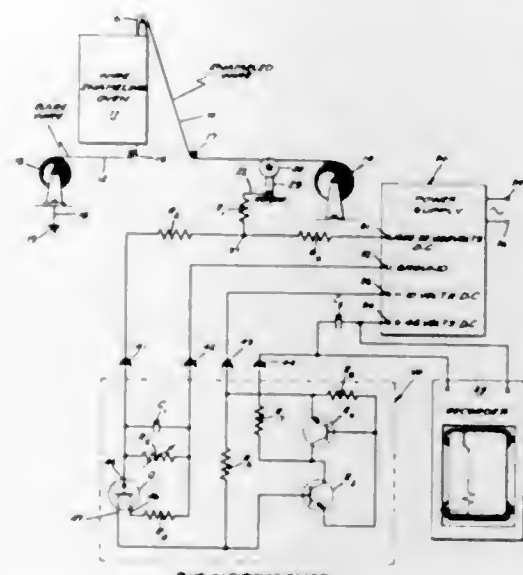


A magnetic temperature sensor including a primary driving coil, a plurality of magnetic couplers having differing Curie points and a plurality of second coils mounted around the magnetic couplers.

**3,413,541**  
**APPARATUS FOR DETECTING INSULATION FAULTS IN MAGNET WIRE UTILIZING FIELD EFFECT TRANSISTOR**  
William A. Swim and Harry L. Kellogg, Fort Wayne, Ind., assignors to General Electric Company, a corporation of New York  
Filed Feb. 24, 1967, Ser. No. 618,430  
4 Claims. (Cl. 324-54)

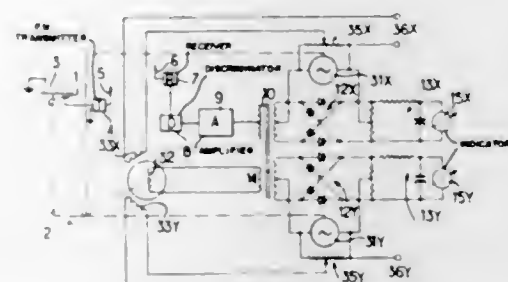
Test apparatus for detecting faults in the insulation coating of moving insulated wire. A relatively high direct current potential is applied by a contact wheel to the surface of the insulation coating of the moving wire.

The contact wheel is connected to tap connection of a voltage divider having a first impedance branch connected to a direct current potential source and a second impedance branch. The first impedance branch preferably limits the current supplied to the contact wheel to a magnitude of not more than 25 microamperes. A current sensing circuit is connected in the second impedance branch of the potential divider and utilizes a field effect transistor to detect changes in current, the field effect transistor being switched into a conducting state in response to a predetermined drop in the current flow in



the second branch thereby to indicate the occurrence of a fault in the insulation coating of the insulated wire. The current sensing circuit may be connected to a recorder or other device for recording or counting the faults occurring in the wire insulation.

**3,413,542**  
**DEVICE FOR PROVIDING AN INDICATION OF THE ORIENTATION OR CONFIGURATION OF A SURFACE BY CORRELATING THE OUTPUT OF A DISTANCE PROBE ROTATING RELATIVE TO THE SURFACE**  
Ferdy Mayer, 22 Rue Ampere, Grenoble, Isere, France  
Continuation-in-part of application Ser. No. 681,033, Nov. 6, 1967. This application Jan. 21, 1965, Ser. No. 426,983  
Claims priority, application France, Jan. 22, 1964, 961,146  
15 Claims. (Cl. 324-61)



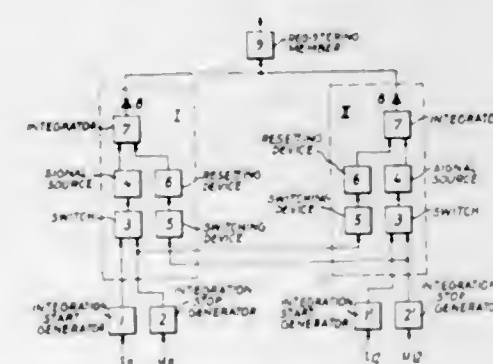
A device for producing an indication of the orientation or configuration of a surface by means of a distance indicating probe rotating relative to the surface, a correlator device connected to receive the output of the probe and reference signals synchronized with the frequency of such relative rotation, and means for generating a further signal determined at least in part by such relative rotation and combining the further signal with the output of the probe for producing an indication of a characteristic of the surface with respect to the axis of probe rotation.

**3,413,543**  
**COMPENSATED FERROELECTRIC HYSTERESIS-SCOPE EMPLOYING GROUND REFERENCE**  
Norman W. Schubring, Birmingham, Alexander Medovsky and James P. Nolte, Warren, and Ronald A. Dork, Utica, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Apr. 23, 1965, Ser. No. 450,484  
6 Claims. (Cl. 324-61)



A simple compensable ferroelectric hysteresiscope permitting measurement of a ground referenced sample voltage by means of an oscilloscope.

**3,413,544**  
**TIME INTERVAL MEASURING DEVICE**  
Robert Jötten, Darmstadt, and Yorck Rogowsky, Berlin, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany  
Filed Feb. 9, 1966, Ser. No. 526,257  
Claims priority, application Germany, Feb. 12, 1965, L 49,954  
13 Claims. (Cl. 324-68)

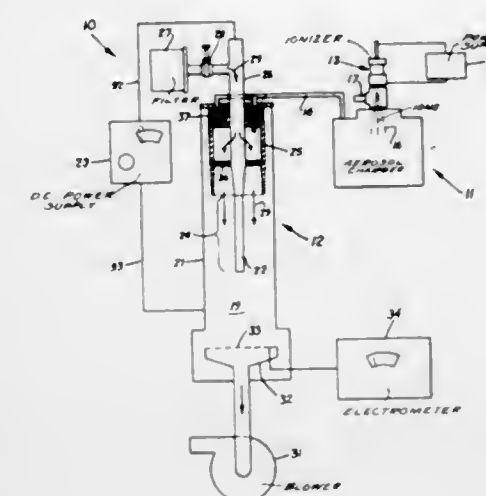


A device for providing an indication of the duration of each of several successive periodic time intervals including a plurality of integrators each providing an output whose amplitude is proportional to a respective time interval and means for placing each integrator in succession into operation during a respective successive time interval and for resetting each integrator output to zero upon termination of the integration of any of the other integrators, and means for registering the largest integrator output obtained during each periodic time interval.

**3,413,545**  
**APPARATUS AND METHOD FOR DETERMINING AEROSOL PARTICLE CONCENTRATION AND PARTICLE SIZE DISTRIBUTION**  
Kenneth T. Whitby, Minneapolis, Minn., assignor to Regents of the University of Minnesota, Minneapolis, Minn., a corporation of Minnesota  
Filed June 23, 1965, Ser. No. 466,331  
22 Claims. (Cl. 324-71)

An electric aerosol particle counting and size distribution measuring system for the 0.01 to 2 micron particle range. An aerosol charger unit having a gas ionizing device and diffusion chamber imparts a unipolar charge on aerosol particles in proportion to the size of the particles. The charged particles are delivered to a mobility analyzer hav-

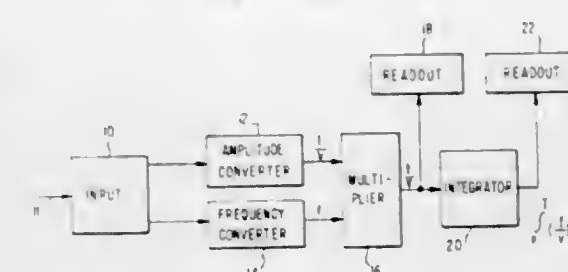
ing a housing with an elongated chamber. A particle collecting electrode projects axially into the chamber above a current collector and sensor filter connected to an electrometer. The separation of the collecting electrode and the current collector permits the use of collecting voltages



up to 30 kv. while maintaining background currents below 10<sup>-14</sup> amp.

**3,413,546**  
**ELECTRONIC CIRCUITRY FOR ANALYZING ELECTROENCEPHALOGRAPHIC WAVEFORMS**  
Jean-Louis R. Riehl and Mohammed Imam Hussain, Los Angeles, Calif., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware  
Filed Dec. 28, 1965, Ser. No. 516,934  
14 Claims. (Cl. 324-77)

An electronic system for analyzing electroencephalographic waveforms to evaluate cerebral activity by providing an output signal representing the quotient of the frequency divided by the voltage amplitude of the waveform. This is accomplished by generating a first output signal inversely proportional to the voltage amplitude of the waveform, and a second output signal directly proportional to the frequency of the waveform. These output signals are then multiplied to provide a third output signal proportional to the quotient of the frequency divided by the voltage amplitude of the waveform. This third output is then fed to suitable indicating apparatus. In addition,



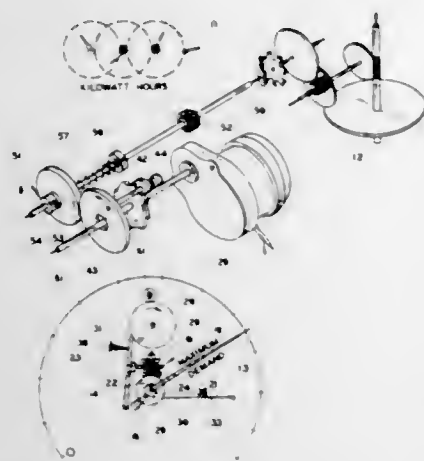
the third output signal may be periodically integrated to provide an indication of low grade chronic changes.

**3,413,547**  
**FAIL SAFE DEVICE FOR DEMAND METER TIMING MOTORS**  
Robert A. Brown, Lafayette, Ind., assignor to Duncan Electric Company, Inc., a corporation of Indiana  
Filed Oct. 24, 1965, Ser. No. 505,074  
9 Claims. (Cl. 324-103)

To prevent demand meter indications that are falsely high because of stoppage of a timing motor while the meter continued to move the demand train, blocking means are provided for preventing movement of the demand train except when the timing motor is running. The



blocking means may be an overrunning device such as a ratchet and pawl, the clock driving one of these members



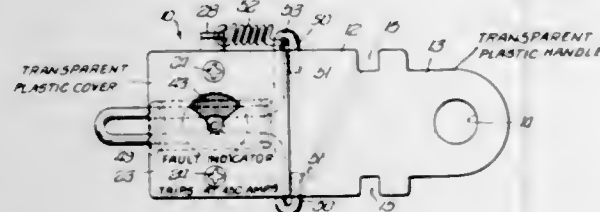
faster than the maximum speed of drive of the other by the meter. Alternatives are disclosed.

3,413,548

### ELECTRIC CURRENT RESPONSIVE MEANS INCLUDING A PORTABLE MAGNET INDICATOR

Edmund O. Schweitzer, Jr., 1002 Dundee Road, Northbrook, Ill. 60062  
Filed Oct. 5, 1964, Ser. No. 401,621  
16 Claims. (Cl. 324-133)

Stationary and rotatable permanent magnets are located in the magnetic field generated by current flow in a conductor in such relation that the rotatable permanent magnet is held in a non-indicating position until the cur-

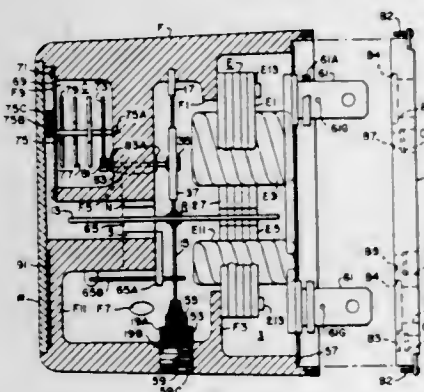


rent flow exceeds a predetermined value whereupon it rotates to an indicating position.

3,413,549

### ELECTRICAL INTEGRATING METERS HAVING DUST-PROOF ENCLOSURES

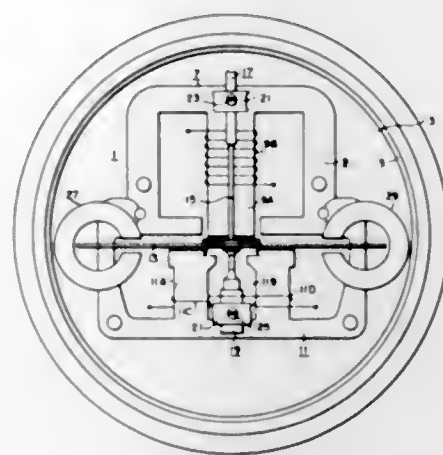
Merrion D. Gill, Raleigh, N.C., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Nov. 6, 1963, Ser. No. 321,835  
5 Claims. (Cl. 324-137)



A meter is located within a dust-proof casing which also serves as a meter frame.

### 3,413,550 INDUCTION METER HAVING MAGNETICALLY-SUPPORTED ROTOR

David F. Wright, Raleigh, N.C., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania  
Original application Feb. 26, 1960, Ser. No. 11,335, now Patent No. 3,143,704, dated Aug. 4, 1964. Divided and this application May 26, 1964, Ser. No. 370,168  
2 Claims. (Cl. 324-152)

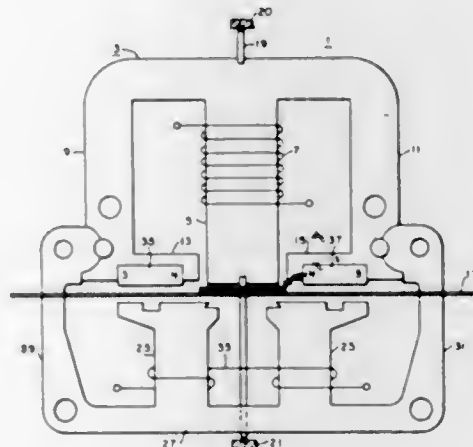


An induction meter has a rotatable electroconductive armature and two damping magnet fields which vary in cross-section oppositely in a direction parallel to the armature axis.

3,413,551

### INDUCTION DEVICES HAVING LOW SIDE THRUST

David F. Wright, Housecreek Township, Raleigh, N.C., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania  
Filed June 22, 1964, Ser. No. 376,911  
7 Claims. (Cl. 324-152)



Induction devices such as watt-hour meters have voltage and current poles and permanent damping magnets all located in a common plane to minimize side thrust.

3,413,552

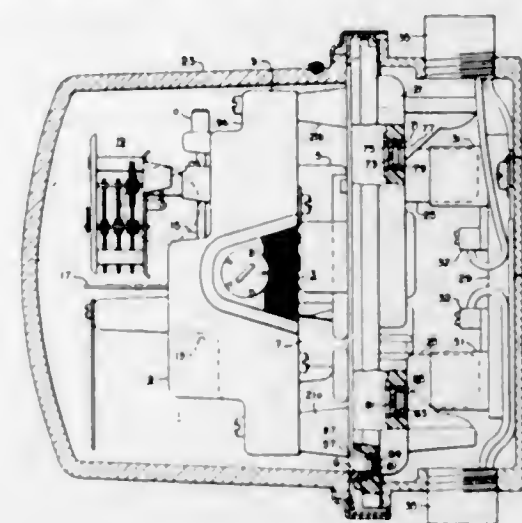
### WATT-HOUR METERS HAVING DUST-PROOF CASINGS

Thomas J. Daley, Frederick E. Mindt, and Frank G. Kuhn, Raleigh, N.C., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 12, 1963, Ser. No. 301,499  
8 Claims. (Cl. 324-156)

A watt-hour meter casing base is provided with three

vertically-spaced filters to permit breathing and drainage

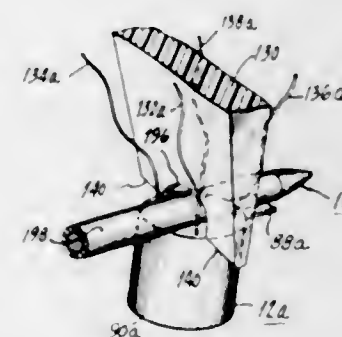


while barring dust from entering the casing.

3,413,553

### METHOD OF SEPARATING CONDUCTORS EXTENDING FROM AN ELECTRICAL COMPONENT FOR TESTING PURPOSES

Benjamin Genualdi, Summit, and Angelo Checki, Jr., Lyndhurst, N.J., assignors to Radio Corporation of America, a corporation of Delaware  
Filed Apr. 14, 1965, Ser. No. 448,049  
3 Claims. (Cl. 324-158)



A method of separating an array of conductors extending from one side of an electrical component for testing purposes comprises the steps of (1) disposing a first insulating member in the array to divide the conductors into two groups, (2) disposing a second insulating member in the array, transversely to the first insulating member and adjacent to the component, to separate the conductors into at least three groups, and (3) moving at least two (test input) contacts toward each other from opposite sides of the first insulating member and adjacent to the second insulating member to engage at least two of the conductors, respectively.

3,413,554

### TRANSCIVER WITH SELF-TUNING TRANSMITTER CONTROLLED BY RECEIVER

Lester R. Yates, Towson, and Charles M. Dorsey, Jr., and Joseph J. Sawicki, Baltimore, Md., and Robert W. Chang, West Lafayette, Ind., assignors to The Bendix Corporation, Towson, Md., a corporation of Delaware  
Filed May 3, 1965, Ser. No. 452,514  
10 Claims. (Cl. 325-17)

A radio transceiver having a self-tuning transmitter variable frequency master oscillator wherein a portion of the master oscillator output frequency is applied to the receiver mixer and the developed receiver intermediate frequency is compared with a reference frequency in a phase detector to generate the master oscillator control signal. Actuation of a transmit switch causes a search signal to be applied to the master oscillator so as to sweep

the master oscillator rapidly over its entire range. Upon the appearance of a receiver intermediate frequency signal at an I.F.-detector and transmit enable circuit and the simultaneous indication by the phase detector that it is within its pull-in range, the transmit enable circuit will energize the transmitter power amplifier and actuate the antenna relay so as to connect the transmitter output to the antenna.

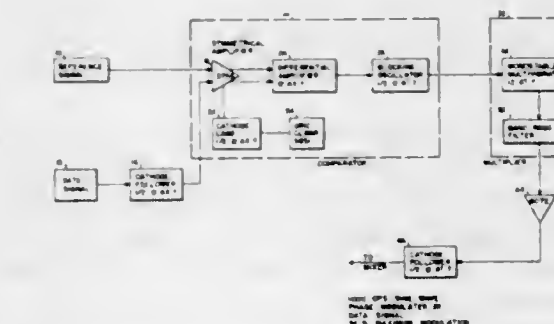
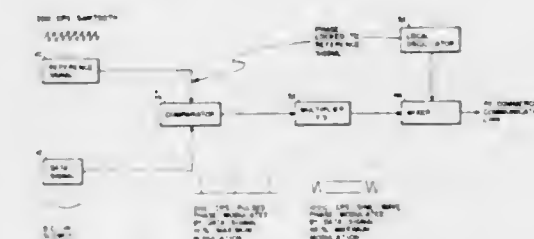


Additionally, oscillator crystals and pretuned tank circuits are selected to control the frequency of the receiver local oscillators and a reference oscillator. Frequency determinative crystals and pretuned tank circuit elements are isolated from their respective oscillators by diodes normally biased nonconductive. By proper selection of forward biasing voltages, those diodes can be made conductive which will introduce the proper crystals and circuit loading to the oscillators.

3,413,555

### ANALOG DATA CONVERTER FOR A PHASE COMPARISON TELEMETRY SYSTEM

Francis X. Downey, Annandale, Va., assignor to the United States of America as represented by the Secretary of the Navy  
Filed July 19, 1965, Ser. No. 473,251  
2 Claims. (Cl. 325-163)



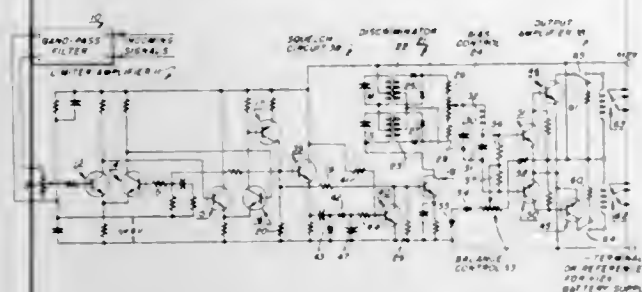
A signal converter for converting DC or AC signals into signals which are phase modulated and synchronized to a standard reference tone. A reference signal and a data signal are coupled to a comparator which produces a sharp pulse when the potential of the data signal and of the reference signal are related in a predetermined way. The output of the comparator is multiplied in frequency and is then heterodyned in a mixer with a signal from a local oscillator which is phase locked to the reference signal.



3,413,556

**FREQUENCY SHIFT RECEIVER PROVIDING THREE OUTPUT FUNCTIONS**

George L. King, Morris Plains, N.J., assignor to RFL Industries, Inc., Boonton, N.J., a corporation of New Jersey

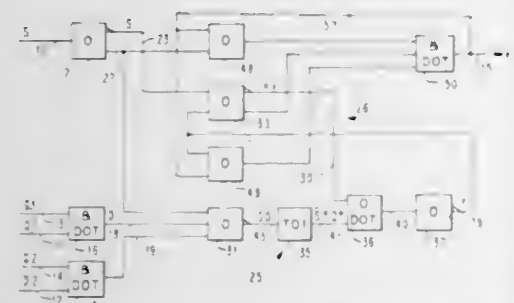
Filed May 3, 1965, Ser. No. 452,522  
7 Claims. (Cl. 325—320)

A receiver providing a three state control function in correspondence with MARK, CENTER and SPACE input signals comprised of pulses having three different carrier frequencies. The receiver includes a discriminator comprising two tuned primary coils, individually coupled to secondary coils, and a squelch circuit which cuts off current flow through the primary coils when the amplitude of the input signals falls below a predetermined level. Output switch means are actuated between first and second positions in correspondence with received MARK and SPACE signals.

3,413,557

**GATED STROBING LATCH FOR SYNCHRONIZING DATA IN AN ASYNCHRONOUS SYSTEM**

Gilbert R. Muhlenbruch, Wappingers Falls, and Ronald Waxman, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

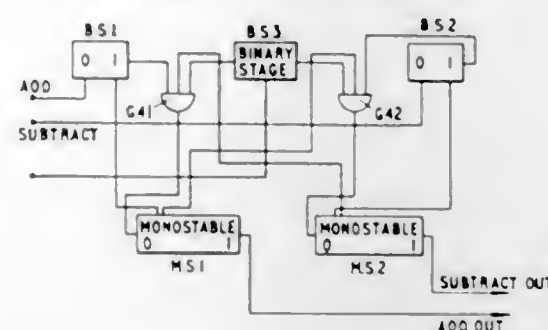
Filed July 2, 1965, Ser. No. 469,205  
8 Claims. (Cl. 328—92)

1. A circuit for synchronizing data in an asynchronous system, comprising, means providing a strobing signal having a first level during a first portion of each strobing period and having a second level during the rest of each strobing period, a first latch connected to receive said strobing signal and a data signal and having a sequential logic function to produce an output that is a function of said data input during said first portion of a strobing period and is invariant during said second portion of each strobing period, a second latch connected to receive said strobing signal and the output of said first latch and having a logic function to produce an output that is a function of the output of said first latch during the portion of said strobing period in which said first latch output is invariant and is invariant during the portion of said strobing period when said first latch output is a function of said data signal, whereby transitions in data at the output of said second latch occur only with transitions in said strobing signal from said first level to said second level.

3,413,558

**PULSE SEPARATORS**George C. Kean, Sudbury Hill, Greenford, England, assignor to Rotax Limited, London, England  
Original application Aug. 16, 1962, Ser. No. 217,382, now Patent No. 3,240,918. Divided and this application June 17, 1965, Ser. No. 464,668  
Claims priority, application Great Britain, Nov. 23, 1961, 41,891/61

1 Claim. (Cl. 328—109)

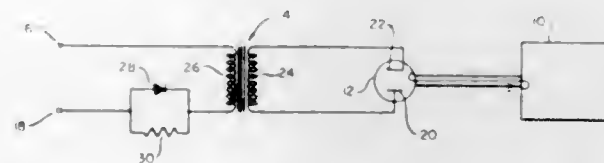


1. A pulse separator for separating pulses from two trains of pulses, comprising a first series circuit including a first bistable circuit, a first gate and a first monostable circuit, the pulses in one train being applied to the first bistable circuit which switches to its alternative state to operate the first monostable circuit provided the first gate is conducting, a second series circuit including a second bistable circuit, a second gate and a second monostable circuit, the pulses in the other train being applied to the second bistable circuit which switches to its alternative state to operate the second monostable circuit provided the second gate is conducting, said monostable circuits providing the output from the separator, an oscillator connected to said gates and rendering them non-conductive alternately, so that only one gate can conduct at a time, means operable as a result of operation of the first and second monostable circuits respectively for switching the first and second bistable circuits to their first state, a connection from the first monostable circuit to the second gate whereby the second gate is held non-conductive while the first monostable circuit is operating, and a connection from the second monostable circuit to the first gate whereby the first gate is held non-conductive while the second monostable circuit is operating.

3,413,559

**TRANSFORMER RESET CIRCUIT FOR MICROWAVE OVEN**

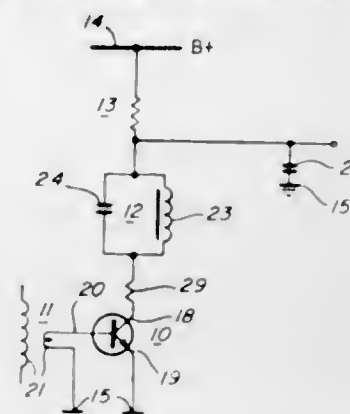
Harry E. Jorgenson, Minneapolis, and Ellis W. Olson, Hopkins, Minn., assignors to Litton Precision Products, Inc., Minneapolis, Minn.

Filed Dec. 11, 1964, Ser. No. 417,670  
4 Claims. (Cl. 328—268)

A diode is connected in parallel with a resistor and both are connected in series with the primary winding of a transformer having a saturable core. Alternating current is applied to this series circuit to energize the primary winding and, hence, the secondary winding of the transformer. The polarity of the diode is such that current flows through the diode during the half cycle in each cycle of AC that a magnetron connected across the secondary winding is conducting. During the alternate half cycles, the diode blocks the passage of current and a limited amount of current flows through the resistor suffi-

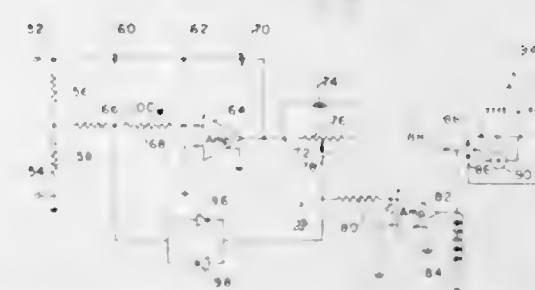
cient to unsaturate the transformer core, thereby resetting the transformer for unsaturated operation in the next conducting half cycle.

3,413,560

**SWITCHING TYPE FM DETECTOR**Peter H. Van Anrooy, Syracuse, N.Y., assignor to Warwick Electronics Inc., a corporation of Delaware  
Filed June 7, 1965, Ser. No. 461,838  
5 Claims. (Cl. 329—103)

An FM detector transistor connected in series with a parallel tuned circuit and a source of DC energy is driven into saturation for a portion of each cycle of an incoming FM signal to switch the DC energy across the tuned circuit. A signal having an amplitude proportional to the frequency of the FM signal is generated in the series circuit and is integrated to produce an audio output signal.

3,413,561

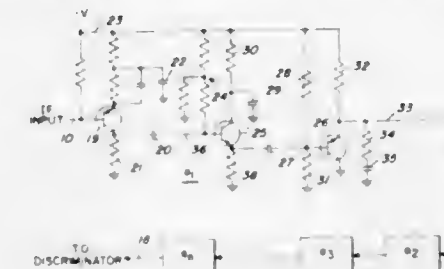
**PROCESS CONTROLLER INCLUDING AN OPERATIONAL AMPLIFIER**James A. Hogan, Lansdowne, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware  
Filed Oct. 22, 1964, Ser. No. 405,654  
1 Claim. (Cl. 330—9)

A process controller including an operational amplifier having an output connected to control a process variable, having an input connected to a current summing junction to which is applied a process variable error signal, and having a negative feedback connection between its output and the summing junction including a reset capacitor. The differences between the reset capacitor signal and reference signals from a reference source are applied to diodes which, when those differences exceed predetermined values, pass a compensating signal through a damping resistor to the summing junction to oppose the reset signal and reduce the amplifier input signal, to prevent the unwanted accumulation of reset.

3,413,562

**CLIPPER AMPLIFIER CIRCUIT**Richard K. Hartin, Plano, and Westley W. Smith, Garland, Tex., assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa  
Filed Feb. 20, 1967, Ser. No. 617,229  
8 Claims. (Cl. 330—17)

This invention relates generally to a signal amplifying and limiting circuitry and more particularly to an im-

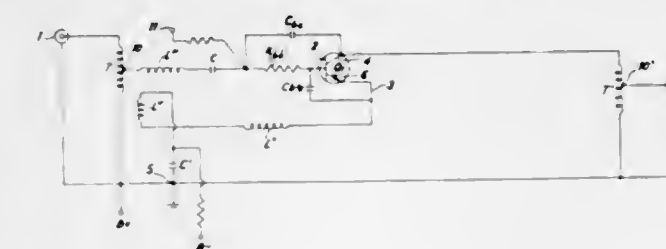


proved signal clipping circuit of the type employing a signal amplifying device in which clipping is effected by driving signal translating devices to "off," or nonconductive, condition as opposed to being driven into saturation.

3,413,563

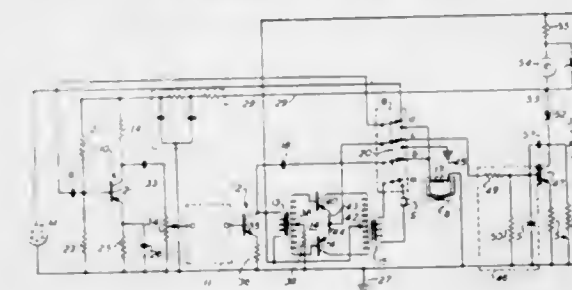
**WIDE BAND TRANSISTOR AMPLIFIER**

Ben Hapgood Tongue, West Orange, N.J., assignor to Blonder-Tongue Laboratories, Inc., a corporation of New Jersey

Filed Jan. 6, 1967, Ser. No. 607,760  
5 Claims. (Cl. 330—27)

Transistor amplifiers, preferably of the common emitter return type, are disclosed embodying critically designed voltage-divider reactance connections and substantially dissipationless feedback paths to attain wide band response with substantially uniform gain, noise figure, impedance matching and input and output capability.

3,413,564

**COMBINED A.G.C. AND INDICATOR CIRCUIT**Albert L. Seifried, Mendham, N.J., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware  
Filed May 19, 1966, Ser. No. 551,311  
5 Claims. (Cl. 330—29)

1. An automatic gain control and volume indicator system comprising a main amplifier including an amplifier stage having a gain control line for increasing and decreasing the gain of the main amplifier as the voltage supply to said line is increased and decreased, a D.C. source of voltage, a voltage divider connected across said source for providing a variable voltage to said gain control line, said voltage divider having a first arm including an indicator lamp and a second series arm including the collector-emitter of a transistor, said divider having a junction point between said arms connected to said gain control line, means for rectifying the signal output voltage from said main amplifier and feeding the same to the base element of said transistor whereby the resistance of said transistor is decreased and increased respectively with in-



crease and decrease in signal voltage causing the voltage to said line to decrease and increase respectively as the signal input level is increased and decreased, and a Zener diode connected across said indicator lamp in reverse polarity to the voltage applied across the lamp to obtain a reverse bias across the diode by the voltage drop across said lamp causing the diode to be non-conducting, said diode having a Zener voltage substantially at the voltage obtained across said lamp when the signal input voltage is at maximum level.

3,413,565

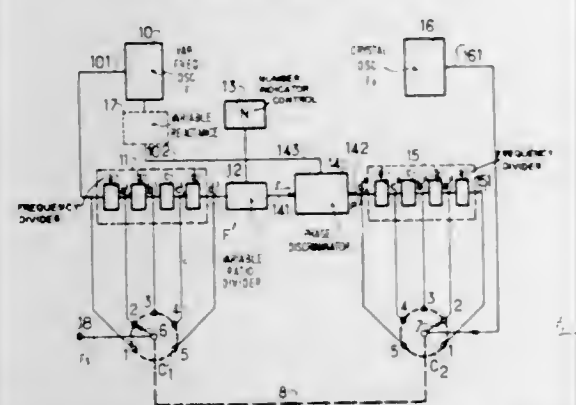
# MULTI-RANGE FREQUENCY GENERATOR USING FREQUENCY DIVIDING TECHNIQUES

Lucien B. Bony, Blanc Mesnil, Didier Bernadet, Courcelles-sur-Viosnes, and Michel Marchal, Paris, France, assignors to C.I.T.—Compagnie Industrielle des Telecommunications, Paris, France

Filed Jan. 25, 1967, Ser. No. 611,761

Claims priority, application France, Jan. 25, 1966, 47,150

11 Claims. (Cl. 331—18)



This application discloses a frequency generator for supplying a plurality of discrete frequencies evenly spaced over a wide frequency range wherein a variable frequency oscillator is connected to a first input of a phase discriminator through a fixed ratio frequency divider connected in series with a variable ratio frequency divider, a stabilized reference frequency oscillator is connected via another fixed ratio frequency divider to a second input of the phase discriminator, the output of which is connected to the variable frequency oscillator in control thereof. A plurality of discrete frequencies are obtained by providing both the fixed ratio dividers as series of individual divider elements and keeping the selected ratio of fixed division connected to the phase discriminator inputs equal.

3,413,566

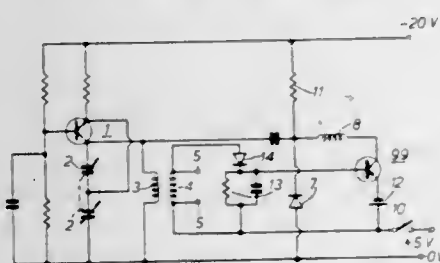
# WIDE FREQUENCY RANGE SIGNAL GENERATORS INCLUDING A NUMBER OF ALTERNATIVELY UTILIZED OSCILLATORS

John Michael Parkyn, St. Albans, England, assignor to Marconi Instruments Limited, London, England, a British company

Filed Jan. 5, 1966, Ser. No. 518,892

Claims priority, application Great Britain, Jan. 7, 1965, 781/65

3 Claims. (Cl. 331—49)



A wide frequency range signal generator including a plurality of independent oscillators each adjustable over a different sub-range of the total wide frequency range

thereof. The oscillators being arranged to oscillate simultaneously, each having the output circuit thereof shunted by a voltage controllable impedance. Each such voltage controllable impedance having associated therewith a control voltage applying circuit. The output circuits of the individual oscillators are connected in parallel with the output circuit of the signal generator. The control voltages applied to the impedances being normally of a value suitable to cause a low shunt impedance thus preventing oscillations from reaching the output circuit of the signal generator. Signals from any one oscillator are applied to the signal generator output circuit upon application of a control voltage suitable to cause a high shunt impedance across the output of the associated oscillator.

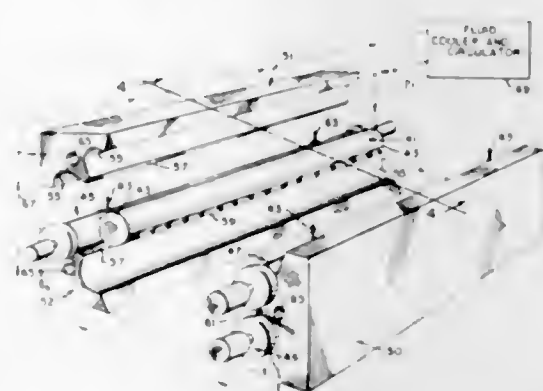
3,413,567

# LASER REFLECTOR AND COOLING MEANS

Joseph P. Hannwacker, Plainview, and Harold A. Kramer, Wantagh, N.Y., assignors to Fairchild Hiller Corporation, a corporation of Maryland

Filed July 5, 1963, Ser. No. 292,912

8 Claims. (Cl. 331—94.5)



This disclosure relates to optically excited lasers devices with a reflective enclosure portions of which are effective both for directing the excitation light and for transferring heat from the laser material by conduction for cooling purposes.

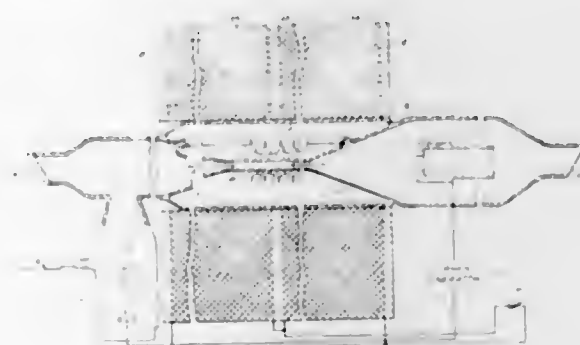
3,413,568

# REVERSED AXIAL MAGNETIC FIELDS IN LASERS

Eugene I. Gordon, Convent Station, Edward F. Labuda, Madison, and Richard C. Miller, Summit, N.J., assignors to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York

Filed June 22, 1965, Ser. No. 466,014

6 Claims. (Cl. 331—94.5)



1. An ion laser comprising: an envelope having a central axis and being filled with a quantity of gas which is capable of population inversion in an ionized condition; means for establishing a gas discharge through the gas; means for maintaining a sufficiently high current through the gas discharge to ionize a significant por-

tion of the gas and to establish a population inversion of component ions, thereby initiating the stimulated emission of coherent optical radiation from at least part of the component ions of the gas; means for increasing the optical gain of the laser comprising means for forming through the discharge an axial magnetic field; and means for reversing the axial direction of the magnetic field at substantially the longitudinal midpoint of the gas discharge, thereby reducing the effects of Zeeman splitting in the gas discharge region.

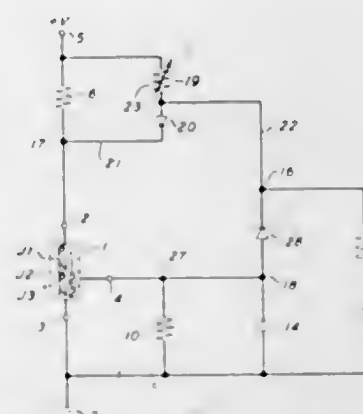
3,413,569

# REPETITIVELY OPERATING THYRISTOR SWITCH CIRCUIT WITH RAPID TURN-OFF ACTION

William B. Harris, Bernardsville, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed May 19, 1967, Ser. No. 639,714

3 Claims. (Cl. 331—111)



Square wave generators based on multivibrator circuits generally require two tubes or transistors for repetitively triggering one from the other. It has been discovered that a switch circuit employing a single thyristor can be adapted to function as an astable oscillator by connecting a Zener diode between the source of pulse current and the gate of the thyristor.

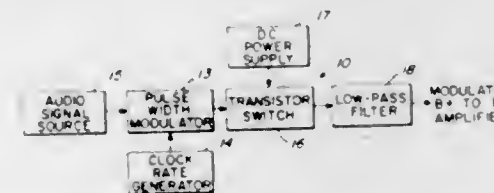
3,413,570

# HIGH EFFICIENCY RF POWER AMPLIFICATION WITH MODULATION SIGNAL CONTROLLED "ON"-"OFF" SWITCH VARIED AMPLIFIER DC POTENTIALS

Warren B. Bruene, Dallas, Tex., and Tom L. Dennis, Jr., Cedar Rapids, and Edgar O. Schoenike, Ames, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Feb. 23, 1966, Ser. No. 529,380

18 Claims. (Cl. 332—9)



1. In a high efficiency RF power amplifier and modulation system: an RF power amplifier; an RF signal source; a circuit interconnection between said RF signal source and said RF power amplifier; a DC power supply; electrode means in said RF power amplifier; circuit means interconnecting said DC power supply and said electrode means; an "on"-"off" switch in the circuit means interconnecting said DC power supply and electrode means in said RF power amplifier; a modulating signal source; and a modulation circuit interconnecting

said modulating signal source and said "on"-"off" switch for control drive of said switch and variance of the "on" to "off" time of said switch in accordance with the signal from the modulating signal source.

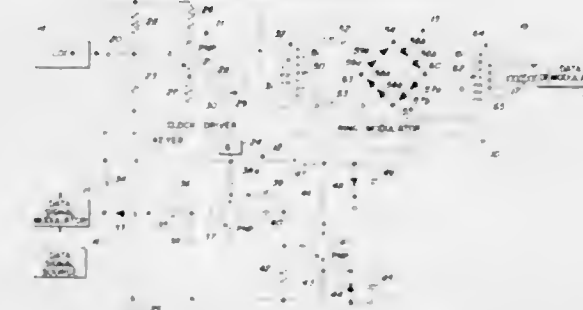
3,413,571

# KEYER/MODULATOR CIRCUIT FOR ENCODING GENERALIZED PERIODIC WAVEFORMS INTO PHASE SCRIPT

Charles J. Ulrick and Charles P. Womack, Marion, Iowa, assignors to Collins Radio Corporation, Cedar Rapids, Iowa, a corporation of Iowa

Filed Nov. 3, 1965, Ser. No. 506,189

7 Claims. (Cl. 332—11)



A keyer-modulator circuit encoding generalized periodic waveforms into phase script receiving a data signal input and a clock driver reference signal and with these two signals in synchronous, with a signal inverter in a keyer circuit accepting existing logic levels followed by a signal level shifting stage selectively operable for offsetting the clock reference of the modulator above and below ground to select the clock phase to be transmitted.

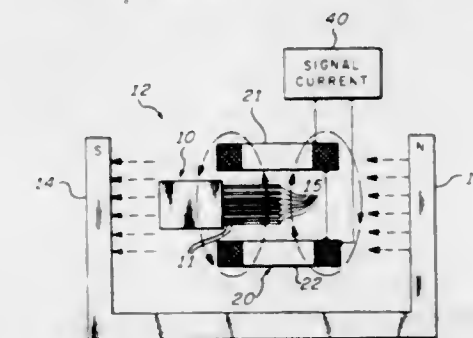
3,413,572

# MAGNETIC FIELD DRIVING MEANS FOR FREQUENCY RESPONSIVE APPARATUS HAVING A PLURALITY OF ENERGY TRANSMITTABLE MAGNETIZABLE FIBERS

Carl E. Burklund, Port Washington, N.Y., assignor to Sperry Rand Corporation, a corporation of Delaware

Filed Sept. 1, 1965, Ser. No. 484,346

4 Claims. (Cl. 332—26)



An assembly of energy transmitting magnetizable fibers disposed in a first magnetic field for inducing magnetic poles on the extremities of the fibers and a second modulating magnetic field disposed substantially perpendicular to the first magnetic field for driving the fiber extremities primarily as a function of the second modulating magnetic field.

3,413,573

# MICROELECTRONIC FREQUENCY SELECTIVE APPARATUS WITH VIBRATORY MEMBER AND MEANS RESPONSIVE THERETO

Harvey C. Nathanson and Robert A. Wickstrom, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

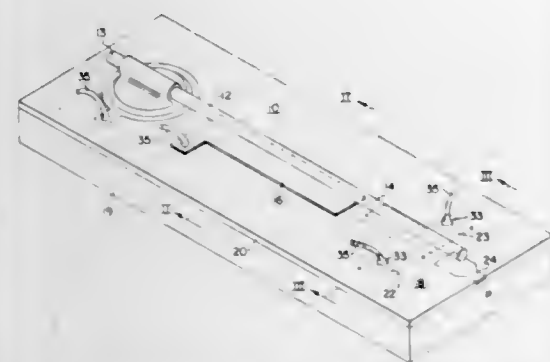
Filed June 18, 1965, Ser. No. 465,090

21 Claims. (Cl. 332—31)

A vibratory member, such as a cantilever, is used to control a field responsive element, such as a surface poten-



tial controlled transistor, to provide a "resonant gate transistor." An input signal at a resonant frequency of the vibratory member affects the output of the responsive

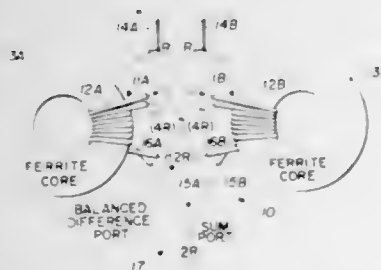


element in a frequency selective manner. Utilization of resonant gate transistors to provide functions such as those of an oscillator, modulator, filter and frequency standard are described.

### 3,413,574 BROADBAND HIGH EFFICIENCY IMPEDANCE STEP-UP 180° PHASE SHIFT HYBRID CIR- CUTS

Klaus G. Schroeder, Dallas, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Oct. 3, 1966, Ser. No. 583,880  
14 Claims. (Cl. 333-4)

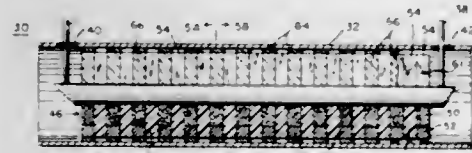


A highly efficient impedance step-up 180° phase shift hybrid circuit usable as a signal combiner in one direction and as a divider in the opposite direction having two 4:1 transformers with bifilar transformer windings wound on individual cores, and with the two transformers, substantially mirror images of each other, connected in phase opposition.

### 3,413,575 LOW-LOSS, CONTROLLABLE PARAMETER, TRANSMISSION LINE

Donn V. Campbell, Neptune, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed Nov. 10, 1964, Ser. No. 410,324  
8 Claims. (Cl. 333-31)



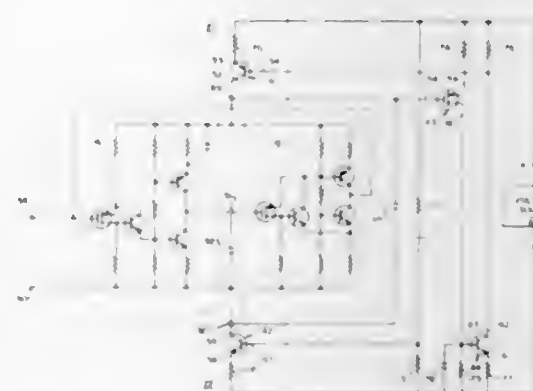
A constant impedance low-loss delay line which includes a coaxial transmission line section comprising an inner conductor and an outer conductor, and a radially stratified propagation medium intermediate the conductors which is adapted to be slideably positioned over the inner conductor. The propagation medium includes a plurality of ferrite-ceramic elements spaced apart by

means of plastic spacers. Each of the ferrite-ceramic elements comprises a ceramic body and a ferrite body concentrically disposed with respect to the coaxial line conductors and disposed along a common radial plane. The ferrite-ceramic elements and plastic spacers therebetween include a radial slot and are aligned to form an integrated longitudinal slot along the inner conductor.

### 3,413,576 GYRATOR ISOLATION CIRCUIT HAVING NEGATIVE FEEDBACK CIRCUIT TO MAINTAIN VOLTAGE ACROSS GYRA- TOR SUBSTANTIALLY CONSTANT

Desmond F. Sheahan, Redwood City, Calif., assignor to Automatic Electric Laboratories, Inc., a corporation of Delaware

Filed Dec. 22, 1966, Ser. No. 603,977  
7 Claims. (Cl. 333-80)

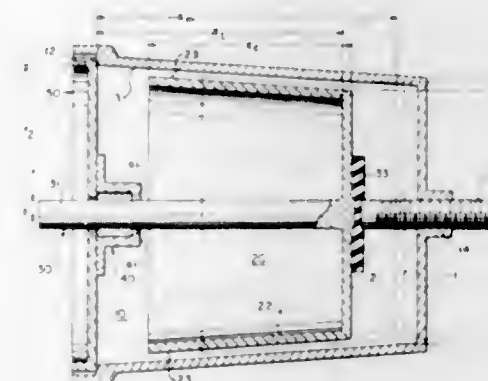


An electrical circuit isolates a gyrator circuit from the terminals of its bias supply thereby permitting the simulation of a "floating" inductor for use as a series circuit element in a filter circuit. The isolation circuit provides high impedance paths between the gyrator bias terminals and the voltage source terminals and a feedback path for stabilizing the bias conditions of the gyrator.

### 3,413,577 ABSORPTION WAVEMETER

Ettore Massano, Milan, Italy, assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed July 28, 1966, Ser. No. 568,434  
1 Claim. (Cl. 333-82)



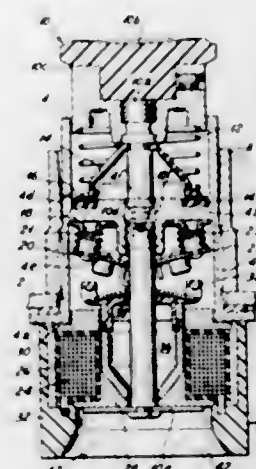
A base wall of an outer conical frustum, the inside surface of a coaxial inner conical frustum with an open base, and a coaxial conductive shaft joining the base wall of the outer frustum and the top wall of the inner frustum, define a first concentric transmission line section. Over the range of frequencies of signal to which the device is to be tuned, this first section, having dimensions much shorter than the wavelengths of the signal, functions as an inductance. A second concentric transmission line section functioning as a capacitive section in series with the first section is formed by adjacent surfaces of the

coextensive tapered walls which are closely spaced compared with the wavelengths of the signal. Axial movement of the inner frustum changes the inductance of the first section and the capacitance of the second section simultaneously to effect linear change in resonant frequency over a wide range.

### 3,413,578 POSITIVE ENGAGEMENT LATCH FOR A PUSH- BUTTON ACTUATOR WITH LOCAL AND RE- MOTE RELEASE

William G. Dennison, Milwaukee, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed Oct. 13, 1966, Ser. No. 586,519  
10 Claims. (Cl. 335-167)

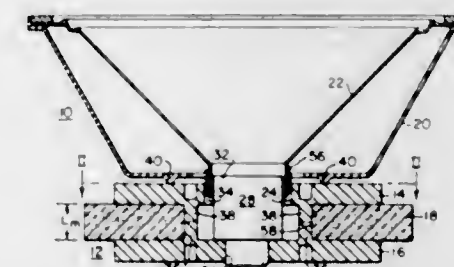


A positive engagement latch for the depressible shaft of a pushbutton actuator for a switch. A pair of spring-biased pivotal levers snap into an annular groove in the shaft when the pushbutton is depressed to lock it. Manual release by turning the pushbutton causes a cross pin in the shaft to separate the levers from the groove. Electrical release by a magnet attracting a concentric armature causes the levers to be pivoted out of the groove to release the shaft for restoring under spring force. The latch is housed within the retaining ring of a one-hole mounting pushbutton.

### 3,413,579 MAGNETIC FIELD ASSEMBLY FOR ELECTRO- MECHANICAL TRANSDUCERS

Carroll D. Sloan, Murrysville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 14, 1966, Ser. No. 534,133  
7 Claims. (Cl. 335-231)

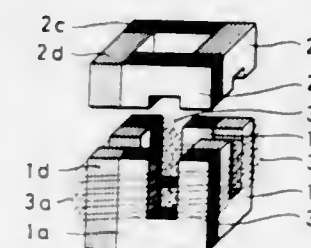


This invention relates to magnetic assemblies for loudspeakers including front and back pole plates, and a ferrite magnet disposed therebetween. More specifically, this invention is directed toward the means of securing the ferrite magnet between the front and back pole plates and in one illustrative embodiment, includes projections extending from each of the pole plates which are welded together.

### 3,413,580 MULTI-COMPONENT ELECTROMAGNET

Christoph Gibas, Villingen, Germany, assignor to Binder Magnete KG., Villingen, Germany, a corporation of Germany

Filed July 1, 1966, Ser. No. 562,234  
Claims priority, application Germany, July 2, 1965,  
B 82,652  
8 Claims. (Cl. 335-279)

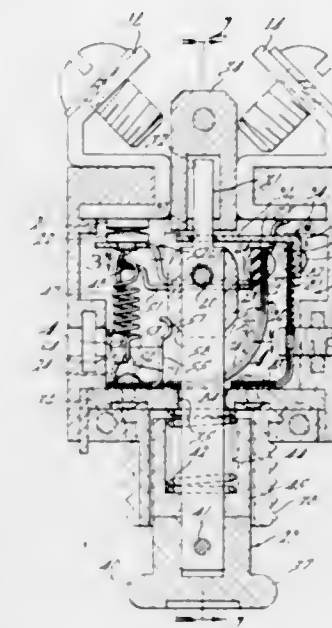


A plurality of separate magnetic cores, each having at least two parallel legs extending from a single yoke, each arranged in a ring in a manner whereby the leg at each end of the yoke of each core has a lateral surface lying flush against a lateral surface of the adjacent leg of the adjacent core. A plurality of windings are wound on the legs and provide an electromagnet.

### 3,413,581 AMBIENT TEMPERATURE COMPENSATED CIRCUIT BREAKER

John MacDonald, Jackson, Mich., assignor to Mechanical Products, Inc., Jackson, Mich., a corporation of Delaware

Filed Oct. 5, 1966, Ser. No. 584,484  
6 Claims. (Cl. 337-39)



1. An electric circuit breaker comprising a pair of separable contacts and an operating mechanism having a latch thereon releasable to effect separation of said contacts, a housing, said operating mechanism being mounted in said housing with an end thereof adjacent said latch being free to move to a limited degree transversely with respect to direction of operation of said operating mechanism, a current and ambient temperature responsive means affixed to said housing and having a transversely movable end with a latching surface engageable with the latch on said operating mechanism for moving said latching surface transversely with respect to the direction of said operating mechanism and out of engagement with said latch in response to a predetermined current, and an ambient temperature compensating means coupled to said housing and said end of said operating mechanism adja-

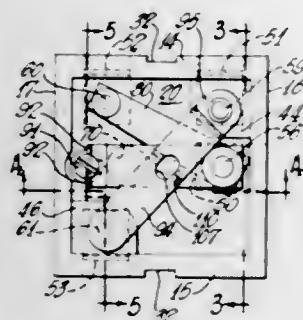


cent said latch for moving said end and said latch in the same direction as said end of said current and ambient temperature responsive means and said latching surface under changes in ambient temperature.

3,413,582

# SWITCH WITH MANUAL AND THERMOSTATIC CONTROL

John W. Huffman and Frank T. Placent, Mansfield, Ohio, assignors, by mesne assignments, to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri  
Filed Jan. 3, 1966, Ser. No. 518,051  
5 Claims. (Cl. 337-42)



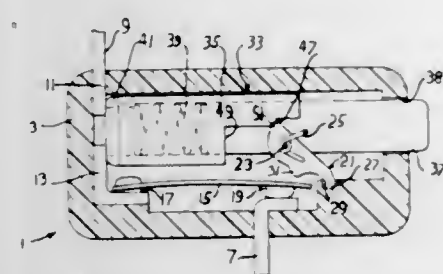
This invention relates to a thermostat switch construction having manually operable means for adjusting a component of the switch mechanism to establish thermoresponsive control of an appliance, the construction embodying a housing of lava fashioned to facilitate modifications of the switch mechanism to adapt the switch mechanism for use with various appliances and for use with a wide range of current capacities.

3,413,583

# CIRCUIT BREAKER

Donald P. Clark, South Attleboro, and Theodore Brasseur, Jr., Berkley, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Dec. 30, 1966, Ser. No. 606,366  
9 Claims. (Cl. 337-55)



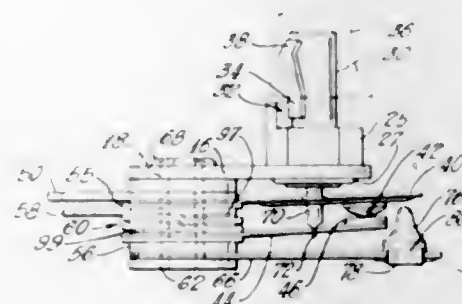
A snap-acting thermostatic member carrying a movable contact normally bridges two electrical terminals and carries current therebetween. When the member is heated to a predetermined temperature by an overload current, it snaps out of engagement with one of the terminals and trips a latch to disengage the latch from a slider assembly, thereby releasing the assembly so that it may travel from a first circuit-closed position to a second tripped or circuit-open position wherein it indicates that the breaker has been tripped. After the thermostatic member has cooled, it snaps back to its original position. However, means carried by the slider assembly prevents completion of the circuit through the breaker until the slider assembly is returned to its first position. In one embodiment the slider assembly carries a bridging contact which must engage two contacts to complete the

circuit through the breaker, and this engagement occurs only when the slider assembly is returned to its first circuit-closed position from the second tripped position. In another embodiment an insulating member slides under the movable contact of the thermostatic member to prevent it from closing until the slider is returned to its first position.

3,413,584

# THERMORESPONSIVE SWITCH

Frank T. Placent and John W. Huffman, Mansfield, Ohio, assignors, by mesne assignments, to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri  
Filed Aug. 30, 1965, Ser. No. 483,471  
10 Claims. (Cl. 337-100)

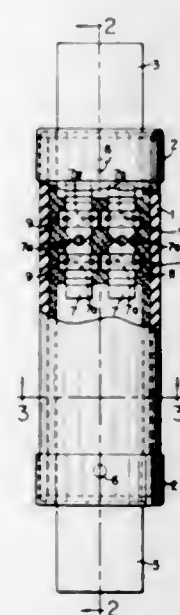


A thermoresponsive switch mechanism of the "stacked" switch type embodying supplemental heating means for accelerating and stabilizing the action of the thermoresponsive means wherein the supplemental heating means is wholly contained within the confines of the stacked switch support arrangement and heat from the supplemental heater transmitted by conduction to the thermoresponsive means.

3,413,585

# ELECTRIC CARTRIDGE FUSE HAVING OFF-CENTER FUSIBLE ELEMENTS

Frederick J. Kozacka, South Hampton, N.H., assignor to The Chase-Shawmut Company, Newburyport, Mass.  
Filed Mar. 10, 1967, Ser. No. 622,267  
4 Claims. (Cl. 337-159)

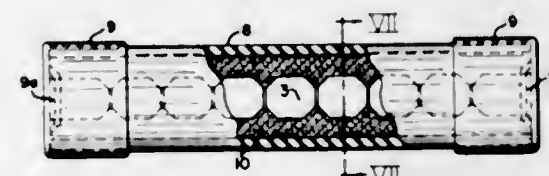


A fuse intended to promote heat flow in a direction longitudinally of the fuse tube to keep the temperature at the center region of the fuse tube relatively low. This end is achieved by an off-center arrangement of the fusible element, or fuse link.

3,413,586

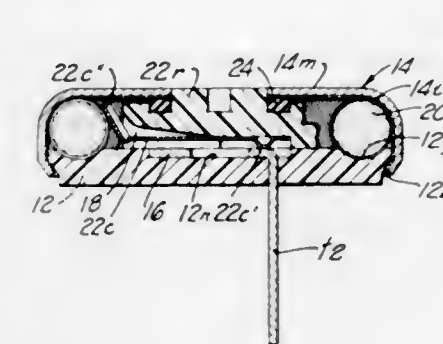
# ELECTRIC CURRENT LIMITING FUSE

Erwin Salzer, Waban, Mass., assignor to The Chase-Shawmut Company, Newburyport, Mass.  
Filed Aug. 7, 1967, Ser. No. 658,856  
4 Claims. (Cl. 337-159)



An electric current-limiting fuse including a ribbon fuse link, or ribbon fuse links, having at least one point of reduced cross-sectional area established by a groove-like recess and a local reduction of the thickness of the ribbon fuse link, or ribbon fuse links, at the point where the groove-like recess is located, the length of the recess, or the spacing between its open ends, being less than the width of the link or links.

a groove in upper face of the base and is engaged by a contact seated in a recess on the bottom of the rotor.



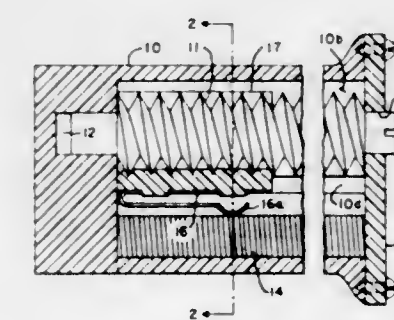
Terminal means extend through the base. The cover compressively retains the resistance element on the base.

3,413,589

# LEAD SCREW OPERATED POTENTIOMETER

Sanford I. Greene, Wantagh, N.Y., assignor to Fairchild Camera and Instrument Corporation, a corporation of Delaware

Filed Sept. 7, 1965, Ser. No. 485,357  
2 Claims. (Cl. 338-180)



A lead screw operated potentiometer comprises a housing having a longitudinal cavity with the side walls forming guide surfaces. In the cavity are disposed an elongated resistance element, a longitudinally movable carriage carrying a resilient contact U-shaped in cross-section, and a lead screw. The lead screw engages complementary threads or grooves in the carriage extending only for 180° or less. As the lead screw is rotated, it exerts a downward camming action on the carriage, biasing the contact into engagement with the resistance element. In the event it is attempted to drive the carriage beyond its limit of travel, the lead screw cams the carriage out of engagement with its threads against the resilience of the contact element, thereby constituting an automatic overload release clutch.

3,413,590

# POTENTIOMETER

John G. Woods, Philadelphia, Pa., and George W. Wood, Hammonton, N.J., assignors to IRC, Inc., Philadelphia, Pa.

Filed July 13, 1967, Ser. No. 653,067  
6 Claims. (Cl. 338-180)

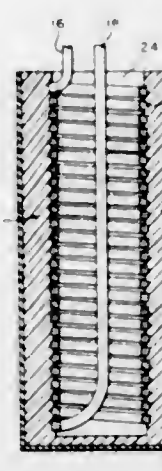
A potentiometer comprising a rectangular housing having an enclosed rectangular cavity therein. A resistance element extends longitudinally along one side wall of the cavity at the bottom of the cavity. The ends of the resistance element are mounted in the clip portions of terminals which extend along the side wall of the cavity and are secured between the top and bottom wall of the cavity. The terminals have leads extending through the bottom wall of the cavity and project beyond the housing. A collector member extends longitudinally along the opposite side wall of the cavity and is secured between the top and

3,413,587

# ELECTRICAL RESISTOR

Chester J. Kawlecki, Santa Barbara, Calif., assignor to Joslyn Mfg. and Supply Co., Chicago, Ill., a corporation of Illinois

Filed Feb. 21, 1966, Ser. No. 529,106  
1 Claim. (Cl. 338-57)



An electrical resistor having a helically coiled resistance wire coaxially disposed within a cylindrical casing and a layer of cementitious insulating material filling the annular base between the wire and the sidewalls of the casing. The space interiorly of the coiled wire is completely open to expose the interior surface of the wire, thereby to facilitate ventilation thereof.

3,413,588

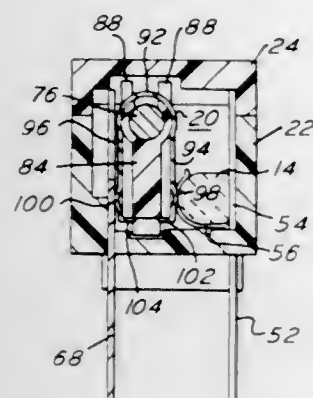
# SINGLE-TURN ROTARY VARIABLE RESISTOR

Robert L. Ferrell, Riverside, Calif., assignor to Bourns, Inc., a corporation of California  
Continuation of application Ser. No. 368,208, May 18, 1964. This application Oct. 11, 1967, Ser. No. 674,681  
9 Claims. (Cl. 338-174)

A sealed variable resistor includes a flat insulative base beveled around its periphery. An insulated and centrally-apertured metal cover of shallow cup-like form is peripherally crimped onto the beveled periphery of the base. A rotor has a flat outer lower face bearing on the upper surface of the base and includes a portion rotatable in the cover aperture. An arcuate resistance element is sealed in

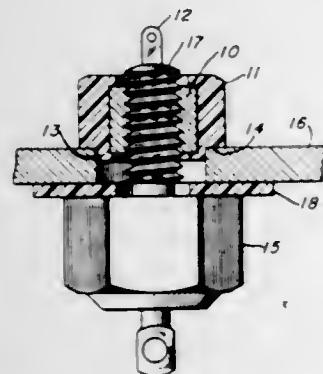


bottom walls. The collector member has a lead extending through the bottom wall and projecting beyond the housing. A threaded shaft is rotatably supported in the housing and extends longitudinally through the cavity between the resistance element and collector member. The shaft extends beyond one end of the housing to permit rotation of



the shaft. A contact carrier is mounted on the shaft within the cavity for longitudinal movement along the shaft upon rotation of the shaft. A contact member is mounted on the contact carrier for movement therewith. The contact member has one arm slidably engaging the resistance element and a second arm slidably engaging the collector member.

**3,413,591**  
**COMBINED FASTENER, INSULATOR AND SOLDERING TERMINAL FOR ELECTRICAL COMPONENTS**  
Karl Hergenhan, Rte. 3, Box 4, Somerville, N.J. 08876  
Filed Feb. 14, 1967, Ser. No. 616,044  
6 Claims. (Cl. 339-33)

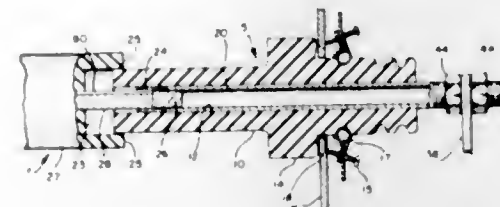


A fastener comprising an internally-threaded, metal insert molded in an insulating body and having an integral portion projecting from one end of the body to form a soldering lug. A reduced-diameter collar formed at the other end of the body extends into a hole formed in a panel when the fastener is threaded onto a stud-type electrical component for panel mounting thereof, said body also including integral means providing a self-locking action.

**3,413,592**  
**VENTED SAFE BREAK TERMINATOR**  
Edwin A. Link, Waukesha, Wis., assignor to RTE Corporation, Waukesha, Wis., a corporation of Wisconsin.  
Filed Dec. 7, 1966, Ser. No. 599,772  
4 Claims. (Cl. 339-111)

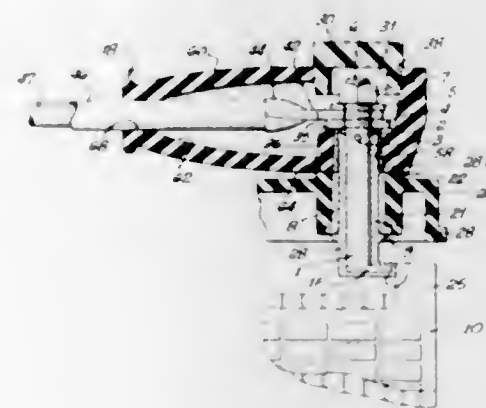
Disclosed herein is an electrical connector including a plug having a first electrically conductive member connected to a high voltage conductor and a receptacle having a second electrically conductive member having a pas-

sage positioned within the receptacle and being connected to a second high voltage conductor and means to relieve



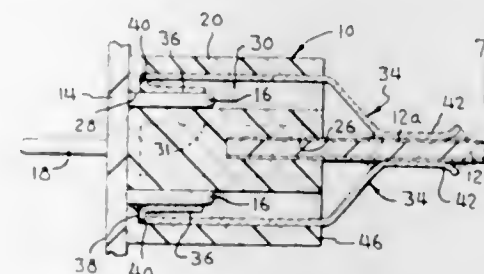
pressure within said passage on insertion of said first electrically conductive member into the passage.

**3,413,593**  
**ISOLATED ELECTRICAL TERMINAL CONNECTION**  
Joseph K. Schaefer, 2107 N. Beachwood Drive, Hollywood, Calif. 90028  
Filed Nov. 3, 1967, Ser. No. 685,229  
9 Claims. (Cl. 339-116)



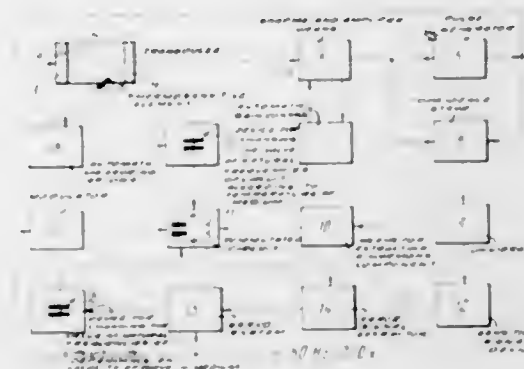
An electrical terminal connection particularly adaptable for use with storage batteries, in which the battery terminal post has a threaded stud imbedded therein yet the dimensions of a standard SAE terminal post are maintained allowing interchangeability of a standard battery terminal connector or a terminal lug; the invention further providing a housing surrounding the connector and the terminal post which prevents the entry of moisture or contaminants which otherwise cause corrosion.

**3,413,594**  
**EDGE CONNECTOR**  
Charles Henry Fernald, Lancaster, and Edward Michael Poltonavage, Palmyra, Pa., assignors to AMP Incorporated, Harrisburg, Pa.  
Filed Aug. 2, 1966, Ser. No. 569,746  
1 Claim. (Cl. 339-176)



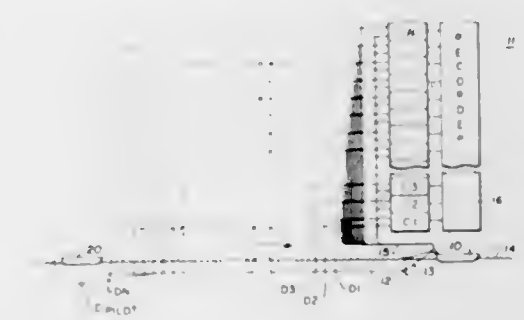
The disclosure relates to an edge connector for printed circuit boards or the like. The edge connector comprises an insulating housing having openings for receiving spring terminals. The terminals are staked in the housing and are configured to engage pin members from a connecting board and conductive strips on a printed circuit board.

**3,413,595**  
**ULTRASONIC APPARATUS FOR CHECKING PROCESSES IN LIQUID MEDIA**  
Oleg Ivanovich Babikov, Drezdenskaya ulits 10, korpus 2, kv. 60; Boris Ermolaevich Mikhalev, Nevsky prospect 153, kv. 10; Georgy Sergeevich Pol-Mari, Ulitsa Volnova 64, kv. 14; Jury Alexandrovich Lapshin, Ulitsa prof. Popova 43, kv. 5; and Vladimir Anatolevich Magnitsky, Prospect Geroev 26, kv. 78, all of Leningrad, U.S.S.R.  
Filed Oct. 27, 1966, Ser. No. 589,912  
4 Claims. (Cl. 340-5)



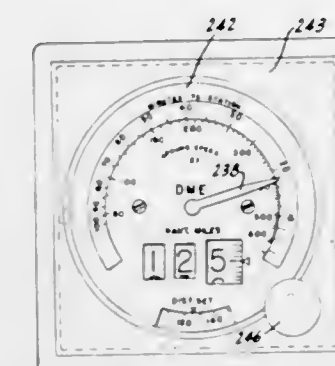
An instrument for the conversion of chemical or physical parameters of liquid media into a standard pneumatic or electric signal whose value is changed according to the change of the chosen parameter of the liquid medium being tested, and wherein the pulse repetition frequency of a generator, whose value is proportional to the velocity of ultrasonic waves in the liquid medium being tested is measured by means of a commutated circuit which is automatically readjusted by means of a servosystem. Correction for the temperature of the liquid medium under test is introduced directly into the commutated circuit. The ultrasonic echo signals from a receiving piezo electric element do not affect a generating piezo electric element. A means being provided for amplifying the received signals and including a wide range automatic gain control to insure reliable operation of the apparatus in liquid media characterized by a highly variable rate of absorption of ultrasonic waves.

**3,413,596**  
**CONTINUOUS WAVE MARINE SEISMIC EXPLORATION**  
Milo M. Backus and Buford M. Baker, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware  
Filed Dec. 8, 1966, Ser. No. 600,101  
2 Claims. (Cl. 340-7)



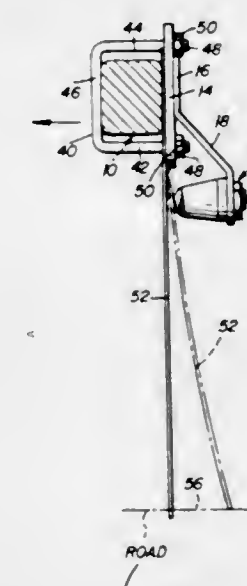
Monofrequency seismic energy varies in frequency from one limit to the other in the lower portion of the seismic frequency spectrum while the source thereof moves along a traverse. Cross-correlation between a pilot signal and reflection signals provide spatial averaging of the subsurface refractory horizons.

**3,413,597**  
**GROUND SPEED AND TIME-TO-STATION INDICATOR FOR USE WITH DME**  
Robert P. Crow, Los Angeles, Calif., assignor to Radio Corporation of America, a corporation of Delaware  
Original application Aug. 17, 1965, Ser. No. 480,356, now Patent No. 3,321,757, dated May 23, 1967. Divided and this application Feb. 23, 1967, Ser. No. 618,213  
5 Claims. (Cl. 340-27)



The disclosed indicator, which is connected to the output of a DME, comprises a D.C. meter portion with a logarithmic scale for indicating ground speed, a magnetic counter portion for indicating distance-to-station, and, most important, a settable slide rule portion, which is set in accordance with the distance-to-station, and which cooperates with the logarithmic scale of the ground speed indicating D.C. meter portion to directly compute the time-to-station.

**3,413,598**  
**LOW TIRE PRESSURE WARNING SYSTEM**  
Joseph H. Uphoff, 1288 E. Lincoln, Woodburn, Oreg. 97071  
Filed Mar. 21, 1966, Ser. No. 535,968  
5 Claims. (Cl. 340-58)

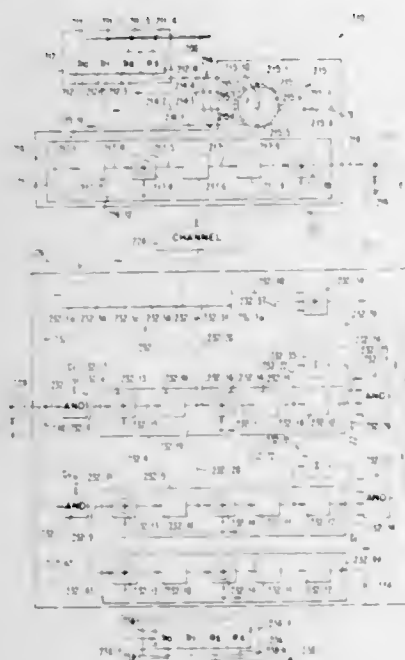


A stationarily supported strap-type spring metal feeler arm fixedly mounted at its upper end to and dependently supported from an unsprung portion of a pneumatic tired vehicle and having a portion of its upper end below its point of fixed mounting operatively associated with a horizontally shiftable switch actuator for engagement therewith and horizontal shifting of the actuator in response to rearward deflection of the lower end of the feeler arm during forward movement of the associated vehicle brought about by the unsprung portion of the vehicle being lowered relative to the ground as one of the pneumatic tires of the vehicle deflates to thus lower the lower end of the feeler arm into contact with the ground.

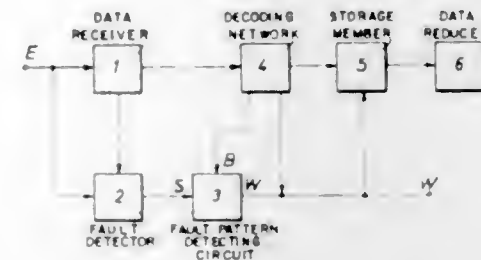


### 3,413,599 HANDLING OF INFORMATION WITH COSET CODES

Charles V. Freiman, Pleasantville, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York  
Filed May 31, 1963, Ser. No. 284,430  
2 Claims. (Cl. 340-146.1)



ascertained for each signal received and the errors can be detected and corrected with minimum repetition. Repetition of a received signal is initiated by means provided

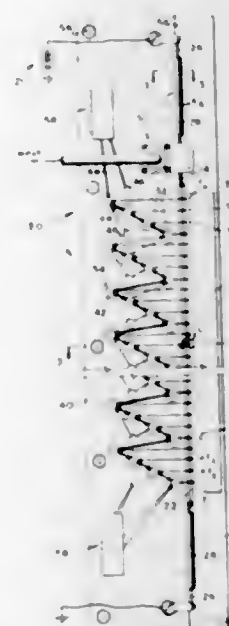


therefor both when an error which can not be corrected is found and when the number of faults is not less than the number of errors which can be recognized and corrected with certainty.

### 3,413,601 TORSIONAL DELAY LINE HAVING MEANS TO COMPENSATE FOR ATTENUATION EFFECTS

George F. Lindsay, Arcadia, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed June 24, 1966, Ser. No. 560,930  
5 Claims. (Cl. 340-146.2)



1. In a delay line coded signal processing device of the type involving interaction between a high frequency acoustic torsional impulse propagating along a delay line having an associated field of concentric magnetic lines of force thereabout along the length of the line, and a set of inductive tap stations along the line in a field of concentric magnetic lines of force along the line, said device including a torsional mode delay line of magneto-elastic material, a means for generating said field of concentric lines of force, said set of inductive tap stations comprising a plurality of loops of wire conductor individually wound about the delay line in longitudinally spaced relationship therealong coupled to a polarity coding and summing network adapted to individually and selectively pass or invert the polarity sense of induced signal at each station in accordance with a predetermined binary sequence code and to then sum the individual induced signals, the improvements comprising:

- said loops of wire conductor having their bight portions uniformly arranged along one circumferential side of said delay line, and
- non-ferritic metal conductor means disposed in variably spaced relationship to said side of the delay line with the width of gap monotonically increasing

- Apparatus for handling an information word which comprises:
  - a source of said information word;
  - means for converting said information word to a group codeword;
  - means for converting said group codeword to a coset codeword;
  - a channel receptive of said coset codeword;
  - means receptive of said coset codeword from said channel as perturbed thereby to provide a perturbed group codeword from said received perturbed coset codeword; and
  - decoder means for reconstructing said original information word from said perturbed codeword including:
    - first and second divider shift registers;
    - a storage register;
    - a syndrome or parity check sequence shift register whereby each group codeword is established in said storage register and each alternate group codeword is established in said first and second divider shift registers, respectively;
    - first and second AND unit means connected to said first and second divider shift registers;
    - modulo-2 adder unit connected to said storage shift register and said AND units to provide correction of errors in each said group codeword established in said storage register;
    - said modulo-2 adder unit being connected to said syndrome shift register, said syndrome shift register providing said information word.

### 3,413,600 TRANSMISSION SYSTEM

Horst Ohnsorge, Ulm (Danube), Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany  
Filed Mar. 1, 1965, Ser. No. 436,184  
Claims priority, application Germany, Feb. 28, 1964, T 25,713

8 Claims. (Cl. 340-146.1)

Means for detecting and correcting errors in transmitted data by the coaction of a fault detector and redundancy code wherein the degree of failure can separately be

in the direction of wave propagation along the line, said non-ferritic metal conductor means being sufficiently close to the delay line to exert an eddy current type repulsive effect upon the dynamic magnetic field associated with the torsional impulse.

### 3,413,602 DATA CONVERSION TECHNIQUES FOR PRODUCING AUTOCORRELATION FUNCTIONS

Lawrence P. Horwitz, Geneva, Switzerland, and Glenmore L. Shelton, Jr., Carmel, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Original application July 25, 1960, Ser. No. 45,034, now Patent No. 3,196,392, dated July 20, 1965. Divided and this application Oct. 12, 1964, Ser. No. 403,262  
6 Claims. (Cl. 340-146.3)



A data conversion system for converting an  $n$ -dimensional array of data into a lower dimensional array of data embodied as a specimen identification system. In the embodiment an input specimen is scanned by an optical scanner and is stored in  $n$ -dimensional (i.e., two dimensional) form in a digital matrix wherein black portions of the specimen may be represented by one bits and white portions of the specimen may be represented by zero bits. The data elements which are stored in the matrix in the  $n$ -dimensional array are converted into an  $m$ -dimensional (i.e., one dimensional) array by transferring the data elements into a shift register such that either the rows or the columns of the data elements of the digital matrix are arranged in tandem. To prevent ambiguity, a trivial one-dimensional array of data is stored in the  $m$ -dimensional array in between each adjacent group of data elements from each row or column. The data elements of the  $n$ -dimensional array are also stored as a second  $m$ -dimensional array in a second shift register. The second register is shifted with respect to the first shift register and comparisons are made of the coincidence of one bits in similar storage positions in each storage means. The comparisons of the one bits which occur as the second storage means is shifted with respect to the first storage means are used to form the autocorrelation function of the input specimen.

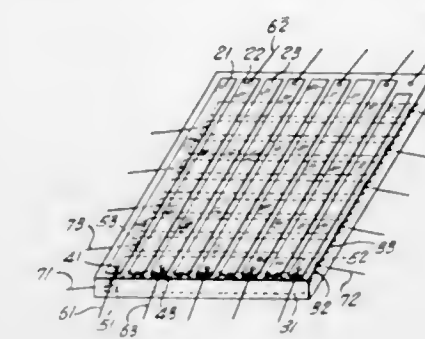
### 3,413,603 SEMICONDUCTOR CHARACTER SENSING DEVICE

Kenjiro Kimura, 10-305, Kanaoka Kodan Jutaku, Kuratsuchimachi, Sakai; Tsutomu Saiji, 239, Sindomachi, Matsubara; and Yasuo Kojima, Shirakabaso 17-7, Seiwaenmachi, Swita, Osaka, Japan

Filed Apr. 16, 1965, Ser. No. 448,777  
Claims priority, application Japan, Apr. 22, 1964, 39/22,782

4 Claims. (Cl. 340-146.3)

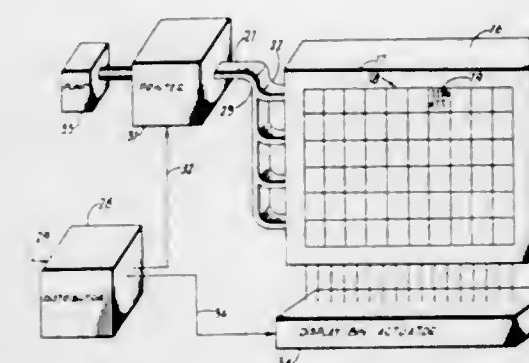
A character sensing device comprising a thin plate of semiconductor material and strip junctions on each of



energy focused on one side of said wafer will penetrate the wafer and produce signals at the junctions on each side thereof.

### 3,413,604 STOCK QUOTATION DISPLAY DEVICE

John W. Sargent, 20 S. 2nd Ave., Mount Vernon, N.Y. 10550  
Filed June 28, 1965, Ser. No. 467,666  
10 Claims. (Cl. 340-154)



- A stock quotation display device comprising: control means to receive stock quotation signals; a display structure having a plurality of display areas; a pneumatic channel leading to a group of said display areas and connected to said control means to be controlled thereby; printing means connected to said control means to be controlled thereby to print quotations on quotation cards; pneumatic means to cause the printed cards to move through said pneumatic channels; trapping means at each of said areas and connected to said control means to be controlled thereby, said trapping means being operable between at least an open position, in which the previously trapped quotation card is released to be pneumatically removed from said display area to permit a newly printed quotation to be trapped, and a closed position in which the newly trapped quotation card is displayed.

### 3,413,605 SYNCHRONOUS REMOTE ELEMENT OPERATING SYSTEM WITH ANSWER BACK

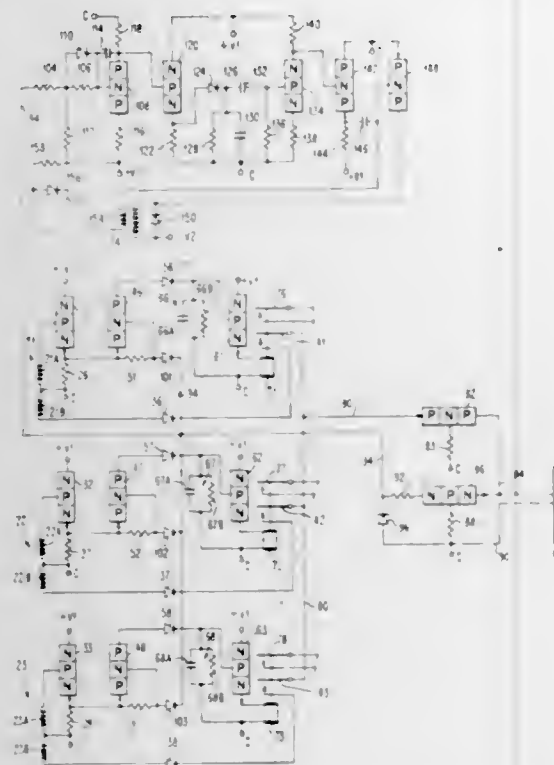
Paul Abramson, Yorktown Heights, Pao H. Chin, Pleasantville, and Fred J. De Felice, Yonkers, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York  
Filed Jan. 8, 1965, Ser. No. 424,371

12 Claims. (Cl. 340-163)

A system for operating elements at a remote station from a central station and for receiving an answer-back signal at the central station each time an element is successfully operated. The central station and the remote station both include a switch and a gate for each element

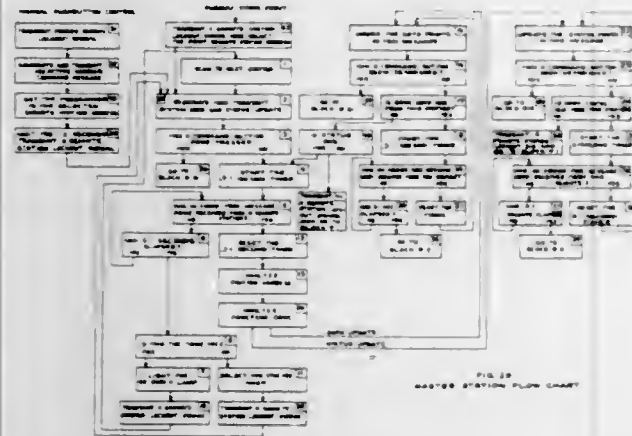


to be operated. Pulses are cyclically sequentially applied to corresponding switches and gates at the central and remote stations in synchronism. When the pulses are applied to a gate of one of the remote station elements, the element and its associated switch is operated, the opera-



tion of the remote station switch permitting the pulse which is applied to it to be applied to the gate at the central station to enable such gate and thereby provide an indication that the remote station element has been operated.

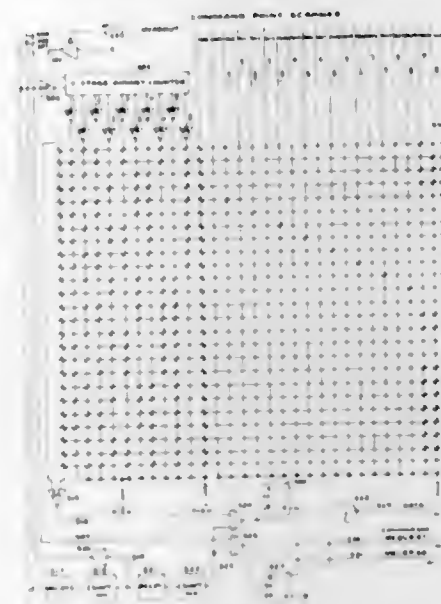
**3,413,606**  
**REMOTE SUPERVISORY AND CONTROL SYSTEM**  
Henry J. Cichanowicz, Charles E. Fine, and Charles F. Stearns, Gallon, Ohio, assignors to North Electric Company, Gallon, Ohio, a corporation of Ohio  
Filed Mar. 31, 1965, Ser. No. 444,230  
20 Claims. (Cl. 340—163)



A nonquiescent remote supervisory control system having a master station and a plurality of remote stations in which word messages transmitted in both directions are of equal length and structure, the word messages including master station (or remote) identification bits and station addresses. Error means at each station drive a plurality of error detection bits from the information bits in each word message during transmission of the information bits, the derived error bits being transmitted after the information bits and being less in number than the information bits. Interrupt means at the master station permit interruption of the nonquiescent scanning for the purpose of transmitting a command to a remote station, and means at the master station thereafter request data and status update from the remote station to which the command was

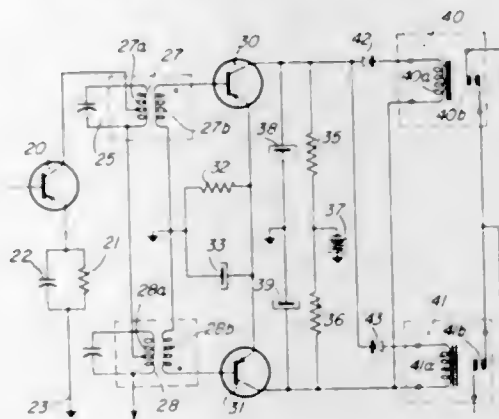
transmitted prior to initiation of the nonquiescent scanning from said station.

**3,413,607**  
**REMOTE SUPERVISORY AND CONTROL SYSTEM**  
Charles E. Fine, Gallon, Ohio, assignor to North Electric Company, Gallon, Ohio, a corporation of Ohio  
Filed Mar. 31, 1965, Ser. No. 444,231  
9 Claims. (Cl. 340—163)



A nonquiescent remote supervisory control system having a master station and a plurality of remote stations in which word messages transmitted in both directions are of equal length and structure, the word messages including master station (or remote) identification bits and station addresses. Error means at each station drive a plurality of error detection bits from the information bits in each word message during transmission of the information bits, the derived error bits being transmitted after the information bits and being less in number than the information bits. Interrupt means at the master station permit interruption of the nonquiescent scanning for the purpose of transmitting a command to a remote station, and means at the master station thereafter request data and status update from the remote station to which the command was transmitted prior to initiation of the nonquiescent scanning from said station.

**3,413,608**  
**NOISE IMMUNE DETECTOR**  
Harold J. Benzuly, Highland Park, Ill., assignor to Warwick Electronics Inc., a corporation of Delaware  
Filed June 12, 1964, Ser. No. 374,646  
14 Claims. (Cl. 340—171)



A multiple channel frequency diversity control with multiple amplifier and detector circuits each having an input tuned to a different frequency. The channels are actuated similarly by noise and inversely by a desired control signal. Oppositely poled diodes interconnect the load of

each channel so that the channels must be inversely actuated to produce an output. When one channel is actuated, the voltage drop across a resistor connected in common with all channels tends to prevent actuation of the remaining channels.

**3,413,609**  
**INDIRECT ADDRESSING APPARATUS FOR A DATA PROCESSING SYSTEM**  
Frank J. Boyle and John E. Wilhite, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York  
Filed Apr. 15, 1965, Ser. No. 448,537  
6 Claims. (Cl. 340—172.5)

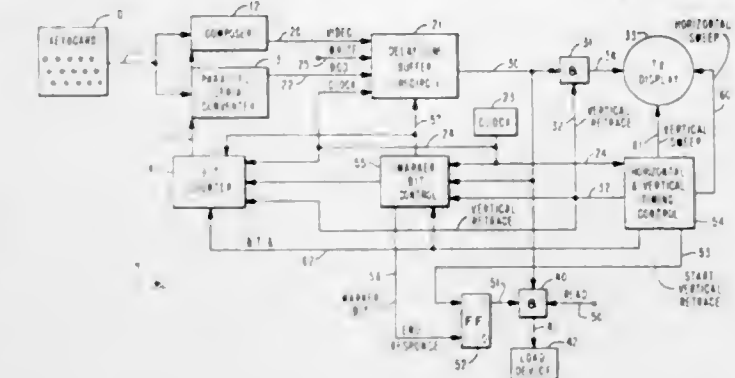


In order to provide powerful and completely flexible indirect addressing, means are provided to selectively develop the address of an Indirect Address Word from the operand address portion of an instruction word under control of an Address Modification Sequence Word called in response to a code in the instruction word. After its address has been developed, the Indirect Address Word replaces the developed address. The Indirect Address Word is also tested to determine whether it is to be immediately modified. If not, the Address Modification Sequence Word is tested to determine whether a new Address Modification Sequence Word is to be obtained to effect further operand address development which may or may not include indirect addressing. If the Indirect Address Word is to be modified, modification proceeds under control of an Indirect Address Modification Sequence Word stored in a predetermined memory storage location relative to that of the Indirect Address Word; and such modification, according to a code in the Indirect Address Modification Sequence Word, may or may not include further indirect addressing which would call a new Indirect Address Word to replace the operand address developed to that point. Address development continues indefinitely until no further indirect addressing and no further diverse operand address modification is specified.

**3,413,610**  
**DISPLAY DEVICE WITH SYNCHRONIZED VIDEO AND BCD DATA IN A CYCLICAL STORAGE**  
John L. Botjer, Hyde Park, Edward O. Donner, Poughkeepsie, and Harold E. Frye and Howard S. Keeler, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Dec. 29, 1965, Ser. No. 517,334  
4 Claims. (Cl. 340—172.5)

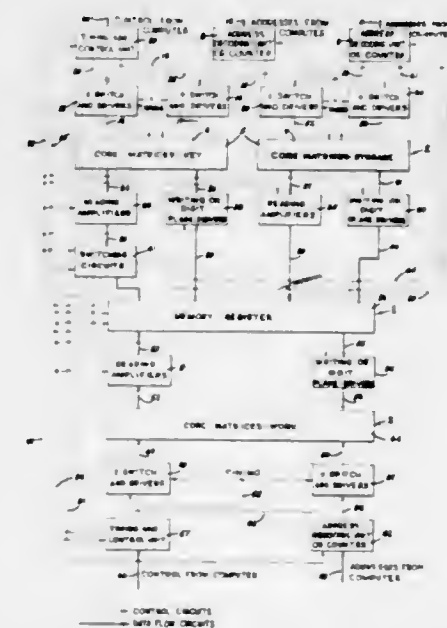
A display console having a keyboard connected to conversion apparatus for converting keyboard characters into equivalent digital code and video signals for storage in a delay line buffer storage device having a pair of parallel delay lines the outputs of which are connected through a switch to a television-type display when video

signals emanate therefrom and to a load device when digital code signals emanate therefrom, and control means for synchronizing the delay line buffer storage device



with the picture frames of the television-type display device so that the digital code signals emanate from the delay line buffer storage device during the frame retrace period.

**3,413,611**  
**METHOD AND APPARATUS FOR THE COMPACTION OF DATA**  
David Pfuetze, 1824 Harp Place, Topeka, Kans. 66611  
Filed Jan. 17, 1966, Ser. No. 520,929  
7 Claims. (Cl. 340—172.5)



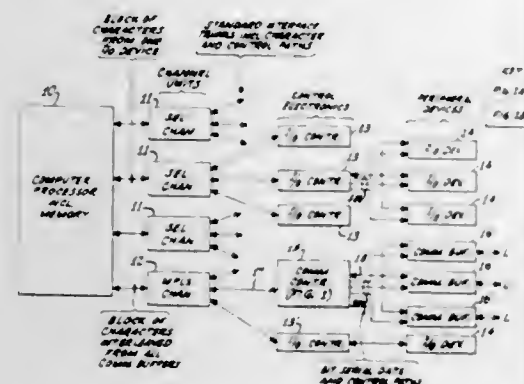
Groups of bits containing bits which are superfluous for representing desired information are compacted for economical transfer by reference to a key group coded to the essential bit group positions whereby the condition of only the bits in the groups corresponding in position to bits in one condition in the key group is transferred. In unpacking, so as to obtain full groups for further processing, bits are added in positions where the key group bits are in one condition and the sensed condition of the compacted bits is transferred where key group bits are in the other condition.

**3,413,612**  
**CONTROLLING INTERCHANGES BETWEEN A COMPUTER AND MANY COMMUNICATIONS LINES**  
Forrest E. Brooks, Moorestown, N.J., Yehuda Rachovitsky, Joseph L. Lindinger, and Murray F. Kaminsky, Philadelphia, Pa., and Richard A. Hammel, Barrington, N.J., assignors to Radio Corporation of America, a corporation of Delaware  
Filed Mar. 18, 1966, Ser. No. 535,550  
4 Claims. (Cl. 340—172.5)

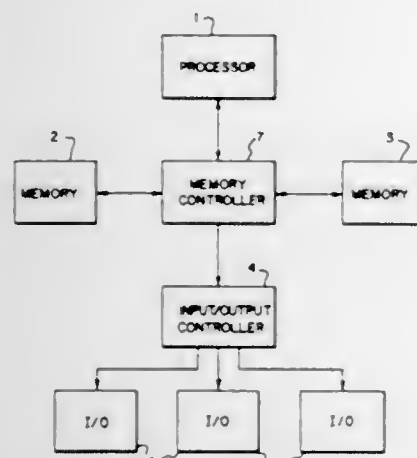
A communications control unit, which is itself a small computer, for use between a main computer and many di-



verse bi-serial communication line buffers. The communications control unit has a memory for storing one line status word for each communications line buffer, and for storing one operation word for each message-protection control character used by the communications systems. The corresponding line status word is accessed and used

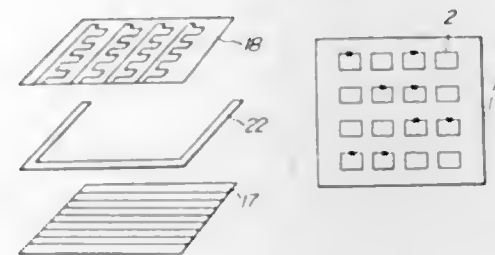


**3,413,613**  
**RECONFIGURABLE DATA PROCESSING SYSTEM**  
David L. Bahrs, Liverpool, N.Y., and John F. Couleur, Richard L. Ruth, and William A. Shelly, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York  
Filed June 17, 1966, Ser. No. 558,515  
12 Claims. (Cl. 340-172.5)



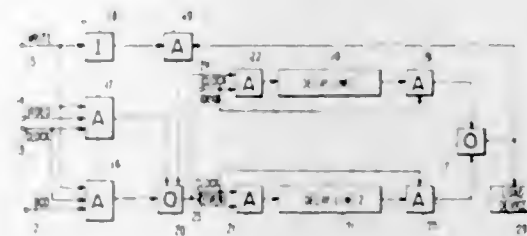
1. A reconfigurable data processing system comprising: a communicating device comprising a data processor for manipulating data in accordance with the instructions of a program and including means for addressing memory locations; a communicating device comprising an input/output controller for transmitting and receiving data and instructions to and from peripheral devices, said input/output controller including means for addressing memory locations; a plurality of memory devices for storing representations of data and instructions at discrete addressable locations; a plurality of memory controllers each connected to a different memory device and all connected to said communicating devices; each of said communicating devices including means for directing addresses of memory locations to preselected ones of said memory controllers.

**3,413,614**  
**SEMI-PERMANENT MEMORY DEVICE**  
Susumu Seki, Kokubunji-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan  
Filed July 12, 1965, Ser. No. 470,990  
Claims priority, application Japan, July 15, 1964, 39/40,593  
10 Claims. (Cl. 340-173)



A semi-fixed memory device is described which is formed by insulating backing members having a plurality of parallel conductive word drive lines formed thereon to each of which a driving electrical signal is applied. A second set of parallel conductive digit lines are formed on the same or a separate insulating backing member and are disposed transverse to the word lines with each of the word drive lines having coupling portions with the intersecting digit lines where the coupling portions are arranged substantially parallel to the intersecting digit lines. As a result upon a driving current being supplied to a respective word drive line, an output voltage is electromagnetically induced on the respective intersecting digit line. A plurality of closed loop conductors are selectively disposed at the coupling portions so as selectively to reduce the coupling between the word drive lines and the digit lines. As a consequence, output signals representing as a whole, information in binary form and having a binary pattern corresponding to the distribution of the closed loop conductors, are induced on the digit lines in response to the application of the driving electric signals selectively supplied to the word drive lines. The closed loop conductors preferably are formed on a separable backing member from the backing members on which the word drive lines and digit lines are formed in order that the binary information stored in the semi-fixed memory may be readily changed.

**3,413,615**  
**DELAY LINE BUFFER STORAGE CIRCUIT**  
John L. Botjer, Hyde Park, Edward O. Donner, Poughkeepsie, and Harold E. Frye and Howard S. Keeler, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Sept. 16, 1965, Ser. No. 487,887  
2 Claims. (Cl. 340-173)



A buffer storage arrangement uses a pair of delay lines connected in parallel to increase the overall bandwidth, and a clock operates And circuits at the input end and the output end of each delay line, the buffer including provision for supplying all signals emanating from the delay lines to a load device and to a feedback circuit for reentry. Signals in the delay lines are recirculated through

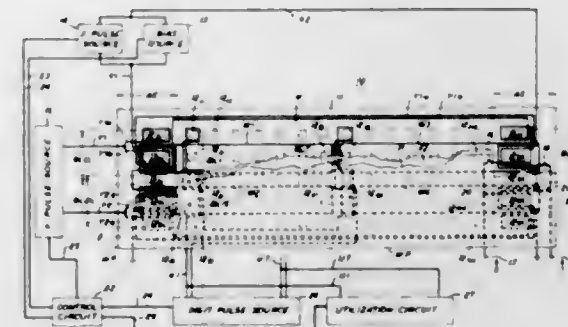
the feedback path except when new intelligence signals are substituted, at which time the feedback path is rendered inoperative under the supervision of a control device.

**3,413,616**  
**PERSISTENT SUPERCURRENT ASSOCIATIVE MEMORY SYSTEM**  
Arwin B. Lindquist, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York  
Filed Dec. 22, 1960, Ser. No. 77,777  
21 Claims. (Cl. 340-173.1)



1. A memory system comprising a plurality of registers for storing information therein, each register having a plurality of persistent current storage loop elements, an input register adapted to record binary values and transmit to the storage elements signals representative of the binary values recorded therein, means for writing into the persistent current storage loop elements signals representative of the binary values transmitted from the input register, means for reading out of the storage element the binary values stored therein, means within each register for comparing the binary values stored in all or a portion of the persistent current storage elements of all registers with the binary values recorded in the input register, and means for writing into or reading out of all registers where the binary values of the stored signals and the recorded signals correspond.

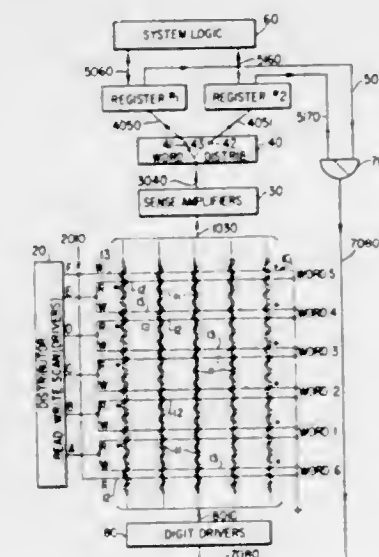
**3,413,617**  
**WAFFLE-IRON MAGNETIC MEMORY ACCESS SWITCHES**  
James L. Smith, Bedminster, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed July 20, 1964, Ser. No. 383,778  
20 Claims. (Cl. 340-174)



A multibit, two-core-per-bit arrangement, including drive means comprising a first conductor and a bifurcated second conductor coupled to the two cores of each bit location provides, when selectively activated, series switching and single switching of the two cores. High amplitude and low amplitude pulses are induced thereby in

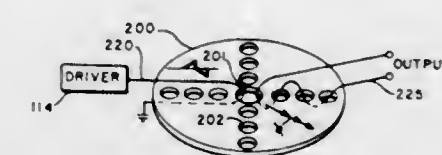
a word conductor coupled to the cores of each location. The arrangement is operated as an access switch to provide a pulse train which is particularly useful in connection with a piggy-back waffle iron memory. If the access switch is of the waffle iron configuration, the switch and the memory may be fabricated, simultaneously, on a single waffle iron base plate.

**3,413,618**  
**MEMORY APPARATUS EMPLOYING A PLURALITY OF DIGIT REGISTERS**  
Joseph P. Shuba, Joliet, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware  
Filed Oct. 19, 1964, Ser. No. 404,765  
9 Claims. (Cl. 340-174)



A recirculating memory system employs a distributor for simultaneously energizing a reading winding of one word and a writing winding of the previously read word. In one embodiment each of two registers is alternately operated as an input and an output register. A second embodiment utilizes two registers in tandem to receive and re-enter data.

**3,413,619**  
**MAGNETIC MEMORY SYSTEMS EMPLOYING MYRIAPERTURE DEVICES**  
Bruce E. Briley, La Grange Park, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware  
Filed Dec. 21, 1964, Ser. No. 421,749  
19 Claims. (Cl. 340-174)

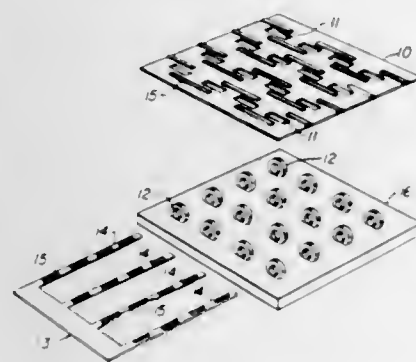


Myriaperture magnetic cores are threaded by a plurality of windings to store data for serial or parallel readout. Strobe windings are employed to register the data read serially in parallel form or to separate parallel stored data. Mirror image storage and strobe windings and full-wave rectifiers provide reading capabilities during resetting of the cores to speed up system operation while the drivers employ a set-reset state memory to determine the polarity of the driver currents.



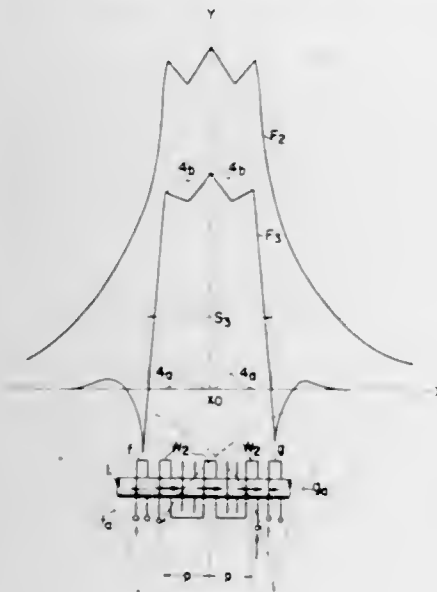
### 3,413,620 MEMORY CORE MATRIX WITH PRINTED WINDINGS

Joseph M. Bernstein, Omaha, Nebr., George J. David, Addison, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware  
Original application Jan. 6, 1961, Ser. No. 81,185, now Patent No. 3,196,522, dated July 27, 1965. Divided and this application Jan. 27, 1965, Ser. No. 428,365  
3 Claims. (Cl. 340—174)



A core memory plane is formed having an array of cores located by an apertured card and maintained in position by a comb-shaped card. One of the embodiments employs a comb-shaped card having the cores threaded by the fingers of the comb and an apertured card in the form of a second comb for spacing the cores by having its fingers extending between the cores and at right angles to the fingers of the first card. Conductive segments on adjacent surfaces of the cards make contact to form windings which thread the cores in substantially the same plane.

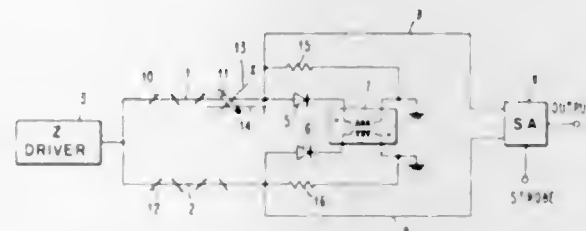
3,413,621  
MAGNETIC STORAGE ELEMENT HAVING  
CONSTANT FLUX DISTRIBUTION  
Hisao Maeda, Ota-ku, Tokyo-to, Japan; Hisaaki Maeda, heir of said Hisao Maeda, deceased  
Filed Mar. 31, 1965, Ser. No. 444,124  
Claims priority, application Japan, Apr. 9, 1964, 39/19,958  
2 Claims. (Cl. 340—174)



1. In a magnetic memory device of the type formed by weaving into a fabric structure numerous lengths of conductor wire covered with magnetic thin film used as information lines and having magnetic easy axes in the circumferential direction as weft members and numerous lengths of conductor wire constituting word lines as warp members, the combination and arrangement comprising a main line of each word line formed from a plurality of

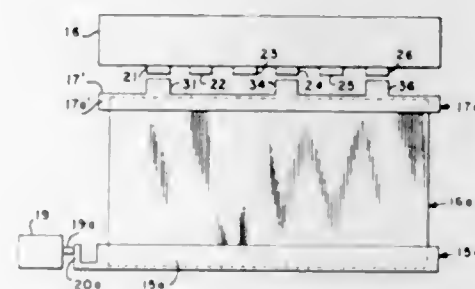
serially connected unit coils each consisting of two adjacent warp members, said coils being spaced apart by warp spacer wire interposed therebetween, said main line being provided for the purpose of flattening the top part of the curve of magnetic flux distribution over the conductor wire covered with magnetic thin film due to current flowing through each word line, and auxiliary lines consisting of warp members positioned on the two end sides of each main line and supplied with currents for producing a negative magnetic flux distribution with respect to the main line, said auxiliary lines being provided for the purpose of causing the slopes of the skirt parts of said magnetic flux distribution curve of the main line to become steep.

3,413,622  
DRIVE-SENSE LINE WITH IMPEDANCE  
DEPENDENT ON FUNCTION  
Anatol Furman, Fishkill, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Apr. 5, 1965, Ser. No. 445,306  
4 Claims. (Cl. 340—174)



A magnetic core storage having a common drive sense system which is electrically balanced with respect to the sensing apparatus while presenting different termination impedances to drive signals and sense signals.

3,413,623  
CARD FILE STORAGE SYSTEM WITH METALLIC  
IDENTIFICATION MEMBERS  
Henry N. Esterly, 22321 Cupertino Road,  
Cupertino, Calif. 95014  
Filed Mar. 11, 1966, Ser. No. 533,476  
8 Claims. (Cl. 340—174.1)



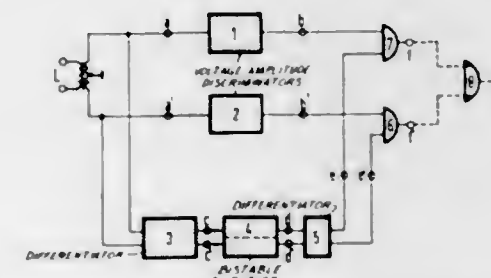
The file storage system includes spaced file items with metallic identification members, detector units responsive to the metallic members, and means to move the file items with respect to the detector units. Each detector unit includes a transducer head with a pair of coils in a circuit capable of oscillating, and each detector unit changes its state of operation after a metallic member is disposed in its sensing region. In between each file item, the detector units are reset to be ready to read the next file item. Consequently, the file storage system enables a desired file item to be identified although all its metallic members may not be simultaneously detected by the detector units.

3,413,624  
AUTOMATIC MAGNETIC RECORDING AND  
PLAYBACK CONTROL SYSTEM FOR A KEY-  
BOARD ACTUATED BUSINESS MACHINE  
Colin D. Murdoch, Union City, and Chad W. Pennebaker, San Leandro, Calif., assignors of twenty percent to Chad W. Pennebaker, San Leandro, Calif., and eighty percent to Colin D. Murdoch, Union City, Calif.  
Filed Feb. 10, 1964, Ser. No. 343,833  
26 Claims. (Cl. 340—174.1)



An automatic recording and playback control system for a typewriter or other similar keyboard-actuated business machine including a plurality of character keys and function keys, including means for sensing the actuation of each of those keys and a storage register for temporary storage of code words identifying the keys as actuated. The system includes timing means for developing a predetermined sequence of individual timing signals each time a key is actuated. The code words representative of the actuated keys are recorded on a single track of a magnetic tape; an auxiliary track on the same tape records signals representative of carriage return and of the start of a message. The start-of-message code is initiated by a special key that begins recording operations. Correction circuits are provided for correcting errors in the recording and provision is made for manual insertion of unrecorded data in the course of a playback operation to reproduce the recorded data. In one embodiment, two tapes are used, one with a principal message and the other with auxiliary data such as individual addresses and specific insertions for the body of the message, with automatic switching between the two tapes to reproduce a composite message. Blank spaces are provided on the tape, particularly at the start of each message and at the beginning of each message line, to facilitate correction, search, and other operations.

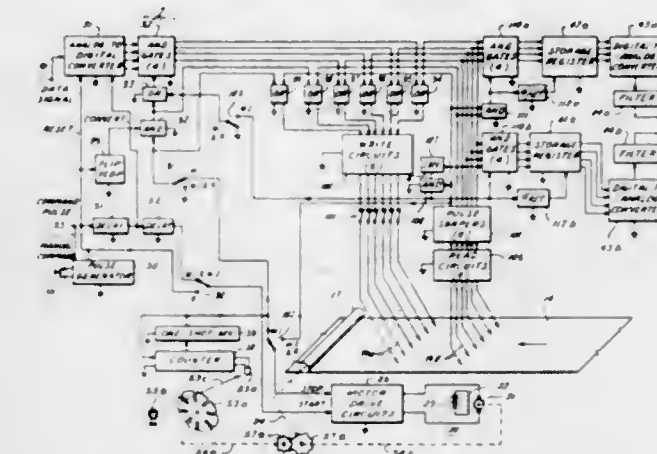
3,413,625  
APPARATUS FOR EVALUATING MAGNETIC  
READ SIGNALS  
Rudolf Mitterer, Gauting, and Peter Wentzel, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany  
Filed Sept. 28, 1965, Ser. No. 489,767  
2 Claims. (Cl. 340—174.1)



A magnetic memory apparatus in which the read signals for separating information signals and interference signals are examined for amplitude and wave shape. The read

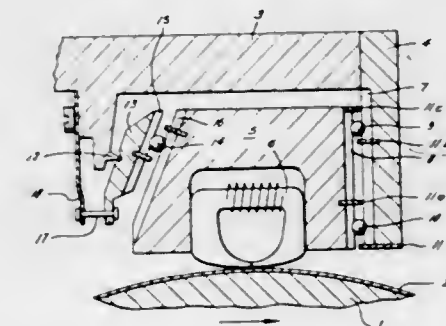
signals are given simultaneously to amplitude discriminators which transmit a pulse when the amplitude of the read signals exceeds a first threshold or remains below a second threshold, and a first differentiator for evaluating the wave shape. A bistable flip-flop and a second differentiator are connected to the first differentiator to transmit a pulse each time that the differentiated read signal has a zero-axis crossing. The pulses of the second differentiator and of the amplitude discriminators are joined to one coincidence circuit.

3,413,626  
METHOD AND APPARATUS FOR MERGING  
DIGITAL DATA ON A MAGNETIC TAPE  
John S. Smith, Ridgefield, Conn., and Arthur A. Cavelos, Liverpool, N.Y., assignors, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas  
Filed Oct. 5, 1964, Ser. No. 401,343  
5 Claims. (Cl. 340—174.1)



One embodiment of the invention discloses a tape recording mechanism for storing information in digital form. In data writing, the tape is advanced in increments during which time bit registration indicia also are impressed on the tape. For data reading, the registration indicia control the tape advance. Other embodiments that use the registration indicia for merging several sets of data on one tape also are shown and described.

3,413,627  
MAGNETIC HEAD MOUNTING  
Friedhelm K. Sender, Hannover, Germany, assignor to Prakla Gesellschaft für Praktische Lagerstättenforschung GmbH, Hannover, Germany, a corporation of Germany  
Filed Oct. 6, 1965, Ser. No. 493,424  
5 Claims. (Cl. 340—174.1)



1. A magnetic head positioning device for guiding a magnetic head in a direction normal to the surface of a movable magnetic recording medium, comprising an instrument frame suitably positioned opposite the recording medium and having a guide track along an inside surface thereof that is substantially normal to a plane tangent to the recording medium at the point of recording.

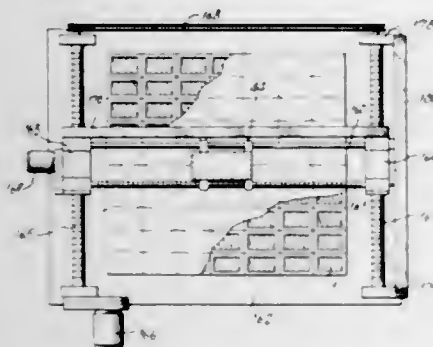


a magnetic head having a normal guide track along an outside surface thereof and disposed opposite said normal track of said instrument frame,  
at least two balls spaced apart for traveling between said normal tracks,  
said magnetic head having an outside track inclined to the normal in the direction of motion of the recording medium on another side of said magnetic head from said normal tracks,  
said instrument frame carrying a resiliently mounted countertrack similarly inclined and oppositely disposed to said inclined track,  
a third ball for traveling between said inclined track and countertrack,  
whereby said magnetic head is urged normally to the surface of the recording medium without interspaces.

3,413,628

### RANDOM ACCESS DATA STORAGE APPARATUS

Ward W. Beman, Glendale, Calif., assignor to Whittaker Corporation, a corporation of California  
Continuation of application Ser. No. 667,635, June 24, 1957. This application Sept. 26, 1967, Ser. No. 670,809  
27 Claims. (Cl. 340—174.1)



1. Data storage apparatus, comprising:  
a plurality of elongated records,  
means for mounting said records in a matrix having X and Y axes with each record having an X and Y coordinate address, said records being mounted substantially parallel to each other,  
transducer means for recording or reading data with respect to said records,  
first positioning means for moving said transducer means with respect to said X axis,  
second positioning means for moving said transducer means with respect to said Y axis,  
means operable when said transducer means is in an operable relationship with a preselected record for withdrawing only said preselected record from said plurality of records in a direction generally transverse to said X and Y axes, said withdrawing means including vacuum means for applying a force to said preselected record, and  
means operable while said preselected record is being withdrawn for moving at least a portion of said preselected record past said transducer means.

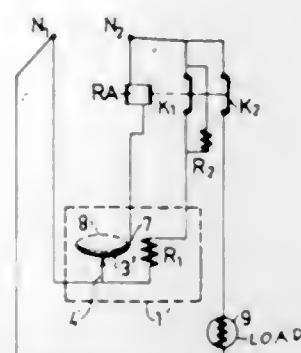
3,413,629

### LIQUID LEVEL SENSING DEVICE

Jan Erik Sandgren, Perstorp, Sweden, assignor to Aktiebolaget Flygt Pumpar, Solna, Sweden  
Filed June 7, 1965, Ser. No. 461,671  
Claims priority, application Sweden, June 15, 1964, 7,270/64  
5 Claims. (Cl. 340—244)

A liquid level sensing and indicating device including an electrical heater and a snap action bimetallic spring

carried in a casing. When the casing is submerged, heat from the heater is conducted away from the spring by the liquid. When the liquid level falls, heat from the

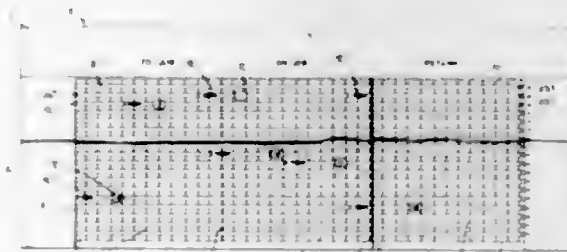


heater causes the spring to snap to a second position which automatically lowers the rate at which heat is emitted from the heater to just maintain the spring in this second position.

3,413,630

### MOVING EVENTS DISPLAY DEVICE

Paul M. Mac Kinney, 1012 E. Geneva Road, Wheaton, Ill. 60187  
Filed Feb. 25, 1966, Ser. No. 530,109  
11 Claims. (Cl. 340—309.1)



1. A job control device for registering job information comprising a rigid frame structure, a grid structure supported by said frame structure and defining a longitudinal job track, indicia means transversely dividing the front portion of said job track into a plurality of segments of predetermined length, a continuous belt member supported by said frame structure and extending longitudinally along said front portion of said job track, means to move said belt member longitudinally along said job track at a predetermined rate of travel, and a signalling element securable to said belt member for movement therewith along said longitudinal job track into successive longitudinal positions, whereby the movement of said belt member carries said signalling element along said job track into varying longitudinal positions with respect to said indicia means to register data as to the status of a job being controlled.

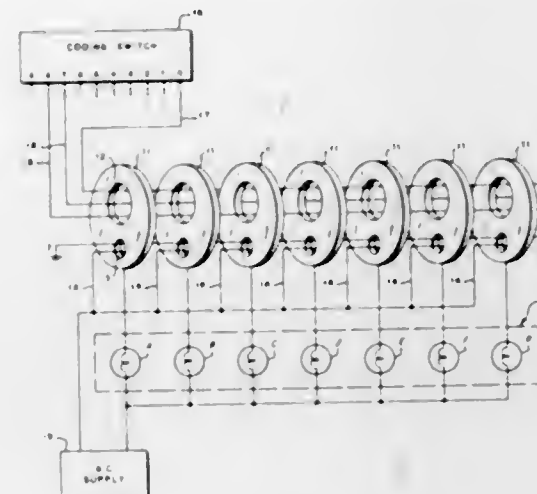
3,413,631

### INDICATOR APPARATUS

William M. Carey, South Lincoln, and Thomas E. Baker, Jr., Framingham, Mass., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy  
Filed Aug. 23, 1965, Ser. No. 481,992  
6 Claims. (Cl. 340—336)

An alphanumeric indicator comprising a plurality of multiaperture devices (or transfluxors) which selectively energize an array of lamps in accordance with a digital input signal. A coding switch pulses one of a plurality of conductors each forming serially connected windings at

selected major aperture of its respective transfluxor. The conductors are then connected in common to one end of another conductor which forms serially connected windings at the minor aperture of each transfluxor, and which is connected to ground at the other end. The number of



turns in the major aperture winding is greater than the number of turns in the minor aperture windings. An output winding at the minor aperture of each transfluxor is connected to a respective lamp and to a common power supply.

3,413,632

### DEVICE FOR AUTOMATICALLY ADJUSTING PHASE OF A DOPPLER INTEGRATOR

Charles L. Christianson, Baltimore, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy  
Filed Aug. 16, 1963, Ser. No. 303,223  
5 Claims. (Cl. 343—7)



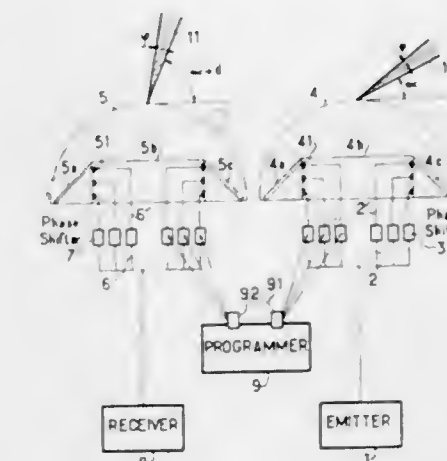
1. In a radar search receiver, a device providing automatic phase adjustment comprising:  
a Doppler integrator,  
a plurality of input channels connected to said Doppler integrator, each said input channel being adaptable for feeding a radar signal of given frequency to said Doppler integrator and each said input channel having a delay line therein,  
means connected to said Doppler integrator for comparing each input signal with a reference signal, and

feedback means connected to said means for comparing for regulating the temperature of each said delay line.

3,413,633

### METHOD AND APPARATUS FOR THE RADIO-ELECTRIC EXPLORATION OF SPACE

Gerard J. Lehmann, Paris, France, assignor to Compagnie Generale d'Electricite, Paris, France  
Filed Dec. 30, 1966, Ser. No. 606,165  
Claims priority, application France, Dec. 30, 1965, 44,390  
6 Claims. (Cl. 343—10)



A system for exploration of space by means of waves in which the space is divided into sections or slices and is swept by a beam of sustained electromagnetic waves, the same section being swept by a directional receiver angularly displaced with respect to the transmitter.

3,413,634

### AUTOMATIC FREQUENCY CONTROL FOR FREQUENCY AGILITY RADAR SYSTEM

Manuel Selvin, Norwalk, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware  
Filed May 25, 1967, Ser. No. 641,355  
13 Claims. (Cl. 343—17.1)



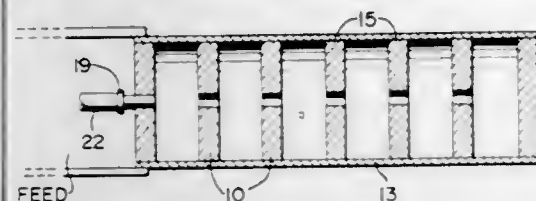
An automatic frequency control system for a phase interferometer radar system employing frequency agility in which a first continuous dither correction signal is produced in response to the actuated magnetron element. A second discontinuous correction signal is obtained by first sampling the frequency of the mixer output during each transmitted pulse and before the nearest range return is received and then applying the samples to an integrator to obtain the second signal. A summing amplifier applies the combined first and second signals to the frequency control of the local oscillator. Means responsive to the second error signal controls the gain of the circuit which couples the first signal to the summing amplifier.





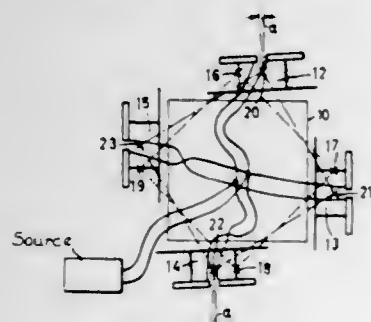


therefor, the container being an inflatable bag to which the dielectric elements are fastened along their respective edges at positions conforming to the desired spacing of the elements when the bag is inflated. An antenna feed is coupled to one end of the container to excite electromagnetic waves therein, and apertures are provided for per-



mitting ingress and egress of gas into and from the spaces between the dielectric elements for inflation and deflation of the bag, the elements each having values of dielectric constant, dimensions and spacing, preselected to provide a value of effective dielectric constant for the overall antenna much lower than the value of dielectric constant of each of the elements themselves.

**3,413,644**  
**ANTENNA HAVING AT LEAST TWO RADIATORS FED WITH DIFFERENT PHASE**  
Helmut Laub and Claus Hoyer, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany  
Continuation of application Ser. No. 240,200, Nov. 21, 1964. This application Sept. 7, 1967, Ser. No. 666,216  
Claims priority, application Germany, Nov. 23, 1961, S 76,808, S 76,809, S 76,810  
12 Claims. (Cl. 343-800)

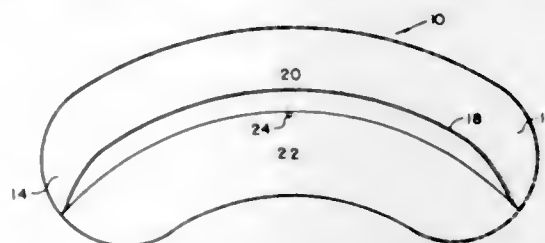


An antenna arrangement having a relatively circular radiation pattern in the transmission range, employing at least three radiators which are fed with different phasing and enclose, in the base arrangement, respective angles between their main radiation directions, in which between one radiator pair, on a change in the frequency, there occurs an increase, and between another radiator pair a decrease in the difference in the feed phases, the angles between the main radiation directions of adjacent radiators being such that radiators, between which the difference in the feed phases becomes greater with increasing frequency, enclose a greater angle between their main radiation directions than those radiators between which the difference in the feed phases becomes less with increasing frequency.

**3,413,645**  
**ELONGATED INFLATABLE PARABOLIC ANTENNA**  
Richard J. Koehler, Ellicott City, Md., assignor, by mesne assignments, to the United States of America, as represented by the Secretary of the Navy  
Filed Apr. 7, 1966, Ser. No. 541,034  
5 Claims. (Cl. 343-872)

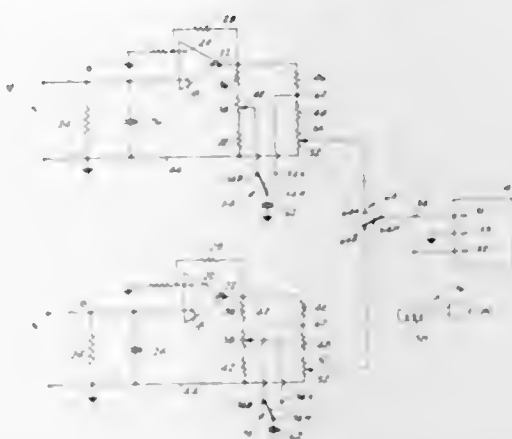
1. A radar antenna assembly comprising,
  - (a) an elongate inflatable envelope,
  - (b) a reflective diaphragm within said envelope and extending axially thereof and

(c) said diaphragm being parabolic in shape and providing a small wave energy aperture in one plane



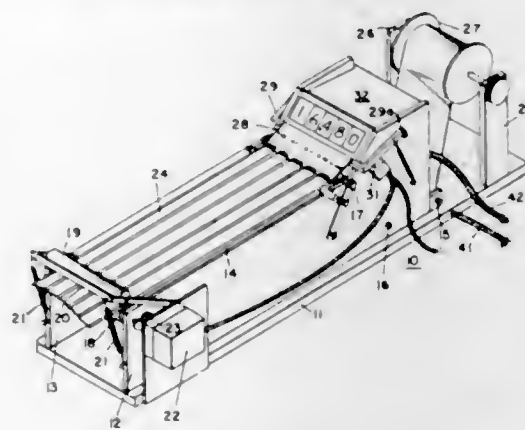
and and a relatively larger wave energy aperture in the plane perpendicular thereto.

**3,413,646**  
**FILTER SYSTEM FOR RECORDING**  
Edwin C. Whitehead, Rye, Milton H. Pelavin, White Plains, and William A. Weschler, Sparkill, N.Y., assignors to Technicon Corporation, a corporation of New York  
Filed May 31, 1966, Ser. No. 554,083  
4 Claims. (Cl. 346-1)



A system of recording a plurality of electrical signals includes sequentially coupling each of said signals to a filter network which includes a capacitor means; for each such signal, initially providing such filter network with a relatively short time constant, thereby permitting said capacitor means to rapidly and closely follow such signal, and subsequently providing said filter network with a relatively long time constant, permitting said filter network to adequately filter such signal, and recording such filtered signal.

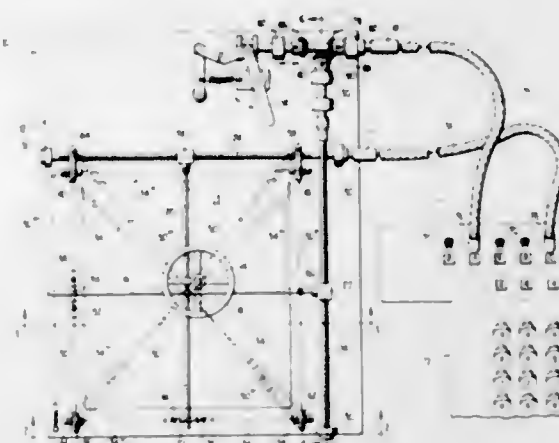
**3,413,647**  
**DIGITAL ANALOG RECORDER**  
Norman E. Polster, Southampton, Raymond W. Ross, Cheltenham, and Albert J. Williams, Jr., Philadelphia, Pa., assignors to Leeds & Northrup Company, a corporation of Pennsylvania  
Filed Feb. 8, 1963, Ser. No. 257,258  
14 Claims. (Cl. 346-14)



A recorder system in which there is provided number display means disposed adjacent a record chart and in

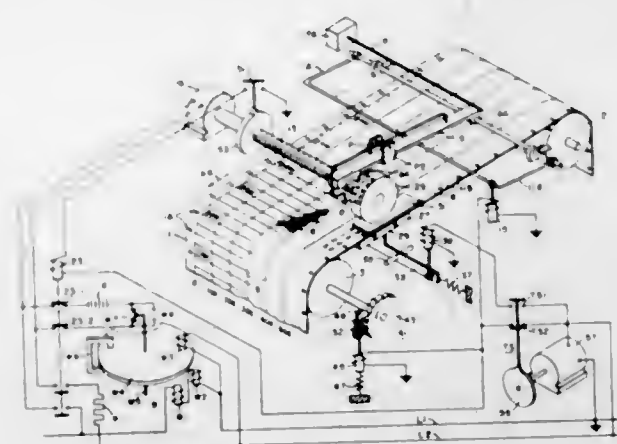
alignment with a limited area of the chart, the number display means being in electrical circuit with stylus means for selective energization to produce a readable number corresponding to the significant figure of the digital value of a condition being recorded on the chart by the stylus means.

**3,413,648**  
**X-Y PLOTTER COMBINED WITH CALCULATOR**  
Samuel L. Martzolf, Rte. 2, Box 119-E, Ocala, Fla. 32670  
Filed Apr. 12, 1967, Ser. No. 630,431  
5 Claims. (Cl. 346-29)



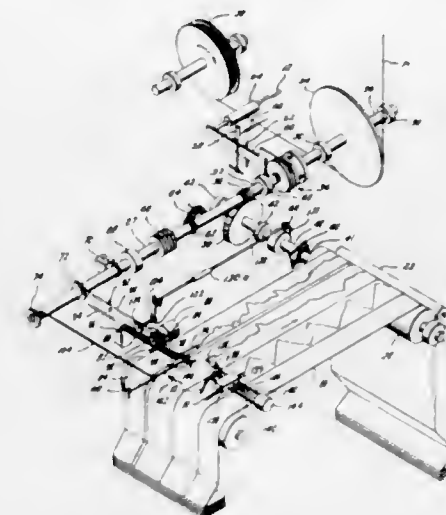
This invention comprises an automatic plotting machine which enables one to produce graphically the results of surveying or similar operations by computation of such results on a calculator. The machine includes a drafting board and stylus with mechanical drive means for moving the stylus along X and Y coordinates. The drive means is adapted to be connected to a calculator without modification of the calculator.

**3,413,649**  
**LINE RECORDER HAVING PRINTED CHARACTER VERNIER**  
Carl J. Snyder, Raleigh, N.C., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Nov. 29, 1966, Ser. No. 597,730  
1 Claim. (Cl. 346-30)



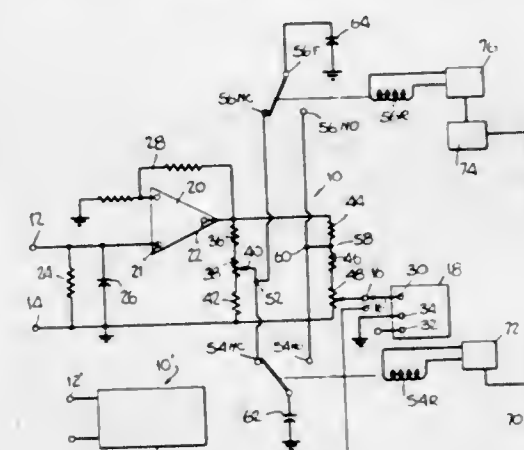
A strip chart recorder applies a printed character to the margin adjacent the terminus of each recorded line. This printed character in effect supplies a vernier measurement of the terminal portion of the line.

**3,413,650**  
**RECORDING DEVICE**  
George J. Greene, Jr., Shreveport, La., assignor, by mesne assignments, to U.G.C. Industries, Inc., a corporation of Texas  
Filed May 6, 1966, Ser. No. 548,108  
12 Claims. (Cl. 346-33)



A recording device for recording drilling operations and having a chart and a chart drive moving the chart in one direction responsive to the downward movement of the kelly joint of the drill string, means to disengage the chart drive from the kelly joint when the drill string supporting means supports a minimum weight, a primary pen and pen drive, a second pen adapted to engage and mark on the chart responsive to the weight supported by said supporting means and a third pen adapted to engage and mark on said chart responsive to drilling fluid pressure, and a memory means interposed between a cam shaft and the kelly joint whereby lifting of the kelly joint actuates a cam on the cam shaft to release the drive on the primary pen and the memory means requires the same downward travel of the kelly joint as it is lifted before the primary pen drive becomes active.

**3,413,651**  
**FILTER SYSTEM FOR RECORDING**  
William A. Weschler, Sparkill, N.Y., assignor to Technicon Corporation, a corporation of New York  
Filed July 18, 1966, Ser. No. 565,844  
4 Claims. (Cl. 346-33)



A recording system includes a recorder for recording a signal having a cyclical noise component, and an input filter network having a capacitance, which is initially disposed in a low time constant configuration in conjunction with the initial provision of the cyclically noisy signal thereto, to permit the capacitance of the network to rapidly charge or discharge to follow the signal; and subsequently a first portion of the capacitance of the network is disposed into a high time constant configuration, and finally the remaining portion of the capacitance of the network is disposed into a high time constant config-

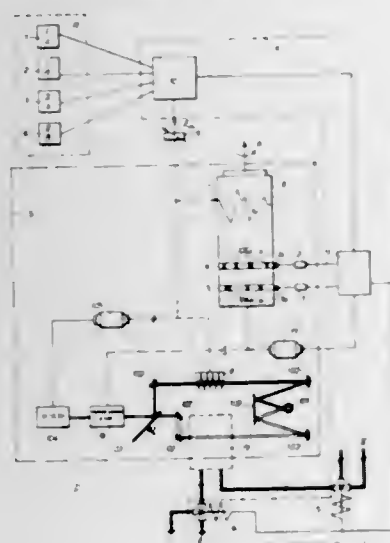


uration at a time interval which is a fraction of the period of the cyclical noise after the first portion has been charged, to cause the capacitance of the network to thereupon substantially instantaneously reach a steady state charge.

### 3,413,652 SPECTRAL PHOTOMETER ANALYSIS RECORDER

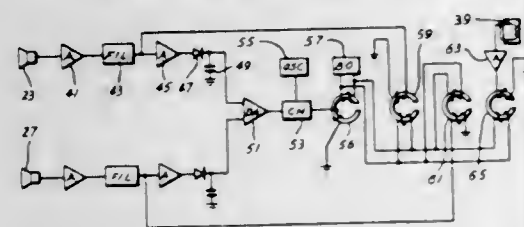
Josef Vogel, Günter Arnold, and Bernhard Vinzelberg, Leverkusen, Peter Fischer, Odenthal über Bergisch Gladbach, Otto Koch, Cologne-Stammheim, and Helmut Walz, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany  
Continuation-in-part of application Ser. No. 395,864, Sept. 11, 1964. This application Mar. 16, 1967, Ser. No. 623,713

Claims priority, application Germany, Sept. 13, 1963, F 40,749  
10 Claims. (Cl. 346—33)



A spectral photometer analysis apparatus capable of measuring and recording the absorbence of successive multi-component fluid samples and having a switching circuit means for automatically controlling the wave length scan of a spectrophotometer and the operation of a multi-channel recorder to measure and record the absorbence value as a function of wave length for the individual components of each sample in a predetermined order correlated with the presentation of successive samples to the spectrophotometer.

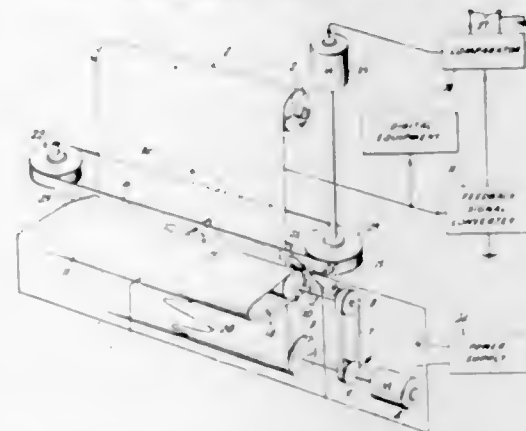
3,413,653  
ACOUSTIC LEAK DETECTING APPARATUS  
Fenton M. Wood, Sugarland, Tex., assignor to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey  
Filed July 25, 1967, Ser. No. 655,936  
10 Claims. (Cl. 346—33)



This invention pertains to apparatus for passing through a pressurized pipeline and acoustically detecting leaks therein. Basically, the apparatus includes a pipeline pig having at least two resilient cups isolating at least one compartment therebetween wherein the electrical portion of the apparatus is carried, an acoustic transducer disposed at the upstream side of the pig, and an acoustic transducer disposed at the downstream side of the pipe. The electrical apparatus portion connected to the respec-

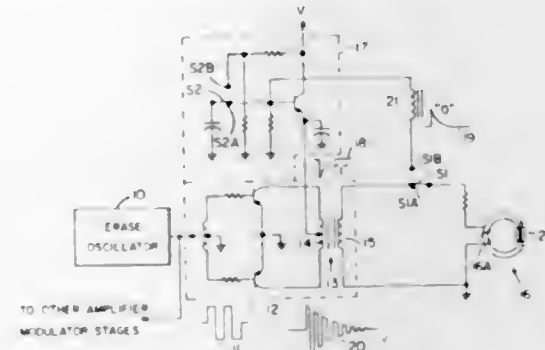
tive transducers includes suitable filters for filtering out environmental low frequencies (including those caused by the pig banging against the pipeline as it passes there-through), a differential amplifier for cancelling the background noise not filtered out from the detected leak noise, and a multi-channel recording system for recording the output of the differential amplifier and one or both of the separate channel signals. Also, a magnetic responsive device may be included for detecting and recording magnetic field responses. From observing the developed records, the presence and location of leaks are determined.

3,413,654  
ELECTROSTATIC TRACE RECORDER  
Roger K. Strong, Doylestown, Pa., assignor to Honeywell Inc., a corporation of Delaware  
Filed Nov. 25, 1964, Ser. No. 413,728  
6 Claims. (Cl. 346—74)



A high speed electrostatic recorder having a container with a longitudinal slit through which a recording powder may be passed is arranged with a tape which seals the slit and container. A rotating drum within the container places the powder into motion and introduces it to the slit. Recording paper is placed against the tape and charged to a polarity opposite a charge placed on the container and tape for urging the recording powder through a hole within the tape onto the paper.

3,413,655  
BINARY CODE MAGNETIC RECORDING  
CIRCUITRY  
Arlen J. Zimmerman, Minneapolis, Minn., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army  
Filed Jan. 5, 1966, Ser. No. 519,173  
7 Claims. (Cl. 346—74)

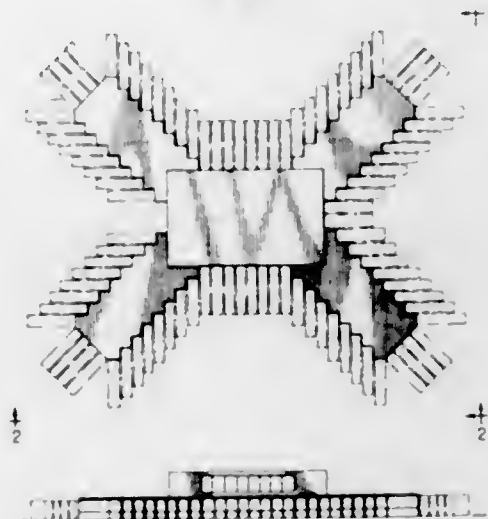


1. An apparatus for recording binary 1's and 0's on a magnetizable medium including A.C. voltage generating means, means for generating two exponentially decaying D.C. voltages, means for modulating said generated A.C. voltage with one of said D.C. voltages, a magnetic recording head, and means for alternatively connecting said modulated A.C. voltage or said other of said exponentially decaying D.C. voltages to said recording head, wherein 1's and 0's are respectively recorded on said magnetizable medium.

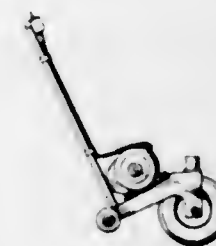
## DESIGNS

NOVEMBER 26, 1968

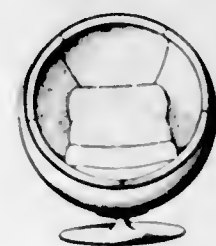
212,799  
TRUCK TERMINAL  
Richard H. Dyer, 313 53rd St.,  
Western Springs, Ill. 60558  
Filed Apr. 20, 1966, Ser. No. 1,957  
Term of patent 14 years  
(Cl. D13—1)



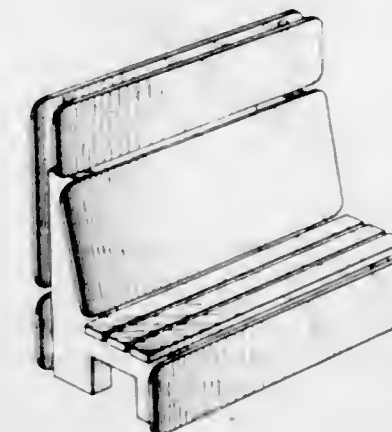
212,800  
POWERED CASTER FOR TRAILERS  
AND THE LIKE  
Howard M. Kimball, 3209 Hoyt Ave.,  
El Monte, Calif. 91733  
Filed Feb. 19, 1968, Ser. No. 10,626  
Term of patent 14 years  
(Cl. D14—3)



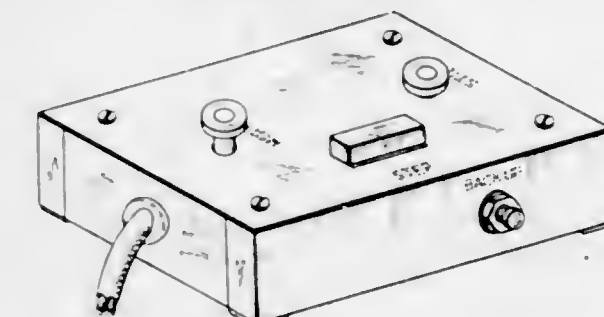
212,801  
GLOBE CHAIR  
Eero Aarnio, Helsinki, Finland, assignor to Asko  
Osakeyhtiö, Lahti, Finland, a firm of Finland  
Filed July 22, 1966, Ser. No. 3,184  
Term of patent 14 years  
(Cl. D15—11)



212,802  
BENCH  
John S. Terket, 135 N. Parkside Ave.,  
Chicago, Ill. 60644  
Filed July 27, 1967, Ser. No. 8,034  
Term of patent 14 years  
(Cl. D15—11)



212,803  
MOTION PICTURE PROJECTOR CONTROL  
Charles Woodruff, New York, N.Y., assignor to Port-A-Films Presentations, Inc., New York, N.Y., a corporation of New York  
Filed Dec. 6, 1967, Ser. No. 9,669  
Term of patent 14 years  
(Cl. D26—13)



212,804  
TELEPHONE COVER WITH HANDSET  
RETAINER OR THE LIKE  
Stacy D. Blackman, 1106 Aversboro Road,  
Garner, N.C. 27529  
Filed Aug. 10, 1966, Ser. No. 3,411  
Term of patent 14 years  
(Cl. D26—14)

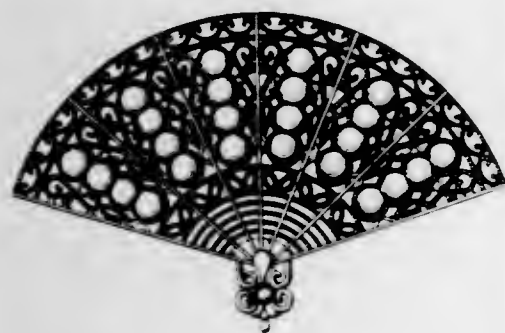




212,805  
**CHRISTMAS TREE ORNAMENT**  
 Dario Moranduzzo, Via Aretina 161,  
 Florence, Italy  
 Filed Apr. 3, 1968, Ser. No. 11,292  
 Term of patent 14 years  
 (Cl. D29—1)



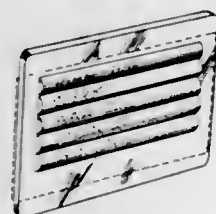
212,806  
**CHRISTMAS TREE ORNAMENT**  
 Dario Moranduzzo, Via Aretina 161,  
 Florence, Italy  
 Filed Apr. 3, 1968, Ser. No. 11,293  
 Term of patent 14 years  
 (Cl. D29—1)



212,807  
**CHRISTMAS TREE ORNAMENT**  
 Dario Moranduzzo, Via Aretina 161,  
 Florence, Italy  
 Filed Apr. 3, 1968, Ser. No. 11,294  
 Term of patent 14 years  
 (Cl. D29—1)



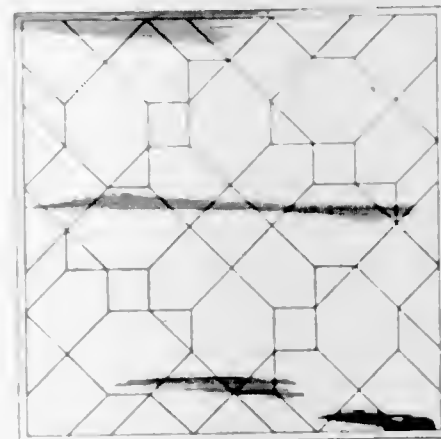
212,808  
**MAGNIFYING LENS BADGE HOLDER**  
 Kenneth F. Knowles, Cove Road,  
 Oyster Bay, N.Y. 11771  
 Filed Dec. 27, 1967, Ser. No. 9,935  
 Term of patent 14 years  
 (Cl. D29—2)



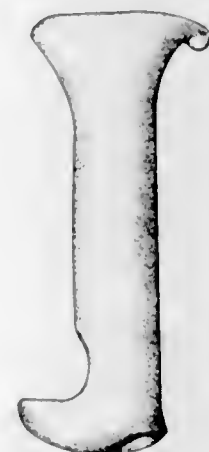
212,809  
**STUFFED TOY**  
 Terrance R. Mitchell, 10101 Lyndale Ave. S.,  
 Bloomington, Minn. 55420  
 Filed May 15, 1967, Ser. No. 7,109  
 Term of patent 14 years  
 (Cl. D34—4)



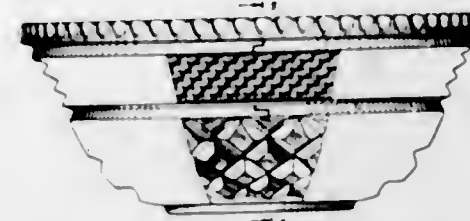
212,810  
**GAME BOARD**  
 Peter Capri, 450 Amsterdam Ave.,  
 New York, N.Y. 10024  
 Filed Apr. 9, 1968, Ser. No. 11,373  
 Term of patent 14 years  
 (Cl. D34—5)



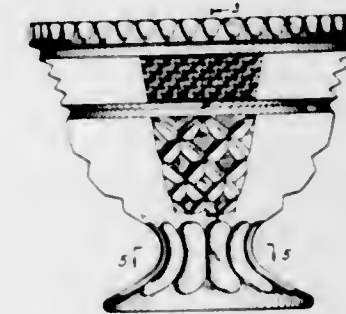
212,811  
**HANDGRIP FOR SKI POLES**  
 Earl A. Miller, Orem, Utah 84057  
 Filed Dec. 12, 1967, Ser. No. 9,750  
 Term of patent 14 years  
 (Cl. D34—14)



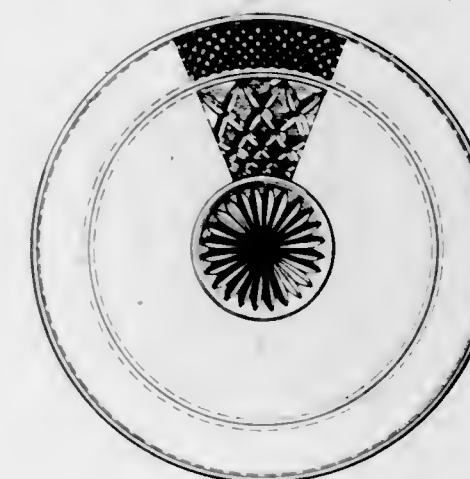
212,812  
**BOWL OR SIMILAR ARTICLE**  
 Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware  
 Original design application May 31, 1967, Ser. No. 7,309. Divided and this application Jan. 30, 1968, Ser. No. 10,354  
 Term of patent 14 years  
 (Cl. D36—2)



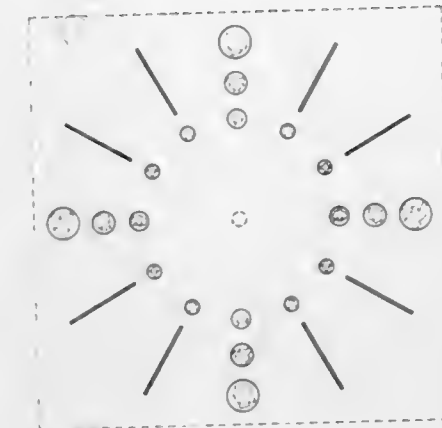
212,813  
**FOOTED BOWL OR SIMILAR ARTICLE**  
 Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware  
 Original design application May 31, 1967, Ser. No. 7,309. Divided and this application Jan. 30, 1968, Ser. No. 10,355  
 Term of patent 14 years  
 (Cl. D36—2)



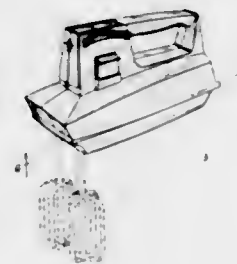
212,814  
**TRAY OR SIMILAR ARTICLE**  
 Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware  
 Original design application May 31, 1967, Ser. No. 7,309. Divided and this application Jan. 30, 1968, Ser. No. 10,363  
 Term of patent 14 years  
 (Cl. D36—2)



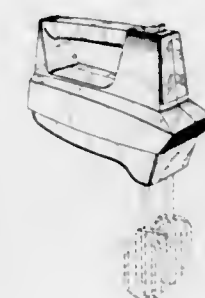
212,815  
**CLOCK FACE**  
 Marion K. Summers, W. Commerce St.,  
 Brownstown, Ind. 47220  
 Filed Mar. 6, 1968, Ser. No. 10,866  
 Term of patent 14 years  
 (Cl. D42—1)



212,816  
**FOOD MIXER OR THE LIKE**  
 Norman A. Steinkamp, Chicago Heights, Ill., and George R. Weir, Hermosa Beach, Calif., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois  
 Filed Feb. 8, 1968, Ser. No. 10,494  
 Term of patent 14 years  
 (Cl. D44—1)



212,817  
**MIXER**  
 Norman A. Steinkamp, Chicago Heights, Ill., and George R. Weir, Hermosa Beach, Calif., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois  
 Filed Feb. 8, 1968, Ser. No. 10,495  
 Term of patent 14 years  
 (Cl. D44—1)





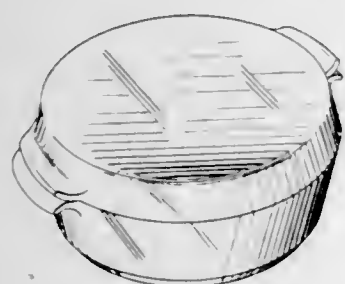
**212,818**  
**DRINKING MUG**  
 Edward P. Flaherty, 2188 N. 31st St.,  
 Milwaukee, Wis. 53208  
 Filed Jan. 26, 1968, Ser. No. 10,323  
 Term of patent 14 years  
 (Cl. D44-9)



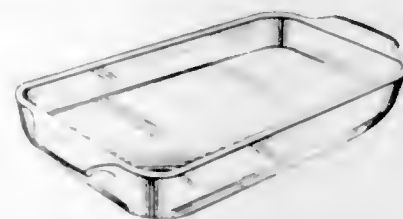
**212,819**  
**DESSERT DISH OR SIMILAR ARTICLE**  
 Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware  
 Original design application May 26, 1967, Ser. No. 7,274. Divided and this application Dec. 14, 1967, Ser. No. 9,778  
 Term of patent 14 years  
 (Cl. D44-10)



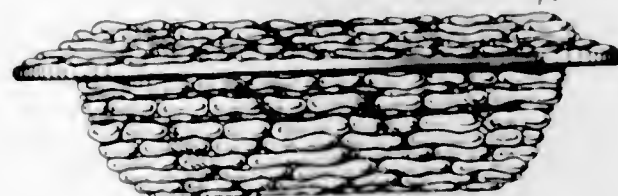
**212,820**  
**CASSEROLE OR SIMILAR ARTICLE**  
 Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware  
 Original design application Dec. 6, 1966, Ser. No. 4,928. Divided and this application July 12, 1967, Ser. No. 8,194  
 Term of patent 14 years  
 (Cl. D44-15)



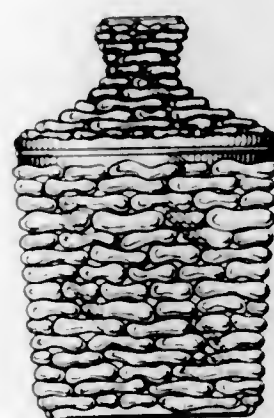
**212,821**  
**CASSEROLE OR SIMILAR ARTICLE**  
 Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware  
 Original design application Dec. 6, 1966, Ser. No. 4,928. Divided and this application July 12, 1967, Ser. No. 8,201  
 Term of patent 14 years  
 (Cl. D44-15)



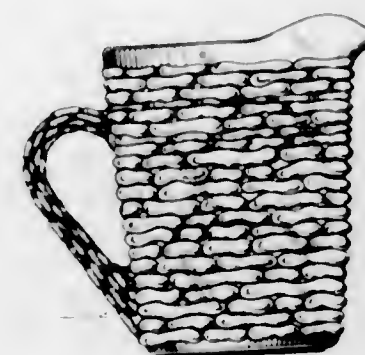
**212,822**  
**BUTTER DISH OR SIMILAR ARTICLE**  
 Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware  
 Original design application Apr. 20, 1967, Ser. No. 6,764. Divided and this application Nov. 15, 1967, Ser. No. 9,901  
 Term of patent 14 years  
 (Cl. D44-15)



**212,823**  
**SUGAR BOWL OR SIMILAR ARTICLE**  
 Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware  
 Original design application Apr. 20, 1967, Ser. No. 6,764. Divided and this application Nov. 16, 1967, Ser. No. 9,902  
 Term of patent 14 years  
 (Cl. D44-15)



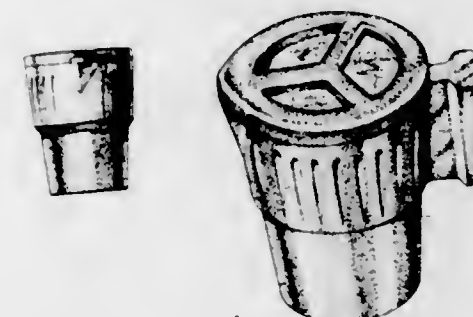
**212,824**  
**CREAMER OR SIMILAR ARTICLE**  
 Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware  
 Original design application Apr. 20, 1967, Ser. No. 6,764. Divided and this application Dec. 5, 1967, Ser. No. 9,903  
 Term of patent 14 years  
 (Cl. D44-21)



**212,825**  
**PITCHER**  
 Robert A. Claridge, Charlotte, N.C., assignor to Southeastern Plastics Corporation, Charlotte, N.C., a corporation of North Carolina  
 Filed Feb. 7, 1968, Ser. No. 10,471  
 Term of patent 14 years  
 (Cl. D44-21)



**212,826**  
**COMBINED PITCHER AND COVER THEREFOR**  
 Robert A. Claridge, Charlotte, N.C., assignor to Southeastern Plastics Corporation, Charlotte, N.C., a corporation of North Carolina  
 Filed Feb. 7, 1968, Ser. No. 10,485  
 Term of patent 14 years  
 (Cl. D44-21)



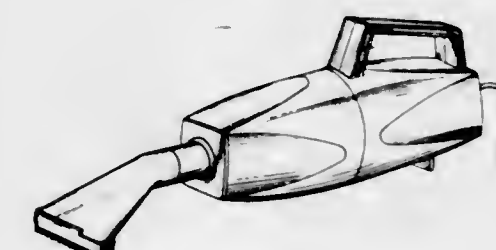
**212,827**  
**CONDIMENT DISPENSER OR THE LIKE**  
 Anthony N. D'Elia, 355 Netherland Ave., Riverdale, N.Y. 10471, and Edward M. Stolarz, R.F.D. 2, Horton Drive, Yorktown Heights, N.Y. 10598  
 Filed Oct. 26, 1967, Ser. No. 9,176  
 Term of patent 14 years  
 (Cl. D44-22)



**212,828**  
**DISPOSABLE LIGHTER**  
 Albertus Van Poppel, Asserstraat 11, Rolde, Netherlands  
 Filed Dec. 21, 1967, Ser. No. 9,879  
 Term of patent 3½ years  
 (Cl. D48-27)



**212,829**  
**PORTABLE VACUUM CLEANER**  
 Maurice H. Kraines, 1005 N. Crescent Drive, Beverly Hills, Calif. 90210  
 Filed Jan. 8, 1968, Ser. No. 10,138  
 Term of patent 14 years  
 (Cl. D49-13)





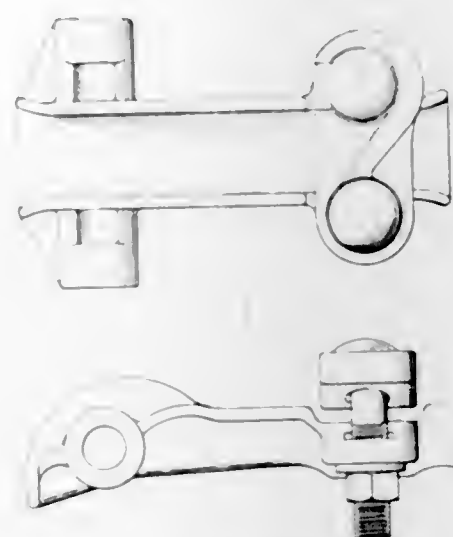
212,830  
VACUUM CLEANER

Meyric K. Rogers, La Grange Park, and Gus Kuschewski, Chicago, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois  
Filed Feb. 8, 1968, Ser. No. 10,496  
Term of patent 14 years  
(Cl. D49—14)



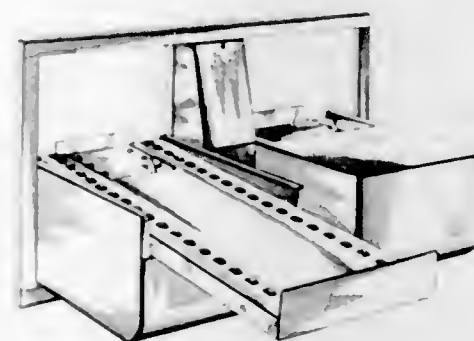
212,832  
HOT LINE SUSPENSION CLAMP FOR LINE  
POST INSULATORS

Carson H. McWhirter, 3613 Springhill Road, Birmingham, Ala. 35223, and Gaddis G. Hall, 8340 SW. 157th St., Miami, Fla. 33157  
Filed Jan. 23, 1967, Ser. No. 5,522  
Term of patent 14 years  
(Cl. D54—1)



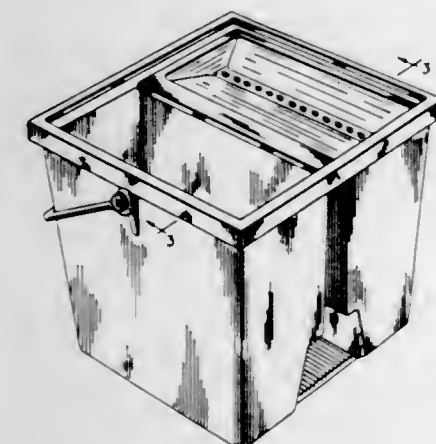
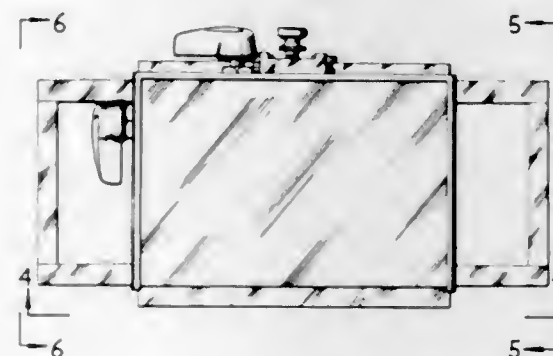
212,833  
LOADING AND UNLOADING STATION FOR  
VERTICAL CONVEYER

Fredrick Theijsmeyer, Port Hope, Ontario, and Jack Hermans, Cobourg, Ontario, Canada, assignors to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin  
Filed Oct. 11, 1966, Ser. No. 4,233  
Term of patent 14 years  
(Cl. D55—1)



212,834  
UNDERWATER HOUSING FOR A CAMERA  
OR SIMILAR ARTICLE

Charles F. Soumar, Marathon, Fla., assignor to Underwater Photographic Service, Inc., Marathon, Fla., a corporation of Florida  
Filed Nov. 15, 1965, Ser. No. 88,082  
Term of patent 14 years  
(Cl. D61—1)

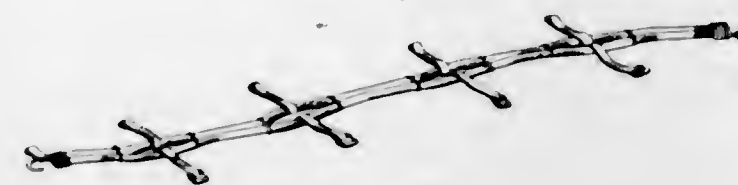


212,831  
PARTITIONED MOP BUCKET

Peter J. Koch, Jericho, N.Y., assignor to Dustbane Enterprises Limited, Ottawa, Ontario, Canada, a corporation of Canada  
Filed Feb. 8, 1968, Ser. No. 10,499  
Claims priority, application Canada Aug. 9, 1967  
Term of patent 14 years  
(Cl. D49—29)

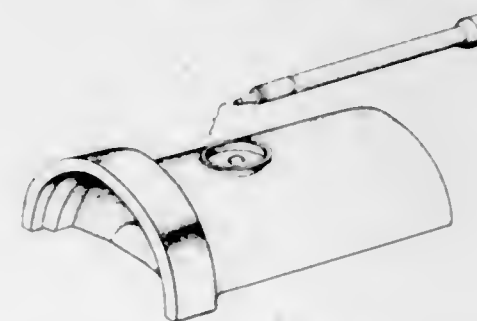
212,835  
SHOCKCORD FURLING GEAR

Fred C. Werber, 807 The Crescent, and Robert Graves, Rock Ridge, both of Mamaroneck, N.Y. 10543  
Filed Dec. 20, 1967, Ser. No. 9,868  
Term of patent 7 years  
(Cl. D71—1)



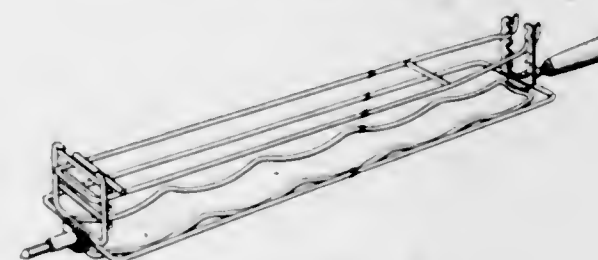
212,836  
DESK SET

Herbert C. Schulze, 3690 Highland Drive, Carlsbad, Calif. 92008  
Substituted for abandoned design application Ser. No. 260, Dec. 21, 1965. This application June 22, 1967, Ser. No. 8,938  
Term of patent 14 years  
(Cl. D74—5)



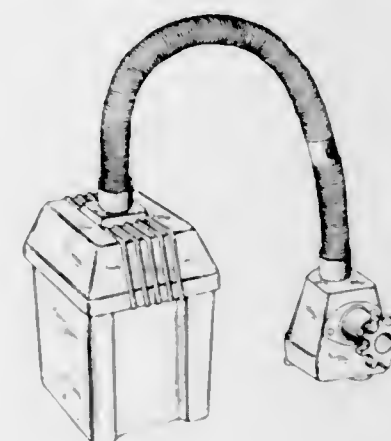
212,837  
BARBECUE CHICKEN HOLDER

Lawrence M. Klissner and Robert Claybin, both of 1215 S. Stanford Ave., Los Angeles, Calif. 90021  
Filed Dec. 26, 1967, Ser. No. 9,911  
Term of patent 14 years  
(Cl. D81—10)



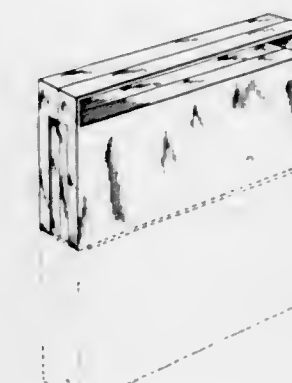
212,838  
HYDROMASSAGE ASSEMBLY

Roy A. Jacuzzi, Little Rock, Ark., assignor to Jacuzzi Research, Inc., a corporation of California  
Filed Mar. 4, 1968, Ser. No. 10,841  
Term of patent 14 years  
(Cl. D83—1)



212,839  
CARRYING CASE FOR TRANSPARENCIES  
OR SIMILAR ARTICLE

Robert E. Dustin, Newton, Mass., assignor to Milprint, Inc., Milwaukee, Wis., a corporation of Delaware  
Filed Oct. 4, 1967, Ser. No. 8,860  
Term of patent 14 years  
(Cl. D87—5)



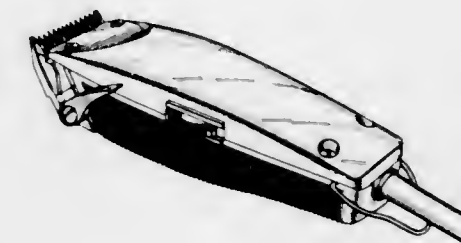
212,840  
DISPENSER FOR COCKTAIL MIXES

J. Russell Price, Esmond, R.I., assignor, by mesne assignments, to Textron Inc., Providence, R.I., a corporation of Rhode Island  
Filed Feb. 17, 1967, Ser. No. 5,861  
Term of patent 14 years  
(Cl. D94—3)



212,841  
HAIR CLIPPER

Alfred W. Madl, Glendale, Wis., assignor to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin  
Filed Mar. 4, 1968, Ser. No. 10,824  
Term of patent 14 years  
(Cl. D95—5)





# LIST OF DESIGN PATENTEEES

TO WHOM

PATENTS WERE ISSUED ON THE 26TH DAY OF NOVEMBER, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- Aarnio, Eero, to Asko Osakeyhtiö, Globe chair, 212,801, 11-26-68, Cl. D15—11.  
Anchor Hocking Glass Corp.: See—  
Benes, Frank J., 212,812.  
Benes, Frank J., 212,813.  
Benes, Frank J., 212,814.  
Benes, Frank J., 212,819-24.  
Asko Osakeyhtiö: See—  
Aarnio, Eero, 212,801.  
Benes, Frank J., to Anchor Hocking Glass Corp. Bowl or similar article, 212,812, 11-26-68, Cl. D36—2.  
Benes, Frank J., to Anchor Hocking Glass Corp. Footed bowl or similar article, 212,813, 11-26-68, Cl. D36—2.  
Benes, Frank J., to Anchor Hocking Glass Corp. Tray or similar article, 212,814, 11-26-68, Cl. D36—2.  
Benes, Frank J., to Anchor Hocking Glass Corp. Dessert dish or similar article, 212,819, 11-26-68, Cl. D44—10.  
Benes, Frank J., to Anchor Hocking Glass Corp. Casserole or similar article, 212,820, 11-26-68, Cl. D44—15.  
Benes, Frank J., to Anchor Hocking Glass Corp. Casserole or similar article, 212,821, 11-26-68, Cl. D44—15.  
Benes, Frank J., to Anchor Hocking Glass Corp. Butter dish or similar article, 212,822, 11-26-68, Cl. D44—15.  
Benes, Frank J., to Anchor Hocking Glass Corp. Sugar bowl or similar article, 212,823, 11-26-68, Cl. D44—15.  
Benes, Frank J., to Anchor Hocking Glass Corp. Creamer or similar article, 212,824, 11-26-68, Cl. D44—21.  
Blackman, Stacy D. Telephone cover with handset retainer or the like, 212,804, 11-26-68, Cl. D26—14.  
Caurl, Peter, Game board, 212,810, 11-26-68, Cl. D34—5.  
Claridge, Robert A., to Southeastern Plastics Corp. Pitcher, 212,825, 11-26-68, Cl. D44—21.  
Claridge, Robert A., to Southeastern Plastics Corp. Combined pitcher and cover therefor, 212,826, 11-26-68, Cl. D44—21.  
Claybin, Robert: See—  
Kissner, Lawrence M., and Claybin, 212,837.  
D'Elia, Anthony N., and E. M. Stolarz, Condiment dispenser or the like, 212,827, 11-26-68, Cl. D44—22.  
Dustbane Enterprises Ltd.: See—  
Koch, Peter J., 212,831.  
Dustin, Robert E., to Milprint, Inc. Carrying case for transparencies or similar article, 212,839, 11-26-68, Cl. D87—5.  
Dyer, Richard H. Truck terminal, 212,799, 11-26-68, Cl. D13—1.  
Flaherty, Edward P. Drinking mug, 212,818, 11-26-68, Cl. D44—9.  
Graves, Robert: See—  
Werber, Fred C., and Graves, 212,835.  
Hall, Gaddis G.: See—  
McWhirter, Carson H., and Hall, 212,832.  
Hermans, Jack: See—  
Theljsmelter, Frederik, and Hermans, 212,833.  
Jacuzzi Research, Inc.: See—  
Jacuzzi, Roy A., 212,838.  
Jacuzzi, Roy A., to Jacuzzi Research, Inc. Hydromassage assembly, 212,838, 11-26-68, Cl. D83—1.  
Kimball, Howard M. Powered caster for trailers and the like, 212,800, 11-26-68, Cl. D14—3.  
Kissner, Lawrence M., and R. Claybin, Barbecue chicken holder, 212,837, 11-26-68, Cl. D81—10.  
Knowles, Kenneth F. Magnifying lens badge holder, 212,808, 11-26-68, Cl. D29—2.  
Koch, Peter J., to Dustbane Enterprises Ltd. Partitioned mop bucket, 212,831, 11-26-68, Cl. D49—29.  
Kratnes, Maurice H. Portable vacuum cleaner, 212,829, 11-26-68, Cl. D49—13.  
Kuschewski, Gus: See—  
Rogers, Meyric K., and Kuschewski, 212,830.  
Madl, Alfred W., to John Oster Mfg. Co. Hair clipper, 212,841, 11-26-68, Cl. D95—5.  
McWhirter, Carson H., and G. G. Hall, Hot line suspension clamp for line post insulators, 212,832, 11-26-68, Cl. D54—1.  
Miller, Earl A. Handgrip for ski poles, 212,811, 11-26-68, 11-26-68, Cl. D34—14.  
Milprint, Inc.: See—  
Dustin, Robert E., 212,839.  
Mitchell, Terrance R. Stuffed toy, 212,809, 11-26-68, Cl. D34—4.  
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Bertolina, Hugo L. Extension attachment for brushes and the like. 3,413,043, 11-26-68, Cl. 306-3.

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Bertsch, Hugh C., and C. R. Conrad, to Mallinckrodt Chemical Works. Process for preparing phenylhydroxylamine and cupferron. 3,413,349, 11-26-68, Cl. 260-580.

Beshers, Richard L., to Universal Oil Products Co. Oxidation of mercapto compounds. 3,413,215, 11-26-68, Cl. 209-206.

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Blanco, Thomas S., and E. M. Kratz, to Baldwin-Montrose Chemical Co., Inc. Mono-Sol Division. Polyvinyl alcohol compositions. 3,413,229, 11-26-68, Cl. 252-90.

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Botler, John L., E. O. Donner, H. E. Frye, and H. S. Keeler, to International Business Machines Corp. Delay line buffer storage circuit. 3,413,615, 11-26-68, Cl. 340-173.

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Brennig, Hans, and H. Kurner, to Siemens Aktiengesellschaft. Circuit arrangement for suppressing output pulses in converting measuring values with the aid of a voltage-frequency converter. 3,413,490, 11-26-68, Cl. 307-233.

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Brooks, Forrest E., Y. Rachovitsky, J. L. Lindinger, M. F. Kaminsky, and R. A. Hammett, to Radio Corp. of America. Controlling interchanges between a computer and many communications lines. 3,413,612, 11-26-68, Cl. 340-172.5.

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Bursack, Kenneth F., E. L. Johnston, and H. J. Moltzan, to Frontier Chemical Co., Division of Vulcan Materials Co. Production of alpha-naphthol. 3,413,357, 11-26-68, Cl. 260-629.

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- Lopitzsch, Karl H. G., to North American Phillips Co., Inc. Direct current-alternating current inverters having a pair of controlled rectifiers. 3,413,539, 11-26-68, Cl. 321-45.
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- MacLean, Alexander E., to Celanese Corp. of America. Electrolytic oxidation of cerium. 3,413,203, 11-26-68, Cl. 204-79.
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- McCandless, William, to Owens-Illinois, Inc. Apparatus for forming drum-like containers. 3,412,654, 11-26-68, Cl. 93-55.1.
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- Braus, Harry, and Woltermann. 3,413,258.
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- Ulrick, Charles J., and Womack. 3,413,571.
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- Cann, Gordon L., and Harder. 3,413,509.
- Roberts, Russell R. 3,413,064.
- Robinson, Bruce R. 3,412,710.
- Townsend, Stephen E. 3,413,412.
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Honjo, Mikio, Imai, Honda, and Yoshioka. 3,413,281.
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- Zackay, Victor F., E. R. Parker, and K. V. Ravi, to United States of America, Atomic Energy Commission. Fine grained steel and process for preparation thereof. 3,413,166, 11-26-68, Cl. 148-125.
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Quigley, Lawrence A., and Zak. 3,413,344.
- Zec, Zvonimir J., to Beckman Instruments, Inc. Method and apparatus for drying thin membranes. 3,412,475, 11-26-68, Cl. 34-19.
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- Zief, Morris: See—  
Schramm, Charles H., and Zief. 3,413,377.
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Ross, Donald S. 3,412,733.
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Wise, Thomas Q., Zion, and Kahn. 3,412,847.
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Bichel, Darwin C., Barquist, and Zmuda. 3,412,735.
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Adams, Harry A., and Zorska. 3,413,151.
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## CLASSIFICATION OF PATENTS

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NOTE.—First number, class; second number, subclass; third number, patent number

2-8	3,412,406	30-40	3,412,464	57-156	3,412,548	74-821	3,412,633	110-40	3,412,698	143-68	3,412,767
69.5	3,412,407	41	3,412,465	58-23	3,412,549	75-5	3,413,112	101	3,412,699	144-114	3,412,768
4-99	3,412,408	228	3,412,466	82	3,412,550	12	3,413,113	112-158	3,412,700	146-1	3,412,769
172	3,412,409	335	3,412,467	133	3,412,551	121	3,413,114	113-119	3,412,701	192	3,412,770
5-343	3,412,410	32-5	3,412,468	60-13	3,412,552	172	3,413,115	114-46	3,412,702	148-1.5	3,413,157
8-2.5	3,413,071	50	3,412,469	53	3,412,553	212	3,413,116	163	3,412,703	6.14	3,413,159
11	3,413,072	33-174	3,412,470	54.5	3,412,554	81-3.1	3,412,634	235	3,412,704		3,413,160
	3,413,073	180	3,412,471		3,412,555	90	3,412,635	115-12	3,412,705	2	3,413,158
21	3,413,074	204	3,412,472	6	3,412,556	83-107	3,412,636	116-70	3,412,706	16.5	3,413,161
26	3,413,075	34-10	3,412,473		3,412,557	539	3,412,637	117-8	3,413,136	20	3,413,162
31	3,413,076	19	3,412,474	67	3,412,558	84-1.25	3,413,403	36.1	3,413,137	23	3,413,163
54	3,413,077	122	3,412,474	202	3,412,559	455	3,412,638	8	3,413,138		3,413,164
106	3,413,078	147	3,412,476	261	3,412,560	85-72	3,412,639	64	3,413,139	111	3,413,165
130.1	3,413,079	164	3,412,477	61-35	3,412,561	89-1.806	3,412,640	72	3,413,140	125	3,413,166
137	3,413,080	172	3,412,478	39	3,412,562	.812	3,412,641	93.2	3,413,141	150-7	3,412,771
151	3,412,411	240	3,412,479	46.5	3,412,563	33	3,412,642	119.4	3,413,142	151-21	3,412,772
13-9	3,413,401	35-9	3,412,480		3,412,564	90-13	3,412,643	120	3,413,143	22	3,412,773
14-71	3,412,412	10.4	3,413,402	53.5	3,412,565	58	3,412,644	155	3,413,144	69	3,412,774
15-21	3,412,413	12	3,412,481	62-3	3,412,566	91-26	3,412,645	201	3,413,145	152-229	3,412,775
	3,412,414	19	3,412,482	13	3,412,567	165	3,412,646	211	3,413,146	156-51	3,413,167
50	3,412,415	35	3,412,483	50	3,412,568	183	3,412,647	215	3,413,147	71	3,413,168
118	3,412,416	48	3,412,484	115	3,412,569	366	3,412,648	218	3,413,148	149	3,413,169
183	3,412,417	55	3,412,485	129	3,412,570	92-48	3,412,649	118-5	3,412,707	204	3,413,170
229	3,412,418	36-4	3,412,486	188	3,412,571	133	3,412,650	261	3,412,708	277	3,413,171
257.1	3,412,419	44	3,412,487	344	3,412,572	93-36	3,412,651	405	3,412,709	334	3,413,172
16-124	3,412,421	37-9	3,412,488	374	3,412,573	53	3,412,652	637	3,412,710	380	3,413,173
125	3,412,422	42	3,412,489	471	3,412,574	55.1	3,412,653	119-20	3,412,711	405	3,413,174
146	3,412,420	87	3,412,490	63-2	3,412,575		3,412,654	75	3,412,712	498	3,413,175
198	3,412,423	189	3,412,491	4	3,412,576	61	3,412,655	122-34	3,412,713	499	3,413,176
17-1	3,412,424	38-77	3,412,492	7	3,412,577	82	3,412,656	406	3,412,714	512	3,413,177
45	3,412,425	40-2.2	3,412,493	14	3,412,578	94-45	3,412,657	510	3,412,715	545	3,413,178
18-5	3,412,426	70	3,412,494	64-6	3,412,579		3,412,658	123-8	3,412,716	159-6	3,412,776
3	3,412,427	79	3,412,495	21	3,412,580	50	3,412,659	32	3,412,717	13	3,412,777
9	3,412,428	104	3,412,496	65-65	3,413,107	95-10	3,412,660		3,412,718	48	3,412,778
12	3,412,429	42-54	3,412,497	208	3,413,108	11	3,412,661	73	3,412,719		3,412,779
19	3,412,430	43-8	3,412,498	66-1	3,412,581		3,412,662	90	3,412,720	160-191	3,412,780
26	3,412,431	15	3,412,499	70	3,412,582		3,412,663		3,412,721	161-60	3,413,179
30	3,412,432	41	3,412,500	146	3,412,583	13	3,412,664	119	3,412,722	89	3,413,180
34	3,412,433	137	3,412,501	69-32	3,412,584	31	3,412,665	148	3,412,723	112	3,413,181
19-267	3,412,434	44-57	3,413,102	70-58	3,412,585	64	3,412,666	195	3,412,724		3,413,182
21-60.5	3,413,081	62	3,413,103	92	3,412,586	93	3,412,667	124-24	3,412,725	160	3,413,183
23-15	3,413,082		3,413,104	313	3,412,587	94	3,412,668	126-200	3,412,726		3,413,184
24	3,413,083	72	3,413,105	358	3,412,588	96-1.2	3,413,117	211	3,412,727	169	3,413,185
51	3,413,084	46-25	3,412,502	71-65	3,413,109	33	3,413,119	270	3,412,728	176	3,413,186
97	3,413,085	84	3,412,503	78	3,413,110	48	3,413,121	128-2.05	3,412,729	192	3,413,187
121	3,413,086	135	3,412,504	94	3,413,111	68	3,413,122	40	3,412,730	195	3,413,188
143	3,413,087	221	3,412,505	72-46	3,412,589	94	3,413,123	172.1	3,412,731	162-29	3,413,189
148	3,413,088	49-82	3,412,506	56	3,412,590	98-40	3,412,669	305	3,412,732	175	3,413,190
184	3,413,089	212	3,412,507	150	3,412,591	43	3,412,670		3,412,733	252	3,413,191
191	3,413,090	51-170	3,412,508	316	3,412,592	99-6	3,413,118	129-18	3,412,734	259	3,413,192
198	3,413,091	295	3,413,106	335	3,412,593	31	3,413,124	130-21	3,412,735	164-76	3,412,781
204	3,413,092	52-2	3,412,509	377	3,412,611	48	3,413,120	30	3,412,736	98	3,412,782
209.4	3,413,093	127	3,412,510	391	3,412,594	79	3,413,125	131-267	3,412,737	122	3,412,783
9	3,413,094	223	3,412,511	405	3,412,595	107	3,413,127	132-40	3,412,738	283	3,412,784
258.5	3,413,095	239	3,412,512	441	3,412,596	109	3,413,126	48	3,412,739	292	3,412,785
288	3,413,096	303	3,412,513	454	3,412,597	171	3,413,128	134-22	3,413,149	165-5	3,412,786
292	3,413,097	480	3,412,514	73-12	3,412,598	176	3,413,129	198	3,412,740	153	3,412,787
301	3,413,098		3,412,515	17	3,412,599		3,413,130	136-6	3,413,150	185	3,412,788
353	3,413,099	492	3,412,516	88	3,412,600	179	3,413,131	83	3,413,151	166-6	3,412,789
367	3,413,100	520	3,412,517	91	3,412,601	234	3,412,671	86	3,413,152	4	3,412,790
24-3	3,412,435	592	3,412,518	119	3,412,602	300	3,412,672		3,413,153	9	3,412,791
11	3,412,436	593	3,412,519	121	3,412,603	346	3,412,673	100	3,413,154		3,412,792
73	3,412,437	53-32	3,412,520	147	3,412,604	402	3,412,674	173	3,413,155	11	3,412,793
205.13	3,412,438	36	3,412,521	150	3,412,605	100-215	3,412,675	212	3,413,156		3,412,794
25-1	3,412,439	189	3,412,522		3,412,606	101-144	3,412,676	137-1	3,412,741	21	3,412,795
36	3,412,440	197	3,412,523	155	3,412,607	148	3,412,677	68	3,412,742	33	3,412,796
41	3,412,441	212	3,412,524	194	3,412,608	287	3,412,678	70	3,412,743	42	3,412,797
28-46	3,412,442	229	3,412,525	308	3,412,609	314	3,412,679	81	3,412,744	68	3,412,798
72	3,412,443	289	3,412,526	362	3,412,610	102-35.4	3,412,680	5	3,412,745	72	3,412,806
29-25.41	3,412,444	390	3,412,527	421	3,412,612	38	3,412,681	118	3,412,746	120	3,412,799
33.5	3,412,445	55-71	3,412,528	425.2	3,412,613		3,412,682	212	3,412,747		3,412,800
121	3,412,446	94	3,412,529	431	3,412,614	38	3,412,683	239	3,412,748		3,412,801
149.5	3,412,447	126	3,412,530	458	3,412,615	114	3,412,684	240	3,412,749		3,412,802
157.3	3,412,448	341	3,412,531	492	3,412,616	136	3,412,685	315	3,412,750	134	3,412,803
182	3,413,101	56-12	3,412,532	74-3.54	3,412,617		3,412,686	331	3,412,751	173	3,412,804
203	3,412,449		3,412,533	5.7	3,412,618	232	3,412,687	480	3,412,752	184	3,412,805
	3,412,450	15	3,412,534	10.33	3,412,619	104-98	3,412,688	490	3,412,753	170-160.26	3,412,806
	3,412,451	23	3,412,535	141	3,412,620	118	3,412,689	512.1	3,412,754	31	3,412,808
205	3,412,452		3,412,536	190	3,412,621	168	3,412,690	517	3,412,755	173	3,412,809
	3,412,453	25.4	3,412,537	200	3,412,622	105-177	3,412,691	540	3,412,756	83	3,412,810
437	3,412,454	306	3,412,538	217	3,412,623	369	3,412,692	606	3,412,757	172-7	3,412,811
472.7	3,412,455	327	3,412,540	325	3,412,624		3,412,693	625.65	3,412,758	173-23	3,412,812
9	3,412,456		3,412,541	368	3,412,625	106-40	3,413,132	138-89	3,412,759	141	3,412,813
487	3,412,457	328	3,412,542	478	3,412,626	50	3,413,133	96	3,412,760	174-3	3,413,406
488	3,412,458	329	3,412,539	483	3,412,627	55	3,413,134	153	3,412,761	17	3,413,404
568	3,412,459	57-34	3,412,543	492	3,412,628	304	3,413,135	139-92	3,412,762	36	3,413,405
577	3,412,460		3,412,544	493	3,412,629	107-14	3,412,694	126	3,412,763	89	3,413,407
608	3,412,461	56	3,412,545	577	3,412,630	55	3,412,695	187	3,412,764	121	3,413,408
627	3,412,462	140	3,412,546	695	3,412,631	110-8	3,412,696	263	3,412,765	175-6	3,412,814



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6 : 3,413,411	138 : 3,412,880	2 : 3,412,956	94.9 : 3,413,277	263-2 : 3,412,984	313-91 : 3,413,505
7.1 : 3,413,412	501 : 3,412,882	33 : 3,412,957	176 : 3,413,278	4 : 3,412,985	108 : 3,413,506
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5 : 3,413,414	518 : 3,412,884	77 : 3,412,959	211.3 : 3,413,280	47 : 3,412,987	161 : 3,413,509
70 : 3,413,415	776 : 3,412,885	130 : 3,412,960	211.3 : 3,413,281	264-5 : 3,413,383	231 : 3,413,510
179-1 : 3,413,416	9 : 3,412,886	130 : 3,412,961	234 : 3,413,282	3 : 3,413,384	318 : 3,413,511
3,413,417	100 : 3,412,887	146 : 3,412,962	239.5 : 3,413,283	30 : 3,413,385	315-3.5 : 3,413,512
15 : 3,413,418	219-7.5 : 3,413,432	153 : 3,412,963	239.5 : 3,413,284	45 : 3,413,386	11 : 3,413,513
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	3,413,357		3,412,900		3,413,153		3,413,302		3,413,106		3,412,577
	3,413,611		3,412,922		3,413,176		3,413,305		3,413,133		3,412,732
21	: 3,412,726		3,412,964		3,413,187		3,413,329		3,413,151		3,412,764
	3,412,727		3,412,968		3,413,214		3,413,331		3,413,155		3,413,008
	3,412,755		3,412,969		3,413,237		3,413,396		3,413,159		3,413,186
	3,413,071		3,413,010		3,413,248		3,413,412		3,413,162	45	: 3,413,188
	3,413,183		3,413,013		3,413,250		3,413,436		3,413,171	46	: 3,412,812
	3,413,184		3,413,023		3,413,254		3,413,438		3,413,174		3,412,982
	3,413,444		3,413,037		3,413,270		3,413,453		3,413,226	47	: 3,412,497
	3,413,445		3,413,100		3,413,289		3,413,459		3,413,234		3,412,532
	3,413,516		3,413,105		3,413,294		3,413,464		3,413,241		3,412,533
22	: 3,412,749		3,413,150		3,413,303		3,413,483		3,413,258		3,412,713
	3,412,859		3,413,224		3,413,304		3,413,488		3,413,261		3,412,950
	3,413,085		3,413,242		3,413,307		3,413,498		3,413,264		3,413,149
	3,413,140		3,413,247		3,413,317		3,413,499		3,413,271		3,413,219
	3,413,220		3,413,287		3,413,322		3,413,512		3,413,277		3,413,397
	3,413,238		3,413,288		3,413,328		3,413,519		3,413,327	48	: 3,412,440
	3,413,323		3,413,293		3,413,344		3,413,525		3,413,385		3,412,480
	3,413,650		3,413,295		3,413,345		3,413,527		3,413,386		3,412,490
23	: 3,412,775		3,413,299		3,413,346		3,413,534		3,413,405		3,412,563
	3,413,121		3,413,300		3,413,363		3,413,557		3,413,461		3,412,565
24	: 3,412,517		3,413,306		3,413,364		3,413,560		3,413,462		3,412,606
	3,412,546		3,413,313		3,413,380		3,413,567		3,413,478		3,412,646
	3,412,604		3,413,330		3,413,400		3,413,572		3,413,501		3,412,674
	3,412,613		3,413,339		3,413,418		3,413,589		3,413,510		3,412,687
	3,412,619		3,413,347		3,413,422		3,413,599		3,413,582		3,412,790
	3,412,634		3,413,370		3,413,448		3,413,604		3,413,584		3,412,798
	3,412,728		3,413,371		3,413,449		3,413,605		3,413,606		3,412,799
	3,412,743		3,413,403		3,413,476		3,413,610		3,413,607		3,412,800
	3,412,863		3,413,417		3,413,477		3,413,615	40	: 3,412,704		3,412,801
	3,412,945		3,413,426		3,413,486		3,413,616		3,412,779		3,412,802
	3,413,119		3,413,427		3,413,487		3,413,622		3,412,792		3,412,803
	3,413,126		3,413,479		3,413,495		3,413,639		3,412,793		3,412,804
	3,413,475		3,413,543		3,413,506		3,413,646		3,412,794		3,412,806
	3,413,540		3,413,581		3,413,508		3,413,651		3,412,823		3,412,817
	3,413,554	27	: 3,412,416		3,413,511	37	: 3,412,547		3,412,984		3,412,941
	3,413,632		3,412,424		3,413,553		3,412,571		3,413,086		3,412,965
	3,413,635		3,412,540		3,413,556		3,412,837		3,413,091		3,412,981
	3,413,645		3,412,612		3,413,563		3,412,962		3,413,211		3,413,025
25	: 3,412,444		3,412,618		3,413,564		3,413,160		3,413,337		3,413,045
	3,412,458		3,412,629		3,413,568		3,413,243		3,413,355		3,413,093
	3,412,522		3,412,694		3,413,569		3,413,391		3,413,359		3,413,203
	3,412,616		3,412,820		3,413,575		3,413,428		3,413,360		3,413,239
	3,412,637		3,412,921		3,413,591		3,413,549		3,413,376		3,413,292
	3,412,651		3,412,970		3,413,612		3,413,550	41	: 3,412,539		3,413,320
	3,412,664		3,412,976		3,413,617		3,413,551		3,412,659		3,413,466
	3,412,678		3,413,058		3,413,641		3,413,552		3,412,757		3,413,470
	3,412,696		3,413,168		3,413,642		3,413,649		3,412,819		3,413,472
	3,412,698		3,413,201	35	: 3,413,032	39	: 3,412,414		3,412,895		3,413,473
	3,412,762		3,413,520		3,413,467		3,412,422		3,412,972		3,413,480
	3,412,763		3,413,521	36	: 3,412,410		3,412,423		3,413,513		3,413,535
	3,412,776		3,413,545		3,412,411		3,412,441		3,413,598		3,413,537
	3,412,786		3,413,559		3,412,421		3,412,459	42	: 3,412,408		3,413,562
	3,412,788		3,413,655		3,412,430		3,412,471		3,412,438		3,413,570
	3,412,866	29	: 3,412,419		3,412,455		3,412,508		3,412,449		3,413,574
	3,412,896		3,412,425		3,412,484		3,412,509		3,412,451		3,413,596
	3,412,909		3,412,640		3,412,485		3,412,556		3,412,460		3,413,653
	3,412,932		3,412,725		3,412,487		3,412,572		3,412,461	49	: 3,412,502
	3,412,985		3,412,870		3,412,493		3,412,573		3,412,468	50	: 3,412,551
	3,413,024		3,413,099		3,412,494		3,412,593		3,412,501	51	: 3,412,450
	3,413,054		3,413,124		3,412,512		3,412,595		3,412,583		3,412,492
	3,413,057		3,413,202		3,412,514		3,412,600		3,412,589		3,412,575
	3,413,066		3,413,218		3,412,561		3,412,603		3,412,596		3,413,005
	3,413,090		3,413,225		3,412,601		3,412,621		3,412,609		3,413,087
	3,413,098		3,413,318		3,412,608		3,412,644		3,412,671		3,413,101
	3,413,116		3,413,340		3,412,638		3,412,653		3,412,673		3,413,185
	3,413,134		3,413,349		3,412,662		3,412,654		3,412,731		3,413,555
	3,413,154	31	: 3,413,620		3,412,710		3,412,677		3,412,781	53	: 3,412,523
	3,413,178	33	: 3,412,417		3,412,718		3,412,684		3,412,797		3,413,177
	3,413,182		3,413,051		3,412,736		3,412,688		3,412,850		3,413,192
	3,413,404		3,413,585		3,412,745		3,412,699		3,412,888		3,412,835
	3,413,409	34	: 3,412,406		3,412,751		3,412,707		3,412,906	54	: 3,413,094
	3,413,410		3,412,407		3,412,752		3,412,738		3,412,911		3,413,144
	3,413,442		3,412,427		3,412,767		3,412,759		3,412,939		3,413,253
	3,413,484		3,412,431		3,412,821		3,412,761		3,412,971		3,413,350
	3,413,515		3,412,445		3,412,826		3,412,771		3,412,983		3,413,390
	3,413,531		3,412,467		3,412,827		3,412,772		3,413,069	55	: 3,412,537
	3,413,583		3,412,504		3,412,832		3,412,773		3,413,108		3,412,605
	3,413,586		3,412,548		3,412,834		3,412,796		3,413,132		3,412,758
	3,413,631		3,412,567		3,412,838		3,412,824		3,413,148		3,412,853



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U.S. DEPARTMENT OF COMMERCE  
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

November 26, 1968

Volume 856

Number 4

TRADEMARKS  
NOTICES

## Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

**Reg. No. 121,818** (DESIGN OF MR. PEANUT), Planters Nut & Chocolate Co., Salted peanuts and peanut bars; **Reg. No. 123,641** (PLANTERS AND DESIGN), same, Salted peanuts, peanut bars, raw peanuts, peanut-butter, peanut-meal, chocolate cream candy, nut-candy, chocolate candy, and peanut-candy; **Reg. No. 237,024** (GROTESQUE FIGURE OF A PEANUT MAN), same, Chocolate-covered peanuts; **Reg. No. 508,052** (MR. PEANUT AND DESIGN OF PEANUT MAN), same, Salted peanuts, peanut candy, chocolate covered peanuts, and salted assorted nuts, and peanut oil for cooking purposes; **Reg. No. 526,962** (DESIGN OF MR. PEANUT), same, Peanut oil for medicinal purposes; **Reg. No. 536,518**, same, Plastic salt and pepper shakers; **Reg. No. 528,882** ("MR. PEANUT"), same, Salted shelled peanuts, potato chips, candied and buttered pop corn and doughnuts; **Reg. No. 799,958** (MR. PEANUT AND DESIGN), Standard Brands Incorporated, Shelled nuts, candy, peanut bars, peanut butter and peanut oil; **Reg. No. 206,415** (MR. PEANUT), The Planters Nut and Chocolate Company, Candy, salted peanuts, peanut meal, peanut butter and candied peanuts; **Reg. No. 526,963** (MR. PEANUT AND DESIGN), same, Peanut oil for medicinal purposes; **Reg. No. 222,961** (PLANTERS JUMBO BLOCK), same, Peanut-candy bar; **Reg. No. 315,261** (PLANT-

ERS "HI-HAT"), Planters Edible Oil Company, Edible oils for salads and for cooking purposes; **Reg. No. 319,615** ("PLANTERS" AND DESIGN), Planters Nut and Chocolate Co., Salted peanuts; **Reg. No. 322,461** (PLANTERS), same, Roasted peanuts, raw peanuts, salted peanuts, peanut butter, peanut meal; candy and peanut confections—namely, peanut candy bars, chocolate coated peanuts, and chocolate coated peanut candy bars; **Reg. No. 528,074**, same, Shelled and salted peanuts, salted mixed nuts, peanut butter sandwiches, potato chips, candied and buttered popped popcorn, and doughnuts; **Reg. No. 706,102**, same, Edible peanut oil, filed May 6, 1968, D.C.N.J. (Camden), Doc. 436-68, *Standard Brands Incorporated v. Solomon Gelnik*. Consent decree for permanent injunction, Aug. 2, 1968.

**Reg. No. 123,641.** (See Reg. No. 121,818.)

**Reg. No. 133,143** (KITCHENAID), The Hobart Manufacturing Company, Electrically driven beating and mixing machines; **Reg. No. 167,175**, same, Brushes designed for household use, including brushes for washing dishes, glassware, bottles, percolators, and like utensils; **Reg. No. 234,988**, same, Oil droppers, food choppers, coffee mills and cereal grinders, fruit-juice extractors, and vegetable slicers; **Reg. No. 235,207**, same, Ice cream freezers; **Reg. No. 549,810**, same, Electric dishwashers; **Reg. No. 610,242**, same, Dishwashers and dishwasher sinks, metal mixing bowls, bowl covers, pouring chutes, colanders and sieves, and parts therefor; **Reg.**

## CONDITION OF TRADEMARK APPLICATIONS AS OF SEPTEMBER 30, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]..... 15,450  
Date of oldest new application..... November 17, 1967  
Date of oldest amended application (filing date)..... January 5, 1965

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B.....	2-9-68	5-3-66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200.....	12-1-67	10-18-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36.....	11-17-67	10-20-65
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107.....	11-27-67	1-5-65
Renewals (All Classes).....	8-19-68	
Sec. 12(c) Publications (All Classes).....	8-26-68	

Applications filed during the month of September 1968—2,238

Registrations Issued ..... 449—No. 860,756 to No. 861,204  
Renewals Issued ..... 100

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price \$12.00 per annum, foreign mailing \$4.00 additional; single copies, 25 cents each.

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TM 856 O.G.—7

TM 137



No. 610,772, same, Aprons; Reg. No. 611,638, same, Buffing wheels and grinding and knife-sharpening wheels; Reg. No. 614,411, same, Glass culinary equipment—namely, bowls, mixing bowls, and containers for receiving ground coffee; Reg. No. 615,734, same, Graduated measures for ground coffee and devices for feeding fluids to foodstuffs at a controlled rate—namely, droppers for oils, fruit juices, flavoring extracts, and the like; Reg. No. 672,776, same, Serving scrapers with blades of rubber-like material; Reg. No. 811,987, same, Food waste disposers, filed Sept. 4, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68-1484-IH, *The Hobart Manufacturing Company v. Kitchen Maid Mfg., Inc.*

Reg. No. 167,175. (See Reg. No. 133,143.)

Reg. No. 206,415. (See Reg. No. 121,818.)

Reg. No. 222,961. (See Reg. No. 121,818.)

Reg. No. 234,988. (See Reg. No. 133,143.)

Reg. No. 235,207. (See Reg. No. 133,143.)

Reg. No. 237,034. (See Reg. No. 121,818.)

Reg. No. 315,261. (See Reg. No. 121,818.)

Reg. No. 319,615. (See Reg. No. 121,818.)

Reg. No. 322,461. (See Reg. No. 121,818.)

Reg. No. 508,032. (See Reg. No. 121,818.)

Reg. No. 526,962. (See Reg. No. 121,818.)

Reg. No. 526,963. (See Reg. No. 121,818.)

Reg. No. 528,074. (See Reg. No. 121,818.)

Reg. No. 536,518. (See Reg. No. 121,818.)

Reg. No. 538,882. (See Reg. No. 121,818.)

Reg. No. 549,810. (See Reg. No. 133,143.)

Reg. No. 610,242. (See Reg. No. 133,143.)

Reg. No. 610,772. (See Reg. No. 133,143.)

Reg. No. 611,638. (See Reg. No. 133,143.)

Reg. No. 614,411. (See Reg. No. 133,143.)

Reg. No. 615,734. (See Reg. No. 133,143.)

Reg. No. 672,776. (See Reg. No. 133,143.)

Reg. No. 706,102. (See Reg. No. 121,818.)

Reg. No. 724,686 (PERMCO), Precision Metal Fabricators Co., Metal forms used in the pouring of concrete, filed Sept. 4, 1968, D.C., N.D. Ohio (Cleveland), Doc. 68-654, *Permco Corporation v. Industrial Metal Services, Inc. and Service Station Equip. Co., Inc.*

Reg. No. 740,467 (SADDLEGUN), Ithaca Gun Company, Inc., Guns, filed Aug. 22, 1968, D.C., N.D.N.Y. (Utica), Doc. 68-CV-280, *Ithaca Gun Company, Inc. v. Charles G. Greco and Professional Industries, Inc.*

Reg. No. 799,958. (See Reg. No. 121,818.)

Reg. No. 811,987. (See Reg. No. 133,143.)

## MARKS PUBLISHED FOR OPPOSITION

### SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105. A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 256,568. Lit-Ning Products Company, Beverly Hills, Calif. Filed Oct. 17, 1966. Grinding Machines; Cutters, Shaving Tools for Gears; Lapping Tools, and Holders Therefor (Int. Cl. 7).



Owner of Reg. No. 599,974.

#### Class 2—Receptacles

For Storage Bins, Storage Trays, Filing Boxes, Waste Baskets, and Portable Carrying Files (Int. Cl. 16).

#### Class 25—Locks and Safes

For Strong Boxes, Cash Boxes, Check Files, and Coin Boxes, All in the Nature of a Safe (Int. Cl. 6).

#### Class 32—Furniture and Upholstery

For Office Equipment—Namely, Literature, Card and Display Racks; Stationery Holders; Storage Cabinets; Copy Holders; Message Racks; Filing Cabinets and Filing Shelves (Int. Cl. 20).

First use in or before August 1961.

SN 260,697. Chemap AG, Mannedorf, Zurich, Switzerland. Filed Dec. 14, 1966.



#### Class 26—Measuring and Scientific Appliances

For Pneumatically Driven Instruments for Process Control—Namely, Pneumatic Thermostats and Programme Cycle Controllers, Flow Meters, and Power Operated Vibration Liquid Stirrers (Int. Cl. 9).

#### Class 31—Filters and Refrigerators

For Self-Cleaning Closed-System Filter Apparatus for Use in the Textile, Paper, Chemical, and Pharmaceutical Industries (Int. Cl. 11).

First use June 1957; in commerce March 1959.

SN 264,632. Lear Siegler, Inc., Santa Monica, Calif., assignee of National Broach and Machine Co., Detroit, Mich. Filed Feb. 14, 1967.



The drawing is lined for the color red. Owner of Reg. Nos. 356,073, 357,504, and others.

#### Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Machines and Tools for Gear and Spline Production—Namely, Machines for Finishing, Shaving and Lapping Gears;

#### Class 26—Measuring and Scientific Appliances

For Measuring, Checking, and Testing Equipment for Gears and Splines—Namely, Machines for Checking Gears; Gauges and Machines for Sound Testing Gears (Int. Cl. 9).

First use Jan. 10, 1967; 1956 in another form.

SN 266,124. Weathermeasure Corporation, Sacramento, Calif., assignee of Aerojet-General Corporation, El Monte, Calif. Filed Mar. 7, 1967.

## WEATHER MEASURE

#### Class 21—Electrical Apparatus, Machines, and Supplies

For Radio Transponders (Int. Cl. 9).

#### Class 26—Measuring and Scientific Appliances

For Meteorological Instruments—Namely, Remote Recording Rain Gages, Remote Recording Heated Snow Gages, Solar Radiation Recorders, Wind Vanes, Air Meters, Anemometers, Hygrothermographs, Barographs, Thermographs, and Psychrometers (Int. Cl. 9).

First use Nov. 9, 1965.

SN 269,410. Joh. Friedrich Behrens, Ahrensburg/Holstein, Germany. Filed Apr. 18, 1967.

## BEA

Priority claimed under Sec. 44(d) on German application filed Oct. 20, 1966; Reg. No. 827,032, dated Dec. 7, 1968.

#### Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Staples, Nails, and Tacks (Int. Cl. 6).

#### Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Pneumatic Stapling, Nailing and Tackling Machines, and Parts Thereof (Int. Cl. 7).

SN 273,808. The Thomas & Betts Co., Elizabeth, N.J. Filed June 13, 1967.



No registration rights are claimed herein for the word "Engineered" apart from the mark as shown in the drawing; but the applicant waives none of its common law rights in said mark or any feature thereof. The mark is lined for the color red or pink, however, color is not claimed as a distinctive feature of the mark. Owner of Reg. Nos. 517,396, 524,097, and 528,237.

#### Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Hydraulic and Pneumatic Hose Connectors and Fittings (Int. Cl. 6).



**Class 15—Oils and Greases**

For Hydraulic Oil (Int. Cl. 4).

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Electrical Raceway Parts, Fittings, Connectors and Supports; Electrical Cable and Cord Parts, Fittings, Connectors and Supports; Floor Boxes, Floor Outlets, Parts and Fittings; Bus Bar Parts and Fittings; Cable Bundling and Harnessing Straps, Parts, Markers and Supports; Terminal Connectors, Insulators, Adaptors, Parts; Connector and Terminal Blocks and Parts Thereof; Joint Compound for Establishing and Maintaining Electrical Conductivity Between Conductors and Conduit and Terminals, Connectors and Fittings (Int. Cl. 9).

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Electrical Raceway Cutting, Shaping, Bending, Forming, Installing and Maintaining Tools; Electrical Cable and Cord Cutting, Shaping, Bending, Forming, Stripping, Splicing, Fishing and Maintaining Tools and Dies; Terminal and Connector Applying and Installing Tools and Dies; Cable Bundling and Harnessing Strap Applying, Tensioning and Cutting Tools; Plastic and Rubber Cutting Tools and Parts Thereof; Metal Cutting and Reaming Tools and Parts Thereof; Dies; Electrically and Pneumatically Operated Hydraulic Pumps and Heads; Tool Kits Consisting Essentially of Cable Pulling, Cutting, and Connector and Terminal Installing Tools; Linemen's Accessories Consisting Essentially of Heavy Duty Cable Cutting, Bending and Installing Tools; Automatic Splicing Units for Splicing Electrical Cables; Portable Tool Stands and Supports; Electrical and Pneumatic Remote Control Units for Operating Hydraulically Operated Tools (Int. Cls. 7 and 8).

**Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires**

For Hydraulic Hose Assemblies; Hydraulic and Pneumatic Pump Seals (Int. Cl. 17).

First use not later than May 1961.

SN 273,809. The Thomas &amp; Betts Co., Elizabeth, N.J. Filed June 13, 1967.



No registration rights are claimed herein for the word "Engineered" apart from the mark as shown in the drawing; but the applicant waives none of its common law rights in said mark or any feature thereof. Owner of Reg. Nos. 517,396, 524,097, and 528,237.

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For Hydraulic Oil (Int. Cl. 4).

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Electrical Raceway Parts, Fittings, Connectors and Supports; Electrical Cable and Cord Parts, Fittings, Connectors and Supports; Floor Boxes, Floor Outlets, Parts and Fittings; Bus Bar Parts and Fittings; Cable Bundling and Harnessing Straps, Parts, Markers and Supports; Terminal

Connectors, Insulators, Adaptors, Parts; Connector and Terminal Blocks and Parts Thereof; Joint Compound for Establishing and Maintaining Electrical Conductivity Between Conductors and Conduit and Terminals, Connectors and Fittings (Int. Cl. 9).

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Electrical Raceway Cutting, Shaping, Bending, Forming, Installing and Maintaining Tools; Electrical Cable and Cord Cutting, Shaping, Bending, Forming, Stripping, Splicing, Fishing and Maintaining Tools and Dies; Terminal and Connector Applying and Installing Tools and Dies; Cable Bundling and Harnessing Strap Applying, Tensioning and Cutting Tools; Plastic and Rubber Cutting Tools and Parts Thereof; Metal Cutting and Reaming Tools and Parts Thereof; Dies; Electrically and Pneumatically Operated Hydraulic Pumps and Heads; Tool Kits Consisting Essentially of Cable Pulling, Cutting, and Connector and Terminal Installing Tools; Linemen's Accessories Consisting Essentially of Heavy Duty Cable Cutting, Bending and Installing Tools; Automatic Splicing Units for Splicing Electrical Cables; Portable Tool Stands and Supports; Electrical and Pneumatic Remote Control Units for Operating Hydraulically Operated Tools (Int. Cls. 7 and 8).

**Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires**

For Hydraulic Hose Assemblies; Hydraulic and Pneumatic Pump Seals (Int. Cl. 17).

First use not later than May 1961.

SN 273,810. The Thomas &amp; Betts Co., Elizabeth, N.J. Filed June 13, 1967.



The drawing is lined for the color red or pink, but color is not claimed as a distinctive feature of the mark. No registration rights are claimed herein for the word "Engineered" apart from the mark as shown in the drawing; but the applicant waives none of its common law rights in said mark or any feature thereof. Owner of Reg. Nos. 517,396, 524,097, and 528,237.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Hydraulic and Pneumatic Hose Connectors and Fittings (Int. Cl. 6).

**Class 15—Oils and Greases**

For Hydraulic Oil (Int. Cl. 4).

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Electrical Raceway Parts, Fittings, Connectors and Supports; Electrical Cable and Cord Parts, Fittings, Connectors and Supports; Floor Boxes, Floor Outlets, Parts and Fittings; Bus Bar Parts and Fittings; Cable Bundling and Harnessing Straps, Parts, Markers and Supports; Terminal Connectors, Insulators, Adaptors, Parts; Connector and Terminal Blocks and Parts Thereof; Joint Compound for Establishing and Maintaining Electrical Conductivity Between Conductors and Conduit and Terminals, Connectors and Fittings (Int. Cl. 9).

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

SN 273,875. Dennison Manufacturing Company, Framingham, Mass. Filed June 14, 1967.

For Electrical Raceway Cutting, Shaping, Bending, Forming, Installing and Maintaining Tools; Electrical Cable and Cord Cutting, Shaping, Bending, Forming, Stripping, Splicing, Fishing and Maintaining Tools and Dies; Terminal and Connector Applying and Installing Tools and Dies; Cable Bundling and Harnessing Strap Applying, Tensioning and Cutting Tools; Plastic and Rubber Cutting Tools and Parts Thereof; Metal Cutting and Reaming Tools and Parts Thereof; Dies; Electrically and Pneumatically Operated Hydraulic Pumps and Heads; Tool Kits Consisting Essentially of Cable Pulling, Cutting, and Connector and Terminal Installing Tools; Linemen's Accessories Consisting Essentially of Heavy Duty Cable Cutting, Bending and Installing Tools; Automatic Splicing Units for Splicing Electrical Cables; Portable Tool Stands and Supports; Electrical and Pneumatic Remote Control Units for Operating Hydraulically Operated Tools (Int. Cls. 7 and 8).

**Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires**

For Hydraulic Hose Assemblies; Hydraulic and Pneumatic Pump Seals (Int. Cl. 17).

First use not later than May 1961.

SN 273,811. The Thomas &amp; Betts Co., Elizabeth, N.J. Filed June 13, 1967.

**T & B**

Owner of Reg. Nos. 517,396, 524,097, and 528,237.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Hydraulic and Pneumatic Hose Connectors and Fittings (Int. Cl. 6).

**Class 15—Oils and Greases**

For Hydraulic Oil (Int. Cl. 4).

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Electrical Raceway Parts, Fittings, Connectors and Supports; Electrical Cable and Cord Parts, Fittings, Connectors and Supports; Floor Boxes, Floor Outlets, Parts and Fittings; Bus Bar Parts and Fittings; Cable Bundling and Harnessing Straps, Parts, Markers and Supports; Terminal Connectors, Insulators, Adaptors, Parts; Connector and Terminal Blocks and Parts Thereof; Joint Compound for Establishing and Maintaining Electrical Conductivity Between Conductors and Conduit and Terminals, Connectors and Fittings (Int. Cl. 9).

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Electrical Raceway Cutting, Shaping, Bending, Forming, Installing and Maintaining Tools; Electrical Cable and Cord Cutting, Shaping, Bending, Forming, Stripping, Splicing, Fishing and Maintaining Tools and Dies; Terminal and Connector Applying and Installing Tools and Dies; Cable Bundling and Harnessing Strap Applying, Tensioning and Cutting Tools; Plastic and Rubber Cutting Tools and Parts Thereof; Metal Cutting and Reaming Tools and Parts Thereof; Dies; Electrically and Pneumatically Operated Hydraulic Pumps and Heads; Tool Kits Consisting Essentially of Cable Pulling, Cutting, and Connector and Terminal Installing Tools; Linemen's Accessories Consisting Essentially of Heavy Duty Cable Cutting, Bending and Installing Tools; Automatic Splicing Units for Splicing Electrical Cables; Portable Tool Stands and Supports; Electrical and Pneumatic Remote Control Units for Operating Hydraulically Operated Tools (Int. Cls. 7 and 8).

**Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires**

For Hydraulic Hose Assemblies; Hydraulic and Pneumatic Pump Seals (Int. Cl. 17).

First use on or about Oct. 1, 1962.



Owner of Reg. No. 777,373.

**Class 6—Chemicals and Chemical Compositions**

For Electrophotographic Liquid Electrostatic Image Developers for Use in Electrostatic Copying Machines (Int. Cl. 1).

**Class 37—Paper and Stationery**

For Copying Paper for Use in Electrostatic Copying Machines (Int. Cl. 16).

First use Jan. 8, 1964.

SN 276,380. Screen Gems, Inc., New York, N.Y. Filed July 20, 1967.



Owner of Reg. No. 629,594.

**Class 2—Receptacles**

For Lunch Kits Consisting of Vacuum Bottles Made of Metal and/or Plastic (Int. Cl. 21).

First use Mar. 20, 1967.

**Class 22—Games, Toys, and Sporting Goods**

For Toy Non-Motorized Wheel Goods Such as Unicycles, Bicycles and Tricycles, Slot-Racing Model Car and Trailer Kits; Toy Musical Instruments, Musical Toys, Puppets, Toy and Stuffed Animals, Toy Key Chains; and Equipment (or Apparatus) Sold as a Unit for Playing a Board Game or Similar Type of Parlor Game (Int. Cl. 28).

First use Sept. 22, 1966.

**Class 26—Measuring and Scientific Appliances**

For Sunglasses (Int. Cl. 9).

First use Feb. 1, 1967.

**Class 39—Clothing**

For Men's and Boys' Socks, Sneakers, Knitted Cotton Sweat Shirts and T-Shirts; and Girls' Coordinated Slacks, Shirts, and Jackets (Int. Cl. 25).

First use Dec. 12, 1966.

SN 275,044. The Thomas &amp; Betts Co., Elizabeth, N.J. Filed Aug. 10, 1967.



Owner of Reg. Nos. 517,396, 524,097, and 528,237.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Hydraulic and Pneumatic Hose Connectors and Fittings (Int. Cl. 6).



**Class 15—Oils and Greases**

For Hydraulic Oil (Int. Cl. 4).

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Electrical Raceway Parts, Fittings, Connectors and Supports; Electrical Cable and Cord Parts, Fittings, Connectors and Supports; Floor Boxes, Floor Outlets, Parts and Fittings; Bus Bar Parts and Fittings; Cable Bundling and Harnessing Straps, Parts, Markers and Supports; Terminal Connectors, Insulators, Adaptors, Parts; Connector and Terminal Blocks and Parts Thereof; Joint Compound for Establishing and Maintaining Electrical Conductivity Between Conductors and Conduit and Terminals, Connectors and Fittings (Int. Cl. 9).

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Electrical Raceway Cutting, Shaping, Bending, Forming, Installing and Maintaining Tools; Electrical Cable and Cord Cutting, Shaping, Bending, Forming, Stripping, Splicing, Fishing and Maintaining Tools and Dies; Terminal and Connector Applying and Installing Tools and Dies; Cable Bundling and Harnessing Strap Applying, Tensioning and Cutting Tools; Plastic and Rubber Cutting Tools and Parts Thereof; Metal Cutting and Reaming Tools and Parts Thereof; Dies; Electrically and Pneumatically Operated Hydraulic Pumps and Heads; Tool Kits Consisting Essentially of Cable Pulling, Cutting, and Connector and Terminal Installing Tools; Linemen's Accessories Consisting Essentially of Heavy Duty Cable Cutting, Bending and Installing Tools; Automatic Splicing Units for Splicing Electrical Cables; Portable Tool Stands and Supports; Electrical and Pneumatic Remote Control Units for Operating Hydraulically Operated Tools (Int. Cls. 7 and 8).

**Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires**

For Hydraulic Hose Assemblies; Hydraulic and Pneumatic Pump Seals (Int. Cl. 17).  
First use on or about Nov. 1, 1966.

SN 279,719. Corl International Corporation, Bremen, Ind.  
Filed Sept. 6, 1967.

**CORLGLAS****Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Bath Tubs and Vanities Designed for Use in Conjunction With Plumbing Fixtures (Int. Cl. 11).

**Class 19—Vehicles**

For Rigid Fiber Glass Tops and Ends for Trailers of the Camper and Mobile Home Type, and Lifting Arms for Such Tops and for Tents of Such Trailers (Int. Cl. 12).  
First use Oct. 27, 1966.

SN 280,767. Compagnie Industrielle de Textiles Artificiels et Synthétiques, Paris, France. Filed Sept. 20, 1967.

**OCTA**

Priority claimed under Sec. 44(d) on French Reg. No. 723,868, dated Mar. 21, 1967.

**Class 1—Raw or Partly Prepared Materials**

For Fibers and Filaments of Any Nature and Particularly of Regenerated Cellulose (Int. Cl. 22).

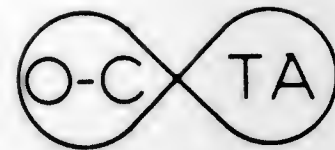
**Class 39—Clothing**

For Men's, Women's, and Children's Underwear, Shirts, Jackets, Trousers, Collars, Cuffs, Blouses, Dresses, Coats, Swimsuits, Corsets, Lingerie, Gloves, Hosiery, and Shoes (Int. Cl. 25).

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

For Fabrics of Regenerated Cellulose Fibers (Int. Cl. 24).

SN 280,768. Compagnie Industrielle de Textiles Artificiels et Synthétiques, Paris, France. Filed Sept. 20, 1967.



Priority claimed under Sec. 44(d) on French Reg. No. 723,866, dated Mar. 21, 1967.

**Class 1—Raw or Partly Prepared Materials**

For Fibers and Filaments of Any Nature and Particularly of Regenerated Cellulose (Int. Cl. 22).

**Class 39—Clothing**

For Men's, Women's, and Children's Underwear, Shirts, Jackets, Trousers, Collars, Cuffs, Blouses, Dresses, Coats, Swimsuits, Corsets, Lingerie, Gloves, Hosiery, and Shoes (Int. Cl. 25).

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

For Fabrics of Regenerated Cellulose Fibers (Int. Cl. 24).

SN 281,238. The Thomas & Betts Co., Elizabeth, N.J. Filed Sept. 26, 1967.

**T&B**

Owner of Reg. Nos. 517,396, 524,097, and 528,237.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Hydraulic and Pneumatic Hose Connectors and Fittings (Int. Cl. 6).

**Class 15—Oils and Greases**

For Hydraulic Oil (Int. Cl. 4).

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Electrical Raceway Parts, Fittings, Connectors and Supports; Electrical Cable and Cord Parts, Fittings, Connectors and Supports; Floor Boxes, Floor Outlets, Parts and Fittings; Bus Bar Parts and Fittings; Cable Bundling and Harnessing Straps, Parts, Markers and Supports; Terminal Connectors, Insulators, Adaptors, Parts; Connector and Terminal Blocks and Parts Thereof; Joint Compound for Establishing and Maintaining Electrical Conductivity Between Conductors and Conduit and Terminals, Connectors and Fittings (Int. Cl. 9).

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Electrical Raceway Cutting, Shaping, Bending, Forming, Installing and Maintaining Tools; Electrical Cable and Cord Cutting, Shaping, Bending, Forming, Stripping, Splicing, Fishing and Maintaining Tools and Dies; Terminal and Connector Applying and Installing Tools and Dies; Cable Bundling and Harnessing Strap Applying, Tensioning and Cutting Tools; Plastic and Rubber Cutting Tools and Parts Thereof; Metal Cutting and Reaming Tools and Parts Thereof; Dies; Electrically and Pneumatically Operated Hydraulic Pumps

and Heads; Tool Kits Consisting Essentially of Cable Pulling, Cutting, and Connector and Terminal Installing Tools; Linemen's Accessories Consisting Essentially of Heavy Duty Cable Cutting, Bending and Installing Tools; Automatic Splicing Units for Splicing Electrical Cables; Portable Tool Stands and Supports; Electrical and Pneumatic Remote Control Units for Operating Hydraulically Operated Tools (Int. Cls. 7 and 8).

**Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires**

For Hydraulic Hose Assemblies; Hydraulic and Pneumatic Pump Seals (Int. Cl. 17).  
First use in or about November 1965.

SN 284,172. Dominique France, Inc., New York, N.Y. Filed Nov. 6, 1967.

**CHARVET**

Owner of Reg. Nos. 425,728, 689,945, and others.

**Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks**

For Empty Toilet Kits, Wallets, and Luggage (Int. Cl. 18).

**Class 28—Jewelry and Precious-Metal Ware**

For Jewelry (Int. Cl. 14).

**Class 39—Clothing**

For Men's Ties, Mufflers, Handkerchiefs, Shirts (Both Sport and Dress), Jackets, Slacks, Hats, Sweaters, Socks, Suspenders, Belts, Shoes, Slippers, Underwear, Pajamas, Robes, Gloves, and Raincoats (Int. Cl. 25).

**Class 41—Canes, Parasols, and Umbrellas**

For Umbrellas (Int. Cl. 18).

First use 1924.

SN 284,173. Dominique France, Inc., New York, N.Y. Filed Nov. 6, 1967.

**CHARVET ET FILS**

Owner of Reg. Nos. 425,728, 689,945, and others.

**Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks**

For Empty Toilet Kits, Wallets, and Luggage (Int. Cl. 18).

**Class 28—Jewelry and Precious-Metal Ware**

For Jewelry (Int. Cl. 14).

**Class 39—Clothing**

For Men's Ties, Mufflers, Handkerchiefs, Shirts (Both Sport and Dress), Jackets, Slacks, Hats, Sweaters, Socks, Suspenders, Belts, Shoes, Slippers, Underwear, Pajamas, Robes, Gloves, and Raincoats (Int. Cl. 25).

**Class 41—Canes, Parasols, and Umbrellas**

For Umbrellas (Int. Cl. 18).

**Class 51—Cosmetics and Toilet Preparations**

For Cologne (Int. Cl. 3).

First use 1924.

SN 286,023. Mipro Metal Products Company, South San Francisco, Calif. Filed Dec. 1, 1967.

**MIPRO****Class 2—Receptacles**

For Vinyl Liners for Waste Receptacles (Int. Cl. 20).

**Class 39—Clothing**

For Vinyl Aprons (Int. Cl. 25).

First use April 1962.

SN 286,503. Clark Paper Converting Corp., South El Monte, Calif. Filed Dec. 8, 1967.

**ARMDOR**

Owner of Reg. Nos. 636,182, 649,544, and 739,911.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Paper Toilet Seat Cover Dispensers (Int. Cl. 6).  
First use Oct. 20, 1967.

**Class 37—Paper and Stationery**

For Paper Toilet Seat Covers (Int. Cl. 16).  
First use Sept. 29, 1967.

SN 286,504. Clark Paper Converting Corp., South El Monte, Calif. Filed Dec. 8, 1967.

**PELDOR**

Owner of Reg. Nos. 636,182, 649,544, and 739,911.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Paper Toilet Seat Cover Dispensers (Int. Cl. 6).  
First use Oct. 23, 1967.

**Class 37—Paper and Stationery**

For Paper Toilet Seat Covers (Int. Cl. 16).  
First use Sept. 29, 1967.

SN 289,937. Grayco Enterprises Ltd., Montreal, Quebec, Canada. Filed Jan. 31, 1968.

**THE BOBO HUT**

Priority claimed under Sec. 44(d) on Canadian application filed Aug. 3, 1967; Reg. No. 157,748, dated July 26, 1968.

**Class 46—Foods and Ingredients of Foods**

For Gourmet Dishes—Namely, Meat Balls With Assorted Ingredients (Int. Cl. 29).

**Class 100—Miscellaneous**

For Restaurant Services (Int. Cl. 42).

SN 290,556. Bunnell Plastics, Inc., Camden, N.J. Filed Feb. 8, 1968.

**Class 1—Raw or Partly Prepared Materials**

For Plastic Tubing, Rods, Profiles, and Strips (Int. Cl. 17).



**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Plastic Machined Parts—Namely, Bearings, Bushings, Sliding Blocks, Gears and Cams, for Use in Machinery, and Parts Thereof (Int. Cl. 7).

First use Dec. 21, 1967; Feb. 15, 1964, as to "Bunnell."

SN 293,070. Essex Wire Corporation, Fort Wayne, Ind. Filed Mar. 13, 1968.

**RBM**

Owner of Reg. Nos. 418,361, 703,856, and 777,763.

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Relays, Contactors, Solenoids, Electric Motor Starting Controls, and Overvoltage Protection Controls (Int. Cl. 9).

**Class 26—Measuring and Scientific Appliances**

For Electrical Time Delay Controls (Int. Cl. 9).

First use Mar. 2, 1964.

SN 293,771. Textron Inc., Providence, R.I. Filed Mar. 21, 1968.

**TWISTON**

Owner of Reg. Nos. 691,261, 747,268, and 764,652.

**Class 27—Horological Instruments**

For Watches (Int. Cl. 14).  
First use Mar. 7, 1968.

**Class 28—Jewelry and Precious-Metal Ware**

For Bracelets, Including Watch Bracelets (Int. Cl. 14).  
First use Mar. 26, 1963.

SN 297,332. The Villager, Inc., Philadelphia, Pa. Filed May 6, 1968.

**THE VILLAGER**

Owner of Reg. Nos. 702,965, 841,021, and others.

**Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks**

For Handbags, Beach Bags, and Tote Bags (Int. Cl. 18).  
First use at least as early as spring 1964.

**Class 39—Clothing**

For Wearing Apparel—Namely, Belts; Blazers; Blouses; Coats; Culottes; Cummerbunds; Dickies; Dresses; Dress Ensembles, Namely, Skirts and Blouses, Blouses and Slacks; Sweaters and Slacks; Sweaters and Skirts, and Blazer and Skirt Sets; Hats; Hosiery; Jackets; Kerchiefs; Kilts; Knitwear, Namely, Culottes, Dresses, Hosiery, Pullovers, Shells, Shirts, and Tights; Lingerie; Nightwear, Namely, Nightgowns, Pajamas, and Nightrobes; Neckwear; Pant-Dresses and Pant-Skirts; Raincoats; Sashes; Shells; Shirts; Skirts; Slacks; Shorts; Suits; Suspenders; Sweaters; Shoes; Swimwear, Namely, Beachrobes, Beach Cover-Ups, Beach Dresses, Beach Shirts, Swim Dresses, and Swimsuits; and Vests (Int. Cl. 25).

First use at least as early as June 1, 1956.

SN 300,774. Bercy Industries, Inc., Venice, Calif. Filed June 19, 1968.

**GO LIGHTLY****Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks**

For Travel Cases (Int. Cl. 18).

**Class 32—Furniture and Upholstery**

For Portable Mirrors (Int. Cl. 20).

First use June 16, 1966.

SN 303,465. Giffen Industries, Inc., Miami, Fla. Filed July 24, 1968.

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Seaming Irons (Int. Cl. 17).  
First use May 3, 1968.

**Class 40—Fancy Goods, Furnishings, and Notions**

For Carpet Seaming Tapes (Int. Cl. 9).  
First use May 22, 1968.

SN 304,174. Ashland Oil & Refining Company, Ashland, Ky. Filed Aug. 2, 1968.

**ASHLAND**

Owner of Reg. Nos. 558,675, 840,704, and others.

**Class 1—Raw or Partly Prepared Materials**

For Synthetic Latex and Synthetic Rubber (Int. Cl. 17).  
First use Mar. 27, 1968.

**Class 6—Chemicals and Chemical Compositions**

For Carbon Black (Int. Cl. 1).  
First use Mar. 7, 1968.

SN 304,175. Ashland Oil & Refining Company, Ashland, Ky. Filed Aug. 2, 1968.



Owner of Reg. Nos. 558,675, 840,704, and others.

**Class 1—Raw or Partly Prepared Materials**

For Synthetic Latex and Synthetic Rubber (Int. Cl. 17).  
First use Mar. 27, 1968.

**Class 6—Chemicals and Chemical Compositions**

For Carbon Black (Int. Cl. 1).  
First use Mar. 7, 1968.

SN 304,850. Armour-Dial, Inc., Chicago, Ill. Filed Aug. 12, 1968.

**GREENBACK GIRL****Class 6—Chemicals and Chemical Compositions**

For Spray Sizing for Textile Fabrics (Int. Cl. 1).

**Class 51—Cosmetics and Toilet Preparations**

For Personal Deodorant (Int. Cl. 5).

First use on or prior to May 17, 1968.

**SECTION 2**

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

**Class 1—Raw or Partly Prepared Materials**

SN 271,755. Pacific Vegetable Oil Corporation, San Francisco, Calif. Filed May 18, 1967.

**SAFFHI 165**

Owner of Reg. Nos. 664,151, 775,995, and others.  
For Agricultural Planting Seeds (Int. Cl. 31).  
First use Nov. 1, 1966.

SN 271,826. Pacific Vegetable Oil Corporation, San Francisco, Calif. Filed May 18, 1967.

**SAFFHI 161**

Owner of Reg. Nos. 664,151, 775,995, and others.  
For Agricultural Planting Seeds (Int. Cl. 31).  
First use Nov. 1, 1966.

SN 281,228. Societe Rhodiaceta, Paris, France. Filed Sept. 26, 1967.

**BIDIM**

Owner of French Reg. No. 702,575, dated Dec. 2, 1965.  
For Crude and Partly Prepared Materials—Namely, Kapok, Fibers, Feathers, Batting, Upholstery Padding in Uncontaminated Sheets, Foam Rubber Sheets, Leather, Imitation Leather, Animal Skins, Asbestos, Mica, and Plastic Tubing, for General Use in the Industrial Arts (Int. Cls. 17, 18 and 22).

SN 285,582. SCM Corporation, Cleveland, Ohio. Filed Nov. 24, 1967.

**MACCO**

Owner of Reg. Nos. 646,968, 742,536, and 758,262.  
For Resinous Compositions for Use Primarily in the Industrial Arts—Namely, Reactive Resinous Monomers, Both Solvent-Free and in Organic Solutions, Reactive Formaldehyde Resins and Acrylic Resins in Organic Solution, and Aqueous Latex Solutions or Dispersions (Int. Cl. 1).  
First use Sept. 1, 1967.

SN 290,822. Carlee Corporation, Northvale, N.J. Filed Feb. 12, 1968.



For Wadding of Synthetic Materials or Staple Fiber Filling Material (Int. Cl. 22).  
First use Sept. 7, 1955.

SN 291,649. Tantalum Mining Corporation of Canada Limited, Toronto, Ontario, Canada. Filed Feb. 21, 1968.

**TANCO**

For Tantalum-Bearing Ores and Concentrates (Int. Cl. 6).  
First use Jan. 22, 1968; in commerce Jan. 22, 1968.

SN 293,335. Reichhold Chemicals, Inc., White Plains, N.Y. Filed Mar. 1, 1968.

**PLYACRYL**

Owner of Reg. Nos. 549,987, 815,687, and 825,147.  
For Acrylic Resin and Film for General Industrial Use (Int. Cls. 1 and 17).  
First use Feb. 13, 1968.

SN 303,098. Dow Badische Company, Williamsburg, Va. Filed July 19, 1968.

**ZEFRITE**

Owner of Reg. Nos. 647,642, 756,148, and others.  
For Acrylic Fiber (Int. Cl. 22).  
First use July 12, 1968.

SN 303,099. Dow Badische Company, Williamsburg, Va. Filed July 19, 1968.

**ZEFHUE**

Owner of Reg. Nos. 647,642, 756,148, and others.  
For Acrylic Fiber (Int. Cl. 22).  
First use July 12, 1968.

SN 303,100. Dow Badische Company, Williamsburg, Va. Filed July 19, 1968.

**ZEFTEST**

Owner of Reg. Nos. 647,642, 756,148, and others.  
For Acrylic Fiber (Int. Cl. 22).  
First use July 12, 1968.

SN 303,101. Dow Badische Company, Williamsburg, Va. Filed July 19, 1968.

**ZEFSPUN**

Owner of Reg. Nos. 647,642, 756,148, and others.  
For Acrylic Fiber (Int. Cl. 22).  
First use July 12, 1968.

SN 303,103. Dow Badische Company, Williamsburg, Va. Filed July 19, 1968.

**ZEFMATE**

Owner of Reg. Nos. 647,642, 756,148, and others.  
For Acrylic Fiber (Int. Cl. 22).  
First use July 12, 1968.

SN 303,107. Dow Badische Company, Williamsburg, Va. Filed July 19, 1968.

**ZEFCROWN**

Owner of Reg. Nos. 647,642, 756,148, and others.  
For Acrylic Fiber (Int. Cl. 22).  
First use July 12, 1968.



**Class 2 — Receptades**

SN 240,108. Motor City Paper Tube Company, Detroit, Mich.  
Filed Mar. 3, 1966.



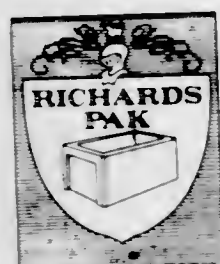
The configuration of the goods and the words "Round Containers" are disclaimed. Owner of Reg. No. 222,894.  
For Paper Cans, Mailing Tubes, Paper Cartons, Cases, and Discs (Int. Cl. 16).  
First use on or about May 26, 1926.

SN 248,254. Ritter Plaudler Corporation, Rochester, N.Y.  
Filed June 16, 1966.

**PFAUDLER**

Owner of Reg. No. 432,268.  
For Reactor Vessels for Industrial Chemical Reactions and Storage Vessels Made of Metal or Plastic Materials, or Metal Lined With Glass, Partially Crystallized Glass, Glass-Ceramic, Plastic, and Other Metals (Int. Cls. 6 and 20).  
First use prior to September 1921.

SN 258,151. A. A. Richards & Co., Inc., Mobile, Ala. Filed Nov. 7, 1966.



No claim is made to the representation of the container apart from the mark as shown. The drawing is lined for the color blue. Apart from the mark as shown, no claim is made to the term "Pak" in its sense as defining a container and descriptive of the goods.

For Storage and Shipping Containers for Foods Under Refrigeration, and Particularly of Expanded Polystyrene (Int. Cl. 20).  
First use about April 1966.

SN 255,033. International Paper Company, New York, N.Y.  
Filed Apr. 5, 1968.



Applicant disclaims the representation of the goods apart from the mark.  
For Boxes and Containers Made From Corrugated Paper-board (Int. Cl. 16).  
First use Oct. 24, 1967.

SN 299,321. The Bomar Company, Inc., Squantum, Mass.  
Filed May 29, 1968.

**SANI-SIPPER**

Owner of Reg. Nos. 772,107 and 792,869.  
For Plastic Training Cups for Infants (Int. Cl. 21).  
First use May 1, 1968.

**Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks**

SN 243,013. J. C. Penney Company, New York, N.Y. Filed Apr. 8, 1966.

**CAROL EVANS**

"Carol Evans" is the name of a living person whose consent is of record. Owner of Reg. Nos. 391,625, 790,029, and 817,421.  
For Children's Handbags and Children's Wallets (Int. Cl. 18).  
First use June 11, 1965; at least as early as Feb. 5, 1941, on related goods.

SN 272,931. Vernon C. Johnson, Tulsa, Okla. Filed June 2, 1967.

**KAY-9 KUMFORT**

For Animal Supplies and Equipment—Namely, Electrical Canine or Feline House or Bed Warmer (Int. Cl. 9).  
First use July 15, 1966.

SN 281,229. Societe Rhodiaceta, Paris, France. Filed Sept. 26, 1967.

**BIDIM**

Owner of French Reg. No. 702,575, dated Dec. 2, 1965.  
For Trunks, Suitcases, and Saddles (Int. Cl. 18).

SN 292,417. Platt Luggage, Inc., Chicago, Ill. Filed Mar. 4, 1968.



The representation of the piece of luggage is disclaimed apart from the mark.  
For Hand Luggage and Carrying Cases (Int. Cl. 18).  
First use September 1966.

**Class 4 — Abrasives and Polishing Materials**

SN 283,925. Plexorize, Inc., Long Island City, N.Y. Filed Nov. 1, 1967.

**PLEXORIZE**

For Preparation for Cleaning and Polishing Surfaces (Int. Cl. 3).  
First use Apr. 10, 1967.

**Class 6 — Chemicals and Chemical Compositions**

SN 273,411. Petrochemicals Company, Inc., Fort Worth, Tex. Filed June 8, 1967.



For Wetting Agents, Surfactants, Emulsifiers, and Organo Sulfonates Used in Reducing the Tendency of Particled Material Such as Ammonium Nitrate To Cake (Int. Cl. 1).  
First use Feb. 13, 1967.

SN 276,762. Releasall Limited, Montreal, Quebec, Canada. Filed July 25, 1967.



Owner of Canadian Reg. No. 142,600, dated Nov. 5, 1965.  
For Layout Fluid and Bearing Blue (Int. Cls. 1 and 2).  
First use at least Oct. 26, 1965; in commerce at least May 9, 1966.

SN 286,241. Apollo Chemical Corp., Clifton, N.J. Filed Dec. 5, 1967.

**MC-7**

Owner of Reg. No. 796,203.  
For Multifunctional Catalyst and Combustion Activator for Use in Residual Fuels (Int. Cl. 1).  
First use Dec. 22, 1966.

SN 286,860. Vikon Chemical Company, Inc., Elon College, N.C. Filed Dec. 13, 1967.

**VIKOL**

For Bactericidal and Fungicidal Agents for Textiles and Synthetic Plastics (Int. Cl. 5).  
First use April 1959.

SN 287,070. Inchem Graphic Products, Inc., Glendale, N.Y. Filed Dec. 18, 1967.

**IGP TOTAL ETCH**

No exclusive rights are claimed in the term "Etch," apart from the mark as shown.  
For Liquid Chemical—Namely, Engravers' Iron Perchloride Solution, for Modern Powderless Etching on Copper (Int. Cl. 1).  
First use Aug. 1, 1967.

SN 287,510. Argus Chemical Corporation, Brooklyn, N.Y. Filed Dec. 26, 1967.

**USP-245**

For Organic Peroxides and Compositions Containing Organic Peroxides (Int. Cl. 1).  
First use June 1, 1965.

SN 287,511. Argus Chemical Corporation, Brooklyn, N.Y. Filed Dec. 26, 1967.

**BZQ**

Owner of Reg. No. 711,689.  
For Organic Peroxides and Compositions Containing Organic Peroxides (Int. Cl. 1).  
First use Jan. 1, 1962.

SN 287,576. Phillips Petroleum Company, Bartlesville, Okla. Filed Dec. 26, 1967.



The drawing is lined for the color red. Owner of Reg. Nos. 529,105 and 758,641.  
For Herbicides, Insecticides, and Fungicides (Int. Cl. 5).  
First use on or about Mar. 1, 1965.

SN 293,435. Imperial Adhesives Inc., Cincinnati, Ohio. Filed Mar. 18, 1968.

**PEDI-PAK**

For Bactericidal-Deodorant Spray for Use in Shoes (Int. Cl. 5).  
First use at least as early as Feb. 22, 1968.

SN 295,095. Astor Products Inc., Jacksonville, Fla. Filed Apr. 8, 1968.

**BLUE ARROW**

Owner of Reg. Nos. 669,721, 797,964, and 798,177.  
For Fabric Softener (Int. Cl. 3).  
First use June 16, 1964.

SN 296,272. Standard Oil Company, Flemington, N.J. Filed Apr. 23, 1968.

**ENCO**

For Plasticizers (Int. Cl. 1).  
First use Oct. 31, 1967.

SN 296,477. The Wun Drop Company, Littleton, Colo. Filed Apr. 24, 1968.

**EMERALD SEA**

For Scented Additive for Water Used in Steam Irons (Int. Cl. 3).  
First use Mar. 8, 1968.

SN 296,562. National Starch and Chemical Corporation, New York, N.Y. Filed Apr. 25, 1968.

**CATO-BOND**

Owner of Reg. Nos. 640,536 and 802,523.  
For Modified Starch for Use as a Coating Binder for Paper (Int. Cl. 1).  
First use December 1967.

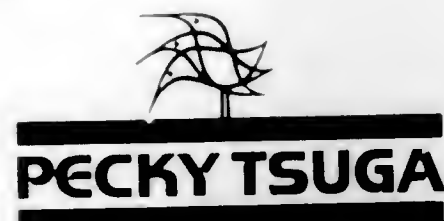


SN 296,563. National Starch and Chemical Corporation, New York, N.Y. Filed Apr. 25, 1968.

SN 287,833. Roseburg Lumber Co., Roseburg, Oreg. Filed Dec. 29, 1967.

**CATO-SIZE**

Owner of Reg. Nos. 640,536 and 802,523.  
For Modified Starch for Application to the Surface of Previously Prepared Paper Products (Int. Cl. 1).  
First use February 1968.

**Class 8—Smokers' Articles, Not Including Tobacco Products**

SN 287,815. S. M. Frank & Co., Inc., New York, N.Y. Filed Dec. 29, 1967.

**YELLO-BOLE**  
**NOVA**

Owner of Reg. Nos. 520,810 and 799,699.  
For Smokers' Pipes (Int. Cl. 34).  
First use Nov. 8, 1967.

**Class 12—Construction Materials**

SN 256,395. U.S. Plywood-Champlon Papers Inc., New York, N.Y., by merger and change of name from United States Plywood Corporation, New York, N.Y. Filed Oct. 12, 1966.

**PLATANO**

For Lumber and Wood Products, i.e., Plywood (Int. Cl. 19).  
First use Sept. 23, 1966.

SN 272,165. Certain-Teed Products Corporation, Ardmore, Pa. Filed May 23, 1967.

**CERTA-SEAL**

For Asbestos Cement Pipe, and Fittings, Couplings and Components Used With Such Pipe (Int. Cl. 19).  
First use Mar. 8, 1967.

SN 277,945. United Shoe Machinery Corporation, Boston, Mass. Filed Aug. 9, 1967.

**SOLBIT**

For Sealant Strip for Securing Panels Such as Windshields and Windows (Int. Cl. 17).  
First use Aug. 11, 1966.

SN 285,098. U.S. Plywood-Champlon Papers Inc., New York, N.Y. Filed Nov. 17, 1967.

**DURAGARD**

Owner of Reg. Nos. 331,076, 805,425, and others.  
For Wood Products, i.e., a Decorative Plastic Overlay for a Wood Fiber Base or Substrate (Int. Cl. 19).  
First use at least as early as May 1966; June 14, 1965, as to "Dura-Guard."

For Plywood and Industrial and Decorative Type Wooden Panels, Including Flakeboard, Hardboard and Particleboard (Int. Cl. 19).  
First use Dec. 15, 1967.

SN 290,554. Avnet, Inc., Plainview, N.Y. Filed Jan. 26, 1968.



The drawing is lined for red, but color is not claimed as a feature of the mark.  
For Refractory Materials, Binders and Potting Agents Used in the Preparation of Refractory Precision Molds (Int. Cl. 19).  
First use in or about December 1966.

SN 291,491. Canadian Cedar, Inc., Fort Lauderdale, Fla. Filed Feb. 20, 1968.

**RANCH**  
**DECK**

No claim is made to the word "Deck" apart from the mark as shown.  
For Wall and Roof Decking (Int. Cl. 19).  
First use on or about Dec. 1, 1967.

SN 291,492. Canadian Cedar, Inc., Fort Lauderdale, Fla. Filed Feb. 20, 1968.

**RANCH PANEL**

No claim is made to the word "Panel" apart from the mark as shown.  
For Interior and Exterior Wall Panelling (Int. Cl. 19).  
First use on or about Dec. 1, 1967.

SN 292,942. Julian A. Lipman, d.b.a. Chemiquip Company, New York, N.Y. Filed Mar. 11, 1968.

**TEPtape**

For Tetrafluoroethylene Ribbon for Sealing Threaded Joints (Int. Cl. 17).  
First use Feb. 2, 1968.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

SN 274,599. The Enterprise Aluminum Company, Massillon, Ohio. Filed June 23, 1967.

**ThermoFused**

For Base Metal Cookware Coated With a Ceramic Frit (Int. Cl. 21).  
First use June 7, 1967.

SN 274,721. Dresser Industries, Inc., Dallas, Tex. Filed June 26, 1967.

**POSI-HOLD**

For Pipe Couplings for Joining Pipe Sections Into a Piping System in Which Fluid Is To Be Contained (Int. Cl. 6).  
First use May 24, 1967.

SN 283,420. Automatic Switch Company, Florham Park, N.J. Filed Oct. 26, 1967.

**FLIPVAL**

For Valves for Controlling the Flow of Fluids Through Conduits (Int. Cl. 6).  
First use Oct. 16, 1967.

SN 289,288. Engine Accessories Mfg. Co., Los Angeles, Calif. Filed Jan. 22, 1968.

**THE EDUCATED NUT**

The word "Nut" is disclaimed apart from other segments shown.  
For Automotive Front Wheel Spindle Nut (Int. Cl. 12).  
First use Apr. 13, 1967.

SN 290,904. A. O. Smith Corporation, Milwaukee, Wis. Filed Feb. 12, 1968.

**POLY THREAD**

For Fiber Reinforced Plastic Pipe and Accessories Thereof (Int. Cl. 17).  
First use Jan. 4, 1968.

SN 292,278. Lafayette Brass Company, Inc., New York, N.Y. Filed Mar. 1, 1968.

**CLOG-BUSTER**

For Toilet Plungers (Int. Cl. 8).  
First use September 1963.

SN 292,774. Fastener Products, Inc., Southport, Conn. Filed Mar. 8, 1968.

**FIN-SET**

For Metal Inserts (Int. Cl. 6).  
First use Feb. 29, 1968.

SN 293,303. Rexall Drug and Chemical Company, d.b.a. Tupperware, Los Angeles, Calif. Filed Mar. 14, 1968.

**JEL-N-SERVE**

For Gelatine Mold (Int. Cl. 21).  
First use January 1965.

SN 293,767. Zimmer-Lightbody Ind., Inc., Detroit, Mich. Filed Mar. 20, 1968.

**Z-TORK**

For Nuts and More Specifically for Prevailing Torque Nuts (Int. Cl. 6).  
First use Oct. 7, 1967.

SN 293,898. Beneke Corporation, Columbus, Miss. Filed Mar. 22, 1968.



For Toilet Seats (Int. Cl. 11).  
First use July 30, 1966.

SN 294,313. Redema Corporation, Livonia, Mich. Filed Mar. 27, 1968.

**LITTLE EAVE**

For Gutter Cleaning Hose Attachment (Int. Cl. 6).  
First use Feb. 27, 1968.

SN 294,329. Universal Marlon Corporation, Chester, Pa. Filed Mar. 27, 1968.

**BACO**

For Cast Steel Chain (Int. Cl. 6).  
First use Apr. 9, 1959.

SN 294,602. John L. Doré Co., Houston, Tex. Filed Apr. 1, 1968.

**POLYDOR**

For Pipe, Fittings, Dip Pipes, Spargers, Expansion Joints, and Thermo Wells (Int. Cl. 6).  
First use May 1966.

SN 295,870. Yoshida Kogyo K.K., Chiyoda-ku, Tokyo, Japan. Filed Mar. 28, 1968.

**CONCEAL**

For Slide Fasteners (Int. Cl. 26).  
First use November 1959; in commerce December 1960.

SN 297,259. George G. Hutchison, d.b.a. Hutchison-Western, Denver, Colo. Filed May 3, 1968.

**H-W**

For Stockade Gates (Int. Cl. 6).  
First use Dec. 20, 1967.

SN 305,516. I-T-E Imperial Corporation, Philadelphia, Pa. Filed Aug. 20, 1968.

**MINI-FLEX**

For Tube Fittings and Couplings (Int. Cl. 6).  
First use May 24, 1968.

SN 305,518. Kenney Manufacturing Company, Warwick, R.I. Filed Aug. 20, 1968.

**IMPERIAL**

For Drapery Hardware (Int. Cl. 6).  
First use 1950.



## Class 14—Metals and Metal Castings and Class 17—Tobacco Products Forgings

SN 304,187. Louis Dejonge and Company, Staten Island, N.Y. Filed Aug. 2, 1968.



For Foil Sandwich Wrap (Int. Cl. 6).  
First use July 15, 1968.

## Class 15—Oils and Greases

SN 283,703. Electrolux Corporation, New York, N.Y., assignee of Peck's Products Company, St. Louis, Mo. Filed Oct. 30, 1967.

### SYN-LUBE

For Conveyor Lubricant (Int. Cl. 4).  
First use 1946.

SN 286,334. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany. Filed Dec. 6, 1967.

### LEVAFORM

Owner of German Reg. No. 709,181, dated Dec. 10, 1957.  
For Mold Release Agents (Int. Cl. 4).

SN 288,019. The Ironsides Company, Columbus, Ohio. Filed Jan. 3, 1968.



The drawing is lined for the color blue, but no claim is made for color. Applicant disclaims the words "Products," "Columbus, Ohio," and the trade name "The Ironside Company" apart from the mark as shown. Owner of Reg. Nos. 39,047, 39,155, and 315,112.  
For Lubricating Oils and Greases (Int. Cl. 4).  
First use in 1912.

SN 289,887. Edward Foley, Scranton, Pa. Filed Jan. 30, 1968.

### POSCARE

For Corrosion Inhibitor in the Nature of a Grease for Storage Batteries and Dry Cell Batteries (Int. Cl. 4).  
First use Mar. 1, 1965.

## Class 16—Protective and Decorative Coatings

SN 278,682. Ford Motor Company, Dearborn, Mich. Filed Aug. 21, 1967.

### ELECTROCURE

For Paints, Enamels, Lacquers, and Varnishes (Int. Cl. 2).  
First use Sept. 14, 1966.

SN 268,933. The American Tobacco Company, New York, N.Y. Filed Apr. 12, 1967.

### EMPERORS

For Cigarettes (Int. Cl. 34).  
First use Apr. 3, 1967.

SN 302,643. Rothmans of Pall Mall Limited, Zurich, Switzerland. Filed July 12, 1968.

### PORTLAND

For Cigarettes (Int. Cl. 34).  
First use Mar. 5, 1968; in commerce Mar. 5, 1968.

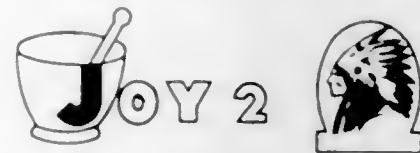
## Class 18—Medicines and Pharmaceutical Preparations

SN 273,621. Eastern Shore Laboratories, Inc., Laurel, Del. Filed June 12, 1967.

### VITA-BOOST

For Mixture of Raw Grain Vitamins and Nutrients To Supplement the Nutritional Balance of Poultry (Int. Cl. 5).  
First use Dec. 24, 1965.

SN 275,047. Glenn Sales Co., Inc., Dallas, Tex. Filed June 29, 1967.



For Medicated Desensitizing Agent (Int. Cl. 5).  
First use on or about July 7, 1962.

SN 276,577. Phillips Roxane, Inc., New York, N.Y. Filed July 21, 1967.

### BIO-CEUTIC

For Veterinary Preparations (Int. Cl. 5).  
First use July 20, 1965.

SN 276,578. Phillips Roxane, Inc., New York, N.Y. Filed July 21, 1967.



The mortar and Pestle are disclaimed apart from the mark as shown.  
For Veterinary Preparations (Int. Cl. 5).  
First use July 20, 1965.

SN 277,515. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. Filed Aug. 4, 1967.

### CUPRATE

For Veterinary Preparation for Use as an Aid in Treatment and the Prevention of Molybdenum Poisoning (Int. Cl. 5).  
First use May 26, 1967.

SN 277,517. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. Filed Aug. 4, 1967.

### CALCIPET

Owner of Reg. No. 824,796.  
For Veterinary Preparation To Prevent and Treat Calcium Deficiency (Int. Cl. 5).  
First use May 26, 1967.

SN 277,529. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. Filed Aug. 4, 1967.

### BVMO

For Veterinary Preparation To Prevent and Treat Vitamin-Mineral Deficiencies (Int. Cl. 5).  
First use May 16, 1967.

SN 277,532. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. Filed Aug. 4, 1967.

### MICROPURE

For Veterinary Preparation for the Removal of Intestinal Worms (Int. Cl. 5).  
First use Nov. 21, 1966.

SN 283,537. Moorman Manufacturing Company of California, Inc., San Gabriel, Calif. Filed Oct. 27, 1967.

### MIXER-AID

For Vitamin and Mineral Supplement for Livestock Feed (Int. Cl. 5).  
First use Sept. 8, 1967.

SN 283,744. Zirin Laboratories International, Inc., Hialeah, Fla. Filed Oct. 30, 1967.

### TITEN-ZEM

For Veterinarian Preparation—Namely, a Topically Applied Skin Massaging Liquid for Relief of Wind Puffs, Bursitis, Suspensory Trouble, Tendonitis, Spavins, Osselots, and Muscle Soreness (Int. Cl. 5).  
First use Jan. 15, 1956.

SN 284,288. American Cyanamid Company, Wayne, N.J. Filed Nov. 7, 1967.

### HEMOQUEL

For Hemostatic Agent (Int. Cl. 5).  
First use Oct. 20, 1967.

SN 284,744. G. D. Searle & Co., Skokie, Ill. Filed Nov. 13, 1967.

### DEPETHINE

Owner of Reg. No. 795,489.  
For Preparation for Treatment of the Gastro-Intestinal System (Int. Cl. 5).  
First use Nov. 3, 1967.

SN 285,722. Ciba Limited, Basel, Switzerland. Filed Nov. 28, 1967.

### RIMACTANE

Priority claimed under Sec. 44(d) on Swiss Reg. No. 228,480, dated Nov. 2, 1967.  
For Antibiotic (Int. Cl. 5).

SN 285,740. Hudson Vitamin Products, d.b.a. Hudson National, Inc., New York, N.Y. Filed Nov. 28, 1967.

### REGACILIUM

For Preparation for Treatment of Constipation and Regulation of Elimination (Int. Cl. 5).  
First use Dec. 31, 1966.

SN 285,755. Pan American Laboratories, Inc., New Orleans, La. Filed Nov. 28, 1967.



For Line of Pharmaceutical Preparations (Int. Cl. 5).  
First use Aug. 14, 1958.

SN 291,368. Drugs for Veterinary Medicine, Inc., Yonkers, N.Y. Filed Feb. 19, 1968.

### SENO-VET

For Veterinary Laxative Preparation (Int. Cl. 5).  
First use Sept. 15, 1959.

SN 291,369. Drugs for Veterinary Medicine, Inc., Yonkers, N.Y. Filed Feb. 19, 1968.

### ASCAVET

For Veterinary Laxative Preparation (Int. Cl. 5).  
First use July 25, 1961.

SN 297,245. Colgate-Palmolive Company, New York, N.Y. Filed May 3, 1968.

### DEW DABS

For Medicated Body Lotion, in Paper Applicator, for Treating the Skin (Int. Cl. 5).  
First use June 26, 1967.

SN 301,891. Chas. Pfizer & Co., Inc., New York, N.Y. Filed July 3, 1968.

### FOOT-GUARD

For Pharmaceutical Preparation for the Treatment of Athlete's Foot (Int. Cl. 5).  
First use June 10, 1968.

SN 302,285. Chas. Pfizer & Co., Inc., New York, N.Y. Filed July 9, 1968.

### CLINICARE

For Vitamin and Mineral Supplement for Dogs and Cats (Int. Cl. 5).  
First use July 1966.



SN 303,123. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed July 19, 1968.

**ANABOLIN**

Owner of Reg. No. 502,101.  
For Metabolic Regulator for the Middle-Age Slowdown, States of Chronic Depletion and Debilitation, and Other Effects of Endocrine Imbalance (Int. Cl. 5).  
First use July 10, 1968.

SN 303,749. Chas. Pfizer & Co., Inc., New York, N.Y. Filed July 29, 1968.

**LIGHTS OUT**

For Medicinal Preparation for Use as an Aid in Controlling the Smoking Habit (Int. Cl. 5).  
First use July 23, 1968.

SN 305,284. Roesbery Laboratories, Inc., Melba, Idaho. Filed Aug. 16, 1968.

**UDDERWISE**

For Antiseptic Cream for Livestock and Other Animals (Int. Cl. 5).  
First use at least as early as July 20, 1968.

SN 305,372. Miles Laboratories, Inc., Elkhart, Ind. Filed Aug. 19, 1968.

**RALLY**

For Analgesic and Cold Preparation (Int. Cl. 5).  
First use on or before Apr. 4, 1968.

**Class 19—Vehicles**

SN 248,639. Parkdale Manufacturing, Inc., Westminster, Calif. Filed Jan. 11, 1968.

**Parkdale**

For House Trailer (Int. Cl. 12).  
First use Nov. 3, 1967.

**Class 21—Electrical Apparatus, Machines, and Supplies**

SN 236,957. The National Acme Company, Cleveland, Ohio. Filed Oct. 21, 1966.

**NAMCO**

For Switches, Solenoids, and Parts Thereof (Int. Cl. 9).  
First use on or about Dec. 15, 1938.

SN 237,520. Societe des Accumulateurs Fixes et de Traction, Romainville, France. Filed Oct. 28, 1966.

**LUMISTICK**

Owner of French Reg. No. 700,610, dated Aug. 17, 1965.  
For Lighting Apparatus—Namely, Flashlights (Int. Cl. 11).

SN 275,902. Aluminum Extrusions, Inc., Charlotte, Mich. Filed July 13, 1967.

**OMNI**

Owner of Reg. No. 690,541.  
For Electrical Lighting Fixtures and Parts Thereof. (Int. Cl. 11).  
First use Sept. 25, 1958.

SN 286,898. Better Home Products of Texas Corp., Houston, Tex. Filed Dec. 14, 1967.



The word "Better" is disclaimed apart from the mark as shown.  
For Lighting Equipment—Namely, Light Bulbs (Int. Cl. 11).  
First use Sept. 9, 1967.

SN 288,624. Adam B. Kronk, d.b.a. Kronk Co., Detroit, Mich. Filed Jan. 11, 1968.

**CY-CO-LATOR**

For Pre-Set Electric Cycle Control Regulator for Shutting Down Machinery (Int. Cl. 9).  
First use Aug. 20, 1966.

SN 293,871. Tymshare, Inc., Los Altos, Calif. Filed Mar. 21, 1968.

**TYMSHARE**

For Audio Magnetic Data Transceivers (Int. Cl. 9).  
First use Sept. 12, 1966.

SN 294,229. Electrolytic Marine Corrosion Services Limited, Victoria, British Columbia, Canada. Filed Mar. 27, 1968.



Applicant disclaims any exclusive right to the use of the word "Systems" apart from the mark as shown.  
For Anodes and Control Panels for Use on Ships or Other Installations Employing Sea Water for Coolant, Ballast, etc. To Render the Sea Water Non-Corrosive Through Electrolytic Action (Int. Cl. 11).  
First use 1952; in commerce May 1957.

**Class 22—Games, Toys, and Sporting Goods**

SN 254,343. Vereinigte Baubeschlagfabriken Gretsch & Co. GmbH, Leonberg, near Stuttgart, Germany. Filed Sept. 12, 1966.

**Topstar S**

Priority claimed under Sec. 44(d) on German application filed Mar. 19, 1966; Reg. No. 520,724, dated June 16, 1966.  
Owner of U.S. Reg. No. 786,673.  
For Hardware for Sporting Goods—Namely, Fittings and Mountings for Sporting Equipment; Ski Bindings, in Particular Front-Jaw Safety Ski-Bindings; Boot Straightener Devices Made of Metal, in Particular Ski-Boot Straightener Devices (Int. Cl. 28).

SN 270,793. Lesney Products & Co. Limited, London, England. Filed May 5, 1967.

**MODELS OF YESTERYEAR**

Owner of U.S. Reg. No. 720,488.  
For Toy Models of Land Vehicles, Machines, and Their Accessories (Int. Cl. 28).  
First use July 5, 1957; in commerce July 26, 1957.

SN 275,077. Romper Room, Inc., Baltimore, Md. Filed June 29, 1967.

**ROMPER STOMPERS**

For Physical Fitness Balancing Toy—Namely, Foot Engaging, Inverted, Cup-Like Devices With Attached Hand Cord (Int. Cl. 28).  
First use May 10, 1967.

SN 277,173. B. L. Humphries, d.b.a. Art Artifices, Wichita Falls, Tex. Filed July 31, 1967.

**DINO SORES**

The drawing is lined for the color red. The word "Sores" is disclaimed apart from the mark as shown.  
For Adhesive Strip on Which Simulated Wounds Are Shown, Which Strips Are Applied to the Body (Int. Cl. 28).  
First use June 15, 1967.

SN 286,901. Campbell Manufacturing Company Limited, Willowdale, Ontario, Canada. Filed Dec. 14, 1967.

**DYNA-MAX**

Priority claimed under Sec. 44(d) on Canadian application filed July 26, 1967; Reg. No. 156,934, dated May 17, 1968.  
For Golf Balls and Golf Clubs (Int. Cl. 28).

SN 289,433. Triangle Leather Goods Company, Chicago, Ill. Filed Jan. 23, 1968.

**BALL-ARIS**

For Bowling Ball Bags (Int. Cl. 28).  
First use Apr. 8, 1963.

SN 289,509. Steve A. Jures, Lansing, Ill. Filed Jan. 24, 1968.

**GEE-MIN-EE**

For Fish Lures (Int. Cl. 28).  
First use Dec. 8, 1967.

SN 289,595. Lindberg Products, Incorporated, Skokie, Ill. Filed Jan. 25, 1968.

**MINI-LINDY**

Owner of Reg. Nos. 789,348 and 815,402.  
For Hobby-Type Model Cars and Trucks, and Kits for Assembling Them (Int. Cl. 28).  
First use Jan. 10, 1968.

SN 292,859. Mattel, Inc., Hawthorne, Calif. Filed Mar. 11, 1968.



No claim of exclusive right, apart from the mark as shown, is made to the term "Storybook" for the goods recited. Owner of Reg. Nos. 753,681, 823,342, and 830,532.  
For Dolls, Toy Animals, and Doll Accessories (Int. Cl. 28).  
First use Sept. 29, 1966.

SN 292,969. Schaper Manufacturing Company, Inc., Minneapolis, Minn. Filed Mar. 11, 1968.

**WHO YOU?**

For Equipment for Playing a Parlor-Type Game (Int. Cl. 28).  
First use Feb. 16, 1968.

SN 292,970. Schaper Manufacturing Company, Inc., Minneapolis, Minn. Filed Mar. 11, 1968.

**PULL THE RUG OUT**

For Equipment for Playing a Parlor-Type Game (Int. Cl. 28).  
First use Feb. 16, 1968.

SN 292,971. Schaper Manufacturing Company, Inc., Minneapolis, Minn. Filed Mar. 11, 1968.

**HUFF 'N PUFF**

For Equipment for Playing a Parlor-Type Game (Int. Cl. 28).  
First use Feb. 13, 1968.

SN 294,167. Cragstan Industries, Inc., New York, N.Y. Filed Mar. 26, 1968.

**SCOOTIES**

For Wind-Up Mobile Toys (Int. Cl. 28).  
First use November 1966.

SN 294,410. Regent Sports Co., Hauppauge, N.Y. Filed Mar. 28, 1968.

**LIDO**

For Fishing Reels (Int. Cl. 28).  
First use March 1962.

SN 296,934. Layman E. Allen, d.b.a. Wff 'N Proof, Ann Arbor, Mich. Filed Sept. 4, 1968.

**PROPAGANDA**

For Equipment (or Apparatus), Sold as a Unit for Playing an Educational Social Studies Game (Int. Cl. 28).  
First use Oct. 1, 1966.



SN 300,872. Gudebrod Bros. Silk Co., Inc., Philadelphia, Pa. Filed June 20, 1968.

**GOODIE**

For Artificial Fishing Lures (Int. Cl. 28).  
First use May 23, 1968.

SN 303,110. Mattel, Inc., Hawthorne, Calif. Filed July 19, 1968.

**LUVVY DUVVY KIDDLE**

Owner of Reg. Nos. 830,532, 838,306, 842,798, and others.  
For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).  
First use May 29, 1968.

SN 304,748. Mattel, Inc., Hawthorne, Calif. Filed July 29, 1968.

**KIDDLE-KONES**

Owner of Reg. Nos. 830,532, 838,306, 842,798, and others.  
For Dolls, Doll Clothing, and Doll Accessories, including Miniature Dolls in Non-Edible Ice Cream Cones (Int. Cl. 28).  
First use June 19, 1968.

SN 304,735. Buddy L Corporation, East Moline, Ill. Filed Aug. 9, 1968.

**BRUTE**

For Toy Vehicles (Int. Cl. 28).  
First use Apr. 12, 1968.

SN 304,739. Mattel, Inc., Hawthorne, Calif. Filed Aug. 9, 1968.

**NIPPY**

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).  
First use Sept. 19, 1966.

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

SN 229,706. Fichtel & Sachs Aktiengesellschaft, Schweinfurt-am-Main, Germany. Filed Oct. 11, 1965.

**SACHS**

Owner of German Reg. No. 143,844, dated Feb. 9, 1911.  
For Multi-Speed Hubs, Gear Shift and Power Transmission Mechanisms, Combustion, Steam, Wind, and Hydraulic Motors, and Hydraulic Pumps, r.p.m. Regulators for Motors, Belt Pulleys, Clutches for All Kinds; Agricultural, Domestic and Industrial Machines and Devices—Namely, Motorized Lawn-Mowers for Use by Gardeners, and Motorized Building Hoists and Elevators; Also Bicycle Chains, Sprockets and Gears, and Component Parts of the Above-Mentioned Articles (Int. Cls. 7 and 12).  
First use May 31, 1932; in commerce Dec. 31, 1958.

SN 259,459. O'Brien Manufacturing Company, Inc., Chicago, Ill. Filed Nov. 25, 1966.

**ELECTRIC ROD MASTER**

Applicant disclaims the words "Electric" and "Rod" apart from the mark as shown. Owner of Reg. No. 427,522.  
For Electric Portable Unitary Sewer Cleaning Machines for Rodding Waste and Sewer Lines (Int. Cl. 7).  
First use on or about Jan. 22, 1946.

SN 270,241. General Precision Systems Inc., Glendale, Calif., by change of name from General Precision, Inc., Glendale, Calif. Filed Apr. 28, 1967.

**LIBRADRIVE**

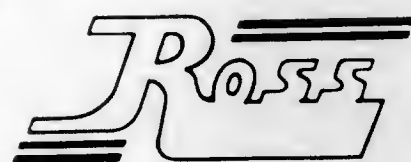
Owner of Reg. Nos. 372,767, 822,743, and others.  
For Retaining Pin Ejector Tools for Removing Retaining Pins From Gear Hub and Shaft Collar Mounting Holes (Int. Cl. 7).  
First use Apr. 5, 1967.

SN 273,629. Bruce N. Fleming, Ottawa, Kans. Filed June 12, 1967.

**FAT-CAT**

For Mechanical Fish Feeders (Int. Cl. 7).  
First use June 1, 1967.

SN 275,960. Ross Porta-Plant, Inc., Brownwood, Tex. Filed July 13, 1967.



Owner of Reg. No. 668,000.  
For Utilized Mobile Concrete Batching Plants, and Parts Thereof (Int. Cl. 7).  
First use on or about Sept. 10, 1957.

SN 278,532. Rockwell Manufacturing Company, Pittsburgh, Pa. Filed Aug. 17, 1967.

**FLEXIBLE**

For Pipe Cleaning Equipment—Namely, Augurs, Brushes, Buckets, Power Bucket Machines, Pipe Scrapers, Rod-Type Cleaners, Hydraulic Cleaners, Root Saws, Sand Traps, Scale Drills, and Associated Tools and Accessories and Parts Thereof (Int. Cls. 7 and 8).  
First use September 1933.

SN 281,335. Wencor, Inc., Miami Springs, Fla. Filed Sept. 27, 1967.

**ORFIT**

For Handtools for the Installation of O-Ring Seals (Int. Cl. 8).  
First use Oct. 7, 1965.

SN 281,930. Sunbeam Corporation, Chicago, Ill. Filed Oct. 5, 1967.

**LAWN CHAMP**

Applicant disclaims the exclusive right to the word "Lawn," except as included in the mark as shown.  
For Lawn Mowers and Parts Thereof (Int. Cl. 7).  
First use July 26, 1967.

SN 288,246. Union Pump Company, d.b.a. Union Pump Co., Battle Creek, Mich. Filed Jan. 5, 1968.

**UNILIGN**

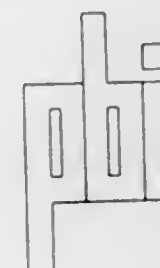
Owner of Reg. Nos. 658,261 and 810,432.  
For Centrifugal Pumps (Int. Cl. 7).  
First use May 1967.

SN 290,022. Royal Zenith Corporation, New York, N.Y. Filed Jan. 31, 1968.

**JOBBER**

For Offset Printing Machines (Int. Cl. 7).  
First use Nov. 21, 1967.

SN 292,056. Popell Brothers, Inc., Chicago, Ill. Filed Feb. 28, 1968.



For Complete Line of Kitchen Appliances of the Small Manually Operated Type—Namely, Food Choppers, Food Slicers, Food Comminutors, Pancake Dough Dispensers, Food Garnishing and Decorating Devices, Kitchen Knives, and Parts Thereof (Int. Cls. 8 and 21).  
First use Oct. 17, 1967.

SN 295,661. McCulloch Corporation, Los Angeles, Calif. Filed Apr. 15, 1968.

**SCRENCH**

For Combination Screwdriver-Wrenches (Int. Cl. 8).  
First use Dec. 12, 1967.

**Class 26—Measuring and Scientific Appliances**

SN 264,983. Spindler & Sauppe, Glendale, Calif. Filed Feb. 17, 1967.

**SELECTROSLIDE**

Owner of Reg. No. 382,255.  
For Slide Projectors (Int. Cl. 9).  
First use August 1938.

SN 272,513. Motomco, Inc., Clark, N.J. Filed May 26, 1967.

**DRILL-OM-ETERS**

For Portable Compressed Air Measuring Meter for Use With Pneumatic Tools (Int. Cl. 9).  
First use at least as early as 1910.

SN 274,807. Loenco, Inc., Altadena, Calif. Filed June 26, 1967.

**GRAPHMATIC-F**

The letter "F" is disclaimed.  
For Gas Chromatographs and Parts Thereof (Int. Cl. 9).  
First use June 1, 1966.

SN 277,543. Consolidated Electrodynamics Corporation, Pasadena, Calif. Filed Aug. 4, 1967.

**DATADIGIT**

For Galvanometer Character Printers and Signal Conditioning Equipment for Use With Recording Oscillographs (Int. Cl. 9).  
First use Sept. 27, 1965.

SN 278,129. Rowe Electronics, Inc., Summit, N.J. Filed Aug. 11, 1967.

**PROX**

For Electronic Counter Responsive to Changes in an Electric Field Developed in a Sensing Probe (Int. Cl. 9).  
First use July 20, 1967.

SN 280,734. The Virtis Company, Inc., Gardiner, N.Y. Filed Sept. 19, 1967.

**VIRTRONICS**

For Electrical Apparatus—Namely, Instruments To Measure, Register, and Control Engineering Variables (Int. Cl. 9).  
First use Aug. 14, 1967.

SN 282,145. Svenska Diamantbergborrnings Aktiebolaget, Sundbyberg, Sweden. Filed Oct. 9, 1967.

**TURAM**

For Apparatus and Instruments Used for Phase Measurements in Electromagnetic Prospecting for Ore—Namely, Field Generating Cables, Pick-Up Coils, Compensator-Amplifying Units, Ear Phones, Generating Sets, Control Boxes, and Connecting Cables (Int. Cl. 9).  
First use 1932; in commerce 1957.

SN 283,849. Argus Incorporated, Chicago, Ill. Filed Nov. 1, 1967.

**ROUNABOUT**

For Slide Projectors (Int. Cl. 9).  
First use Oct. 17, 1967.

SN 284,258. Werkzeugmaschinenfabrik Oerlikon Bührle & Co., Zurich, Switzerland. Filed Nov. 6, 1967.

**FOTOMAT**

Owner of Swiss Reg. No. 214,275, dated Nov. 24, 1965.  
For Numerical Control System for Machine Tools Consisting of a Linear Measuring Scale and Photoelectric Microscope, for Measuring Linear Traverses; Rotary Measuring Head for Angular and Indirect Measurement; Punched Tape Reader; Co-Ordinate Control; Memory for Auxiliary Functions and Drive Controls (Int. Cl. 9).

SN 286,418. Electronic Switchgear (London) Limited, Westminster, London, England. Filed Dec. 7, 1967.

**SOLUVISOR**

Priority claimed under Sec. 44(d) on British Reg. No. 911,889, dated July 12, 1967.  
For Solution Concentration Controller (Int. Cl. 9).

SN 286,435. Lundell Controls, Inc., Chicago, Ill. Filed Dec. 7, 1967.

**RECORDALARM**

For Electronic Sequential Event Recorder Instrument for Continuously Monitoring a Variety of Points and Printing Out an Immediate Record of Abnormal Operating Conditions (Int. Cl. 9).  
First use on or about July 15, 1961.

SN 287,532. Endevco Corporation, Pasadena, Calif. Filed Dec. 26, 1967.

**PIXIE**

For Strain Sensitive Piezoresistive Elements Employed as Parts of Electromechanical Transducers (Int. Cl. 9).  
First use Aug. 31, 1965.



SN 288,263. Raytheon Company, Lexington, Mass. Filed Jan. 8, 1968.

**DIDS-400**

For Digital Information Display Systems (Int. Cl. 9).  
First use October 1964.

SN 291,789. Technical Education and Manufacturing, Inc., Ferndale, Mich. Filed Feb. 23, 1968.

**TEAM**

For Hydraulic and Pneumatic Scientific Apparatus Used for Measuring and Testing for Educational Purposes (Int. Cl. 9).  
First use Oct. 20, 1967.

SN 293,569. Photon, Inc., Wilmington, Mass. Filed Mar. 18, 1968.

**KEYCOMP**

For Keyboards for Production of Coded Paper or Magnetic Tape, for Keyboards for the Direct Control of Computers or Typesetting Machines (Int. Cl. 9).  
First use on or about Jan. 30, 1968.

SN 293,707. Essex Wire Corporation, Fort Wayne, Ind. Filed Mar. 20, 1968.

**TRAVEL-TROL**

For Combined Temperature Regulator and Safety Pilot Controls for Gas Burners (Int. Cl. 9).  
First use Mar. 12, 1968.

SN 294,731. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed Apr. 2, 1968.

**ANSCOGRAPH**

Owner of Reg. No. 210,571.  
For Light-Sensitive Photographic Materials—Namely, Paper and Film (Int. Cl. 1).  
First use Feb. 12, 1968.

SN 290,047. Spratone, Inc., Flushing, N.Y. Filed Apr. 19, 1968.

**CUSTOMIZER**

For Adapter Which Makes Possible Use of an Accessory Designed for One Type of Lens or Camera on a Camera of a Different Design or Size (Int. Cl. 9).  
First use June 1, 1967.

SN 296,048. Spratone, Inc., Flushing, N.Y. Filed Apr. 19, 1968.

**MIRROTACH**

For Photographic Right-Angle Lens Attachment (Int. Cl. 9).  
First use Nov. 5, 1967.

SN 296,050. Spratone, Inc., Flushing, N.Y. Filed Apr. 19, 1968.

**COLOR-BROME**

For Sensitized Photographic Printing and Enlarging Paper (Int. Cl. 1).  
First use Mar. 14, 1967.

SN 297,628. Leach Corporation, South Pasadena, Calif. Filed May 8, 1968.

**HDDR**

For Recording and Reproducing Equipment Employing a Magnetic Medium and Associated Read and Write Electronics for Storing and Retrieving Information Signals on the Medium (Int. Cl. 9).  
First use at least as early as Mar. 25, 1968.

SN 298,174. Hexol, Inc., d.b.a. The Bex Company, San Francisco, Calif. Filed May 15, 1968.

*Bex-ometer*

For Torque Measuring Instruments (Int. Cl. 9).  
First use Jan. 11, 1965.

SN 299,073. Paillard Incorporated, Linden, N.J. Filed May 27, 1968.

**MULTIMATIC**

For Photographic Projectors and Cameras (Int. Cl. 9).  
First use May 15, 1968.

SN 300,407. Pappagallo, Inc., New York, N.Y. Filed June 14, 1968.

*Pappagallo*

For Sunglasses (Int. Cl. 9).  
First use at least as early as April 1968.

**Class 27 — Horological Instruments**

SN 268,984. Orient Watch Co., Ltd., Chiyoda-ku, Tokyo, Japan. Filed Apr. 12, 1967.

**ORIENT**

For Watches and Clocks, and Parts Thereof (Int. Cl. 14).  
First use Nov. 10, 1958; in commerce Dec. 15, 1958.

SN 281,601. Morris B. Mass, d.b.a. Mass Sales Co., St. Louis, Mo. Filed Oct. 2, 1967.

**MARC MASSON**

The name "Marc Masson" is fanciful.  
For Watches (Int. Cl. 14).  
First use Sept. 21, 1967.

SN 285,671. Montre de Sport Genève S.A., Geneva, Switzerland. Filed Nov. 27, 1967.

**MILUNA**

Owner of Swiss Reg. No. 225,025, dated Apr. 14, 1967.  
For Watches and Parts Thereof (Int. Cl. 14).

SN 286,942. Joval Ring Co., Inc., New York, N.Y. Filed Dec. 14, 1967.

**JEAUVAL**

For Watches (Int. Cl. 14).  
First use Nov. 2, 1967.

SN 287,012. Gold Medal Jewelry Inc., New York, N.Y. Filed Dec. 15, 1967.



Owner of Reg. No. 793,333.  
For Watches (Int. Cl. 14).  
First use June 1966.

SN 291,686. R. J. Raphael, Inc., Miami, Fla. Filed Feb. 23, 1968.

**RAJAR**

For Wristwatches (Int. Cl. 14).  
First use Feb. 1, 1967.

SN 297,497. Aquastar S.A. ci-devant Jean Richard, Geneva, Switzerland. Filed May 7, 1968.

**JEANRICHARD**

The name "Jean Richard" does not identify any particular living individual.  
For Watches (Int. Cl. 14).  
First use 1948; in commerce 1948.

**Class 28 — Jewelry and Precious-Metal Ware**

SN 280,882. Onelda Ltd., Onelda, N.Y. Filed Sept. 21, 1967.

**FLORAL GLEN**

For Silverplated Flatware (Int. Cl. 8).  
First use Sept. 8, 1967.

SN 286,830. Patrick J. Leonard, Dallas, Tex. Filed Dec. 13, 1967.

*"Le Soleil d'Or."*

The English translation of "Le Soleil d'Or" is "the golden sun."  
For Diamonds (Int. Cl. 14).  
First use Dec. 14, 1966.

SN 288,717. S.p.A. Signorli & Bondioli, Milan, Italy. Filed Jan. 12, 1968.

**POMELLATO**

Owner of Italian Reg. No. 213,704, dated Sept. 4, 1967.  
For Jewelry and Imitation Jewelry (Int. Cl. 14).

SN 290,299. Jacques Kreisler Manufacturing Corporation North Bergen, N.J. Filed Feb. 5, 1968.

*Kreisler Stelux*

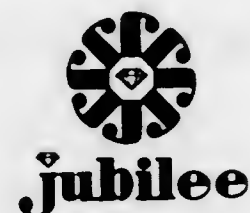
Owner of Reg. No. 642,339.  
For Watch Bracelets (Int. Cl. 14).  
First use Jan. 5, 1968.

SN 292,167. Associated Barr Stores, Inc., d.b.a. Barr's, and Barr's Jewelers, Philadelphia, Pa. Filed Feb. 29, 1968.

*BARR'S*

For Jewelry and Diamonds (Int. Cl. 14).  
First use 1853.

SN 293,685. Baumgold Bros., Inc., New York, N.Y. Filed Mar. 20, 1968.



The mark consists of the word "Jubilee" and a fanciful representation of eight letter "J's." Applicant disclaims the representation of diamonds apart from the mark shown.  
For Rings, Pins, Earrings, and Other Items of Jewelry in Which Are Mounted Diamonds (Int. Cl. 14).  
First use Jan. 25, 1949.

**Class 31 — Filters and Refrigerators**

SN 286,359. Multiplex Company, St. Louis, Mo. Filed Dec. 6, 1967.

**QUADRATOR**

For Non-Alcoholic Refrigerated Beverage Dispensers (Int. Cl. 11).  
First use about July 1966.

SN 289,090. Flint & Walling Manufacturing Co., Inc., Kendallville, Ind. Filed Jan. 18, 1968.

**MARINA**

For Water Conditioners, Water Softeners, Cartridge Type Water Filter Units, and Replacement Elements for Filter Units (Int. Cl. 11).  
First use Nov. 26, 1967.

SN 289,257. Amicon Corporation, Lexington, Mass. Filed Jan. 22, 1968.

*Diaflo*

Owner of Reg. No. 833,683.  
For Ultrafiltration Membranes and Ultrafiltration Apparatus (Int. Cl. 11).  
First use Apr. 17, 1967.



SN 289,476. Cambridge Filter Corporation, Syracuse, N.Y. Filed Jan. 24, 1968.

## SIDE-CARB

Owner of Reg. Nos. 820,734 and 820,735.  
For Air Filters (Int. Cl. 11).  
First use Jan. 16, 1968.

## Class 32 — Furniture and Upholstery

SN 287,285. Drexel Enterprises, Inc., Drexel, N.C. Filed Dec. 20, 1967.

## DREXOTHANE

For Plastic Material Sold as a Component Part of Furniture Items—Namely, Living Room, Dining Room, and Bedroom Furniture (Int. Cl. 20).  
First use Sept. 18, 1967.

SN 298,479. U.S. Plywood-Champion Papers Inc., New York, N.Y. Filed May 22, 1968.

## CONTRACT SEVEN

For Institutional and Office Furniture—Namely, Movable Office and Home Partitions, Cabinets, Storage Cabinets, Wardrobes, Desks, and Chairs (Int. Cl. 20).  
First use on or about Mar. 12, 1968.

## Class 33 — Glassware

SN 294,453. American Saint Gobain Corporation, Kingsport, Tenn. Filed Mar. 26, 1968.

## LUSTRONIC

Owner of Reg. No. 564,683.  
For Flat and Sheet Glass (Int. Cl. 21).  
First use Mar. 4, 1968.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 248,430. Neoweld Electric Inc., Cornwall Bridge, Conn. Filed June 21, 1966.

## KAOPAK

For Portable Electrical Resistance Heating Units and Parts and Controls Therefor, for Preheating, Stress Relieving and Heat Treating Various Metals and Metal Products (Int. Cl. 11).  
First use Oct. 1, 1965.

SN 268,480. The Coleman Company, Inc., Wichita, Kans. Filed Apr. 7, 1967.

## COLEMAN COMBO

Owner of Reg. Nos. 140,701, 726,393, and others.  
For Combination Air Conditioner and Heating Unit for Mobile Homes (Int. Cl. 11).  
First use on or before Jan. 27, 1967.

SN 268,987. Pacific Scientific Company, City of Commerce, Calif. Filed Apr. 12, 1967.

## VACU-DRAW

For Vacuum-Type Heat Treating Furnaces (Int. Cl. 11).  
First use Nov. 19, 1964.

SN 269,457. Ronson Corporation, Woodbridge, N.J. Filed Apr. 18, 1967.

## VARAFLAME

Owner of Reg. No. 726,873.  
For Gas-Fired Candles, Gas-Fired Chaffing Dishes, and Gas-Fired Torches (Int. Cl. 11).  
First use Aug. 15, 1962, on gas-fired candles.

SN 272,284. Liquid Carbonic Corporation, Chicago, Ill. Filed May 24, 1967.

## DYNAWELD

For Automatic and Semi-Automatic Welding Apparatus for Use in the MIG and TIG Welding Processes (Int. Cl. 7).  
First use Dec. 5, 1966.

SN 272,285. Liquid Carbonic Corporation, Chicago, Ill. Filed May 24, 1967.

## DYNATUBE

For Automatic Pulsed Arc Welding Systems and Parts Thereof (Int. Cl. 9).  
First use Dec. 5, 1966.

SN 279,925. Boyar-Schultz Corporation, Broadview, Ill. Filed Sept. 8, 1967.

## COOKIE-MATIC

For Commercial Cooky Forming and Baking Machine (Int. Cl. 11).  
First use Mar. 1, 1959.

SN 282,279. Kobe Steel, Ltd., Fukui-ku, Kobe, Japan. Filed Oct. 11, 1967.

## ALEX

Owner of Japanese Reg. No. 733,001, dated Feb. 13, 1967.  
For Braze Aluminum Heat Exchanger (Int. Cl. 11).

SN 287,318. Raypak Company, Inc., South El Monte, Calif. Filed Dec. 20, 1967.

## CALIFORNIAN

For Hot Water Heaters and Swimming Pool Heaters (Int. Cl. 11).  
First use 1963.

SN 295,368. Plascon AG, Munchenstein, Switzerland. Filed Apr. 10, 1968.

## LUMATIC

Owner of Swiss Reg. No. 190,427, dated Feb. 22, 1962.  
For Steam Generators of All Types, Especially Steam Humidifiers (Int. Cl. 11).  
First use July 21, 1967; in commerce July 21, 1967.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 294,423. Think Thin International, Long Beach, Calif. Filed Mar. 28, 1968.

SN 289,936. Westinghouse Air Brake Company, Wilmerding, Pa. Filed Jan. 30, 1968.

## WHITE DOT

Owner of Reg. No. 717,595.  
For Gaskets, Compression Rings, O-Rings or Grommets, Diaphragms, and Packing Cups (Int. Cl. 17).  
First use Nov. 16, 1967.

SN 290,510. McCreary Tire & Rubber Company, Indiana, Pa. Filed Feb. 7, 1968.

## SCOT WIDE SPORT

The term "Wide" is disclaimed apart from the mark as a whole.  
For Vehicle Tires (Int. Cl. 12).  
First use Dec. 27, 1967.

SN 303,880. Wencor, Inc., Miami, Fla. Filed July 30, 1968.

## Wencor

For O-Ring Seals (Int. Cl. 17).  
First use Oct. 29, 1966.

## Class 36 — Musical Instruments and Supplies

SN 280,106. Troy National Bank, Troy, Mich., assignee of Stereodyne, Inc., Troy, Mich. Filed Sept. 11, 1967.

## DYNAPAK

For Single Reel, Endless Magnetic Tape Cartridges (Int. Cl. 9).  
First use on or about June 26, 1967.

SN 286,444. Dick Paladino, Las Vegas, Nev. Filed Dec. 7, 1967.

## Dick Paladino

For Clarinet and Saxophone Mouthpieces (Int. Cl. 15).  
First use May 5, 1966.

SN 291,877. Edward A. Kotlar, d.b.a. Kotlar Enterprises, Grosse Pointe Woods, Mich. Filed Feb. 26, 1968.

## Contrast

For Phonograph Records and Pre-recorded Magnetic Tapes (Int. Cl. 9).  
First use Jan. 9, 1967.



For Phonograph Records (Int. Cl. 9).  
First use Jan. 19, 1968.

## Class 37 — Paper and Stationery

SN 275,446. Kee Lox Manufacturing Company, Rochester, N.Y. Filed July 6, 1967.

## MARVEL

For Carbon Paper and Typewriter Ribbon (Int. Cl. 16).  
First use June 13, 1967.

SN 276,151. Ludlow Corporation, Needham, Mass., by merger from The Marvellum Company, Holyoke, Mass. Filed July 17, 1967.

## PEARLTONE

For Coated Paper and Paper-Board (Int. Cl. 16).  
First use July 1959.

SN 278,490. Highland Supply Corporation, d.b.a. Arrow Brands, Highland, Ill. Filed Aug. 17, 1967.

## PLASTIFOIL

For Laminates of Aluminum Foil and Plastic for Use as a Wrapping Material (Int. Cl. 16).  
First use about Aug. 10, 1955.

SN 281,231. Societe Rhodiaceta, Paris, France. Filed Sept. 26, 1967.

## BIDIM

Owner of French Reg. No. 702,575, dated Dec. 2, 1965.  
For Paper and Articles Made of Paper, Specifically Writing Papers, Printing Papers, Paper Mounts for Photographers, Book Covers, Artists' Papers, and Wall Papers (Int. Cls. 16 and 27).

SN 283,246. Georgia-Pacific Corporation, Portland, Oreg. Filed Oct. 24, 1967.

## HOPPER SMOOTHOPAUQUE

The word "Smoothopauque" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 652,065, 739,021, and 812,532.  
For Printing Paper (Int. Cl. 16).  
First use Oct. 1, 1965; 1939 as to the word "Hopper."



SN 287,488. Textron Inc., Providence, R.I. Filed Dec. 22, 1967. SN 285,318. F-D-C Reports, Inc., Washington, D.C. Filed Nov. 21, 1967.

**DESKETTE**

For Desk Stands for Writing Instruments and Parts for Such Desk Stands, Writing Instrument Sockets, Fountain Pens, Ballpoint Pens, Mechanical Pencils, and Marking Pens (Int. Cl. 16).  
First use Aug. 1, 1967.

**Class 38—Prints and Publications**

SN 273,995. Groller Incorporated, New York, N.Y. Filed June 8, 1967.

**AIR  
PIX**

Owner of Reg. No. 408,804.  
For Series of Books Published Periodically (Int. Cl. 16).  
First use Sept. 29, 1966.

SN 271,859. Marjorie T. Thomas, d.b.a. Air Pix, Melville, N.Y. Filed May 18, 1967.

**THE NEW BOOK OF  
KNOWLEDGE**

For Photographs of Airplanes and Photographs Taken From Airplanes (Int. Cl. 16).  
First use May 1, 1967.

SN 278,314. Mecanorma S.A., Paris, France. Filed Aug. 17, 1967.

**NORMATYPE**

Priority claimed under Sec. 44(d) on French Reg. No. 723,945, dated June 7, 1967.  
For Dry Transfer Sheet for Transfer on All Surfaces of Letters, Signs, Drawings, Webs, Colors, and All Graphic Representations or Symbols (Int. Cl. 16).

SN 279,166. Bond Publishing Company, Newport Beach, Calif. Filed Aug. 28, 1967.

**CAR LIFE**

Owner of Reg. No. 640,351.  
For Periodical Magazine (Int. Cl. 16).  
First use February 1954.

SN 282,570. Girl Scouts of the United States of America, New York, N.Y. Filed Oct. 16, 1967.

**THE BROWNIE READER**

For Magazine (Int. Cl. 16).  
First use Sept. 22, 1967.

SN 284,505. Ridge Tool Company, Elyria, Ohio. Filed Nov. 9, 1967.

**RIDGID**

Owner of Reg. Nos. 419,190, 770,621, and others.  
For Calendars (Int. Cl. 16).  
First use December 1935.

**"The Gold Sheet"**

For Specialized Trade Report Issued Periodically in the Food, Drug, Cosmetic, and Related Industries (Int. Cl. 16).  
First use July 21, 1967.

SN 285,319. F-D-C Reports, Inc., Washington, D.C. Filed Nov. 21, 1967.

**QC**

For Specialized Trade Report Issued Periodically in the Food, Drug, Cosmetic, and Related Industries (Int. Cl. 16).  
First use July 21, 1967.

SN 288,725. Peter J. Stelnecrohn, M.D., Coral Gables, Fla. Filed Jan. 12, 1968.

**STOP KILLING YOURSELF**

For Nationally Syndicated Medical Columns (Int. Cl. 16).  
First use November 1955.

SN 290,317. Ernest N. Oeland, Jr., d.b.a. Dial-A-Play, West Covina, Calif. Filed Feb. 5, 1968.

**DIAL-A-PLAY**

For Rotatable Chart Containing Information About the Playing of Baseball (Int. Cl. 16).  
First use Mar. 15, 1965.

SN 297,829. Fleer Corp., Philadelphia, Pa. Filed May 10, 1968.

**Show  
Offs**

For Printed Images or Pictures Transferrable to Skin (Int. Cl. 16).  
First use Apr. 21, 1968.

**Class 39—Clothing**

SN 276,116. Farah Manufacturing Company, Inc., d.b.a. Farah Industries, El Paso, Tex. Filed July 17, 1967.

**COZY-KNIT**

For Diapers (Int. Cl. 25).  
First use June 5, 1967.

SN 280,336. Sanrival S.r.l., Milan, Italy. Filed Sept. 14, 1967. SN 289,188. Gilbert Shoe Stores, Inc., Columbus, Ohio. Filed Jan. 19, 1968.



Priority claimed under Sec. 44(d) on Italian application filed Aug. 30, 1967; Reg. No. 225,515, dated Apr. 17, 1968. The lining shown in the drawing is for shading purposes only and does not represent color.

For Clothing for Men, Women and Children—Namely, Shirts, Underpants, Stockings, Socks, Bathing Suits, Foundation Garments, Garter Belts, Hats, Brassieres, Scarfs, Ties, and Garters (Int. Cl. 25).  
First use 1948; in commerce 1952.

SN 282,076. Goodyear Rubber Company, Middletown, Conn. Filed Oct. 9, 1967.

**LINCOLN**

For Rubber Boots and Shoes (Int. Cl. 25).  
First use December 1884.

SN 282,077. Goodyear Rubber Company, Middletown, Conn. Filed Oct. 9, 1967.

**CRACK PROOF**

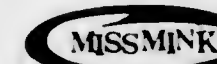
For Rubber Boots and Shoes (Int. Cl. 25).  
First use December 1876.

SN 286,153. Kastinger & Co. KG Sportschufabrik, Seewalchen am Attersee, Austria. Filed Dec. 4, 1967.



Priority claimed under Sec. 44(d) on Austrian application filed June 16, 1967; Reg. No. 60,710, dated Nov. 9, 1967. The drawing is lined for gold.  
For Shoes (Int. Cl. 25).

SN 286,355. Mayer & Cie Pelzfabrik, Zurich, Switzerland. Filed Dec. 6, 1967.



Priority claimed under Sec. 44(d) on Swiss Reg. No. 225,764, dated July 7, 1967. No claim is made to the exclusive use of the word "Mink" apart from the mark as a whole.

For Mink and/or Mink Trimmed Coats, Capes, Jackets, and Suits (Int. Cl. 25).  
First use Mar. 6, 1967; in commerce Mar. 23, 1967.

SN 287,755. Peter Pan International, Inc., New York, N.Y. Filed Dec. 28, 1967.

**PETER PAN HOSIERY**

The term "Hosiery" is disclaimed apart from the mark as shown. Owner of Reg. No. 578,495.  
For Hosiery (Int. Cl. 25).  
First use Dec. 14, 1967.

**weather gaiters**

No claim is made to the word "Gaiters" apart from the mark as shown. The lining on the drawing is not intended to depict any particular color.  
For Rubber Boots and Overshoes (Int. Cl. 25).  
First use Jan. 4, 1968.

SN 291,602. David Ferguson Ltd., New York, N.Y. Filed Feb. 21, 1968.



For Women's Sportswear—Namely, Dresses, Skirts, Bathing Suits, Shirts, Pants, Shorts, Blouses, Raincoats, Sweaters, Hats, Suits, and Coats (Int. Cl. 25).  
First use January 1965.

SN 292,173. A. S. Beck Shoe Corporation, New York, N.Y. Filed Feb. 29, 1968.

**Beck  
COLORVISION**

Owner of Reg. Nos. 693,556, 695,384, and others.  
For Shoes (Int. Cl. 25).  
First use Feb. 8, 1968.

SN 295,807. J. P. Conroy, Inc., Johnstown, N.Y. Filed Apr. 17, 1968.

**ALUMINAR**

For Glove Linings, Sold as Components of Gloves (Int. Cl. 25).  
First use September 1967.

SN 302,024. The Villager, Inc., Philadelphia, Pa. Filed July 5, 1968.



Owner of Reg. Nos. 702,965, 841,021, and others.  
For Shirts, Blouses, Dresses, Skirts, Suits, Slacks, Shorts, and Sweaters (Int. Cl. 25).  
First use January 1962.

**Class 40—Fancy Goods, Furnishings, and Notions**

SN 287,424. David and David, Inc., Long Island City, N.Y. Filed Dec. 22, 1967.

**CURLETTE**

For Wigs and Hairpieces (Int. Cl. 26).  
First use Feb. 6, 1967.  
Subj. to Intf. with SN 287,684.



SN 287,684. Tovar Tresses, Inc., New York, N.Y. Filed Dec. 27, 1967. SN 270,124. Gebeco, Inc., Buffalo, N.Y. Filed Apr. 27, 1967.

**CURL-ETTE**

For Wigs, Wiglets, and Hairpieces (Int. Cl. 26).  
First use Dec. 1, 1957.  
Subj. to Intf. with SN 287,424.

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

SN 292,951. G. W. Onthank Company, Des Moines, Iowa. Filed Mar. 11, 1968.



The word "Carpets" is disclaimed.  
For Carpets (Int. Cl. 27).  
First use Jan. 31, 1968.

SN 290,186. Olin Mathieson Chemical Corporation, New York, N.Y. Filed May 28, 1968.

**KITTEN STEP**

For Rug Underlay (Int. Cl. 27).  
First use Mar. 26, 1968.

SN 302,202. Shapiro and Son Bedspread Corp., New York, N.Y. Filed July 8, 1968.

**JET SET**

For Bedspreads, Drapes, Pillow Shams, and Dust Ruffles (Int. Cl. 24).  
First use June 10, 1968.

**Class 43—Thread and Yarn**

SN 292,828. T. G. & Y. Stores Company, Oklahoma City, Okla. Filed Mar. 8, 1968.

**GOLDEN T**

For Knitting Yarns (Int. Cl. 23).  
First use Oct. 18, 1967.

**Class 44—Dental, Medical, and Surgical Appliances**

SN 237,623. Sweden Freezer Manufacturing Co., Seattle, Wash. Filed Jan. 28, 1966.



Owner of Reg. Nos. 523,137, 750,552, and others.  
For External Artificial Kidney Units (Int. Cl. 10).  
First use on or about Dec. 10, 1962.

**CARESSE**

For Body Massaging Devices Which Exert Rhythmic Pressure on the Body by the Use of an Alternately Inflatable and Deflatable Member Strapped to the Body Which Is Actuated by an Air Pump (Int. Cl. 10).  
First use Mar. 9, 1967.

SN 275,066. Modern Denture Research Co., Los Angeles, Calif. Filed June 29, 1967.

**AIR-CENTRIC**

For Denture Diagnostic and Bite Registration Kits Used by Dentists in Fitting and Adjusting Dentures in the Mouth of a Patient (Int. Cl. 10).  
First use Mar. 25, 1966.

SN 287,673. Ritter Pfaudler Corporation, Rochester, N.Y. Filed Dec. 27, 1967.

**ULTRA-CENTRIC**

For Dental Handpieces and an Air and/or Water Spray Clip-On Attachment Accessory (Int. Cl. 10).  
First use Mar. 27, 1967.

SN 287,992. Edward Fitz, d.b.a. El-Fax, Ardmore, Pa. Filed Jan. 2, 1968.

**XLATOR**

For Lung Exercising Device—Namely, an Apparatus Intended To Aid Persons in the Development of Contractile Strength for Their Lungs, To Increase the Strength of Exhalation, and To Provide an Isometric, Isotonic or Isometric-Isotonic Type of Exercise for the User's Lungs (Int. Cl. 10).  
First use Dec. 17, 1967.

SN 291,528. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company, Los Angeles, Calif. Filed Feb. 20, 1968.

**SEAMLESS SURGICAL SCRUBBER**

Applicant disclaims "Surgical Scrubber" apart from the mark as shown. Owner of Reg. Nos. 146,606 and 444,431.  
For Disposable Sponges (Int. Cl. 5).  
First use Jan. 29, 1968.

SN 295,991. Ethicon, Inc., Somerville, N.J. Filed Apr. 19, 1968.



For Sutures (Int. Cl. 10).  
First use Mar. 5, 1968.

SN 298,010. The Kendall Company, Walpole, Mass. Filed May 13, 1968.

**TENDERSKIN**

For Surgical Adhesive Tape (Int. Cl. 5).  
First use June 27, 1966.

**Class 46—Foods and Ingredients of Foods**

SN 253,318. Peter J. Ferrara, d.b.a. Keep Chemical Company, New York, N.Y. Filed Aug. 29, 1966.

**CAMBRIDGE FORMULA**

The word "Formula" is disclaimed apart from the mark as shown.  
For Baked Goods—Namely, Breads, Rolls, Biscuits, Pastries, Puff Pastries, Muffins, and Crisp-Breads (Int. Cl. 30).  
First use May 6, 1965.  
Subj. to Intf. with SN 258,270.

SN 262,108. American Dairy Queen Corporation, Minneapolis, Minn. Filed Jan. 9, 1967.



Owner of Reg. Nos. 738,023, 814,632, and others.  
For Condiments—Namely, Catsup, Mustard, Pickles, Relish, and Salt and Pepper (Int. Cls. 29 and 30).  
First use Jan. 15, 1964.

SN 263,115. Riviana Foods Inc., Houston, Tex. Filed Jan. 23, 1967.

**NUTTY**

For Rice (Int. Cl. 30).  
First use Jan. 10, 1967.

SN 288,490. Big Icy System, Inc., Phoenix, Ariz. Filed Jan. 10, 1968.



For Flavor Bases for Making Fruit Flavored Ices (Int. Cl. 30).  
First use Nov. 27, 1967.

SN 291,960. Brooklyn Cheese Company, Inc., Brooklyn, N.Y. Filed Feb. 27, 1968.

**4C CRUM 'N BAKE**

Owner of Reg. No. 766,467.  
For Seasoned Crumbling Mix, for Poultry, Fish and Meat (Int. Cl. 30).  
First use Feb. 14, 1968.

SN 295,425. Delicia, Inc., d.b.a. Progress Confection Company, Elizabeth, N.J. Filed Apr. 11, 1968.

**HIGH-JINKS**

For Confectionery—Namely, Assorted Nuts and Popcorn Coated With a Caramel Coating (Int. Cl. 30).  
First use Feb. 5, 1968.

SN 298,041. Reddi-Wip, Inc., Los Angeles, Calif. Filed May 13, 1968.

**REDDI WIP**

Owner of Reg. Nos. 560,710, 827,404, and others.  
For Sour Dressing of the Type Derived From Vegetable Fat Rather Than Cream, and Similarly Derived Garlic Onion Dip, French Onion Dip, and Chive Onion Dip (Int. Cl. 29).  
First use Apr. 25, 1968.

**Class 48—Malt Beverages and Liquors**

SN 304,869. Jos. Schlitz Brewing Company, Milwaukee, Wis. Filed Aug. 12, 1968.

**SCHLITZ**

Owner of Reg. Nos. 52,011, 820,875, and others.  
For Beer (Int. Cl. 32).  
First use May 1, 1888.

**Class 49—Distilled Alcoholic Liquors**

SN 284,139. Myers Rum Company Limited, Nassau, Bahamas. Filed Nov. 6, 1967.



Applicant disclaims all words except "Myer's" and "Planters'" apart from the mark as shown. Owner of U.S. Reg. Nos. 312,595, 639,814, and others.  
For Rum (Int. Cl. 33).  
First use at least as early as Jan. 15, 1951; in commerce at least as early as Jan. 15, 1951.

**Class 50—Merchandise Not Otherwise Classified**

SN 272,115. Carroll E. Thomas, San Francisco, Calif. Filed S.R. May 22, 1967; Am. P.R. Oct. 15, 1968.



For Artist's Painting Kit (Int. Cl. 16).  
First use Feb. 10, 1965.

SN 275,092. Clarence P. Ward, d.b.a. Travalet Products, Klamath Falls, Oreg. Filed June 29, 1967.



For Trouser Holding Device in the Nature of a Tube (Int. Cl. 21).  
First use Apr. 20, 1967.



SN 278,208. Hall-Neal Furnace Company, Indianapolis, Ind. Filed Aug. 14, 1967.



The drawing is lined for the colors green and yellow.  
For Heated Hovers, Brooder Heaters, and Brooder Systems, Each Such System Comprising a House, a Hover Within the House and Adjustable Between a Condition in Which Heated Air Supplied Thereto Is Confined to the Hover and a Condition in Which Such Heated Air May Escape to the Interior of the House, Means for Heating Air and Means for Delivering Such Heated Air at a Controlled Rate to the Interior of the Hover (Int. Cl. 11).  
First use May 9, 1967.

### Class 51—Cosmetics and Toilet Preparations

SN 254,440. Yardley of London, Inc., Totowa, N.J. Filed Aug. 15, 1966.

### DEVONSHIRE CREAM

The word "Cream" is disclaimed apart from the mark as shown.  
For Bath Products—Namely, Bath Oil and Foam Bath (Int. Cl. 3).  
First use June 15, 1966.  
Subj. to Intf. with SN 254,735.

SN 270,169. Valhalla Inc., Tuscaloosa, Ala. Filed Apr. 27, 1967.



For Cologne (Int. Cl. 3).  
First use Feb. 1, 1967.

SN 270,170. Valhalla Inc., Tuscaloosa, Ala. Filed Apr. 27, 1967.



For Cologne (Int. Cl. 3).  
First use Feb. 1, 1967.

SN 270,172. Valhalla Inc., Tuscaloosa, Ala. Filed Apr. 27, 1967.



For Cologne (Int. Cl. 3).  
First use Feb. 1, 1967.

SN 272,571. Borden, Inc., New York, N.Y., by change of name from The Borden Company, New York, N.Y. Filed May 29, 1967.

### HOLD EVERYTHING

Owner of Reg. No. 426,975.  
For Cold Wave and Neutralizer Solution for Permanent Waves (Int. Cl. 3).  
First use Mar. 16, 1962.

SN 276,525. Autumn Leaves Company, Ada, Mich. Filed July 21, 1967.

### AUTUMN LEAVES

For Cologne (Int. Cl. 3).  
First use May 24, 1967.

SN 277,458. W. K. M. Hassenstein, d.b.a. Hassenstein, Hollywood, Calif. Filed Aug. 3, 1967.



No claim is made to the exclusive use of the words "Skin Beauty," apart from the other features of the mark as shown.  
For Skin Cream (Int. Cl. 3).  
First use Jan. 31, 1960.

SN 281,306. Mowatt & Moore Limited, Pointe Claire, Quebec, Canada. Filed Sept. 27, 1967.

### PROMANI

Owner of Canadian Reg. No. 115/29,684, dated Mar. 13, 1948.  
For Hand Lotion (Int. Cl. 3).  
First use Mar. 16, 1946; in commerce Sept. 20, 1967.

SN 281,691. Exquisite Form Industries, Inc., New York, N.Y. Filed Oct. 3, 1967.

### MANDATE!

Owner of Reg. No. 743,495.  
For Toilettes for Men, Specifically After-Shave Lotion (Int. Cl. 3).  
First use Sept. 22, 1967.

SN 287,381. Sea & Ski Corporation, San Francisco, Calif. Filed Dec. 21, 1967.

### SUNMATE

For After Shave Bronzer (Int. Cl. 3).  
First use Nov. 14, 1967.

SN 287,651. Hoffritz for Cutlery, Inc., d.b.a. Hoffritz, New York, N.Y. Filed Dec. 27, 1967.

### TICKER TAPE

For Men's After-Shave Lotion and Cologne (Int. Cl. 3).  
First use Nov. 24, 1967.

SN 289,788. Dorosy, Incorporated, Chicago, Ill. Filed Jan. 29, 1968.

### KIX KINKS

Applicant disclaims the word "Kinks" in connection with any use apart from the mark as shown.  
For Cosmetic Hair Straightener (Int. Cl. 3).  
First use Jan. 20, 1920.

SN 292,091. Gabel's Cosmetics, Inc., Los Angeles, Calif. Filed Feb. 28, 1968.

### IMPROVE

For Hair Styling Lotion (Int. Cl. 3).  
First use at least as early as July 10, 1967.

SN 295,299. Avon Products, Inc., New York, N.Y. Filed Apr. 10, 1968.

### PROFIT

For Toothpaste, Personal Deodorant, and After Shave Lotion (Int. Cls. 3 and 5).  
First use Mar. 22, 1968.

SN 302,891. The Gillette Company, d.b.a. The Toni Company, Boston, Mass. Filed July 17, 1968.

### MOPPET

For Cologne (Int. Cl. 3).  
First use June 24, 1968.  
Subj. to Intf. with SN 301,571.

SN 303,747. The Gillette Company, Boston, Mass. Filed July 29, 1968.

### HIGH TIME

For Hairspray (Int. Cl. 3).  
First use July 18, 1968.

SN 303,966. Physicians Formula Cosmetics, Inc., Los Angeles, Calif. Filed July 31, 1968.

### SUN SHIELD

For Liquid Make-Up, Skin Lubricating and Protection Lotion (Int. Cl. 3).  
First use Feb. 4, 1965.  
Subj. to Intf. with SN 278,775.

### Class 52—Detergents and Soaps

SN 275,887. Foresight Corporation, d.b.a. Water Soluble Products, Chicago, Ill. Filed July 12, 1967.

### DETERGENT "3·2·4"

The word "Detergent" is disclaimed apart from the mark as shown.  
For All-Purpose Cleaning Preparation (Int. Cl. 3).  
First use June 1, 1967.

SN 276,045. Maurice H. Simson, d.b.a. Alpha Chemical Company, Baltimore, Md. Filed July 14, 1967.

### ALPHA

For Liquid Toilet Soaps, Liquid Detergents for Household, Automobile, and General Cleaning, Liquid Cleaning Compound for Wood, Metal, Glass, Marble, Painted Woodwork, Floors, Walls, and Furniture (Int. Cl. 3).  
First use May 1, 1925.  
Subj. to Intf. with SN 285,995.

SN 279,107. Shur-Dol Chemical Company, Holland, Mich. Filed Aug. 25, 1967.

### BY\*PAS

For Household All-Purpose Cleaning Concentrate (Int. Cl. 3).  
First use May 29, 1967.

SN 279,767. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Sept. 6, 1967.

### DEEPSOL

For Toilet Bowl Cleaner (Int. Cl. 3).  
First use June 20, 1967.

SN 280,279. West Chemical Products, Inc., Long Island City, N.Y. Filed Sept. 13, 1967.



Owner of Reg. No. 210,422 and others.  
For Liquid Hand Soap; Surgical Soap; Hand Soap; Liquid Castile Soap and Powdered Hand Soap; Chemical Preparations for Use in Disinfecting and Cleaning Bowls, Pipes; and Leaf Cleansing Agents (Int. Cls. 3 and 5).  
First use Feb. 13, 1967.

SN 281,739. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed Sept. 19, 1967.

### RC-1

Owner of Reg. Nos. 430,777, 611,886, and others.  
For Alkaline Detergent for Cleaning Rubber in Dairy and Food Processing Plants (Int. Cl. 3).  
First use Apr. 26, 1967.

SN 282,636. Stanley Home Products, Inc., Westfield, Mass. Filed Oct. 16, 1967.

### TENDER FOAM

The word "Foam" is disclaimed apart from the mark as shown.

For Hair Shampoo (Int. Cl. 3).  
First use June 10, 1964.

SN 284,000. ESWA, Gloor, Meier & Co., Chem.-Techn. Produkte, Wascherel-Bedarfsartikel, Stansstad, Stansstad, Nidwalden, Switzerland. Filed Nov. 2, 1967.

### ESWA

Owner of Swiss Reg. No. 182,689, dated Aug. 9, 1960.  
For Laundry Detergents and Soaps (Int. Cl. 3).



SN 286,875. Alberto-Culver Company, Melrose Park, Ill. Filed Dec. 14, 1967.

## MAKES YOUR HAIR DO WHAT YOU WANT IT TO!

For Hair Shampoo (Int. Cl. 3).  
First use at least as early as May 1963.

SN 295,300. Avon Products, Inc., New York, N.Y. Filed Apr. 10, 1968.

## PROFIT

For Toilet Soap (Int. Cl. 3).  
First use Mar. 22, 1968.

SN 298,698. Bristol-Myers Company, New York, N.Y. Filed May 21, 1968.

## MOISTURA

For Hair Shampoo (Int. Cl. 3).  
First use Apr. 1, 1968.  
Subj. to Intf. with SN 304,843.

SN 300,881. Purex Corporation, Ltd., Lakewood, Calif. Filed June 20, 1968.

## BRILLO

Owner of Reg. Nos. 93,517, 736,958, and others.  
For Spray and Wipe Surface Cleaner for Household Use (Int. Cl. 3).  
First use May 29, 1968.

## SERVICE MARKS

### Class 100 — Miscellaneous

SN 281,046. Denny's Restaurants, Inc., La Mirada, Calif. Filed Sept. 25, 1967.



Owner of Reg. Nos. 736,161 and 740,359.  
For Restaurant Services (Int. Cl. 42).  
First use on or about Mar. 5, 1963.

SN 286,020. Majoda Tool & Mfg. Corp., Hoboken, N.J. Filed Dec. 1, 1967.



For Engineering Design Services (Int. Cl. 42).  
First use Nov. 1, 1967.

SN 288,711. The National Urban League, Inc., New York, N.Y. Filed Jan. 12, 1968.



For Community Services Designed To Secure Equal Opportunities for Negroes and Other Minorities in All Areas of American Life With Special Emphasis on Housing, Health and Welfare, Education, and Employment (Int. Cl. 42).  
First use Jan. 8, 1968.

SN 289,176. Educational Data Corporation, d.b.a. Ed-Data Corp., Fort Lauderdale, Fla. Filed Jan. 19, 1968.

## COM-DATE

For Matching of People Through Computer Testing (Int. Cl. 42).  
First use Oct. 1, 1964.

SN 294,435. Dentacenters, Inc., Indianapolis, Ind. Filed Mar. 29, 1968.

## DENTACENTERS

For Consulting Services in Connection With Dental Health Plans and the Like (Int. Cl. 42).  
First use Mar. 19, 1968.

SN 304,289. Tin Lizzy, Inc., Pomona, Calif. Filed Aug. 5, 1968.

## TIN LIZZY

For Restaurant Services (Int. Cl. 42).  
First use Feb. 23, 1968.

SN 304,553. Mr. Bun, Inc., North Palm Beach, Fla. Filed Aug. 7, 1968.



For Restaurant Services (Int. Cl. 42).  
First use June 11, 1968.

### Class 101 — Advertising and Business

SN 252,400. Metro-Graphics, Inc., Washington, D.C. Filed Aug. 15, 1966.



For Printing Services (Int. Cl. 35).  
First use in or about September 1965.

SN 254,612. Minute Man Dairy Stores, Inc., Atlantic City, N.J. Filed Sept. 16, 1966.

## MINUTE MAN

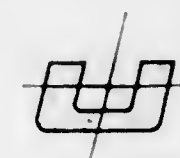
For Promotion and Sale of Retail Dairy Food Store Services (Int. Cl. 35).  
First use Jan. 25, 1966.

SN 258,554. Patrick F. Kennedy, d.b.a. P. F. Kennedy and Associates, Newtown Square, Pa. Filed Nov. 14, 1966.



For Collecting Information About an Audience and Measuring Audience Opinion (Int. Cl. 35).  
First use June 25, 1966.  
Subj. to Intf. with SN 269,660 and SN 272,274.

SN 266,815. Unishops, Inc., Jersey City, N.J. Filed Mar. 15, 1967.



For Operating Men's and Boys' Wear Sections in Department Stores (Int. Cl. 35).  
First use on or about July 31, 1962.

SN 278,767. Key-Write Corporation, Chicago, Ill. Filed Aug. 22, 1967.

## KEY-WRITE

For Rental of Electronic Data Processing Equipment and Advisory Services in Setting Up, Programming, Maintaining and Supervising the Use of Electronic Data Processing Equipment and Systems (Int. Cl. 35).  
First use July 7, 1967.

SN 285,391. Bradshaw-Welles Company, Inc., Los Angeles, Calif. Filed Nov. 22, 1967.



For Brokerage Merchandising—Namely, Negotiating the Sale of Merchandise for the Accounts of Sellers as Principals (Int. Cl. 35).  
First use on or about June 15, 1962.

SN 289,631. Staff Supermarket Associates, Inc., Jericho, N.Y. Filed Jan. 25, 1968.

## STAFF

Owner of Reg. Nos. 838,162, 844,219, and others.  
For Retail Grocery Store Services (Int. Cl. 35).  
First use Jan. 18, 1959.

SN 291,701. Auto-Tronix Universal Corporation, Denver, Colo. Filed Feb. 23, 1968.

## ATU

Owner of Reg. No. 812,303.  
For Business Services in and Relating to the Field of Electronic Data Processing—Namely, Computer Programming, Systems Design, Systems Analysis, Management Consulting, and Data Processing Operations (Int. Cl. 35).  
First use May 1966.  
Subj. to Intf. with SN 266,299.

SN 295,594. Ballinger-Meserole Company, Philadelphia, Pa. Filed Apr. 15, 1968.



For Management Consultation Services—Namely, Assessment and Evaluation of Executive Staffs, Labor, Material, and Production Schedules for Business and Industry (Int. Cl. 35).  
First use December 1966.

SN 297,243. Castle & Cooke, Inc., d.b.a. Plan, Honolulu, Hawaii. Filed May 3, 1968.



Owner of Reg. No. 816,753.  
For Contract Management and Management Consulting Services in the Fields of Agriculture, Fisheries, Shipping, Urban Planning, Land Development, and Management of Construction Projects (Int. Cl. 35).  
First use Jan. 1, 1968.

SN 299,076. The World of Sleep, Inc., Denver, Colo. Filed May 27, 1968.

## WORLD OF SLEEP

For Retail Furniture Store Services (Int. Cl. 35).  
First use Oct. 3, 1965.

SN 301,887. Inmark, Inc., Kensington, Md. Filed July 3, 1968.

## Rentronix

For Electronic Instrumentation and Computer Rental (Int. Cl. 35).  
First use Feb. 1, 1968.

SN 304,319. Dial-A-Score, Inc., Houston, Tex. Filed Aug. 5, 1968.

## DIAL-A-SCORE

For Service of Advertising Subscribing Patrons to Members of the Public Who Call by Telephone To Obtain Scores of Various and Sundry Sporting Events (Int. Cl. 35).  
First use in or before August 1966.



SN 305,183. Esquire, Inc., New York, N.Y. Filed Aug. 15, 1968.  
 SN 277,457. The Gramatan Company Incorporated of Bronxville, New York, N.Y. Filed Aug. 3, 1967.

**I-R-I-S**

For Answering Service Providing a Reader of an Advertisement With Substantially Instant Information as to the Retail Store Most Convenient to the Reader Handling the Merchandise Advertised (Int. Cl. 35).  
 First use May 6, 1968.

**Class 102 — Insurance and Financial**

SN 258,285. Midwest Bank Card System, Inc., Chicago, Ill., assignee of Continental Illinois National Bank and Trust Company of Chicago, Chicago, Ill. Filed Nov. 9, 1966.



The drawing is lined for blue and green.  
 For Providing Credit Card Services (Int. Cl. 36).  
 First use Sept. 27, 1966.

SN 258,287. Midwest Bank Card System, Inc., Chicago, Ill., assignee of Continental Illinois National Bank and Trust Company of Chicago, Chicago, Ill. Filed Nov. 9, 1966.



For Providing Credit Card Services (Int. Cl. 36).  
 First use as early as Sept. 27, 1966.

SN 269,363. Union Mutual Life Insurance Company, Portland, Maine. Filed Apr. 17, 1967.



The mark consists of the letters "PIP."  
 For Setting Up or Development of Insurance Programs for Individuals and Corporations (Int. Cl. 36).  
 First use Jan. 27, 1967.

The name and portrait are those of a deceased Indian Chief.  
 Owner of Reg. Nos. 742,108 and 768,001.  
 For Industrial Banking Services (Int. Cl. 36).  
 First use July 1, 1930.



SN 287,135. Bankers Commercial Life Insurance Company, Dallas, Tex. Filed Dec. 18, 1967.

**GOLD CROWN PLAN**

No claim is made to exclusive rights in the word "Plan" apart from the mark as shown.  
 For Underwriting Medical, Surgical and Hospital Expenses, Accidental Bodily Injury and Accidental Death and Life Insurance (Int. Cl. 36).  
 First use Oct. 7, 1967.

SN 289,238. Financial Programs, Inc., Denver, Colo. Filed Jan. 22, 1968.



The mark comprises a fanciful representation of the letter "d."  
 For Providing Investment Advisory Service (Int. Cl. 36).  
 First use in or about June 1966.

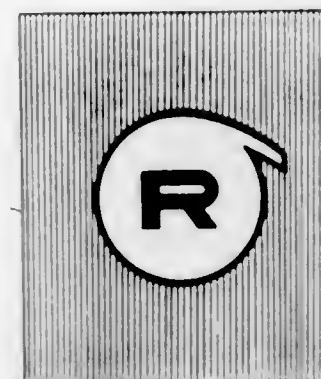
**Class 103 — Construction and Repair**

SN 270,709. The Richardson Company, Melrose Park, Ill. Filed May 4, 1967.



Owner of Reg. Nos. 765,724 and 765,725.  
 For Chemical Cleaning Services on Industrial Equipment (Int. Cl. 37).  
 First use on or before Dec. 26, 1965.  
 Subj. to Intf. with SN 295,784.

SN 270,710. The Richardson Company, Melrose Park, Ill. Filed May 4, 1967.



The drawing is lined for the color red, but color is not an essential feature of the mark. Owner of Reg. Nos. 765,724 and 765,725.  
 For Chemical Cleaning Services on Industrial Equipment (Int. Cl. 37).  
 First use on or before Dec. 26, 1965.  
 Subj. to Intf. with SN 295,784.

SN 272,615. James Knox, d.b.a. JAK Enterprises, Denver, Colo. Filed May 29, 1967.

**JAK**

For Electrical and/or Structural Construction, Repair and/or Maintenance; and Mechanical and/or Shop Repair and/or Maintenance Work on Electrical and/or Construction Equipment; and Manufacture of Specialized Small Construction Equipment and Tools (Int. Cl. 37).  
 First use Feb. 22, 1967.

SN 278,748. Tele-Quick Corporation, New Haven, Ind. Filed Aug. 21, 1967.

**TELE-QUICK**

For Television Repair Service (Int. Cl. 37).  
 First use Feb. 22, 1967.

SN 280,076. Susan Louise Long, d.b.a. Smokemaster Cleaning Service, Tucker, Ga. Filed Sept. 11, 1967.

**SMOKEMASTER**

For Cleaning the Interior of Buildings After the Same Have Been Burned (Int. Cl. 37).  
 First use on or about Oct. 4, 1964.

SN 288,584. American Uniform Company, d.b.a. Dust-Tex Company, Cleveland, Tenn. Filed Jan. 11, 1968.

**DUST-TEX**

Owner of Reg. Nos. 337,545 and 772,503.  
 For Rental, Delivery, and Periodic Pick-Up, Laundering, and Treating of Mops, Dust Cloths, and Dirt-Retaining Rugs (Int. Cl. 37).  
 First use on or about Jan. 15, 1956.

SN 294,059. Lanning Equipment Corp., Akron, Ohio. Filed Mar. 25, 1968.

**BIG BARNEY**

Owner of Reg. No. 846,457.  
 For Automatic Car Washing Services (Int. Cl. 37).  
 First use Dec. 15, 1966.

TM 856 O.G.—8

**Class 105 — Transportation and Storage**

SN 253,615. Atlantic Richfield Company, Philadelphia, Pa. Filed Sept. 1, 1966.



The drawing is lined for red.  
 For Association Services—Namely, Furthering the Interests of Automobile Drivers Who Are Members of Applicant's Club (Int. Cl. 39).  
 First use May 5, 1966.

SN 304,290. United Cargo Corp., New York, N.Y. Filed Aug. 5, 1968.

**LAND-BRIDGE**

For Containerizing and Freight Forwarding of the Cargo of Others Via an Intermodal System (Int. Cl. 39).  
 First use May 29, 1967.

**Class 107 — Education and Entertainment**

SN 285,204. Coral Television Corporation, Miami, Fla. Filed Nov. 20, 1967.

**WHITE BARON**

For Entertainment Services Rendered Through the Medium of Television—Namely, a Children's Program (Int. Cl. 41).  
 First use on or about Sept. 20, 1967.

SN 286,565. Unity School of Christianity, Lee's Summit, Mo. Filed Dec. 8, 1967.

**VOICE OF UNITY**

For Providing Religious Education by Means of a Radio Program (Int. Cl. 41).  
 First use Jan. 9, 1967.

SN 286,956. Phoenix Professional Hockey Club, Inc., Phoenix, Ariz. Filed Dec. 14, 1967.



The drawing is lined for the color blue, but no claim is made to such color.  
 For Entertainment Services—Namely, Ice Hockey Exhibitions (Int. Cl. 41).  
 First use Oct. 9, 1967.



SN 291,702. Auto-Tronix Universal Corporation, Denver, Colo. Filed Feb. 23, 1968.

**ATU**

Owner of Reg. No. 812,303.  
For Educational Services—Namely, Resident and Correspondence Instruction, Training, and Education in the Field of Data Processing (Int. Cl. 41).  
First use May 1966.  
Subj. to Intf. with SN 266,299.



SN 299,631. Madison Square Garden Corporation, New York, N.Y. Filed June 4, 1968.

**RANGERS**

For Professional Ice Hockey Contests (Int. Cl. 41).  
First use 1926.

The word "Cinema" is disclaimed apart from the mark as shown.  
For Operating Motion Picture Theatres (Int. Cl. 41).  
First use Mar. 30, 1968.

SN 299,636. Madison Square Garden Corporation, New York, N.Y. Filed June 4, 1968.

**KNICKERBOCKERS**

For Professional Basketball Contests (Int. Cl. 41).  
First use 1946.

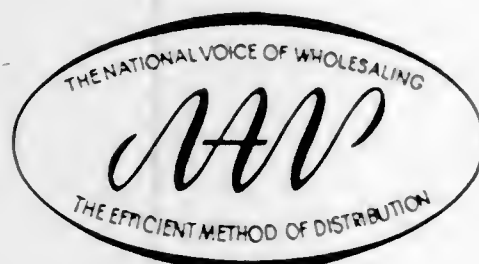
SN 305,097. The More Tishans, Stillwater, Minn. Filed Aug. 14, 1968.

**MORE TISHANS**

For Providing Entertainment Services by a Musical Organization (Int. Cl. 41).  
First use Nov. 25, 1964.

**COLLECTIVE MEMBERSHIP MARKS****Class 200**

SN 271,064. The National Association of Wholesalers, Washington, D.C. Filed May 9, 1967.



The monogram is described as having the letters "NAW" in script in an ellipse.  
For Indicating Membership in Applicant.  
First use Oct. 30, 1946.

**TRADEMARK REGISTRATIONS ISSUED  
PRINCIPAL REGISTER****Class 1—Raw or Partly Prepared Materials**

860,756. MISCELLANEOUS DESIGN. Kingsford Company. SN 243,675. Pub. 12-5-67. Filed 4-18-66.  
860,757. SIR-PEL POLY-VYSILIC MATERIAL AND DESIGN. Georgia-Bonded Fibers, Inc. SN 268,489. Pub. 9-10-68. Filed 4-6-67.  
860,758. SKIVERTEX. Philip G. Whitman, Inc. SN 271,863. Pub. 6-25-68. Filed 5-18-67.  
860,759. NY-KON. Liquid Nitrogen Processing Corporation. SN 274,636. Pub. 7-23-68. Filed 6-23-67.  
860,760. HYSTRON. Hystron Fibers Incorporated. SN 277,175. Pub. 9-10-68. Filed 7-31-67.  
860,761. GYLON. Garlock Inc. MULTIPLE CLASS (Classes 1, 23, and 35). SN 280,835. Pub. 9-10-68. Filed 9-21-67.  
860,762. STEARNS COAL AND DESIGN. Stearns Coal & Lumber Company, Inc. SN 281,324. Pub. 9-10-68. Filed 9-27-67.  
860,763. G AND DESIGN. Gregoire's Flowers, Inc. SN 281,981. Pub. 9-10-68. Filed 10-6-67.  
860,764. UFS-25. Unarco Industries, Inc. SN 282,736. Pub. 9-10-68. Filed 10-17-67.

**Class 2—Receptacles**

860,765. FLEXALL. Precision Paper Tube Company. SN 262,968. Pub. 7-23-68. Filed 1-20-67.  
860,766. NEVCO. Nevco Wood Products, Inc. MULTIPLE CLASS (Classes 2, 13, 23, and 32). SN 264,438. Pub. 9-10-68. Filed 2-10-67.  
860,767. TRI-PAK. Tri-City Industrial Services, Inc. MULTIPLE CLASS (Classes 2 and 23). SN 265,854. Pub. 5-14-68. Filed 3-2-67.  
860,768. MADISON. Martin-Marletta Corporation. SN 272,840. Pub. 9-10-68. Filed 6-1-67.  
860,769. WINCHELL'S DONUT HOUSE AND DESIGN. Winchell Donut House, Inc. SN 272,970. Pub. 9-10-68. Filed 6-2-67.  
860,770. SGI UNI-JAK AND DESIGN. Southern Graphic Industries. SN 283,726. Pub. 9-10-68. Filed 10-30-67.  
860,771. TYMINDEX. Terrence L. Weber, d.b.a. Weber & Sons. SN 285,164. Pub. 9-10-68. Filed 11-17-67.  
860,772. STERIGARD. Sterigard Company. SN 285,470. Pub. 9-10-68. Filed 11-22-67.  
860,773. STRAUSS STORES AND DESIGN. Strauss Stores Corporation. SN 291,908. Pub. 9-10-68. Filed 2-26-68.  
860,774. FLEX-O-BAGS. Flex-O-Glass, Inc., d.b.a. Warp Brothers. SN 293,818. Pub. 9-10-68. Filed 3-21-68.  
860,775. PUNK-RESIST. Romuald J. La Fleur. SN 296,845. Pub. 9-10-68. Filed 4-29-68.  
860,776. FORCASTER. Bristol-Myers Company. SN 297,968. Pub. 9-10-68. Filed 5-13-68.

**Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks**

860,777. DUNHILL TAILORS. Dunhill Tailored Clothes, Inc. MULTIPLE CLASS (Classes 3, 28, 32, and 51). SN 221,327. CONCURRENT USE. Pub. 12-14-65. Filed 6-17-65.  
860,778. DUNDEE. Schlesinger Brothers. SN 280,337. Pub. 9-10-68. Filed 9-14-67.

860,779. FEMMEFOLIOS. Robert A. Heyman Corp. SN 281,078. Pub. 9-10-68. Filed 9-25-67.  
860,780. WHIMSICASES. Robert A. Heyman Corp. SN 281,079. Pub. 9-10-68. Filed 9-25-67.

**Class 4—Abrasives and Polishing Materials**

860,781. DUST 'N WAX. Standard International Corporation, by merger from Lestoll Products Inc. SN 296,630. Pub. 8-24-65. Filed 11-20-64.  
860,782. DURATRON. Merit Products, Inc. SN 277,683. Pub. 7-23-68. Filed 8-7-67.  
860,783. SWIPE-A-SHINE. Chemical Associates, Inc. SN 284,348. Pub. 9-10-68. Filed 11-8-67.  
860,784. AJAX. Colgate-Palmolive Company. SN 291,356. Pub. 9-10-68. Filed 2-19-68.

**Class 5—Adhesives**

860,785. FA (DESIGN). Findley Adhesives Inc. SN 280,407. Pub. 9-10-68. Filed 9-15-67.  
860,786. FINDLEY. Findley Adhesives Inc. SN 281,055. Pub. 9-10-68. Filed 9-25-67.  
860,787. SAFE T SEAL. Rexford Paper Company. SN 287,952. Pub. 9-10-68. Filed 1-2-68.  
860,788. VEF F-1460-W ETC. L. E. Carpenter & Company. SN 297,970. Pub. 9-10-68. Filed 5-13-68.

**Class 6—Chemicals and Chemical Compositions**

860,789. VITACOPPER. Takeda Chemical Industries, Ltd. SN 245,352. Pub. 9-10-68. Filed 5-10-66.  
860,790. ANTIOX. Compagnie Metallurgique de la Campine. SN 248,427. Pub. 11-21-67. Filed 6-20-66.  
860,791. COTE D'OR. Technic, Inc. SN 254,407. Pub. 9-10-68. Filed 9-13-66.  
860,792. KENBRITE. Conversion Chemical Corporation. SN 271,131. Pub. 9-10-68. Filed 5-10-67.  
860,793. POLARIS. Kewanee Oil Company, d.b.a. The Harshaw Chemical Company. SN 274,216. Pub. 9-10-68. Filed 6-19-67.  
860,794. FLOCCOTAN. The Forestal Land, Timber and Railways Company Limited. SN 282,063. Pub. 9-10-68. Filed 10-10-67.  
860,795. D-SECT. W. R. Grace & Co. SN 282,078. Pub. 6-25-68. Filed 10-9-67.  
860,796. MISCELLANEOUS DESIGN. Mercer Alloys Corporation. SN 283,021. Pub. 9-10-68. Filed 10-20-67.  
860,797. SCREINDEX. WTC Chemical Corporation. SN 285,364. Pub. 9-10-68. Filed 11-21-67.  
860,798. OPTIKLEEN. General Motors Corporation. SN 285,539. Pub. 9-10-68. Filed 11-24-67.  
860,799. CONOCLAD. Continental Oil Company. SN 285,723. Pub. 9-10-68. Filed 11-28-67.  
860,800. TINOVETIN. Gelgy Chemical Corporation. SN 286,338. Pub. 9-10-68. Filed 12-6-67.  
860,801. SELECTOXO. Engelhard Minerals & Chemicals Corporation. SN 286,516. Pub. 9-10-68. Filed 12-8-67.  
860,802. FLUF-DRI. Martens Chemical Corp. SN 286,692. Pub. 9-10-68. Filed 12-11-67.



- 860,803. RAPITAN. Badische Anilin- & Soda-Fabrik Aktien-gesellschaft. SN 286,752. Pub. 9-10-68. Filed 12-12-67.
- 860,804. SUMITOL. Gelgy Chemical Corporation. SN 287,058. Pub. 9-10-68. Filed 12-18-67.
- 860,805. END-ALL. Gelgy Chemical Corporation. SN 287,537. Pub. 9-10-68. Filed 12-26-67.
- 860,806. STOP IT. M & W Manufacturing and Distributing Company. SN 288,022. Pub. 9-10-68. Filed 1-3-68.
- 860,807. PITT-CONSOL 555. Pitt-Consol Chemical Com-pany. SN 288,340. Pub. 9-10-68. Filed 1-8-68.
- 860,808. NO-DIE-Drag. Wyrongh and Loser, Inc. SN 288,400. Pub. 9-10-68. Filed 1-8-68.
- 860,809. FUNGI-SPERSE. Standard Spray and Chemical Company. SN 295,083. Pub. 9-10-68. Filed 4-8-68.
- 860,810. ESKATAB. Smith Kline Instrument Company. SN 295,882. Pub. 9-10-68. Filed 4-18-68.

### Class 7 — Cordage

- 860,811. FIBRILENE. Frank W. Winne & Son Incorporated. SN 299,817. Pub. 9-10-68. Filed 6-6-68.

### Class 8 — Smokers' Articles, Not Including Tobacco Products

- 860,812. TITAN. Wally Frank, Ltd. SN 294,037. Pub. 6-18-68. Filed 3-25-68.
- 860,813. MERCHANT SERVICE. Holland Penny Limited. SN 300,592. Pub. 9-10-68. Filed 6-17-68.

### Class 9 — Explosives, Firearms, Equipments, and Projectiles

- 860,814. SKB. SKB Arms Co., Ltd. SN 236,033. Pub. 9-10-68. Filed 1-6-66.
- 860,815. GEBRUDER MERKEL SUHL. VEB Ernst-Thäl-mann-Werk Suhl. SN 269,707. Pub. 9-10-68. Filed 4-20-67.

### Class 10 — Fertilizers

- 860,816. ALIVE. Metropolitan Waste Conversion Corpora-tion. SN 286,544. Pub. 9-10-68. Filed 12-8-67.
- 860,817. CORENCO AND DESIGN. Corenco Corporation. SN 294,817. Pub. 7-30-68. Filed 4-3-68.

### Class 11 — Inks and Inking Materials

- 860,818. COPYMAKER. Old Town Corporation. SN 216,722. Pub. 6-18-68. Filed 4-16-65.
- 860,819. 0-33. Central Compounding Company. SN 282,543. Pub. 9-10-68. Filed 10-16-67.
- 860,820. AQUA-HYDE. Lawter Chemicals, Inc. SN 289,309. Pub. 9-10-68. Filed 1-22-68.
- 860,821. TUFFAK. Rohm and Haas Company. SN 293,051. Pub. 9-10-68. Filed 3-12-68.

### Class 12 — Construction Materials

- 860,822. LUXURY TRIM. Kenton Industries, d.b.a. Home Equipment Mfg. Company. SN 266,894. Pub. 9-10-68. Filed 3-16-67.

- 860,823. BRITE-EDGE. Walter E. Selck and Co. SN 267,549. Pub. 9-10-68. Filed 3-24-67.
- 860,824. IBG. Ickes-Braun Glasshouses, Inc. SN 272,277. Pub. 9-10-68. Filed 5-24-67.
- 860,825. KALEIDO. Ditta Mariotti Primo. SN 277,823. Pub. 9-10-68. Filed 8-8-67.
- 860,826. SEROC. Seroc, Inc. SN 279,418. Pub. 9-10-68. Filed 8-30-67.
- 860,827. COLOR PUTTY. Paul R. Kubly, d.b.a. Color Putty Co. SN 280,069. Pub. 9-10-68. Filed 9-11-67.
- 860,828. FIBERFLEX. Thompson Materials Corp. SN 283,367. Pub. 7-30-68. Filed 10-25-67.
- 860,829. DUALINEK. PPG Industries, Inc., by change of name from Pittsburgh Plate Glass Company. SN 284,430. Pub. 9-10-68. Filed 11-9-67.
- 860,830. SOVEREIGN. Cloray Corporation. SN 289,278. Pub. 7-30-68. Filed 1-22-68.
- 860,831. SIERRA GROOVE. Simpson Timber Company. SN 290,057. Pub. 9-10-68. Filed 2-1-68.
- 860,832. POLYTUBE. Allegheny Plastics, Inc. SN 292,538. Pub. 9-10-68. Filed 3-6-68.
- 860,833. CONEX. Interior Roof Drain Systems, Inc. SN 292,789. Pub. 9-10-68. Filed 3-8-68.
- 860,834. CHEM-TEX. Chem-Tex Paint Company, Inc. SN 294,472. Pub. 9-10-68. Filed 3-29-68.
- 860,835. U-FORM. U-Form Associates. SN 295,064. Pub. 9-10-68. Filed 4-5-68.
- 860,836. ARCHCRAFT. Williams Products, Inc. SN 295,579. Pub. 9-10-68. Filed 4-12-68.
- 860,837. KRIMPLOK AND DESIGN. Portland Wire and Iron Works. SN 295,669. Pub. 9-10-68. Filed 4-15-68.
- 860,838. JET. Bird & Son, Inc. SN 295,715. Pub. 9-10-68. Filed 4-16-68.
- 860,839. DOR PAK. M. L. Gordon Sash & Door Company. SN 297,780. Pub. 9-10-68. Filed 5-9-68.
- 860,840. STRATCELL. Stratford Materials Corporation. SN 297,809. Pub. 9-10-68. Filed 5-9-68.
- 860,841. GENPAD. General Plastics Corporation. SN 298,122. Pub. 9-10-68. Filed 5-14-68.
- 860,842. PENINSULA. Pacific Wood Products Company. SN 298,146. Pub. 9-10-68. Filed 5-14-68.
- 860,843. SCULPTURED ACCENTS. Amerock Corporation. SN 298,190. Pub. 9-10-68. Filed 5-15-68.
- 860,844. SECURE AND DESIGN. Life-Time Bathtub Enelo-sures, Inc. SN 298,460. Pub. 9-10-68. Filed 5-17-68.
- 860,845. TEGA. Allen-Bradley Company. SN 298,679. Pub. 9-10-68. Filed 5-21-68.

### Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

- 860,766. (See Class 2 for this trademark.)
- 860,846. VERSAMATIC. First Manufacturing Corporation. SN 212,764. Pub. 9-28-65. Filed 2-25-65.
- 860,847. MAYFAIR. Bemis Manufacturing Company. SN 251,274. Pub. 9-10-68. Filed 7-29-66.
- 860,848. CSR. Republic Steel Corporation. SN 260,683. Pub. 9-10-68. Filed 12-13-66.
- 860,849. WONDERFOIL. Anaconda Aluminum Company. SN 271,427. Pub. 9-10-68. Filed 5-15-67.
- 860,850. NAFCO AND DESIGN. National Fittings Company of New York, Inc. SN 278,519. Pub. 9-10-68. Filed 8-17-67.
- 860,851. PRO. Texpak, Inc. SN 281,730. Pub. 9-10-68. Filed 10-3-67.
- 860,852. TWIN-TEX. Vistron Corporation. SN 282,643. Pub. 9-10-68. Filed 10-16-67.
- 860,853. PARABOLT. United Shoe Machinery Corporation. SN 286,858. Pub. 9-10-68. Filed 12-13-67.
- 860,854. KUPLEX. American Chain & Cable Company, Inc. SN 287,131. Pub. 9-10-68. Filed 12-18-67.

- 860,855. JET TEST QD. Gammon Technical Products, Inc. SN 287,288. Pub. 9-10-68. Filed 12-20-67.
- 860,856. RUFF-COTE. Continental Oil Company. SN 287,420. Pub. 9-10-68. Filed 12-22-67.
- 860,857. VRC. Cenco Instruments Corporation. SN 287,602. Pub. 9-10-68. Filed 12-26-67.
- 860,858. MISCELLANEOUS DESIGN. R. J. Gallagher Com-pany. SN 288,093. Pub. 9-10-68. Filed 1-4-68.
- 860,859. LA SCALA. A. C. Weber International, Inc. SN 288,393. Pub. 9-10-68. Filed 1-8-68.
- 860,860. ACHESON. Acheson Manufacturing Company. SN 288,579. Pub. 9-10-68. Filed 1-11-68.
- 860,861. MARQUIS. Price-Pfister Brass Mfg. Co. SN 288,851. Pub. 9-10-68. Filed 1-15-68.
- 860,862. JOY. Lewis Weiner Industries, Inc. SN 289,369. Pub. 9-10-68. Filed 1-2-68.
- 860,863. NATURAL. Sands Point Manufacturing Co. Inc. SN 294,557. Pub. 9-10-68. Filed 4-1-68.
- 860,864. CONCENTRIC CIRCLES (DESIGN). David Kam-enstein Inc. SN 294,707. Pub. 9-10-68. Filed 4-2-68.

### Class 14 — Metals and Metal Castings and Forgings

- 860,865. CU-BRITE. Unifvertical Corporation. SN 292,731. Pub. 9-10-68. Filed 3-7-68.
- 860,866. MISCELLANEOUS DESIGN. Koninklijke Neder-landsche Hoogovens en Staalfabriken N.V. SN 299,812. Pub. 9-10-68. Filed 6-6-68.
- 860,867. SOLVAN. Foote Mineral Co. SN 300,397. Pub. 9-10-68. Filed 6-14-68.

### Class 15 — Oils and Greases

- 860,868. GOLD EAGLE. Gold Eagle Products Co. SN 277,832. Pub. 7-16-68. Filed 8-8-67.

### Class 16 — Protective and Decorative Coatings

- 860,869. VELVASURF. Finnaren and Haley, Incorporated. SN 266,526. Pub. 9-10-68. Filed 3-13-67.
- 860,870. RUBBER STONE. United Paint Mfg. Co. SN 266,605. Pub. 9-10-68. Filed 3-13-67.
- 860,871. AQUAGLO. Benjamin Moore & Co. SN 269,442. Pub. 7-23-68. Filed 4-18-67.
- 860,872. CARBO ZINC. Carboline Company. SN 280,014. Pub. 9-10-68. Filed 9-11-67.
- 860,873. POXOLON. Kelley Technical Coatings, Inc. SN 287,073. Pub. 9-10-68. Filed 12-18-67.
- 860,874. SPECTRAFLAME. Mattel, Inc. SN 297,336. Pub. 9-10-68. Filed 5-6-68.
- 860,875. HEMPADUR. Hempel's Marine Paints, Inc. SN 299,521. Pub. 9-10-68. Filed 5-28-68.
- 860,876. HEMPANYL. Hempel's Marine Paints, Inc. SN 299,522. Pub. 9-10-68. Filed 5-28-68.
- 860,877. HEMPATONE. Hempel's Marine Paints, Inc. SN 299,523. Pub. 9-10-68. Filed 5-28-68.
- 860,878. HEMPINOL. Hempel's Marine Paints, Inc. SN 299,524. Pub. 9-10-68. Filed 5-28-68.

### Class 17 — Tobacco Products

- 860,879. PUNCHEON SELECTION SLENDOROS. "21" Club Selected Items, Ltd. SN 268,705. Pub. 9-10-68. Filed 4-10-67.

- 860,880. PRINZ EUGEN. Austria Tabakwerke Aktiengesell-schaft vorm. Österreichische Tabakregie. SN 292,669. Pub. 9-10-68. Filed 3-7-68.
- 860,881. BELLMAN SEFIR AND DESIGN. Svenska Tobaks Aktiebolaget. SN 292,866. Pub. 9-10-68. Filed 3-11-68.
- 860,882. BORKUM RIFF AND DESIGN. Svenska Tobaks Aktiebolaget. SN 292,867. Pub. 9-10-68. Filed 3-11-68.
- 860,883. JOHN SILVER. Svenska Tobaks Aktiebolaget. SN 292,868. Pub. 9-10-68. Filed 3-11-68.
- 860,884. BLUE RIBBON. A. J. Golden, Inc. SN 295,430. Pub. 9-10-68. Filed 4-11-68.
- 860,885. SUBURBIA. Larus & Brother Company. SN 295,733. Pub. 9-10-68. Filed 5-21-68.
- 860,886. PEBBLE BEACH. Larus & Brother Company. SN 295,734. Pub. 9-10-68. Filed 5-21-68.
- 860,887. TIME. Philip Morris Incorporated. SN 299,282. Pub. 9-10-68. Filed 5-29-68.

### Class 18 — Medicines and Pharmaceutical Preparations

- 860,888. SUPARBEE. The Vitarline Co., Inc. SN 234,791. Pub. 7-9-68. Filed 12-16-65.
- 860,889. ASPIRUB. Michael V. Sivak. SN 237,881. Pub. 6-25-68. Filed 2-2-66.
- 860,890. C-BREAK. Hoffmann-La Roche Inc., by assignment and merger from Sauter Laboratories, Inc. SN 271,528. Pub. 8-27-68. Filed 5-15-67.
- 860,891. CALF KRUNCH. Allied Mills, Inc. SN 276,911. Pub. 9-10-68. Filed 7-27-67.
- 860,892. TRIAZURE. Calbiochem. SN 277,143. Pub. 9-10-68. Filed 7-31-67.
- 860,893. TRIAPRIN. Dunhall Inc. SN 277,900. Pub. 9-10-68. Filed 8-9-67.
- 860,894. ALMICORTEN. Ciba Limited. SN 278,089. Pub. 9-10-68. Filed 8-11-67.
- 860,895. ZONOMUNE. Eli Lilly and Company. SN 279,815. Pub. 9-10-68. Filed 9-7-67.
- 860,896. LORIDINE. Eli Lilly and Company. SN 283,327. Pub. 8-20-68. Filed 10-25-67.
- 860,897. ECOLIN. Ciba Corporation., d.b.a. The Gland-O-Lac Company. SN 283,863. Pub. 8-20-68. Filed 11-1-67.
- 860,898. GRAVIDOX. American Cyanamid Company. SN 284,287. Pub. 9-10-68. Filed 11-7-67.
- 860,899. DY R A C Y C L I N E. Bristol-Myers Company. SN 286,629. Pub. 9-10-68. Filed 12-11-67.
- 860,900. ECONOCYCLINE. Bristol-Myers Company. SN 286,637. Pub. 9-10-68. Filed 12-11-67.
- 860,901. SOLUBASE. The Norwich Pharmacal Company. SN 294,236. Pub. 6-18-68. Filed 3-27-68.
- 860,902. PUR-VAC. Ralston Purina Company. SN 295,207. Pub. 9-10-68. Filed 4-9-68.
- 860,903. CHEK-R-VAC. Ralston Purina Company. SN 295,208. Pub. 9-10-68. Filed 4-9-68.
- 860,904. MEREPRINE. Richardson-Merrell Inc. SN 295,894. Pub. 7-9-68. Filed 4-18-68.

### Class 19 — Vehides

- 860,905. O'DAY AND DESIGN. Bangor-Punta Operations, Inc. SN 259,078. Pub. 9-10-68. Filed 11-21-66.
- 860,906. SAF-TEE AND DESIGN. Stelber Cycle Corpora-tion. SN 285,265. Pub. 9-10-68. Filed 11-20-67.
- 860,907. BUICK. General Motors Corporation. SN 291,863. Pub. 9-10-68. Filed 2-26-68.



## Class 21—Electrical Apparatus, Machines, and Supplies

- 860,908. ELECTRO-LAB. Bell & Howell Company, assignee of Levry Technical Institute, Inc. SN 236,064. Pub. 9-19-67. Filed 1-10-66.
- 860,909. MRI. Micro-Radionics, Incorporated. MULTIPLE CLASS (Classes 21 and 26). SN 242,905. Pub. 3-26-68. Filed 4-7-66.
- 860,910. CONTROLLED MAGNETIC. Shure Brothers Incorporated. SN 247,264. Pub. 9-10-68. Filed 6-3-66.
- 860,911. ALTEC AND DESIGN. LTV Ling Altec, Inc. SN 253,319. Pub. 9-10-68. Filed 8-29-66.
- 860,912. SIGNAPOINT. Kent Corporation. SN 275,056. Pub. 4-30-68. Filed 6-29-67.
- 860,913. MULTRONICS. Multronics, Inc. SN 276,029. Pub. 9-10-68. Filed 7-14-67.
- 860,914. MAGNESTART. The Hobart Manufacturing Company. SN 279,483. Pub. 9-10-68. Filed 8-31-67.
- 860,915. LEV-L-OHM. Precision Systems Company, Inc. SN 280,726. Pub. 9-10-68. Filed 9-19-67.
- 860,916. SONO-CERAMIC. Sonotone Corporation. MULTIPLE CLASS (Classes 21 and 44). SN 281,499. Pub. 9-10-68. Filed 9-29-67.
- 860,917. VERPLEX. The Verplex Company. SN 282,409. Pub. 9-10-68. Filed 10-12-67.
- 860,918. TGR. Reda Pump Company. SN 284,394. Pub. 9-10-68. Filed 11-8-67.
- 860,919. LC (DESIGN). Litecontrol Corporation. SN 284,684. Pub. 9-10-68. Filed 11-13-67.
- 860,920. PROCAST. Harman-Kardon Incorporated. SN 285,331. Pub. 9-10-68. Filed 11-29-67.
- 860,921. PROGUARD. Harman-Kardon Incorporated. SN 285,832. Pub. 9-10-68. Filed 11-29-67.
- 860,922. ION-ALARM. Notifier Company, assignee of Notifier Corporation. SN 286,443. Pub. 9-10-68. Filed 12-7-67.
- 860,923. KARPET CHAMP. Multi-Clean Products, Incorporated. SN 286,952. Pub. 9-10-68. Filed 12-14-67.
- 860,924. KENN-KOP. Joseph E. Podgor Co., Inc. SN 287,577. Pub. 9-10-68. Filed 12-26-67.
- 860,925. DYNAPHASE. Eaton Yale & Towne Inc. SN 288,201. Pub. 9-10-68. Filed 1-5-68.
- 860,926. ARCKO. Kearney-National Inc. SN 288,822. Pub. 9-10-68. Filed 1-11-68.
- 860,927. P AND DESIGN. National Presto Industries, Inc. SN 288,847. Pub. 9-10-68. Filed 1-15-68.
- 860,928. TELESSET. The Telex Corporation. SN 288,887. Pub. 9-10-68. Filed 1-15-68.

## Class 22—Games, Toys, and Sporting Goods

- 860,929. THRIFT TOYS. World Toy House, Inc. SN 269,368. Pub. 9-10-68. Filed 4-17-67.
- 860,930. FUNMATE. Matsushiro USA, Inc. SN 270,932. Pub. 9-10-68. Filed 5-8-67.
- 860,931. SUPER 88. Brunswick Corporation. SN 271,125. Pub. 9-10-68. Filed 5-10-67.
- 860,932. SNOOZER. Graco Metal Products, Inc. SN 272,604. Pub. 9-10-68. Filed 5-29-67.
- 860,933. NORTHERN WOBLER. Atlantic Lures, Inc. SN 273,465. Pub. 9-10-68. Filed 6-9-67.
- 860,934. GUERRILLA-GUARD. Shooting Equipment, Inc. SN 274,699. Pub. 9-10-68. Filed 7-24-67.
- 860,935. SUPERANG. James Frederick Liston. SN 277,561. Pub. 9-10-68. Filed 8-4-67.
- 860,936. GOOFY-GOO. Paul A. Price Co., Inc., d.b.a. Papeco. SN 277,794. Pub. 9-10-68. Filed 8-8-67.
- 860,937. GEMINI. The Coleman Company, Inc. SN 279,274. Pub. 9-10-68. Filed 8-29-67.
- 860,938. LODESTAR. The Coleman Company, Inc. SN 279,275. Pub. 9-10-68. Filed 8-29-67.

- 860,939. BLUE STAR. The Coleman Company, Inc. SN 279,370. Pub. 9-10-68. Filed 8-30-67.
- 860,940. SATELLITE. The Coleman Company, Inc. SN 279,371. Pub. 9-10-68. Filed 8-30-67.
- 860,941. POLESTAR. The Coleman Company, Inc. SN 279,373. Pub. 9-10-68. Filed 8-30-67.
- 860,942. CMI. Redfield Gun Sight Company, Limited, d.b.a. Colorado Mountain Industries. SN 280,093. Pub. 7-9-68. Filed 9-11-67.
- 860,943. TACKLE BOXROD AND DESIGN. Woodstream Corporation. SN 281,409. Pub. 9-10-68. Filed 9-28-67.
- 860,944. GREAT-SCOT. Brunswick Corporation. SN 282,675. Pub. 9-10-68. Filed 10-17-67.
- 860,945. DESIGN OF SCOTSMAN. Brunswick Corporation. SN 282,676. Pub. 9-10-68. Filed 10-17-67.
- 860,946. ELECTION '68. Createk. SN 284,623. Pub. 9-10-68. Filed 11-13-67.
- 860,947. STRIP-ON. Erwin Weller Company. SN 287,287. Pub. 9-10-68. Filed 12-20-67.
- 860,948. SCUDDER. Fred Arbogast Company, Inc. SN 287,356. Pub. 9-10-68. Filed 12-21-67.
- 860,949. CLUTCHER SEAM. Lannom Manufacturing Company, Incorporated. SN 287,822. Pub. 9-10-68. Filed 12-29-67.
- 860,950. JEWEL BOX MINI-ZOO. Classic Industries, Inc. SN 292,553. Pub. 9-10-68. Filed 3-6-68.
- 860,951. LITE-A-TUNE. The A. C. Gilbert Company. SN 292,575. Pub. 9-10-68. Filed 3-6-68.
- 860,952. PICTURE BOOK. Allied Doll and Toy Corp. SN 292,663. Pub. 9-10-68. Filed 3-7-68.
- 860,953. THE FOOLER AND DESIGN. Crosby Mfg. Co. SN 292,764. Pub. 9-10-68. Filed 3-8-68.
- 860,954. BABY PARTY. De Luxe Topper Corporation. SN 292,893. Pub. 9-10-68. Filed 3-11-68.
- 860,955. RED BARON. Monogram Models, Inc. SN 293,161. Pub. 9-10-68. Filed 3-13-68.
- 860,956. TRACK STAR. Converse Rubber Corporation. SN 293,340. Pub. 9-10-68. Filed 3-15-68.
- 860,957. IDDI DECOY. Robert A. Stephens. SN 293,599. Pub. 9-10-68. Filed 3-18-68.
- 860,958. SHRINKIES. Wham-O Mfg. Co. SN 293,999. Pub. 9-10-68. Filed 3-25-68.
- 860,959. COMPUT-A-TUTOR. Primoff & Elchner Associates. SN 296,489. Pub. 9-10-68. Filed 4-25-68.
- 860,960. EASY TWIST AND DESIGN. Donco Products Corp. SN 299,532. Pub. 9-10-68. Filed 6-3-68.
- 860,961. DURO-FLEX TAILORED PAD. King Athletic Goods Company. SN 300,400. Pub. 9-10-68. Filed 6-14-68.

## Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

- 860,962. FLAT STROKE AND DESIGN. Westinghouse Air Brake Company. SN 253,696. Pub. 9-10-68. Filed 9-1-66.
- 860,963. GEARMASTER. The Reliance Electric and Engineering Company, by merger from Dodge Manufacturing Corporation. SN 260,029. Pub. 9-10-68. Filed 12-5-66.
- 860,964. WEAR 'N WEAR. True Temper Corporation. SN 265,449. Pub. 9-10-68. Filed 2-24-67.
- 860,965. ELECTROSPRING. Curtiss-Wright Corporation. SN 266,865. Pub. 9-10-68. Filed 3-16-67.
- 860,966. BRAND-IT AND DESIGN. Brunswick Corporation. SN 267,502. Pub. 9-10-68. Filed 3-24-67.
- 860,967. VALCO-DEX. The Valeron Corporation. SN 270,624. Pub. 9-10-68. Filed 5-3-67.
- 860,968. WILSCO AND DESIGN. Wilco Sales and Engineering Company. SN 278,145. Pub. 9-10-68. Filed 8-11-67.
- 860,969. DION AND DESIGN. J. R. Kanik, Inc. SN 278,637. Pub. 9-10-68. Filed 8-21-67.
- 860,970. NSS. The National Super Service Company. SN 281,912. Pub. 9-10-68. Filed 10-5-67.

- 860,971. NSS AND DESIGN. The National Super Service Company. SN 281,913. Pub. 9-10-68. Filed 10-5-67.
- 860,972. EGO-PAK. Otto Niederer Sons, Inc. SN 282,124. Pub. 9-10-68. Filed 10-9-67.
- 860,973. RATE-CONN. Propulsion Systems, Inc. SN 283,033. Pub. 9-10-68. Filed 10-20-67.
- 860,974. MR TAP ETC. AND DESIGN. Serva Tool Corporation. SN 283,581. Pub. 9-10-68. Filed 10-27-67.
- 860,975. PROCOM. Wilton Corporation. SN 284,956. Pub. 9-10-68. Filed 11-15-67.
- 860,976. VYBA. American Tractor Equipment Corporation. SN 285,512. Pub. 9-10-68. Filed 11-24-67.
- 860,977. WESTLINE. Western Auto Supply Company. SN 289,851. Pub. 9-10-68. Filed 1-29-68.

## Class 24—Laundry Appliances and Machines

- 860,978. FEDDERS. Fedders Corporation. MULTIPLE CLASS (Classes 24, 31, and 34). SN 283,298. Pub. 9-10-68. Filed 10-23-67.
- 860,979. THE ANYWHERE DRYER. The Maytag Company. SN 296,236. Pub. 9-10-68. Filed 4-23-68.

## Class 25—Locks and Safes

- 860,980. KROOKLOK. Kitty Zaldener. SN 287,055. Pub. 9-10-68. Filed 12-15-67.
- 860,981. MITEY-LOK. Builders Brass Works Corporation. SN 287,630. Pub. 9-10-68. Filed 12-27-67.
- 860,982. VULCANA. Straube Industries Inc. SN 300,018. Pub. 9-10-68. Filed 6-7-68.

## Class 26—Measuring and Scientific Appliances

- 860,983. SERUM SKIMMER. Baxter Laboratories, Inc., assignee of Hyland Laboratories. SN 243,068. Pub. 9-10-68. Filed 4-18-66.
- 860,984. 'LO-BOY'. Lab-Line Instruments, Inc. SN 269,546. Pub. 9-10-68. Filed 4-19-67.
- 860,985. APOLLO. Foto-Quelle GmbH. SN 271,247. Pub. 9-10-68. Filed 5-11-67.
- 860,986. STABILITE. Spectra-Physics, Inc. SN 271,851. Pub. 9-10-68. Filed 5-18-67.
- 860,987. TELETRIC. Spiratone, Inc. SN 272,421. Pub. 9-10-68. Filed 5-25-67.
- 860,988. MICROFLASH. EG & G, Inc. SN 274,419. Pub. 9-10-68. Filed 6-21-67.
- 860,989. GROVE. Standard Thomson Corporation. SN 279,574. Pub. 9-10-68. Filed 9-1-67.
- 860,990. AVCOM. A-V Communications, Inc. SN 280,847. Pub. 9-10-68. Filed 9-21-67.
- 860,991. SECOAL. Stock Equipment Company. SN 282,302. Pub. 9-10-68. Filed 10-11-67.
- 860,992. DIGICORD. Photovolt Corporation. SN 283,151. Pub. 9-10-68. Filed 10-23-67.
- 860,993. STROBOMATIC. Graflex, Inc. SN 283,887. Pub. 9-10-68. Filed 11-1-67.
- 860,994. CRYSTALITE. Rozin Optical Export Corp. SN 289,127. Pub. 9-10-68. Filed 1-18-68.
- 860,995. RATE-MASTER. F. W. Dwyer Mfg. Co., Inc. SN 289,666. Pub. 9-10-68. Filed 1-29-68.
- 860,996. PHOTO-SCOPE AND DESIGN. Security Electronics, Inc. SN 292,328. Pub. 9-10-68. Filed 3-4-68.
- 860,997. SIZE-MINDER. Federal Products Corporation. SN 299,716. Pub. 9-10-68. Filed 6-3-68.

- 860,998. PDVM. Dytro Corporation. SN 299,732. Pub. 9-10-68. Filed 6-5-68.

## Class 28—Jewelry and Precious-Metal Ware

- 860,777. (See Class 3 for this trademark.)

## Class 29—Brooms, Brushes, and Dusters

- 860,999. ALEXANDRE AND DESIGN. Alexandre-Louis Ralmon. MULTIPLE CLASS (Classes 29, 51, and 52). SN 203,367. Pub. 8-3-65. Filed 10-6-64.
- 861,000. E-Z-SCRUB. Deseret Pharmaceutical Company, Inc. SN 273,614. Pub. 9-10-68. Filed 6-12-67.

## Class 30—Crockery, Earthenware, and Porcelain

- 861,001. TUDOR AND DESIGN. Exclusive China Co., Inc. SN 266,622. Pub. 1-16-68. Filed 3-14-67.

## Class 31—Filters and Refrigerators

- 860,978. (See Class 24 for this trademark.)
- 861,002. WHITECAPSUL. Rite Hardware Manufacturing Co. SN 271,641. Pub. 9-10-68. Filed 5-16-67.
- 861,003. ZEOSORB. Peter Spence & Sons Limited. SN 271,652. Pub. 9-10-68. Filed 5-16-67.
- 861,004. BIOLON. Amicon Corporation. SN 277,335. Pub. 9-10-68. Filed 8-2-67.
- 861,005. STEEMSINK. Dean Products, Inc. SN 279,285. Pub. 9-10-68. Filed 8-29-67.
- 861,006. CATCH-ALL. Sporlan Valve Company. SN 289,429. Pub. 9-10-68. Filed 1-23-68.

## Class 32—Furniture and Upholstery

- 860,766. (See Class 2 for this trademark.)
- 860,777. (See Class 3 for this trademark.)
- 861,007. CHARACTER PATINA. United Cabinet Corporation. SN 258,332. Pub. 9-10-68. Filed 11-9-66.
- 861,008. SPACE MATE. Formco, Inc. SN 262,578. Pub. 11-7-67. Filed 1-16-67.
- 861,009. COMFORT-EZE. The Dalton Foundries, Inc. SN 283,988. Pub. 9-10-68. Filed 11-2-67.
- 861,010. PORT-A-DRESSER. Port-A-Crib, Inc. SN 287,947. Pub. 9-10-68. Filed 1-2-68.
- 861,011. ENTREE AND DESIGN. Alma Desk Company. SN 292,152. Pub. 9-10-68. Filed 2-29-68.
- 861,012. DAYCOR. Dayco Corporation. SN 294,379. Pub. 9-10-68. Filed 3-28-68.
- 861,013. TRI-FOAM. Dayco Corporation. SN 296,314. Pub. 9-10-68. Filed 4-23-68.
- 861,014. V21. Virco Mfg. Corporation. SN 299,921. Pub. 9-10-68. Filed 6-7-68.

## Class 33—Glassware

- 861,015. SOUNDPROPANE. Dearborn Glass Company. SN 285,821. Pub. 9-10-68. Filed 11-29-67.



- 861,016. PROTECTOPANE. Dearborn Glass Company. SN 285,322. Pub. 9-10-68. Filed 11-29-67.
- 861,017. NEUTROPANE. Dearborn Glass Company. SN 285,323. Pub. 9-10-68. Filed 11-29-67.
- 861,018. DIFFUSOPANE. Dearborn Glass Company. SN 285,324. Pub. 9-10-68. Filed 11-29-67.

### Class 34 — Heating, Lighting, and Ventilating Apparatus

- 860,978. (See Class 24 for this trademark.)
- 861,019. CARDINAL AND DESIGN. Cardinal Products Company. SN 225,006. Pub. 9-13-66. Filed 8-5-65.
- 861,020. COMFORT-STAT. Admiral Corporation. SN 248,089. Pub. 9-12-67. Filed 6-15-66.
- 861,021. VENT-PAK. Modern Maid, Inc. SN 264,076. Pub. 9-10-68. Filed 2-6-67.
- 861,022. CLEAN-A-MATIC. Modern Maid, Inc. SN 264,077. Pub. 9-10-68. Filed 2-6-67.
- 861,023. ABC MITE. Automatic Burner Corporation. SN 275,008. Pub. 9-10-68. Filed 7-13-67.
- 861,024. GP AND DESIGN. Gordon & Platt, Inc. SN 276,318. Pub. 9-10-68. Filed 7-19-67.
- 861,025. CONVERTA. DCA Corporation. SN 280,026. Pub. 9-10-68. Filed 9-11-67.
- 861,026. TABLE CHEF. Ronson Corporation. SN 280,271. Pub. 9-10-68. Filed 9-13-67.
- 861,027. THE LANDAM FLO-HOT. Landam Products Corporation. SN 283,446. Pub. 9-10-68. Filed 10-26-67.
- 861,028. COMPUTEMP. Blazer Corporation. SN 283,764. Pub. 9-10-68. Filed 10-31-67.
- 861,029. AQUA BELT AND DESIGN. Cory Corporation. SN 288,795. Pub. 9-10-68. Filed 1-15-68.
- 861,030. SHUR-FLO. Walker Manufacturing & Sales Corporation. SN 289,049. Pub. 9-10-68. Filed 1-17-68.

### Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

- 860,741. (See Class 1 for this trademark.)
- 861,031. FANCIFUL GEOMETRICAL DESIGN. Maurey Manufacturing Corporation. SN 245,938. Pub. 9-10-68. Filed 5-18-66.
- 861,032. CON-O-TFE. C. E. Conover & Co., Inc. SN 284,801. Pub. 9-10-68. Filed 11-14-67.
- 861,033. CON-O-VERSEAL. C. E. Conover & Co., Inc. SN 285,397. Pub. 6-18-68. Filed 11-22-67.
- 861,034. AFCO. GAF Corporation, by merger from American Felt Company. SN 299,063. Pub. 9-3-68. Filed 5-27-68.

### Class 36 — Musical Instruments and Supplies

- 861,035. LIVING PHONOGRAPH. Tele-Tone Company, Inc. SN 275,707. Pub. 9-10-68. Filed 7-10-67.
- 861,036. MULTI-VIDER. C. G. Conn Ltd. SN 279,456. Pub. 9-10-68. Filed 8-31-67.
- 861,037. GEM SOLID STATE AND DESIGN. Ionic Organ Company. SN 286,685. Pub. 9-10-68. Filed 12-11-67.
- 861,038. PATTY RECORDS AND DESIGN. Galmen Production Corporation. SN 286,815. Pub. 9-10-68. Filed 12-13-67.
- 861,039. CRAZY HORSE AND DESIGN. Capitol Records, Inc. SN 300,394. Pub. 9-10-68. Filed 6-14-68.

### Class 37 — Paper and Stationery

- 861,040. BIC AND DESIGN. Waterman-Bic Pen Corporation, assignee, by mesne assignment, of Marcel Louis Michel Antoine Bich. SN 231,378. Pub. 2-7-67. Filed 10-23-65.
- 861,041. LEISURE TIME. Oliver Ross Stevens. SN 251,478. Pub. 9-10-68. Filed 8-1-66.
- 861,042. VIS. Plastic Sealing Corporation. SN 260,581. Pub. 9-10-68. Filed 12-12-66.

### Class 38 — Prints and Publications

- 861,043. PONY EXPRESS AND DESIGN. James C. Bowers. SN 268,377. Pub. 6-18-68. Filed 4-5-67.

### Class 39 — Clothing

- 861,044. JACK RICHARDS. W. Seltchik & Sons, Inc. SN 223,050. Pub. 7-19-66. Filed 7-9-65.
- 861,045. DOUBLE DIAMONDS. International Playtex Corporation, by change of name from International Latex Corporation. SN 226,055. Pub. 6-14-66. Filed 5-19-65.
- 861,046. CAMISA DE ESPANA ETC. AND DESIGN. Izod, Ltd. SN 239,149. Pub. 9-10-68. Filed 2-18-66.
- 861,047. S SAFELINE AND DESIGN. American Optical Company. SN 244,953. Pub. 8-1-67. Filed 5-5-66.
- 861,048. SAFELINE. American Optical Company. SN 244,956. Pub. 7-25-67. Filed 5-5-66.
- 861,049. MIGHTY-MAC. Cape Ann Manufacturing Co. SN 270,754. Pub. 5-28-68. Filed 5-5-67.
- 861,050. JOHN BROWN'S LEATHER WORKS. John Brown, d.b.a. John Brown's Leather Works. SN 274,306. Pub. 9-10-68. Filed 6-20-67.
- 861,051. SQUARE "B." The Kendall Company. SN 278,222. Pub. 9-10-68. Filed 8-14-67.
- 861,052. DAWNLEIGH. Lorch-Westway Corporation. SN 281,090. Pub. 9-10-68. Filed 9-25-67.
- 861,053. CARVIL. Societe Carvil. SN 282,144. Pub. 9-10-68. Filed 10-9-67.
- 861,054. BALL. The Ball Company, Inc. (New York). SN 284,154. Pub. 2-20-68. Filed 11-6-67.
- 861,055. DIMINU. Junior Gallery, Inc. SN 286,151. Pub. 9-10-68. Filed 12-4-67.
- 861,056. TIES PLUS. Anjac Corporation. SN 287,626. Pub. 9-10-68. Filed 12-27-67.
- 861,057. S-P-I AND DESIGN. Storktowne Products, Inc. SN 290,983. Pub. 9-10-68. Filed 2-13-68.
- 861,058. SUNFISH. Unroyal, Inc. SN 291,652. Pub. 9-10-68. Filed 2-21-68.
- 861,059. HUNTER JUNIORS. Bernard E. Powers. SN 292,610. Pub. 9-10-68. Filed 3-6-68.
- 861,060. COUNTRY TROTTER. Frayne Sportswear Mfrs. Inc. SN 293,496. Pub. 9-10-68. Filed 3-18-68.
- 861,061. CATHY DEE. De Gee, Inc. SN 297,542. Pub. 9-10-68. Filed 5-7-68.
- 861,062. COUNTER-SPY. Hat Corporation of America. SN 299,533. Pub. 9-10-68. Filed 6-3-68.
- 861,063. WISH-AWAYS. E. I. du Pont de Nemours and Company. SN 300,396. Pub. 9-10-68. Filed 6-14-68.

### Class 40 — Fancy Goods, Furnishings, and Notions

- 861,064. JUMBO JETS. Reynolds Yarns Inc. SN 278,243. Pub. 7-23-68. Filed 8-14-67.
- 861,065. GISMO. Fashion Tress, Inc. SN 300,225. Pub. 9-10-68. Filed 6-12-68.

### Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

- 861,066. SERENE. Fiber Industries, Inc. SN 274,867. Pub. 9-10-68. Filed 6-27-67.
- 861,067. ASTROLAR. National Research Corporation. SN 275,159. Pub. 5-21-68. Filed 6-30-67.
- 861,068. EAST ORANGE MILL END SHOPS AND DESIGN. East Orange Mill End Shops. SN 287,531. Pub. 9-10-68. Filed 12-26-67.

### Class 44 — Dental, Medical, and Surgical Appliances

- 860,916. (See Class 21 for this trademark.)
- 861,069. TONOKAP. I.G.R. Corporation, assignee of Adolph Posner and Richard Inglima (Joint owners). SN 272,630. Pub. 9-10-68. Filed 5-29-67.
- 861,070. ARTIGRAPH. Vita Zahnfabrik H. Rauter K.G. SN 279,126. Pub. 9-10-68. Filed 8-25-67.
- 861,071. SALONETTE. Dynamic Classics, Ltd. SN 294,884. Pub. 9-10-68. Filed 4-4-68.

### Class 45 — Soft Drinks and Carbonated Waters

- 861,072. CAMELOT. Allied Supermarkets, Inc. MULTIPLE CLASS (Classes 45 and 46). SN 264,776. Pub. 9-10-68. Filed 2-16-67.
- 861,073. CARMY COLA AND DESIGN. Carmy Cola Corporation. SN 273,253. Pub. 9-10-68. Filed 6-7-67.
- 861,074. PERRIER AND DESIGN. Source Perrier, S.A. SN 297,637. Pub. 9-10-68. Filed 5-8-68.

### Class 46 — Foods and Ingredients of Foods

- 861,072. (See Class 45 for this trademark.)
- 861,075. SNOBOY ETC. AND DESIGN. Fine Foods, Inc. SN 241,448. Pub. 9-10-68. Filed 3-21-66.
- 861,076. PECANEROS. Judson Candles, Inc., by change of name from Judson's Candles, Inc. SN 263,466. Pub. 10-31-67. Filed 1-27-67.
- 861,077. FAMILY CASSEROLE DISH AND DESIGN. On-Cor Frozen Foods, Inc. SN 264,336. Pub. 9-10-68. Filed 2-9-67.
- 861,078. COSMOPOLITAN INTERNATIONAL UNITY SERVICE ACTION THINK AND DESIGN. Cosmopolitan International. SN 264,392. Pub. 9-10-68. Filed 2-10-67.
- 861,079. SOPHISTICATED CHICKEN AND DESIGN. Donald J. Davine. SN 264,916. Pub. 9-10-68. Filed 2-17-67.
- 861,080. A AND DESIGN. Adams Packing Association, Inc. SN 269,837. Pub. 9-10-68. Filed 4-24-67.
- 861,081. STAR. Universal Foods Corporation. SN 270,725. Pub. 7-23-68. Filed 5-4-67.
- 861,082. BURGER BARN. Burger Barn Corporation. SN 275,363. Pub. 7-16-68. Filed 7-5-67.
- 861,083. C-A-F AND DESIGN. C. A. Fortune & Company. SN 283,517. Pub. 9-10-68. Filed 10-27-67.
- 861,084. ROLLY TOASTERS. Kellogg Company. SN 286,467. Pub. 9-10-68. Filed 12-8-67.
- 861,085. MORANOL. Feed Service Corporation. SN 293,117. Pub. 9-3-68. Filed 3-13-68.
- 861,086. STARTER. Mead Johnson & Company. SN 293,671. Pub. 6-18-68. Filed 3-20-68.

- 861,087. COPIA BRAND. Van Buren Packing Company. SN 298,983. Pub. 9-10-68. Filed 5-23-68.

### Class 47 — Wines

- 861,088. ALIANCA. Caves Allanca-Vinicola de Sangalhos S.A.R.L., d.b.a. Caves Allanca. SN 233,680. Pub. 9-10-68. Filed 12-1-65.
- 861,089. ALIANCA AND DESIGN. Caves Allanca-Vinicola de Sangalhos S.A.R.L., d.b.a. Caves Allanca. SN 233,681. Pub. 9-10-68. Filed 12-1-65.
- 861,090. CHATAQUA. Mogen David Wine Corporation. SN 274,226. Pub. 9-10-68. Filed 6-19-67.
- 861,091. MORLANT (DE LA MARNE). Morlant (de la Marne) Societe Anonyme. SN 296,488. Pub. 9-10-68. Filed 4-25-68.
- 861,092. TICKLE PINK. E. & J. Gallo Winery, d.b.a. Gallo Vineyards. SN 297,502. Pub. 9-10-68. Filed 5-7-68.

### Class 48 — Malt Beverages and Liquors

- 861,093. CHUG-A-MUG. Rheingold Breweries, Inc. SN 290,561. Pub. 4-30-68. Filed 2-8-68.

### Class 49 — Distilled Alcoholic Liquors

- 861,094. JAGERMEISTER AND DESIGN. Curt Mast. SN 271,633. Pub. 9-10-68. Filed 5-16-67.
- 861,095. GUARDSMAN. The Black Prince Distillery, Inc. SN 273,365. Pub. 9-10-68. Filed 6-8-67.
- 861,096. JOSE MONCADO. Mar-Salle Chicago Co. SN 274,220. Pub. 9-10-68. Filed 6-19-67.
- 861,097. MAR-SALLE. Mar-Salle Chicago Co. SN 274,221. Pub. 9-10-68. Filed 6-19-67.
- 861,098. GIVE EVERY MAN HIS DEW. Tullamore Dew Limited. SN 285,076. Pub. 9-10-68. Filed 11-16-67.
- 861,099. STRAIGHT WESTERN. Paramount Distillers, Incorporated. SN 290,369. Pub. 9-10-68. Filed 2-6-68.
- 861,100. GRINGA. Continental Distilling Corporation, d.b.a. Continental Distilling Co. SN 299,651. Pub. 9-10-68. Filed 6-4-68.

### Class 50 — Merchandise Not Otherwise Classified

- 861,101. POLORON. Polaron Products, Inc. SN 276,862. Pub. 9-10-68. Filed 7-26-67.
- 861,102. GREIF HANGERS AND DESIGN. The Greif Bros. Cooperage Corporation. SN 277,276. Pub. 8-20-68. Filed 8-1-67.
- 861,103. TOTEHANGER. Frederick H. Good. SN 285,417. Pub. 9-10-68. Filed 11-22-67.
- 861,104. PAPPAGALLO. Pappagallo, Inc. SN 300,231. Pub. 9-10-68. Filed 6-12-68.

### Class 51 — Cosmetics and Toilet Preparations

- 860,777. (See Class 3 for this trademark.)
- 860,999. (See Class 29 for this trademark.)
- 861,105. CLEAN AND SPARKLE. Yardley & Company Limited, assignee of Yardley of London, Inc. SN 205,218. Pub. 9-10-68. Filed 10-30-64.
- 861,106. GO GAY. Helene Curtis Industries, Inc. SN 264,415. Pub. 4-23-68. Filed 2-10-67.



- 861,107. WHIPPED PEARL. Del Laboratories, Inc. SN 269,748. Pub. 4-9-68. Filed 4-21-67.
- 861,108. SHEER GLO. Merle Norman Cosmetics, Inc. SN 277,696. Pub. 6-25-68. Filed 8-7-67.
- 861,109. PATRICIA HUNT. Westbury Cosmetics Corp. SN 279,127. Pub. 9-10-68. Filed 8-25-67.
- 861,110. LILIKOI. The Mennen Company. SN 279,206. Pub. 9-10-68. Filed 8-23-67.
- 861,111. ELEGIS. L'Oreal. SN 280,430. Pub. 9-10-68. Filed 9-15-67.
- 861,112. FIRM LAC. Samuel Bonat & Bro., Inc. SN 280,757. Pub. 9-10-68. Filed 9-20-67.
- 861,113. LACQUA. Demert & Dougherty, Inc. SN 281,044. Pub. 6-25-68. Filed 9-25-67.
- 861,114. SYBIL IVES. Sybil Ives Incorporated. SN 281,829. Pub. 9-10-68. Filed 10-4-67.
- 861,115. FIRST DAY BLONDE. Clairol Incorporated. SN 282,058. Pub. 9-10-68. Filed 10-9-67.
- 861,116. "TACK ROOM." Mary E. Lynne Weenink, d.b.a. Mary Lynne. SN 282,646. Pub. 9-10-68. Filed 10-16-67.
- 861,117. MOD MASKS. Yardley of London, Inc. SN 282,854. Pub. 9-10-68. Filed 10-18-67.
- 861,118. BODY AND DEPTH. Samuel Bonat & Bro., Inc. SN 283,424. Pub. 9-10-68. Filed 10-26-67.
- 861,119. MOUNTAIN SIGH. Avon Products, Inc. SN 283,505. Pub. 9-10-68. Filed 10-27-67.
- 861,120. JUVEN-OIL. Elizabeth Pope Inc., assignee of William H. Pope. SN 281,702. Pub. 4-25-67. Filed 12-30-66.
- 861,121. HIS HONOR. New York Pencil Co., Inc. SN 287,936. Pub. 9-10-68. Filed 1-2-68.
- 861,122. ZOTOS. Sales Affiliates, Inc. SN 287,959. Pub. 9-10-68. Filed 1-2-68.
- 861,123. I AM LOVED AND DESIGN. Helzberg's Diamond Shops, Inc. SN 294,999. Pub. 9-10-68. Filed 4-5-68.
- 861,124. MISCELLANEOUS DESIGN. De Leon Cosmetics Company, Inc. SN 297,247. Pub. 9-10-68. Filed 5-3-68.
- 861,125. DE LEON AND DESIGN. De Leon Cosmetics Company, Inc. SN 297,248. Pub. 9-10-68. Filed 5-3-68.
- 861,126. WELL SPOKEN. Carter-Wallace, Inc. SN 299,397. Pub. 9-10-68. Filed 5-31-68.
- 861,127. LOVELY ANGEL. Carter-Wallace, Inc. SN 299,722. Pub. 9-10-68. Filed 6-5-68.
- 861,128. LOOK LOVELY. Carter-Wallace, Inc. SN 299,725. Pub. 9-10-68. Filed 6-5-68.
- 861,129. ACTIVE. Carter-Wallace, Inc. SN 299,906. Pub. 9-10-68. Filed 6-7-68.
- 861,141. NEUTRA-SOLV. Universal Oil Products Company. SN 288,562. Pub. 9-10-68. Filed 1-10-68.
- 861,142. I AM LOVED AND DESIGN. Helzberg's Diamond Shops, Inc. SN 295,000. Pub. 9-10-68. Filed 4-5-68.
- 861,143. STABELENE. Baron Blakeslee, Inc. SN 299,272. Pub. 9-10-68. Filed 5-29-68.
- 861,144. MONTESSA. Lanvin-Charles of the Ritz, Inc. SN 299,280. Pub. 9-10-68. Filed 5-29-68.
- 861,145. PALMOLIVE. Colgate-Palmolive Company. SN 299,727. Pub. 9-10-68. Filed 6-5-68.

## Service Marks

## Class 100 — Miscellaneous

- 861,146. NAPDA AND DESIGN. National Aircraft Parts Distributors. SN 256,579. Pub. 9-10-68. Filed 10-17-66.
- 861,147. SIR LOIN THE ARISTOCRAT OF STEAKS AND DESIGN. Charles Clifford Ford, d.b.a. Sir Loin. SN 261,832. Pub. 9-10-68. Filed 1-3-67.
- 861,148. SAFEHOUSE. Safehouse Ltd. SN 264,105. Pub. 9-10-68. Filed 2-6-67.
- 861,149. ARINC. Aeronautical Radio Inc. SN 270,210. Pub. 9-10-68. Filed 4-28-67.
- 861,150. COMPUTAID. Computer Aid Companies, Inc. SN 275,433. Pub. 9-10-68. Filed 7-6-67.
- 861,151. FORD'S RESTAURANT AND DESIGN. Ford's Restaurant. SN 277,655. Pub. 9-10-68. Filed 8-7-67.
- 861,152. "PORKY" MANERO'S STEAK HOUSE AND DESIGN. "Porky" Manero's Steak House. SN 277,842. Pub. 9-10-68. Filed 8-8-67.
- 861,153. STEAK AND ALE AND DESIGN. Steak and Ale, Inc. SN 282,222. Pub. 9-10-68. Filed 10-10-67.
- 861,154. BOBBER CAFE. Bobber Cafe, Inc. SN 285,086. Pub. 9-10-68. Filed 12-1-67.
- 861,155. ZABERERS. Rerebaz, Inc. SN 286,180. Pub. 9-10-68. Filed 12-4-67.
- 861,156. CHUCK-A-RAMA AND DESIGN. Greene-Tree, Inc. SN 290,603. Pub. 9-10-68. Filed 2-8-68.
- 861,157. LA GRENOUILLE. La Grenouille, Inc. SN 296,487. Pub. 9-10-68. Filed 4-25-68.

## Class 101 — Advertising and Business

- 861,158. LIVE A LITTLE! American Dairy Queen Corporation, assignee of Dairy Queen National Development Company. SN 226,901. Pub. 9-10-68. Filed 9-1-65.
- 861,159. ELLE. France Editions & Publications, assignee of Societe des Editions Mal. SN 237,756. Pub. 9-10-68. Filed 2-1-66.
- 861,160. SFS. S. Freedman & Sons, Inc. SN 262,157. Pub. 9-10-68. Filed 1-9-67.
- 861,161. "LADY OF THE HOUSE." Public Relations Counsel, Inc. SN 266,917. Pub. 9-10-68. Filed 3-16-67.
- 861,162. G2. Richard W. Griffiths. SN 275,656. Pub. 9-10-68. Filed 7-10-67.
- 861,163. INTERNATIONAL AND DESIGN. International Personnel Service, Inc. SN 276,236. Pub. 9-10-68. Filed 7-18-67.
- 861,164. SHENDO. Shendo Corporation. SN 276,479. Pub. 9-10-68. Filed 7-20-67.
- 861,165. AUDIO FIDELITY. Audio Fidelity Corporation. SN 277,123. Pub. 9-10-68. Filed 7-31-67.
- 861,166. AFC AND DESIGN. Audio Fidelity Corporation. SN 277,126. Pub. 9-10-68. Filed 7-31-67.
- 861,167. SEE. Selective Educational Equipment, Inc. SN 284,242. Pub. 9-10-68. Filed 11-6-67.
- 861,168. TIG AND DESIGN. Presbyterian Life, Inc. SN 285,761. Pub. 9-10-68. Filed 11-28-67.

## Class 52 — Detergents and Soaps

- 860,999. (See Class 29 for this trademark.)
- 861,130. SWEPKO AND DESIGN. Southwestern Petroleum Corporation. SN 240,033. Pub. 9-10-68. Filed 3-2-66.
- 861,131. CHEM-RAM. Madison Chemical Corporation. SN 268,751. Pub. 7-23-68. Filed 4-10-67.
- 861,132. BIG BOB AND DESIGN. Robert H. Benson, d.b.a. Big Bob Mfg. Co. SN 274,706. Pub. 9-10-68. Filed 6-26-67.
- 861,133. HEXIFOAM. Lyman R. Lyon. SN 274,810. Pub. 9-10-68. Filed 6-26-67.
- 861,134. MOUNTAIN SIGH. Avon Products, Inc. SN 283,504. Pub. 9-10-68. Filed 10-27-67.
- 861,135. ATLAS. Atlas Supply Company. SN 283,759. Pub. 9-10-68. Filed 10-31-67.
- 861,136. JI. Johnson Industries, Inc. SN 285,135. Pub. 9-10-68. Filed 11-17-67.
- 861,137. WEST ELECTROSOLVE. West Chemical Products, Inc. SN 285,782. Pub. 9-10-68. Filed 11-28-67.
- 861,138. R-M AND DESIGN. Interchemical Corporation. SN 286,148. Pub. 9-10-68. Filed 12-4-67.
- 861,139. LIQUID LUSTRE. DBA Products Co., Inc. SN 287,151. Pub. 9-10-68. Filed 12-18-67.
- 861,140. HER PRETTINESS. Avon Products, Inc. SN 288,183. Pub. 9-10-68. Filed 1-5-68.

## Class 102 — Insurance and Financial

- 861,169. SAVINGS CREDIT INSURANCE AND DESIGN. D.S.R. Employees Federal Credit Union. SN 244,683. Pub. 9-10-68. Filed 5-2-66.
- 861,170. A.O.U.W. Ancient Order United Workmen. SN 279,709. Pub. 9-10-68. Filed 9-6-67.
- 861,171. ADJUST-A-CLAIM AND DESIGN. Samuel Bld, d.b.a. Adjust-A-Claim. SN 282,974. Pub. 9-10-68. Filed 10-20-67.

## Class 103 — Construction and Repair

- 861,172. CREST (DESIGN). The MacMillin Co., Inc. SN 282,912. Pub. 9-10-68. Filed 10-19-67.

## Class 104 — Communication

- 861,173. AIR CHECK. Air Check Services Corporation of America. SN 269,271. Pub. 9-10-68. Filed 4-17-67.

## Class 105 — Transportation and Storage

- 861,174. ABC TRAVEL SERVICE AND DESIGN. ABC Travel Service, S.A. SN 282,406. Pub. 9-10-68. Filed 10-26-67.
- 861,175. ACL (DESIGN). The Atlantic Container Line, Ltd. SN 284,272. Pub. 9-10-68. Filed 11-7-67.

## Class 106 — Material Treatment

- 861,176. JCI AND DESIGN. Mal Heller. SN 258,378. Pub. 9-10-68. Filed 11-10-66.

## SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

## Class 5 — Adhesives

- 861,190. Fortin Laminating Corporation, North Hollywood, Calif. SN 256,536. Filed P.R. 10-17-66; Am. S.R. 8-5-68.

## NO-FLO

For Plastic Resin Pre-Pregs Used in Bonding Laminates and for Multi-Layer Circuitry (Int. Cl. 1).  
First use on or about Sept. 1, 1966.

- 861,191. Fortin Laminating Corporation, North Hollywood, Calif. SN 256,537. Filed P.R. 10-17-66; Am. S.R. 8-5-68.

## LO-FLO

For Plastic Resin Pre-Pregs Used in Bonding Laminates and for Multi-Layer Circuitry (Int. Cl. 1).  
First use on or about Sept. 14, 1966.

## Class 107 — Education and Entertainment

- 861,177. MISCELLANEOUS DESIGN. California International Sea Festival at Long Beach, Inc. SN 263,891. Pub. 9-10-68. Filed 2-3-67.
- 861,178. THE FAMOUS FIVE. Bankers Management & Services, Inc. SN 266,997. Pub. 9-10-68. Filed 3-17-67.
- 861,179. THE AMAZING FIVE. Bankers Management & Services, Inc. SN 266,998. Pub. 9-10-68. Filed 3-17-67.
- 861,180. STAGS OF GREAT NECK AND DESIGN. Stags of Great Neck, Inc. SN 267,450. Pub. 9-10-68. Filed 3-23-67.
- 861,181. AMERICAN-NATIONALS ETC. AND DESIGN. Chicago Downs Association, Inc. SN 271,031. Pub. 9-10-68. Filed 5-9-67.
- 861,182. EMPHASIS EXCELLENCE AND DESIGN. Kilgore Junior College District. SN 271,810. Pub. 9-10-68. Filed 5-18-67.
- 861,183. MARINE STUDIOS. Marine Studios, Incorporated. SN 286,765. Pub. 9-10-68. Filed 12-12-67.
- 861,184. PORPOISE (DESIGN). Marine Studios, Incorporated. SN 286,766. Pub. 9-10-68. Filed 12-12-67.
- 861,185. SEAQUARIUM. Marine Exhibition Corporation. SN 292,657. Pub. 9-10-68. Filed 3-7-68.
- 861,186. MOVIELAND CARS OF THE STARS AND DESIGN. James F. Brucker. SN 296,376. Pub. 9-10-68. Filed 4-24-68.

## Collective Membership Marks

## Class 200

- 861,187. MISCELLANEOUS DESIGN. California Association for Neurologically Handicapped Children. SN 263,657. Pub. 9-10-68. Filed 1-31-67.
- 861,188. NATIONAL SKI PATROL. National Ski Patrol System, Inc. SN 278,147. Pub. 9-10-68. Filed 7-21-67.
- 861,189. ATO. Alpha Tau Omega Fraternity, Inc. SN 287,623. Pub. 9-10-68. Filed 12-27-67.

## Class 6 — Chemicals and Chemical Compositions

- 861,192. Arlan's Dept. Stores, Inc., New York, N.Y. SN 231,002. Filed P.R. 10-22-65; Am. S.R. 2-1-67.

*Arlan's*

For Spray Starch, Anti-Freeze, Room Deodorant, Moth Proofing Spray, and Insecticide (Int. Cls. 1, 3, and 5).  
First use April 1964.

## Class 22 — Games, Toys, and Sporting Goods

- 861,193. Milton Bradley Company, Springfield, Mass. SN 273,171. Filed P.R. 6-6-67; Am. S.R. 8-19-68.

## KRESKIN'S ESP

The name "Kreskin" identifies a living individual and his consent to use and registration has been given.  
For Equipment for a Game Involving the Principles of Extra Sensory Perception (Int. Cl. 28).  
First use Jan. 3, 1967.



861,194. Cragstan Industries, Inc., New York, N.Y. SN 294,166. Filed P.R. 3-26-68; Am. S.R. 8-26-68.

**GYRO POWERED**

For Toy Automobiles and Trucks (Int. Cl. 28).  
First use October 1966.

**Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires**

861,195. United Co-Operatives, Inc., Alliance, Ohio. SN 256,657. Filed P.R. 10-18-66; Am. S.R. 9-10-68.

**PUL-N-GRIP**

For Tractor Tires (Int. Cl. 12).  
First use Aug. 18, 1966.

**Class 39 — Clothing**

861,196. In Sportswear, Inc., New York, N.Y. SN 273,286. Filed P.R. 6-7-67; Am. S.R. 9-3-68.



For Women's; Teens' and Children's Sportswear—Namely, Swimsuits, Shorts, Slacks, Pants, Pants-Tops, Dresses, Skirts, Suits, and Vests, Blouses and Shirts (Int. Cl. 25).  
First use at least as early as Sept. 4, 1966.

**Class 40 — Fancy Goods, Furnishings, and Notions**

861,197. Astl Products, Inc., New York, N.Y. SN 255,406. Filed P.R. 9-29-66; Am. S.R. 8-30-68.

**KEEP SHAPE**

For Ladies' Wigs (Int. Cl. 26).  
First use Sept. 14, 1966.

**Class 46 — Foods and Ingredients of Foods**

861,198. Tree Pickle Company, Inc., Cheektowaga, N.Y. SN 264,863. Filed P.R. 2-16-67; Am. S.R. 9-9-68.

**SWEETHOTS**

For Pickles (Int. Cl. 29).  
First use Jan. 19, 1967.

**MIX 'N SCRAMBLE**

For Flavoring and Seasoning Mix for Use in Preparation of Egg Dishes (Int. Cl. 30).  
First use on or about Sept. 30, 1966.

**Class 51 — Cosmetics and Toilet Preparations**

861,200. Clairol Incorporated, New York, N.Y. SN 271,343. Filed P.R. 5-12-67; Am. S.R. 9-6-68.

**SOFTLY BLONDE**

For Hair Tinting, Dyeing and Coloring Preparation (Int. Cl. 3).  
First use Feb. 8, 1967.

861,201. Clairol Incorporated, New York, N.Y. SN 271,348. Filed P.R. 5-12-67; Am. S.R. 9-6-68.

**SOFTLY BROWN**

For Hair Tinting, Dyeing and Coloring Preparation (Int. Cl. 3).  
First use Feb. 8, 1967.

861,202. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 275,867. Filed P.R. 7-12-67; Am. S.R. 9-5-68.

**PUSSYFOOTER**

For Nail Enamel (Int. Cl. 3).  
First use June 9, 1967.

861,203. Halliwell, Inc., d.b.a. Halliwell, New York, N.Y. SN 283,340. Filed P.R. 10-25-67; Am. S.R. 8-20-68.

**XTRA-BODY**

For Preparation for Moisturizing the Skin and for Conditioning the Hair (Int. Cl. 3).  
First use July 31, 1967.

**Certification Mark****Class A — Goods**

861,204. The Asphalt Institute, College Park, Md. SN 280,685. Filed P.R. 9-19-67; Am. S.R. 8-9-68.

**FULL-DEPTH**

The mark certifies that the pavement is one in which asphalt mixtures are employed for all courses above the subgrade or improved subgrade with the pavement laid directly on the prepared subgrade.

For Asphalt Pavements.  
First use in or about November 1965.

**TRADEMARK REGISTRATIONS RENEWED**

31,839.	REPRESENTATION OF A BELL. Cl. 22 (Int. Cl. 28). 8-2-1898.	501,105.	RIPPLE. Cl. 17 (Int. Cl. 34). 7-20-48.
66,843.	MARMOLA. Cl. 18 (Int. Cl. 5). 12-31-07.	501,106.	UNION LEADER. Cl. 17 (Int. Cl. 34). 7-20-48.
70,734.	MILE HIGH. Cl. 46 (Int. Cl. 30). 9-29-08.	501,157.	NECTAR. Cl. 46 (Int. Cl. 30). 7-27-48.
71,745.	"HORSE SHOE BRAND" AND REPRESENTATION OF HORSE SHOE. Cl. 46 (Int. Cl. 29). 12-15-08.	501,159.	IONA. Cl. 46 (Int. Cl. 30). 7-27-48.
72,879.	RAINBOW. Cl. 35 (Int. Cls. 7 and 17). 3-2-09.	501,239.	HELMAR. Cl. 17 (Int. Cl. 34). 7-27-48.
237,356.	"TUG-O-WAR" AND DESIGN. Cl. 39 (Int. Cl. 25). 1-10-28.	501,240.	SENSATION. Cl. 17 (Int. Cl. 34). 7-27-48.
241,601.	WW. Cl. 12 (Int. Cl. 6). 5-1-28.	501,241.	BAGPIPE. Cl. 17 (Int. Cl. 34). 7-27-48.
243,566.	MODERN. Cl. 23 (Int. Cl. 7). 6-26-28.	501,243.	BOUNTY. Cl. 17 (Int. Cl. 34). 7-27-48.
245,676.	CYCLONE. Cl. 23 (Int. Cl. 7). 8-21-28.	501,945.	TIM-TRUSS. Cl. 12 (Int. Cl. 19). 8-31-48.
247,355.	"INTER-STATE" ETC. AND DESIGN. Cl. 21 (Int. Cls. 7, 9, and 12). 9-25-28.	502,037.	GARDENED HOME. Cl. 38 (Int. Cl. 16). 9-7-48.
247,636.	"SLOAN'S" ETC. PORTRAIT AND LABEL DESIGN. Cl. 18 (Int. Cl. 5). 10-2-28.	502,236.	BREATHITAKING. Cl. 39 (Int. Cl. 25). 9-21-48.
247,916.	"SEALED BY BROOKS" AND REPRESENTATION OF A GLOBE. Cl. 25 (Int. Cl. 6). 10-9-28.	502,261.	ARM & HAMMER. Cl. 52 (Int. Cls. 1, 3, and 5). 9-21-48.
248,512.	HOUDAILLE. Cl. 19 (Int. Cl. 12). 10-23-28.	502,262.	REPRESENTATION OF ARM AND HAMMER. Cl. 52 (Int. Cls. 1, 3, and 5). 9-21-48.
248,550.	E. J. BROOKS & CO. Cl. 25 (Int. Cl. 6). 10-23-28.	502,263.	REPRESENTATION OF ARM AND HAMMER. Cl. 46 (Int. Cl. 30). 9-21-48.
248,737.	TRIANGLE (DESIGN). Cl. 46 (Int. Cl. 29). 10-30-28.	502,264.	COW BRAND. Cl. 6 (Int. Cls. 1, 3, and 5). 9-21-48.
248,837.	"FIREFLY" AND REPRESENTATION OF FLY. Cl. 39 (Int. Cl. 25). 10-30-28.	502,265.	COW. Cl. 46 (Int. Cl. 30). 9-21-48.
251,164.	"MOORMAN'S" AND DESIGN. Cl. 46 (Int. Cl. 31). 1-1-29.	502,365.	SHEER WITCHERY. Cl. 39 (Int. Cl. 25). 9-21-48.
251,298.	ACTO. Cl. 18 (Int. Cl. 5). 1-1-29.	502,413.	GEMEX. Cl. 28 (Int. Cl. 14). 9-21-48.
252,431.	"J. E. RHOADS & SONS POWER WATERSHED" AND DESIGN. Cl. 35 (Int. Cl. 7). 2-5-29.	502,461.	CRESCENT CITY AND DESIGN. Cl. 46 (Int. Cl. 30). 9-28-48.
253,404.	OHIO JURISPRUDENCE. Cl. 38 (Int. Cl. 16). 2-26-29.	502,556.	200. Cl. 35 (Int. Cl. 7). 9-28-48.
254,012.	MAXIM. Cl. 28 (Int. Cl. 14). 3-12-29.	502,589.	OZOMULSION AND DESIGN. Cl. 18 (Int. Cl. 5). 9-28-48.
439,499.	FOREST MILLS. Cl. 39 (Int. Cl. 25). 7-6-48.	502,810.	OAKHURST. Cl. 39 (Int. Cl. 25). 10-12-48.
439,512.	ARTUS. Cl. 35 (Int. Cl. 17). 7-6-48.	502,811.	HUDSON. Cl. 39 (Int. Cl. 25). 10-12-48.
439,786.	MAGNALITE. Cl. 15 (Int. Cl. 4). 7-20-48.	502,880.	WRIGHT'S AND DESIGN. Cl. 39 (Int. Cl. 25). 10-12-48.
439,796.	BLUE RINGS. Cl. 17 (Int. Cl. 34). 7-20-48.	502,881.	WRIGHT'S CUT-A-WAY'S. Cl. 39 (Int. Cl. 25). 10-12-48.
439,883.	EXPERT. Cl. 27 (Int. Cl. 14). 7-27-48.	502,886.	GLASTENBURY. Cl. 39 (Int. Cl. 25). 10-12-48.
440,148.	SURE SLEEP AND DESIGN. Cl. 32 (Int. Cl. 20). 8-17-48.	503,173.	SPEEDLOCK. Cl. 25 (Int. Cl. 6). 10-19-48.
440,170.	ALCOQUINONE. Cl. 6 (Int. Cl. 2). 8-17-48.	503,192.	DR. DRAKES. Cl. 18 (Int. Cl. 5). 10-19-48.
440,312.	FEMCO. Cl. 23 (Int. Cl. 6). 8-24-48.	503,257.	PYRROLAZOTE. Cl. 18 (Int. Cl. 5). 10-19-48.
440,371.	MONOMADE AND DESIGN. Cl. 32 (Int. Cl. 20). 8-24-48.	503,455.	HEISKELL'S. Cl. 52 (Int. Cl. 3). 10-26-48.
440,425.	RID. Cl. 4 (Int. Cl. 21). 8-31-48.	503,619.	WRIGHT'S HEALTH SLEEPER AND DESIGN. Cl. 39 (Int. Cl. 25). 11-2-48.
440,475.	PURECO AND DESIGN. Cl. 13 (Int. Cl. 7). 9-7-48.	503,620.	WRIGHT'S HEALTH UNDERWEAR AND DESIGN. Cl. 39 (Int. Cl. 25). 11-2-48.
440,558.	TYPEMASTER. Cl. 29 (Int. Cl. 21). 9-14-48.	504,155.	7TH INNING STRETCH. Cl. 39 (Int. Cl. 25). 11-23-48.
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 Color Purty Co.: See—Kubly, Paul R.  
 Colorado Milling & Elevator Co., The: See—Longmont Farmers Milling & Elevator Co., The.  
 Colorado Mountain Industries: See—Redfield Gun Sight Co., Ltd.  
 Compagnie Metallurgique De La Campine, Brussels, Belgium. 860,790, pub. 11-21-67. Cl. 6.  
 Computer Aid Companies, Inc., Dallas, Tex. 861,150, pub. 9-10-68. Cl. 100.  
 Conn. C. G., Ltd., Elkhart, Ind. 861,036, pub. 9-10-68. Cl. 36.  
 Conover, C. E., & Co., Inc., Fairfield, N.J. 861,032-3, pub. 9-10-68. Cl. 35.  
 Consolidated Machine Tool Corp. of America, Rochester, N.Y., to Textron Inc., Providence, R.I. 243,566, ren. 11-26-68. Cl. 23.  
 Continental Baking Co., Rye, N.Y. 739,128, can. Cl. 46.  
 Continental Distilling Co.: See—Continental Distilling Corp.  
 Continental Distilling Corp., d.b.a. Continental Distilling Co., Philadelphia, Pa. 861,100, pub. 9-10-68. Cl. 49.  
 Continental Oil Co., Ponca City, Okla. 860,799, pub. 9-10-68. Cl. 6.  
 Continental Oil Co., Ponca City, Okla. 860,856, pub. 9-10-68. Cl. 13.  
 Converse Rubber Corp., Malden, Mass. 860,956, pub. 9-10-68. Cl. 22.  
 Conversion Chemical Corp., Rockville, Conn. 860,792, pub. 9-10-68. Cl. 6.  
 Coq d'Or Farm: See—Weisberg, Harold.  
 Coreneo Corp., Tewksbury, Mass. 860,817, pub. 7-30-68. Cl. 10.  
 Cory Corp., Chicago, Ill. 861,029, pub. 9-10-68. Cl. 34.  
 Cosmopolitan International, Fort Worth, Tex. 861,078, pub. 9-10-68. Cl. 46.  
 Cragstan Industries, Inc., New York, N.Y. 861,194. Cl. 22.  
 Createk, Los Angeles, Calif. 860,946, pub. 9-10-68. Cl. 22.  
 Crosby Mfg. Co., Crosby, Minn. 860,953, pub. 9-10-68. Cl. 22.  
 Crucible Steel Co. of America, New York, N.Y., to Crucible Steel Corp., Pittsburgh, Pa. 440,829, ren. 11-26-68. Cl. 14.  
 Crucible Steel Corp.: See—Crucible Steel Co. of America.  
 Curtis, Helene, Industries, Inc., Chicago, Ill. 861,106, pub. 4-23-68. Cl. 51.  
 Curtiss-Wright Corp.: See—Wright Aeronautical Corp.  
 Curtiss-Wright Corp., Wood-Ridge, N.J. 860,965, pub. 9-10-68. Cl. 23.  
 DBA Products Co., Inc., Lake Bluff, Ill. 861,139, pub. 9-10-68. Cl. 52.  
 DCA Corp., Grand Rapids, Mich. 861,025, pub. 9-10-68. Cl. 31.  
 D.S.R. Employees Federal Credit Union, Highland Park, Mich. 861,169, pub. 9-10-68. Cl. 102.  
 Daggett & Ramsdell, assor. to Daggett & Ramsdell Inc., to Daggett & Ramsdell International Corp., New York, N.Y. 506,568, ren. 11-26-68. Cl. 51.  
 Daggett & Ramsdell International Corp.: See—Daggett & Ramsdell.  
 Dairy Queen National Development Co.: See—American Dairy Queen Corp.  
 Dalton Foundries, Inc., The, Warsaw, Ind. 861,009, pub. 9-10-68. Cl. 32.  
 Dana Corp.: See—Perfect Circle Corp.  
 Danway Corp., Baton Rouge, La. 739,175, can. Cl. 52.  
 Davis Paint Co.: See—New Method Paint Co.  
 Dayco Corp., Dayton, Ohio. 861,012-13, pub. 9-10-68. Cl. 32.  
 Dean Products, Inc., Brooklyn, N.Y. 861,005, pub. 9-10-68. Cl. 31.  
 Dearborn Glass Co., Argo, Ill. 861,015-18, pub. 9-10-68. Cl. 33.  
 De Gee, Inc., Asbury Park, N.J. 861,061, pub. 9-10-68. Cl. 39.  
 Del Laboratories, Inc., Farmingdale, N.Y. 861,107, pub. 4-9-68. Cl. 51.  
 De Leon Cosmetics Co., Inc., Omaha, Nebr. 861,124-5, pub. 9-10-68. Cl. 51.  
 De Luxe Topper Corp., Elizabeth, N.J. 860,954, pub. 9-10-68. Cl. 22.  
 Demert & Dougherty, Inc., Chicago, Ill. 861,113, pub. 6-25-68. Cl. 51.  
 Deseret Pharmaceutical Co., Inc., Sandy, Utah. 861,000, pub. 9-10-68. Cl. 29.  
 Derry Technical Institute, Inc.: See—Bell & Howell Co.  
 Diamond Shamrock Corp.: See—Nopco Chemical Co.  
 Ditta Mariotti Primo, Rome, Italy. 860,825, pub. 9-10-68. Cl. 12.  
 Divine, Donald J., Parsons, Kans. 861,079, pub. 9-10-68. Cl. 46.  
 Dodge Mfg. Corp.: See—Reliance Electric & Engineering Co., The.  
 Donco Products Corp., Lakeview, Oreg. 860,960, pub. 9-10-68. Cl. 22.  
 Drexel Enterprises, Inc., Drexel, N.C. 739,009, can. Cl. 32.  
 Duffy-Mott Co., Inc., New York, N.Y. 739,117, can. Cl. 46.  
 Dunhall Inc., Gravette, Ark. 860,893, pub. 9-10-68. Cl. 18.  
 Dunhill Tailored Clothes, Inc., New York, N.Y. 860,777, pub. 12-12-65. Multiple Class (Classes 3, 28, 32, and 51).  
 Du Pont de Nemours, E. I., & Co., Wilmington, Del. 861,063, pub. 9-10-68. Cl. 39.  
 Dwyer, F. W., Mfg. Co., Inc., Michigan City, Ind. 860,995, pub. 9-10-68. Cl. 26.  
 Dynamic Classics, Ltd., New York, N.Y. 861,071, pub. 9-10-68. Cl. 44.  
 Dytro Corp., Hicksville, N.Y. 860,998, pub. 9-10-68. Cl. 26.  
 EG & G, Inc., Bedford, Mass. 860,988, pub. 9-10-68. Cl. 26.  
 East Orange Mill End Shops, East Orange, N.J. 861,068, pub. 9-10-68. Cl. 42.  
 Eaton Yale & Towne Inc., Cleveland, Ohio. 860,925, pub. 9-10-68. Cl. 21.  
 Ebsco Industries, Inc., Birmingham, Ala. 739,036, can. Cl. 38.  
 Elbon, Inc.: See—Johnston Holloway & Co., Inc.  
 Endicott Johnson Corp., Endicott, N.Y. 739,050, can. Cl. 39.  
 Engelhard Minerals & Chemicals Corp., Newark, N.J. 860,801, pub. 9-10-68. Cl. 6.  
 Erie Forge & Steel Corp., Erie, Pa. 716,346, can. Cl. 14.  
 Evans, Joe I., d.b.a. Super Cold Co., Denver, Colo. 739,000, can. Cl. 31.  
 Exclusive China Co., Inc., New York, N.Y. 861,001, pub. 1-16-68. Cl. 30.  
 Fairservice, Richard H., d.b.a. Polynesian Productions Ltd., Honolulu, Hawaii. 739,041, can. Cl. 38.  
 Falls Engineering & Machine Co., Cuyahoga Falls, Ohio. 440,312, ren. 11-26-68. Cl. 23.  
 Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 738,896, can. Cl. 6.  
 Fashion Tress, Inc., Miami Beach, Fla. 861,065, pub. 9-10-68. Cl. 40.  
 Fedders Corp., Edison, N.J. 860,978, pub. 9-10-68. Multiple Class (Classes 24, 31, and 34).  
 Federal Products Corp., Providence, R.I. 860,997, pub. 9-10-68. Cl. 26.  
 Federated Department Stores, Inc., Cincinnati, Ohio. 739,151, can. Cl. 51.  
 Feed Service Corp., Crete, Nebr. 861,085, pub. 9-3-68. Cl. 46.  
 Fiber Industries, Inc., Charlotte, N.C. 861,066, pub. 9-10-68. Cl. 42.  
 Flin 'N' Feather Farm, Inc.: See—McGraw, Max.  
 Findley Adhesives Inc., Milwaukee, Wis. 860,785-6, pub. 9-10-68. Cl. 5.  
 Fine Foods, Inc., Seattle, Wash. 861,075, pub. 9-10-68. Cl. 46.  
 Finnaren & Haley, Inc., Philadelphia, Pa. 860,869, pub. 9-10-68. Cl. 16.  
 First Mfg. Corp., New York, N.Y. 860,849, pub. 9-28-65. Cl. 13.  
 Fleet Oil Co., Inc., New York, N.Y. 738,909, can. Cl. 15.  
 Flex-O-Glass, Inc., d.b.a. Warp Bros., Chicago, Ill. 860,774, pub. 9-10-68. Cl. 2.  
 Flying Tiger Line Inc., The, Burbank, Calif. 739,205, can. Cl. 105.  
 Foote Mineral Co., Exton, Pa. 860,867, pub. 9-10-68. Cl. 14.  
 Ford, Charles C., d.b.a. Sir Lola, Denver, Colo. 861,147, pub. 9-10-68. Cl. 100.  
 Ford's Restaurant, Glard, Pa. 861,151, pub. 9-10-68. Cl. 100.  
 Forestal Land, Timber & Railways Co., Ltd., The, London, England. 860,794, pub. 9-10-68. Cl. 6.  
 Formco, Inc., Cincinnati, Ohio. 861,008, pub. 11-7-67. Cl. 32.  
 Fortin Laminating Corp., North Hollywood, Calif. 861,190-1. Cl. 5.  
 Fortune, C. A., & Co., River Forest, Ill. 861,083, pub. 9-10-68. Cl. 46.  
 Foto-Quelle G.m.b.H., Nurnberg, Germany. 860,985, pub. 9-10-68. Cl. 26.  
 France Editions & Publications, from Societe des Editions Mal, Paris, France. 861,159, pub. 9-10-68. Cl. 101.  
 Frank, Wally, Ltd., New York, N.Y. 860,812, pub. 6-18-68. Cl. 8.  
 Frayne Sportwear Mfrs. Inc., Tampa, Fla. 861,060, pub. 9-10-68. Cl. 39.  
 Fredon Co., Spearfish, S. Dak. 739,003, can. Cl. 32.  
 Freedman, S., & Sons, Inc., Washington, D.C. 861,160, pub. 9-10-68. Cl. 101.  
 Friedman, Nathan H., Stratford, Conn. 738,929, can. Cl. 18.  
 GAF Corp., New York, N.Y., from American Felt Co., Glenville, Conn. 861,034, pub. 9-3-68. Cl. 35.  
 Gallagher, R. J., Co., Houston, Tex. 860,858, pub. 9-10-68. Cl. 13.  
 Galmen Production Corp., New York, N.Y. 861,038, pub. 9-10-68. Cl. 36.  
 Gallo, E. & J., Winery, d.b.a. Gallo Vineyards, Modesto, Calif. 861,092, pub. 9-10-68. Cl. 47.  
 Gallo Vineyards: See—Gallo, E. & J., Winery.  
 Gammon Technical Products, Inc., Newark, N.J. 860,855, pub. 9-10-68. Cl. 13.  
 Garlock Inc., Palmyra, N.Y. 860,761, pub. 9-10-68. Multiple Class (Classes 1, 23, and 35).  
 Geigy Chemical Corp., Ardsley, N.Y. 860,800, pub. 9-10-68. Cl. 6.  
 Geigy Chemical Corp., Ardsley, N.Y. 860,804-5, pub. 9-10-68. Cl. 6.  
 Gemex Co., Union, N.J., to Jacoby-Bender, Inc., Woodside, N.Y. 502,413, ren. 11-26-68. Cl. 28.  
 General Foods Corp., White Plains, N.Y. 861,199. Cl. 46.  
 General Motors Corp., Detroit, Mich. 860,798, pub. 9-10-68. Cl. 6.  
 General Motors Corp., Detroit, Mich. 860,907, pub. 9-10-68. Cl. 19.  
 General Plastics Corp., Bloomfield, N.J. 860,841, pub. 9-10-68. Cl. 12.  
 Georgia-Bonded Fibers, Inc., Newark, N.J. 860,757, pub. 9-10-68. Cl. 1.  
 Gilbert, A. C., Co., The, New Haven, Conn. 738,976, can. Cl. 22.  
 Gilbert, A. C., Co., The, New Haven, Conn. 860,951, pub. 9-10-68. Cl. 22.  
 Gilbert Paper Co., Menasha, Wis. 711,884, can. Cl. 37.  
 Gland-O-Lac Co., The: See—Ciba Corp.  
 Glessner Co., The, to The Lenco Co., Findlay, Ohio. 500,774, ren. 11-26-68. Cl. 18.  
 Glessner Co., The, to The Lenco Co., Findlay, Ohio. 503,192, ren. 11-26-68. Cl. 18.  
 Gold Eagle Products Co., Chicago, Ill. 860,868, pub. 7-16-68. Cl. 15.  
 Golden, A. J., Inc., York, Pa. 860,884, pub. 9-10-68. Cl. 17.  
 Good, Frederick H., Los Angeles, Calif. 861,103, pub. 9-10-68. Cl. 50.  
 Gordon, M. L., Sash & Door Co., Minneapolis, Minn. 860,839, pub. 9-10-68. Cl. 12.  
 Gordon & Platt, Inc., Winfield, Kans. 861,024, pub. 9-10-68. Cl. 34.  
 Grace, W. R., & Co., New York, N.Y. 860,795, pub. 6-25-68. Cl. 6.  
 Graco Metal Products, Inc., Elverson, Pa. 860,932, pub. 9-10-68. Cl. 22.  
 Graflex, Inc., Rochester, N.Y. 860,993, pub. 9-10-68. Cl. 26.  
 Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 501,157, ren. 11-26-68. Cl. 46.  
 Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 501,159, ren. 11-26-68. Cl. 46.  
 Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 502,461, ren. 11-26-68. Cl. 46.  
 Great Atlantic & Pacific Tea Co., Inc., The: See—American Coffee Corp.  
 Great Atlantic & Pacific Tea Co., The.  
 Greene-Tree, Inc., Salt Lake City, Utah. 861,156, pub. 9-10-68. Cl. 100.  
 Gregoire's Flowers, Inc., San Francisco, Calif. 860,763, pub. 9-10-68. Cl. 1.  
 Greif Bros. Cooperage Corp., The, Delaware, Ohio. 861,102, pub. 8-20-68. Cl. 50.  
 Greiner, William, Co., Chicago, Ill. 738,865, can. Cl. 1.  
 Griffith Laboratories, Inc., The, Chicago, Ill. 739,116, can. Cl. 46.  
 Griffiths, Richard W., Pacific Palsades, Calif. 861,162, pub. 9-10-68. Cl. 101.  
 Halliwell: See—Halliwell, Inc.  
 Halliwell, Inc., d.b.a. Halliwell, New York, N.Y. 861,203. Cl. 51.  
 Hanlon Chemical Co., Inc., Kansas City, Kans. 738,883, can. Cl. 6.  
 Harman-Kardon Inc., Plainville, N.Y. 860,920-1, pub. 9-10-68. Cl. 21.  
 Harshaw Chemical Co., The, to Kewanee Oil Co., d.b.a. The Harshaw Chemical Co. Division, Cleveland, Ohio. 507,439, ren. 11-26-68. Cl. 6.  
 Harshaw Chemical Co., The: See—Kewanee Oil Co.  
 Harshaw Chemical Co. Division, The: See—Harshaw Chemical Co., The.  
 Hat Corp. of America, New York, N.Y. 861,062, pub. 9-10-68. Cl. 39.  
 Heller, Mal, Brooklyn, N.Y. 861,176, pub. 9-10-68. Cl. 106.  
 Helzberg's Diamond Shops, Inc., Kansas City, Mo. 861,123, pub. 9-10-68. Cl. 51.  
 Helzberg's Diamond Shops, Inc., Kansas City, Mo. 861,142, pub. 9-10-68. Cl. 52.  
 Hempel's Marine Paints, Inc., New York, N.Y. 860,875-S, pub. 9-10-68. Cl. 16.  
 Heyman, Robert A., Corp., New York, N.Y. 860,779-80, pub. 9-10-68. Cl. 3.  
 Hinkle Farms: See—Hinkle, Peyton L.  
 Hinkle, Peyton L., d.b.a. Hinkle Farms, Ottsville, Pa. 739,098, can. Cl. 46.  
 Hobart Mfg. Co., The, Troy, Ohio. 860,914, pub. 9-10-68. Cl. 21.  
 Hoffmann-La Roche Inc., from Sauter Laboratories, Inc., Nutley, N.J. 860,890, pub. 8-27-68. Cl. 18.  
 Holland Penny Ltd., Piccadilly, London, England. 860,813, pub. 9-10-68. Cl. 8.  
 Home Brand of America, Inc., Chicago, Ill. 739,111, can. Cl. 46.  
 Home Equipment Mfg. Co.: See—Kenton Industries.  
 Houdaille Industries, Inc.: See—Honde Engineering Corp.  
 Honde Engineering Corp., to Houdaille Industries, Inc., Buffalo, N.Y. 248,512, ren. 11-26-68. Cl. 19.  
 Hubbard-Hall Chemical Co., The, Waterbury, Conn. 739,167, can. Cl. 52.  
 Hudson Hoslery Co., Charlotte, N.C. 502,365, ren. 11-26-68. Cl. 39.  
 Hudson Hoslery Co., Charlotte, N.C. 502,810-11, ren. 11-26-68. Cl. 39.  
 Hughes, Shirley L., d.b.a. Shirley Lou Bath Oils, Denver, Colo. 739,148, can. Cl. 51.  
 Humble Oil & Refining Co.: See—Stanco Inc.  
 Hyland Laboratories: See—Baxter Laboratories, Inc.  
 Hystron Fibers Inc., New York, N.Y. 860,760, pub. 9-10-68. Cl. 1.  
 I.C.I./Organics/Inc.: See—Arnold, Hoffman & Co., Inc.  
 I.G.R. Corp., from Adolph Posner and Richard Inglima, New York, N.Y. 861,069, pub. 9-10-68. Cl. 44.  
 I-XL Furniture Co., Inc., The, Goshen, Ind. 739,002, can. Cl. 32.  
 Ickes-Braun Glasshouses, Inc., Aptakistic, Ill. 860,824, pub. 9-10-68. Cl. 12.  
 In Sportswear, Inc., New York, N.Y. 861,196. Cl. 39.  
 Industrial Products Suppliers, New York, N.Y., to The Artus Corp., Englewood, N.J. 439,512, ren. 11-26-68. Cl. 35.  
 Industrias Pampero C.A., Caracas, Venezuela. 739,136, can. Cl. 49.  
 Inglima, Richard, and Adolph Posner: See—I.G.R. Corp.

Erle Forge & Steel Corp., Erie, Pa. 716,346, can. Cl. 14.  
 Evans, Joe I., d.b.a. Super Cold Co., Denver, Colo. 739,000, can. Cl. 31.  
 Exclusive China Co., Inc., New York, N.Y. 861,001, pub. 1-16-68. Cl. 30.  
 Fairservice, Richard H., d.b.a. Polynesian Productions Ltd., Honolulu, Hawaii. 739,041, can. Cl. 38.  
 Falls Engineering & Machine Co., Cuyahoga Falls, Ohio. 440,312, ren. 11-26-68. Cl. 23.  
 Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 738,896, can. Cl. 6.  
 Fashion Tress, Inc., Miami Beach, Fla. 861,065, pub. 9-10-68. Cl. 40.  
 Fedders Corp., Edison, N.J. 860,978, pub. 9-10-68. Multiple Class (Classes 24, 31, and 34).  
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 Federated Department Stores, Inc., Cincinnati, Ohio. 739,151, can. Cl. 51.  
 Feed Service Corp., Crete, Nebr. 861,085, pub. 9-3-68. Cl. 46.  
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 Flin 'N' Feather Farm, Inc.: See—McGraw, Max.  
 Findley Adhesives Inc., Milwaukee, Wis. 860,785-6, pub. 9-10-68. Cl. 5.  
 Fine Foods, Inc., Seattle, Wash. 861,075, pub. 9-10-68. Cl. 46.  
 Finnaren & Haley, Inc., Philadelphia, Pa. 860,869, pub. 9-10-68. Cl. 16.  
 First Mfg. Corp., New York, N.Y. 860,849, pub. 9-28-65. Cl. 13.  
 Fleet Oil Co., Inc., New York, N.Y. 738,909, can. Cl. 15.  
 Flex-O-Glass, Inc., d.b.a. Warp Bros., Chicago, Ill. 860,774, pub. 9-10-68. Cl. 2.  
 Flying Tiger Line Inc., The, Burbank, Calif. 739,205, can. Cl. 105.  
 Foote Mineral Co., Exton, Pa. 860,867, pub. 9-10-68. Cl. 14.  
 Ford, Charles C., d.b.a. Sir Lola, Denver, Colo. 861,147, pub. 9-10-68. Cl. 100.  
 Ford's Restaurant, Glard, Pa. 861,151, pub. 9-10-68. Cl. 100.  
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 Fortin Laminating Corp., North Hollywood, Calif. 861,190-1. Cl. 5.  
 Fortune, C. A., & Co., River Forest, Ill. 861,083, pub. 9-10-68. Cl. 46.  
 Foto-Quelle G.m.b.H., Nurnberg, Germany. 860,985, pub. 9-10-68. Cl. 26.  
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 Frayne Sportwear Mfrs. Inc., Tampa, Fla. 861,060, pub. 9-10-68. Cl. 39.  
 Fredon Co., Spearfish, S. Dak. 739,003, can. Cl. 32.  
 Freedman, S., & Sons, Inc., Washington, D.C. 861,160, pub. 9-10-68. Cl. 101.  
 Friedman, Nathan H., Stratford, Conn. 738,929, can. Cl. 18.  
 GAF Corp., New York, N.Y., from American Felt Co., Glenville, Conn. 861,034, pub. 9-3-68. Cl. 35.  
 Gallagher, R. J., Co., Houston, Tex. 860,858, pub. 9-10-68. Cl. 13.  
 Galmen Production Corp., New York, N.Y. 861,038, pub. 9-10-68. Cl. 36.  
 Gallo, E. & J., Winery, d.b.a. Gallo Vineyards, Modesto, Calif. 861,092, pub. 9-10-68. Cl. 47.  
 Gallo Vineyards: See—Gallo, E. & J., Winery.  
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 Garlock Inc., Palmyra, N.Y. 860,761, pub. 9-10-68. Multiple Class (Classes 1, 23, and 35).  
 Geigy Chemical Corp., Ardsley, N.Y. 860,800, pub. 9-10-68. Cl. 6.  
 Geigy Chemical Corp., Ardsley, N.Y. 860,804-5, pub. 9-10-68. Cl. 6.  
 Gemex Co., Union, N.J., to Jacoby-Bender, Inc., Woodside, N.Y. 502,413, ren. 11-26-68. Cl. 28.  
 General Foods Corp., White Plains, N.Y. 861,199. Cl. 46.  
 General Motors Corp., Detroit, Mich. 860,798, pub. 9-10-68. Cl. 6.  
 General Motors Corp., Detroit, Mich. 860,907, pub. 9-10-68. Cl. 19.  
 General Plastics Corp., Bloomfield, N.J. 860,841, pub. 9-10-68. Cl. 12.  
 Georgia-Bonded Fibers, Inc., Newark, N.J. 860,757, pub. 9-10-68. Cl. 1.  
 Gilbert, A. C., Co., The, New Haven, Conn. 738,976, can. Cl. 22.  
 Gilbert, A. C., Co., The, New Haven, Conn. 860,951, pub. 9-10-68. Cl. 22.  
 Gilbert Paper Co., Menasha, Wis. 711,884, can. Cl. 37.  
 Gland-O-Lac Co., The: See—Ciba Corp.  
 Glessner Co., The, to The Lenco Co., Findlay, Ohio. 500,774, ren. 11-26-68. Cl. 18.  
 Glessner Co., The, to The Lenco Co., Findlay, Ohio. 503,192, ren. 11-26-68. Cl. 18.  
 Gold Eagle Products Co., Chicago, Ill. 860,868, pub. 7-16-68. Cl. 15.  
 Golden, A. J., Inc., York, Pa. 860,884, pub. 9-10-68. Cl. 17.  
 Good, Frederick H., Los Angeles, Calif. 861,103, pub. 9-10-68. Cl. 50.  
 Gordon, M. L., Sash & Door Co., Minneapolis, Minn. 860,839, pub. 9-10-68. Cl. 12.  
 Gordon & Platt, Inc., Winfield, Kans. 861,024, pub. 9-10-68. Cl. 34.  
 Grace, W. R., & Co., New York, N.Y. 860,795, pub. 6-25-68. Cl. 6.  
 Graco Metal Products, Inc., Elverson, Pa. 860,932, pub. 9-10-68. Cl. 22.  
 Graflex, Inc., Rochester, N.Y. 860,993, pub. 9-10-68. Cl. 26.  
 Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 501,157, ren. 11-26-68. Cl. 46.  
 Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 501,159, ren. 11-26-68. Cl. 46.  
 Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 502,461, ren. 11-26-68. Cl. 46.  
 Great Atlantic & Pacific Tea Co., Inc., The: See—American Coffee Corp.  
 Great Atlantic & Pacific Tea Co., The.  
 Greene-Tree, Inc., Salt Lake City, Utah. 861,156, pub. 9-10-68. Cl. 100.  
 Gregoire's Flowers, Inc., San Francisco, Calif. 860,763, pub. 9-10-68. Cl. 1.  
 Greif Bros. Cooperage Corp., The, Delaware, Ohio. 861,102, pub. 8-20-68. Cl. 50.  
 Greiner, William, Co., Chicago, Ill. 738,865, can. Cl. 1.  
 Griffith Laboratories, Inc., The, Chicago, Ill. 739,116, can. Cl. 46.  
 Griffiths, Richard W., Pacific Palsades, Calif. 861,162, pub. 9-10-68. Cl. 101.  
 Halliwell: See—Halliwell, Inc.  
 Halliwell, Inc., d.b.a. Halliwell, New York, N.Y. 861,203. Cl. 51.  
 Hanlon Chemical Co., Inc., Kansas City, Kans. 738,883, can. Cl. 6.  
 Harman-Kardon Inc., Plainville, N.Y. 860,920-1, pub. 9-10-68. Cl. 21.  
 Harshaw Chemical Co., The, to Kewanee Oil Co., d.b.a. The Harshaw Chemical Co. Division, Cleveland, Ohio. 507,439, ren. 11-26-68. Cl. 6.  
 Harshaw Chemical Co., The: See—Kewanee Oil Co.  
 Harshaw Chemical Co. Division, The: See—Harshaw Chemical Co., The.  
 Hat Corp. of America, New York, N.Y. 861,062, pub. 9-10-68. Cl. 39.  
 Heller, Mal, Brooklyn, N.Y. 861,176, pub. 9-10-68. Cl. 106.  
 Helzberg's Diamond Shops, Inc., Kansas City, Mo. 861,123, pub. 9-10-68. Cl. 51.  
 Helzberg's Diamond Shops, Inc., Kansas City, Mo. 861,142, pub. 9-10-68. Cl. 5



Interchemical Corp., New York, N.Y. 861,138, pub. 9-10-68. Cl. 52.  
 Interior Roof Drain Systems, Inc., Lubbock, Tex. 860,833, pub. 9-10-68. Cl. 12.  
 International Latex Corp.: See—  
 International Playtex Corp.  
 International Personnel Service, Inc., Detroit, Mich. 861,163, pub. 9-10-68. Cl. 101.  
 International Playtex Corp., from International Latex Corp., Dover, Del. 861,045, pub. 6-14-66. Cl. 39.  
 International Steel Wool Corp., Springfield, Ohio. 440,425, ren. 11-26-68. Cl. 4.  
 Inter-State Auto Parts Co., Inc., New York, N.Y. 247,355, ren. 11-26-68. Cl. 21.  
 Ionic Organ Co., Morristown, N.J. 861,037, pub. 9-10-68. Cl. 36.  
 Ives, Sybil, Inc., Yonkers, N.Y. 861,114, pub. 9-10-68. Cl. 51.  
 Izod, Ltd., New York, N.Y. 861,046, pub. 9-10-68. Cl. 39.  
 J. & J. Distributing Co., Millburn, N.J. 504,925, ren. 11-26-68. Cl. 49.  
 Jacoby/Bender, Inc.: See—  
 Genex Co.  
 Jarmy, Monica, d.b.a. Senator Safety Productions, New York, N.Y. 739,048, can. Cl. 38.  
 Jenkins Publications, Inc., Los Angeles, Calif., to Chilton Co., Philadelphia, Pa. 506,078-9, ren. 11-26-68. Cl. 38.  
 Johnson, Edward E., Inc., St. Paul, Minn., to Universal Oil Products Co., Des Plaines, Ill. 505,962, ren. 11-26-68. Cl. 13.  
 Johnson Industries, Inc., Menlo Park, N.J. 861,136, pub. 9-10-68. Cl. 52.  
 Johnston, Holloway & Co., Inc., Philadelphia, Pa., to Elbon, Inc., Morristown, N.J. 503,455, ren. 11-26-68. Cl. 52.  
 Judson Candles, Inc., from Judson's Candles, Inc., San Antonio, Tex. 861,076, pub. 10-31-67. Cl. 46.  
 Judson's Candles, Inc.: See—  
 Judson Candles, Inc.  
 Junior Gallery, Inc., New York, N.Y. 861,055, pub. 9-10-68. Cl. 49.  
 Kamenstein, David, Inc., New York, N.Y. 860,864, pub. 9-10-68. Cl. 13.  
 Kane Import Corp., New York, N.Y. 718,777, can. Cl. 6.  
 Kanik, J. R., Inc., Black River, N.Y. 860,969, pub. 9-10-68. Cl. 43.  
 Kayser-Roth Corp.: See—  
 Stein, A., & Co.  
 Kearney-National Inc., St. Louis, Mo. 860,926, pub. 9-10-68. Cl. 21.  
 Kelley Technical Coatings, Inc., Louisville, Ky. 860,873, pub. 9-10-68. Cl. 16.  
 Kellogg Co., Battle Creek, Mich. 861,084, pub. 9-10-68. Cl. 46.  
 Kendall Co., The, Walpole, Mass. 861,051, pub. 9-10-68. Cl. 39.  
 Kent Corp., Princeton, N.J. 860,912, pub. 4-30-68. Cl. 21.  
 Kenton Industries, d.b.a. Home Equipment Mfg. Co., Stanton, Calif. 860,822, pub. 9-10-68. Cl. 12.  
 Keweenaw Oil Co.: See—  
 Harshaw Chemical Co., The.  
 Keweenaw Oil Co., d.b.a. The Harshaw Chemical Co., Cleveland, Ohio. 860,793, pub. 9-10-68. Cl. 6.  
 Kilde Mfg. Co., Inc., Bloomfield, N.J. 738,889, can. Cl. 6.  
 Kilgore Junior College District, Kilgore, Tex. 861,182, pub. 9-10-68. Cl. 107.  
 King Athletic Goods Co., Philadelphia, Pa. 860,961, pub. 9-10-68. Cl. 22.  
 Kingsford Co., Louisville, Ky. 860,756, pub. 12-5-67. Cl. 1.  
 Kinney & Co., Inc., Columbus, Ind. 738,951, can. Cl. 18.  
 Kiplinger Washington Editors, Inc., The, Washington, D.C. 739,152-4, can. Cl. 100.  
 Kiwi Polish Co. Proprietary Ltd., The, Victoria, Australia. 739,162, can. Cl. 52.  
 Kolodney, R., & Co. Inc., Hartford, Conn. 716,911, can. Cl. 39.  
 Koninklijke Nederlandsche Hoogovens en Staalfabrieken N.V., IJmuiden, Velzen, Netherlands. 860,866, pub. 9-10-68. Cl. 14.  
 Kubly, Paul R., d.b.a. Color Putty Co., Monroe, Wis. 860,827, pub. 9-10-68. Cl. 12.  
 LTV Ling Altec, Inc.: See—  
 Altec Lansing Corp.  
 LTV Ling Altec, Inc., Anaheim, Calif. 860,911, pub. 9-10-68. Cl. 21.  
 La Berge, Louis E., d.b.a. The Silent-Bookkeeper Co., San Diego, Calif. 739,195, can. Cl. 101.  
 Lab-Line Instruments, Inc., Melrose Park, Ill. 860,984, pub. 9-10-68. Cl. 26.  
 Lafleur, Romuald J., Santa Rosa, Calif. 860,775, pub. 9-10-68. Cl. 2.  
 La Grenouille, Inc., New York, N.Y. 861,157, pub. 9-10-68. Cl. 100.  
 Lakeside Laboratories, Inc., Milwaukee, Wis. 738,942, can. Cl. 18.  
 Lakewood Mfg. Co., Westlake, Ohio. 720,391, can. Cl. 40.  
 Landam Products Corp., New York, N.Y. 861,027, pub. 9-10-68. Cl. 34.  
 Lannon Mfg. Co., Inc., Tullahoma, Tenn. 860,949, pub. 9-10-68. Cl. 22.  
 Lavin-Charles of the Ritz, Inc., New York, N.Y. 861,144, pub. 9-10-68. Cl. 52.  
 Larabee Flour Mills Co., The: See—  
 Archer-Daniels-Midland Co.  
 Larus & Brother Co., Richmond, Va. 860,885-6, pub. 9-10-68. Cl. 17.  
 Lawter Chemicals, Inc., Chicago, Ill. 860,820, pub. 9-10-68. Cl. 11.  
 Lawyers Co-Operative Publishing Co., The, Rochester, N.Y. 253,404, ren. 11-26-68. Cl. 38.  
 Leeds & Northrop Co., North Wales, Pa. 440,818, ren. 11-26-68. Cl. 26.  
 Lenco Co., The: See—  
 Glessner Co., The.  
 Lestoll Products Inc.: See—  
 Standard International Corp.  
 Libby, McNeill & Libby, Chicago, Ill. 248,737, ren. 11-26-68. Cl. 46.  
 Life Laboratories, North Hollywood, Calif. 739,154, can. Cl. 51.  
 Life-Time Bathing Enclosures, Inc., Philadelphia, Pa. 860,844, pub. 9-10-68. Cl. 12.  
 Lilly, Eli, & Co., Indianapolis, Ind. 860,895-6, pub. 9-10-68. Cl. 18.  
 Liquid Nitrogen Processing Corp., Malvern, Pa. 860,759, pub. 7-23-68. Cl. 1.  
 Liston, James F., Ottawa, Ontario, Canada. 860,935, pub. 9-10-68. Cl. 22.  
 Litecontrol Corp., Watertown, Mass. 860,910, pub. 9-10-68. Cl. 21.  
 Longmont Farmers Milling & Elevator Co., The, Longmont, to The Colorado Milling & Elevator Co., Denver, Colo. 70,734, ren. 11-26-68. Cl. 46.  
 Lorel-Westway Corp., Dallas, Tex. 861,052, pub. 9-10-68. Cl. 39.  
 L'Oreal, Paris, France. 861,111, pub. 9-10-68. Cl. 51.  
 Lorillard, P., Co., New York, N.Y. 501,103-6, ren. 11-26-68. Cl. 17.  
 Lorillard, P., Co., New York, N.Y. 501,239-41, ren. 11-26-68. Cl. 17.  
 Lorillard, P., Co., New York, N.Y. 501,243, ren. 11-26-68. Cl. 17.  
 Lorillard, P., Co., New York, N.Y. 439,796, ren. 11-26-68. Cl. 17.  
 Lynne, Mary: See—  
 Weenink, Mary E. L.  
 Lyon, Lyman R., Royal Oak, Mich. 861,133, pub. 9-10-68. Cl. 52.  
 M & W Mfg. & Distributing Co., Lovington, N. Mex. 860,806, pub. 9-10-68. Cl. 6.  
 MacMillan Ring-Free Oil Co., Inc., Los Angeles, Calif. 738,863, can. Cl. 1.  
 MacMillan Ring-Free Oil Co., Inc., Los Angeles, Calif. 738,877, can. Cl. 5.  
 MacMillin Co., Inc., The, Keene, N.H. 861,172, pub. 9-10-68. Cl. 103.  
 Macwhitty Co., Kenosha, Wis. 506,331, ren. 11-26-68. Cl. 7.  
 Madison Chemical Corp., Maywood, Ill. 861,131, pub. 7-23-68. Cl. 52.  
 Maize Industries, Earlville, Ill. 739,083, can. Cl. 46.  
 Manchester Hosiery Mills: See—  
 Massachusetts Knitting Mills  
 Marine Exhibition Corp., Miami, Fla. 861,185, pub. 9-10-68. Cl. 107.  
 Marine Studios, Inc., St. Augustine, Fla. 861,183-4, pub. 9-10-68. Cl. 107.  
 Marmola Co., Detroit, to Raladam Co., Grosse Pointe Woods, Mich. 66,843, ren. 11-26-68. Cl. 18.  
 Mar-Salle Chicago Co., Chicago, Ill. 861,096-7, pub. 9-10-68. Cl. 49.  
 Martens Chemical Corp., Middle Village, N.Y. 860,802, pub. 9-10-68. Cl. 6.  
 Martin-Marletta Corp., New York, N.Y. 860,768, pub. 9-10-68. Cl. 2.  
 Massachusetts Knitting Mills, Boston, Mass., to Manchester Hosiery Mills, Manchester, N.H. 248,837, ren. 11-26-68. Cl. 39.  
 Mast, Curt, Wolfenbuttel, Germany. 861,094, pub. 9-10-68. Cl. 49.  
 Matson Navigation Co., San Francisco, Calif. 739,204, can. Cl. 105.  
 Matsushiro USA, Inc., Bellevue, Wash. 860,930, pub. 9-10-68. Cl. 22.  
 Mattel, Inc., Hawthorne, Calif. 860,874, pub. 9-10-68. Cl. 16.  
 Mattox and Moore, Inc., Indianapolis, Ind. 738,944, can. Cl. 18.  
 Maurey Mfg. Corp., Chicago, Ill. 861,031, pub. 9-10-68. Cl. 35.  
 Mavtag Co., The, Newton, Iowa. 860,979, pub. 9-10-68. Cl. 24.  
 McGraw, Max, to Fin 'N' Feather Farm, Inc., Dundee, Ill. 440,922, ren. 11-26-68. Cl. 46.  
 Mead Johnson & Co., Evansville, Ind. 861,086, pub. 6-18-68. Cl. 46.  
 Meme Dysthe, Montreal, Quebec, Canada. 739,056, can. Cl. 39.  
 Mennen Co., The, Morristown, N.J. 739,145, can. Cl. 51.  
 Mennen Co., The, Morristown, N.J. 861,110, pub. 9-10-68. Cl. 51.  
 Mercer Alloys Corp., Los Angeles, Calif. 860,796, pub. 9-10-68. Cl. 6.  
 Meredith Corp.: See—  
 Meredith Publishing Co.  
 Meredith Publishing Co., to Meredith Corp., Des Moines, Iowa. 502,037, ren. 11-26-68. Cl. 38.  
 Merit Products, Inc., Los Angeles, Calif. 860,782, pub. 7-23-68. Cl. 4.  
 Meth, Irving, d.b.a. B & N Hosiery Co., New York, N.Y. 739,215, can. Cl. 39.  
 Metropolitan Food Co., North Attleboro, Mass. 739,001, can. Cl. 31.  
 Metropolitan Waste Conversion Corp., Wheaton, Ill. 860,816, pub. 9-10-68. Cl. 10.  
 Meyercood Co., The, Carol Stream (Wheaton), Ill. 506,917, ren. 11-26-68. Cl. 38.  
 Meyercood Co., The, Carol Stream (Wheaton), Ill. 506,929-30, ren. 11-26-68. Cl. 38.  
 Micro-Radionics, Inc., Van Nuys, Calif. 860,909, pub. 3-26-68. Multiple Class (Classes 21 and 26).  
 Miller, Anton, Ingostadt (Danube), Germany. 738,904, can. Cl. 10.  
 Milner, Dumas, Corp., Jackson, Miss. 738,948, can. Cl. 18.  
 Mirro Aluminum Co.: See—  
 Aluminum Goods Mfg. Co.  
 Mr. Boston Distiller Inc., Boston, Mass. 739,137, can. Cl. 49.  
 Mitchell, Robert F., Colorado Springs, Colo. 739,038, can. Cl. 38.  
 Modern Mald, Inc., Chattanooga, Tenn. 861,021-2, pub. 9-10-68. Cl. 34.  
 Mogen David Wine Corp., Chicago, Ill. 861,090, pub. 9-10-68. Cl. 47.  
 Monogram Models, Inc., Morton Grove, Ill. 860,955, pub. 9-10-68. Cl. 22.  
 Monroe Upholstering Co., to Monroe Upholstering Co., Inc., Baltimore, Md. 440,371, ren. 11-26-68. Cl. 32.  
 Monroe Upholstering Co., Inc.: See—  
 Monroe Upholstering Co.  
 Moore, Benjamin, & Co., New York, N.Y. 860,871, pub. 7-23-68. Cl. 16.  
 Moorman Mfg. Co., Quincy, Ill. 251,164, ren. 11-26-68. Cl. 46.  
 Morlant (De La Marne) Societe Anonyme, Ay, Marne, France. 861,091, pub. 9-10-68. Cl. 47.  
 Morris, Philip, Inc., New York, N.Y. 860,887, pub. 9-10-68. Cl. 17.  
 Multi-Clean Products, Inc., St. Paul, Minn. 860,923, pub. 9-10-68. Cl. 21.  
 Multitronics, Inc., Rockville, Md. 860,913, pub. 9-10-68. Cl. 21.  
 National Aircraft Parts Distributors Association, Elk Grove Village, Ill. 861,146, pub. 9-10-68. Cl. 100.  
 National Fittings Co. of New York, Inc., Wyandanch, N.Y. 860,850, pub. 9-10-68. Cl. 13.  
 National Oil Products Co.: See—  
 Nopco Chemical Co.  
 National Presto Industries, Inc., Eau Claire, Wis. 860,927, pub. 9-10-68. Cl. 21.  
 National Research Corp., Newton Highlands, Mass. 861,067, pub. 5-21-68. Cl. 42.  
 National Ski Patrol System, Inc., Denver, Colo. 861,188, pub. 9-10-68. Cl. 200.  
 National Super Service Co., The, Toledo, Ohio. 860,970-1, pub. 9-10-68. Cl. 23.  
 Nevco Wood Products Co., Inc., Yonkers, N.Y. 860,766, pub. 9-10-68. Multiple Class (Classes 2, 13, 23, and 32).  
 New Method Paint Co., Kansas City, to Davis Paint Co., North Kansas City, Mo. 442,115, ren. 11-26-68. Cl. 16.  
 New York Pencil Co., Inc., New York, N.Y. 861,121, pub. 9-10-68. Cl. 51.  
 Niederer, Otto, Sons, Inc., Pennington, N.J. 860,972, pub. 9-10-68. Cl. 23.  
 Nopco Chemical Co., now by change of name from National Oil Products Co., Harrison, N.J., to Diamond Shamrock Corp., Cleveland, Ohio. 505,931, ren. 11-26-68. Cl. 18.  
 Nordco, Kohler, Wis. 738,977, can. Cl. 22.  
 Norman, Merle, Cosmetics, Inc., Los Angeles, Calif. 861,108, pub. 6-25-68. Cl. 51.  
 Norman, Merle, Cosmetics, Inc., Los Angeles, Calif. 861,202, Cl. 51.  
 North American Coal Corp., The, Cleveland, Ohio. 738,893-4, can. Cl. 6.  
 Norwich Pharmaceutical Co., The, Norwich, N.Y. 860,901, pub. 6-18-68. Cl. 18.  
 Notifier Co., from Notifier Corp., Lincoln, Nebr. 860,922, pub. 9-10-68. Cl. 21.  
 Notifier Corp.: See—  
 Notifier Co.  
 Nu-Vita Products, Inc., Pittsburgh, Pa. 738,884, can. Cl. 6.  
 Old Town Corp., Brooklyn, N.Y. 860,818, pub. 6-18-68. Cl. 11.  
 On-Cor Frozen Foods, Inc., Chicago, Ill. 861,077, pub. 9-10-68. Cl. 46.  
 Oregon Bulb Farms Division of Melridge, Inc.: See—  
 Oregon Bulb Farms.  
 Oregon Bulb Farms, Sandy, to Oregon Bulb Farms Division of Melridge, Inc., Gresham, Ore. 440,827, ren. 11-26-68. Cl. 1.  
 Owens-Corning Fiberglas Corp., Toledo, Ohio. 713,590, can. Cl. 43.  
 Ozomulsion Co., The, New York, N.Y. 502,589, ren. 11-26-68. Cl. 18.  
 PPG Industries, Inc., from Pittsburgh Plate Glass Co., Pittsburgh, Pa. 860,829, pub. 9-10-68. Cl. 12.  
 Pacific Wood Products Co., Los Angeles, Calif. 860,842, pub. 9-10-68. Cl. 12.  
 Palace Metal Products, Inc., Brooklyn, N.Y. 739,005, can. Cl. 32.  
 Papco: See—  
 Price, Paul A., Co., Inc.  
 Pappagallo, Inc., New York, N.Y. 861,104, pub. 9-10-68. Cl. 50.  
 Pappas, Bettle W., Covina, Calif. 739,043, can. Cl. 38.  
 Paramount Distillers, Inc., Cleveland, Ohio. 861,099, 9-10-68. Cl. 49.  
 Pate Oil Co., Milwaukee, Wis., to Humble Oil & Refining Co., Houston, Tex. 504,360, ren. 11-26-68. Cl. 15.  
 Payne-Jones, Inc., Lowville, N.Y. 717,990, can. Cl. 50.  
 Peerless Rubber Mfg. Co., to Uniroyal, Inc., New York, N.Y. 72,879, ren. 11-26-68. Cl. 35.  
 Perfect Circle Corp., Hagerstown, Ind., to Dana Corp., Toledo, Ohio. 502,556, ren. 11-26-68. Cl. 35.  
 Peterson Plastics, Inc., Claremont, N.H. 738,979, can. Cl. 22.  
 Photovolt Corp., New York, N.Y. 860,992, pub. 9-10-68. Cl. 26.  
 Piel Bros., d.b.a. Trommer Brewing Co., Brooklyn, N.Y. 739,134, can. Cl. 48.  
 Pillsbury Co., The, Minneapolis, Minn. 739,104, can. Cl. 46.  
 Pitt-Consol Chemical Co., Newark, N.J. 860,807, pub. 9-10-68. Cl. 6.  
 Pittsburgh Garter Co., Pittsburgh, Pa. 723,090, can. Cl. 28.  
 Pittsburgh Plate Glass Co.: See—  
 PPG Industries, Inc.  
 Plastic Sealing Corp., Los Angeles, Calif. 861,042, pub. 9-10-68. Cl. 37.  
 Podgor, Joseph E., Co., Inc., Pennsauken, N.J. 860,924, pub. 9-10-68. Cl. 21.  
 Polaron Products, Inc., New Rochelle, N.Y. 861,101, pub. 9-10-68. Cl. 50.  
 Polynesian Productions Ltd.: See—  
 Fairservice, Richard H.  
 Pope, Elizabeth, Inc., New York, from William H. Pope, Pelham Manor, N.Y. 861,120, pub. 4-25-67. Cl. 51.  
 Pope, William H.: See—  
 Pope, Elizabeth, Inc.  
 "Porky" Manero's Steak House, Westport, Conn. 861,152, pub. 9-10-68. Cl. 100.  
 Port-A-Crib, Inc., Ballwin, Mo. 861,010, pub. 9-10-68. Cl. 32.  
 Portland Wire & Iron Works, Portland, Ore. 860,837, pub. 9-10-68. Cl. 12.  
 Powers, Bernard E., Fitchburg, Mass. 861,059, pub. 9-10-68. Cl. 39.  
 Poznak, Murray P., Rahway, N.J. 739,155, can. Cl. 51.  
 Precision Paper Tube Co., Wheeling, Ill. 860,765, pub. 7-23-68. Cl. 2.  
 Precision Systems Co., Inc., Somerville, N.J. 860,915, pub. 9-10-68. Cl. 21.  
 Presbyterian Life, Inc., Philadelphia, Pa. 861,168, pub. 9-10-68. Cl. 101.  
 Prescott, J. L., Co.: See—  
 Candy Crafters, Inc.  
 Prowitt, J. Nelson, Inc., Rochester, N.Y. 739,173, can. Cl. 52.  
 Price, Paul A., Co., Inc., d.b.a. Papco, Roslyn, N.Y. 860,936, pub. 9-10-68. Cl. 22.  
 Price-Paster Brass Mfg. Co., Pacoima, Calif. 860,861, pub. 9-10-68. Cl. 13.  
 Primoff & Elchner Associates, New Rochelle, N.Y. 860,959, pub. 9-10-68. Cl. 22.  
 Procter & Gamble Co., The, Cincinnati, Ohio. 738,899, can. Cl. 6.  
 Propulsion Systems, Inc., Port Washington, N.Y. 860,973, pub. 9-10-68. Cl. 23.  
 Public Relations Counsel, Inc., New York, N.Y. 861,161, pub. 9-10-68. Cl. 101.  
 Puget Sound Pulp & Timber Co., Taylorville, Ill. 739,021, can. Cl. 37.  
 Pure Carbonic, Inc., to Air Reduction Co., Inc., New York, N.Y. 440,475, ren. 11-26-68. Cl. 13.  
 Purofied Down Products Corp., New York, N.Y. 440,148, ren. 11-26-68. Cl. 32.  
 RMS Engineering, Inc., Atlanta, Ga. 738,969, can. Cl. 21.  
 Ralmon, Alexandre-Louis, Paris, France. 860,999, pub. 8-3-65. Multiple Class (Classes 29, 51, and 52).  
 Raladam Co.: See—  
 Marmola Co.  
 Ralston Purina Co., St. Louis, Mo. 860,902-3, pub. 9-10-68. Cl. 18.  
 Reda Pump Co., Bartlesville, Okla. 860,918, pub. 9-10-68. Cl. 21.  
 Redfield Gun Sight Co., Ltd., d.b.a. Colorado Mountain Industries, Denver, Colo. 860,942, pub. 7-9-68. Cl. 22.  
 Reid Laboratories, Inc., Atlanta, Ga. 738,954, can. Cl. 18.  
 Reliance Electric & Engineering Co., The, Euclid, Ohio, from Dodge Mfg. Corp., Mishawaka, Ind. 860,963, pub. 9-10-68. Cl. 23.  
 Reliance Mfg. Co., New York, N.Y. 739,060, can. Cl. 39.  
 Republic Steel Corp., Cleveland, Ohio. 860,848, pub. 9-10-68. Cl. 13.  
 Rerebaz, Inc., McKee City, N.J. 861,155, pub. 9-10-68. Cl. 100.  
 Rexford Paper Co., Milwaukee, Wis. 860,787, pub. 9-10-68. Cl. 5.  
 Reynolds Yarns Inc., Plainville, N.Y. 861,064, pub. 7-23-68. Cl. 40.  
 Rheingold Breweries, Inc., Brooklyn, N.Y. 861,093, pub. 4-30-68. Cl. 48.  
 Rhoads, J. E., & Sons, Philadelphia, Pa., to J. E. Rhoads & Sons, Inc., Wilmington, Del. 252,431, ren. 11-26-68. Cl. 35.  
 Rhoads, J. E., & Sons, Inc.: See—  
 Rhoads, J. E., & Sons.  
 Rice-Stix Dry Goods Co., St. Louis, Mo. 81,357, can. Cl. 42.  
 Rice-Stix Dry Goods Co., St. Louis, Mo. 113,428, can. Cl. 39.  
 Rice-Stix Dry Goods Co., St. Louis, Mo. 308,754, can. Cl. 39.  
 Rich, Louis, Foods, Inc., Rock Island, Ill. 739,123, can. Cl. 46.  
 Richardson-Merrell Inc., New York, N.Y. 860,904, pub. 7-9-68. Cl. 18.  
 Rite Hardware Mfg. Co., Glendale, Calif. 861,002, pub. 9-10-68. Cl. 31.  
 Rohm & Haas Co., Philadelphia, Pa. 860,821, pub. 9-10-68. Cl. 11.  
 Ronson Corp., Woodbridge, N.J. 861,026, pub. 9-10-68. Cl. 34.  
 Rozin Optical Export Corp., New York, N.Y. 860,994, pub. 9-10-68. Cl. 26.  
 SKB Arms Co., Ltd., Tokyo, Japan. 860,814, pub. 9-10-68. Cl. 9.  
 Safehouse Ltd., Milwaukee, Wis. 861,148, pub. 9-10-68. Cl. 100.

Micro-Radionics, Inc., Van Nuys, Calif. 860,909, pub. 3-26-68. Multiple Class (Classes 21 and 26).  
 Miller, Anton, Ingostadt (Danube), Germany. 738,904, can. Cl. 10.  
 Milner, Dumas, Corp., Jackson, Miss. 738,948, can. Cl. 18.  
 Mirro Aluminum Co.: See—  
 Aluminum Goods Mfg. Co.  
 Mr. Boston Distiller Inc., Boston, Mass. 739,137, can. Cl. 49.  
 Mitchell, Robert F., Colorado Springs, Colo. 739,038, can. Cl. 38.  
 Modern Mald, Inc., Chattanooga, Tenn. 861,021-2, pub. 9-10-68. Cl. 34.  
 Mogen David Wine Corp., Chicago, Ill. 861,090, pub. 9-10-68. Cl. 47.  
 Monogram Models, Inc., Morton Grove, Ill. 860,955, pub. 9-10-68. Cl. 22.  
 Monroe Upholstering Co., to Monroe Upholstering Co., Inc., Baltimore, Md. 440,371, ren. 11-26-68. Cl. 32.  
 Monroe Upholstering Co., Inc.: See—  
 Monroe Upholstering Co.  
 Moore, Benjamin, & Co., New York, N.Y. 860,871, pub. 7-23-68. Cl. 16.  
 Moorman Mfg. Co., Quincy, Ill. 251,164, ren. 11-26-68. Cl. 46.  
 Morlant (De La Marne) Societe Anonyme, Ay, Marne, France. 861,091, pub. 9-10-68. Cl. 47.  
 Morris, Philip, Inc., New York, N.Y. 860,887, pub. 9-10-68. Cl. 17.  
 Multi-Clean Products, Inc., St. Paul, Minn. 860,923, pub. 9-10-68. Cl. 21.  
 Multitronics, Inc., Rockville, Md. 860,913, pub. 9-10-68. Cl. 21.  
 National Aircraft Parts Distributors Association, Elk Grove Village, Ill. 861,146, pub. 9-10-68. Cl. 100.  
 National Fittings Co. of New York, Inc., Wyandanch, N.Y. 860,850, pub. 9-10-68. Cl. 13.  
 National Oil Products Co.: See—  
 Nopco Chemical Co.  
 National Presto Industries, Inc., Eau Claire, Wis. 860,927, pub. 9-10-68. Cl. 21.  
 National Research Corp., Newton Highlands, Mass. 861,067, pub. 5-21-68. Cl. 42.  
 National Ski Patrol System, Inc., Denver, Colo. 861,188, pub. 9-10-68. Cl. 200.  
 National Super Service Co., The, Toledo, Ohio. 860,970-1, pub. 9-10-68. Cl. 23.  
 Nevco Wood Products Co., Inc., Yonkers, N.Y. 860,766, pub. 9-10-68. Multiple Class (Classes 2, 13, 23, and 32).  
 New Method Paint Co., Kansas City, to Davis Paint Co., North Kansas City, Mo. 442,115, ren. 11-26-68. Cl. 16.  
 New York Pencil Co., Inc., New York, N.Y. 861,121, pub. 9-10-68. Cl. 51.  
 Niederer, Otto, Sons, Inc., Pennington, N.J. 860,972, pub. 9-10-68. Cl. 23.  
 Nopco Chemical Co., now by change of name from National Oil Products Co., Harrison, N.J., to Diamond Shamrock Corp., Cleveland, Ohio. 505,931, ren. 11-26-68. Cl. 18.  
 Nordco, Kohler, Wis. 738,977, can. Cl. 22.  
 Norman, Merle, Cosmetics, Inc., Los Angeles, Calif. 861,108, pub. 6-25-68. Cl. 51.  
 Norman, Merle, Cosmetics, Inc., Los Angeles, Calif. 861,202, Cl. 51.  
 North American Coal Corp., The, Cleveland, Ohio. 738,893-4, can. Cl. 6.  
 Norwich Pharmaceutical Co., The, Norwich, N.Y. 860,901, pub. 6-18-68. Cl. 18.  
 Notifier Co., from Notifier Corp., Lincoln, Nebr. 860,922, pub. 9-10-68. Cl. 21.  
 Notifier Corp.: See—  
 Notifier Co.  
 Nu-Vita Products, Inc., Pittsburgh, Pa. 738,884, can. Cl. 6.  
 Old Town Corp., Brooklyn, N.Y. 860,818, pub. 6-18-68. Cl. 11.  
 On-Cor Frozen Foods, Inc., Chicago, Ill. 861,077, pub. 9-10-68. Cl. 46.  
 Oregon Bulb Farms Division of Melridge, Inc.: See—  
 Oregon Bulb Farms.  
 Oregon Bulb Farms, Sandy, to Oregon Bulb Farms Division of Melridge, Inc., Gresham, Ore. 440,827, ren. 11-26-68. Cl. 1.  
 Owens-Corning Fiberglas Corp., Toledo, Ohio. 713,590, can. Cl. 43.  
 Ozomulsion Co., The, New York, N.Y. 502,589, ren. 11-26-68. Cl. 18.  
 PPG Industries, Inc., from Pittsburgh Plate Glass Co., Pittsburgh, Pa. 860,829, pub. 9-10-68. Cl. 12.  
 Pacific Wood Products Co., Los Angeles, Calif. 860,842, pub. 9-10-68. Cl. 12.  
 Palace Metal Products, Inc., Brooklyn, N.Y. 739,005, can. Cl. 32.  
 Papco: See—  
 Price, Paul A., Co., Inc.  
 Pappagallo, Inc., New York, N.Y. 861,104, pub. 9-10-68. Cl. 50.  
 Pappas, Bettle W., Covina, Calif. 739,043, can. Cl. 38.  
 Paramount Distillers, Inc., Cleveland, Ohio. 861,099, 9-10-68. Cl. 49.  
 Pate Oil Co., Milwaukee, Wis., to Humble Oil & Refining Co., Houston, Tex. 504,360, ren. 11-26-68. Cl. 15.  
 Payne-Jones, Inc., Lowville, N.Y. 717,990, can. Cl. 50.  
 Peerless Rubber Mfg. Co., to Uniroyal, Inc., New York, N.Y. 72,879, ren. 11-26-68. Cl. 35.  
 Perfect Circle Corp., Hagerstown, Ind., to Dana Corp., Toledo, Ohio. 502,556, ren. 11-26-68. Cl. 35.  
 Peterson Plastics, Inc., Claremont, N.H. 738,979, can. Cl. 22.  
 Photovolt Corp., New York, N.Y. 860,992, pub. 9-10-68. Cl. 26.  
 Piel Bros., d.b.a. Trommer Brewing Co., Brooklyn, N.Y. 739,134, can. Cl. 48.  
 Pillsbury Co., The, Minneapolis, Minn. 739,104, can. Cl. 46.  
 Pitt-Consol Chemical Co., Newark, N.J. 860,807, pub. 9-10-68. Cl. 6.  
 Pittsburgh Garter Co., Pittsburgh, Pa. 723,090, can. Cl. 28.  
 Pittsburgh Plate Glass Co.: See—  
 PPG Industries, Inc.  
 Plastic Sealing Corp., Los Angeles, Calif. 861,042, pub. 9-10-68. Cl. 37.  
 Podgor, Joseph E., Co., Inc., Pennsauken, N.J. 860,924, pub. 9-10-68. Cl. 21.  
 Polaron Products, Inc., New Rochelle, N.Y. 861,101, pub. 9-10-68. Cl. 50.  
 Polynesian Productions Ltd.: See—  
 Fairservice, Richard H.  
 Pope, Elizabeth, Inc., New York, from William H. Pope, Pelham Manor, N.Y. 861,120, pub. 4-25-67. Cl. 51.  
 Pope, William H.: See—  
 Pope, Elizabeth, Inc.  
 "Porky" Manero's Steak House, Westport, Conn. 861,152, pub. 9-10-68. Cl. 100.  
 Port-A-Crib, Inc., Ballwin, Mo. 861,010, pub. 9-10-68. Cl. 32.  
 Portland Wire & Iron Works, Portland, Ore. 860,837, pub. 9-10-68. Cl. 12.  
 Powers, Bernard E., Fitchburg, Mass. 861,059, pub. 9-10-68. Cl. 39.  
 Poznak, Murray P., Rahway, N.J. 739,155, can. Cl. 51.  
 Precision Paper Tube Co., Wheeling, Ill. 860,765, pub. 7-23-68. Cl. 2.  
 Precision Systems Co., Inc., Somerville, N.J. 860,915, pub. 9-10-68. Cl. 21.  
 Presbyterian Life, Inc., Philadelphia, Pa. 861,168, pub. 9-10-68. Cl. 101.  
 Prescott, J. L., Co.: See—  
 Candy Crafters, Inc.  
 Prowitt, J. Nelson, Inc., Rochester, N.Y. 739,173, can. Cl. 52.  
 Price, Paul A., Co., Inc., d.b.a. Papco, Roslyn, N.Y. 860,936, pub. 9-10-68. Cl. 22.  
 Price-Paster Brass Mfg. Co., Pacoima, Calif. 860,861, pub. 9-10-68. Cl. 13.  
 Primoff & Elchner Associates, New Rochelle, N.Y. 860,959, pub. 9-10-68



Sales Affiliates, Inc., New York, N.Y. 861,122, pub. 9-10-68. Cl. 51.  
 Sands Point Mfg. Co. Inc., Great Neck, N.Y. 860,863, pub. 9-10-68. Cl. 13.  
 Sauter Laboratories, Inc.: See—  
 Hoffmann-La Roche Inc.  
 Schnadig Corp., Chicago, Ill. 739,004, can. Cl. 32.  
 Schlesinger Bros., Philadelphia, Pa. 860,778, pub. 9-10-68. Cl. 3.  
 Schrier Electronics Corp., Brooklyn, N.Y. 739,014, can. Cl. 36.  
 Schwarz, F. A. O.: See—  
 Schwarz, F. A. O., The Firm of.  
 Schwarz, F. A. O., The Firm of, to F. A. O. Schwarz, New York, N.Y. 31,839, ren. 11-26-68. Cl. 22.  
 Security Electronics, Inc., Omaha, Nebr. 860,996, pub. 9-10-68. Cl. 26.  
 Setchik, W., & Sons, Inc., Philadelphia, Pa. 861,044, pub. 7-10-66. Cl. 39.  
 Selective Educational Equipment, Inc., Newton, Mass. 861,167, pub. 9-10-68. Cl. 101.  
 Selck, Walter E., & Co., Chicago, Ill. 860,823, pub. 9-10-68. Cl. 12.  
 Senator Safety Productions: See—  
 Jarmyn, Monica.  
 Seroc Inc., San Francisco, Calif. 860,826, pub. 9-10-68. Cl. 12.  
 Servo Tool Corp., Dayton, Ohio. 860,974, pub. 9-10-68. Cl. 23.  
 Shemo Corp., Boston, Mass. 861,164, pub. 9-10-68. Cl. 101.  
 Sherman Poultry Industries, Gardena, Calif. 739,095, can. Cl. 46.  
 Shirley Lou Bath Oils: See—  
 Hughes, Shirley L.  
 Shooting Equipment, Inc., Chicago, Ill. 860,934, pub. 9-10-68. Cl. 22.  
 Shure Bros. Inc., Evanston, Ill. 860,910, pub. 9-10-68. Cl. 21.  
 Silent-Bookkeeper Co., The: See—  
 La Berge, Louis E.  
 Simpson Timber Co., Seattle, Wash. 860,831, pub. 9-10-68. Cl. 12.  
 Sir Loin: See—  
 Ford, Charles C.  
 Sivak, Michael V., Erie, Pa. 860,889, pub. 6-25-68. Cl. 18.  
 Sloan, Dr. Earl S., Inc., Wilmington, Del., New York, N.Y., and St. Louis, Mo., to Standard Laboratories, Inc., Morris Plains, N.J. 247,636, ren. 11-26-68. Cl. 18.  
 Smith Kline & French Laboratories, Philadelphia, Pa. 738,941, can. Cl. 18.  
 Smith Kline & French Laboratories, Philadelphia, Pa. 738,944, can. Cl. 18.  
 Smith Kline & French Laboratories, Philadelphia, Pa. 738,957, can. Cl. 18.  
 Smith Kline Instrument Co., Philadelphia, Pa. 860,810, pub. 9-10-68. Cl. 6.  
 Soabar Co., Philadelphia, Pa. 716,833, can. Cl. 23.  
 Soabar Co., Philadelphia, Pa. 716,889, can. Cl. 38.  
 Societe Carvil, Paris, France. 861,053, pub. 9-10-68. Cl. 39.  
 Societe des Editions Mal: See—  
 France Editions & Publications.  
 Sonotone Corp., Elmsford, N.Y. 860,916, pub. 9-10-68. Multiple Class (Classes 21 and 44).  
 Source Perrier, S.A., Gard, France. 861,074, pub. 9-10-68. Cl. 45.  
 Southern Graphic Industries, Nashville, Tenn. 860,770, pub. 9-10-68. Cl. 2.  
 Southwestern Petroleum Corp., Fort Worth, Tex. 861,130, pub. 9-10-68. Cl. 52.  
 Spectra-Physics, Inc., Mountain View, Calif. 860,986, pub. 9-10-68. Cl. 26.  
 Spence, Peter, & Sons Ltd., Widnes, England. 861,003, pub. 9-10-68. Cl. 31.  
 Spiratone, Inc., Flushing, N.Y. 860,987, pub. 9-10-68. Cl. 26.  
 Sporlan Valve Co., St. Louis, Mo. 861,006, pub. 9-10-68. Cl. 31.  
 Stage of Great Neck, Inc., Forest Hills, N.Y. 861,180, pub. 9-10-68. Cl. 107.  
 Stano Inc., Wilmington, Del., and New York, N.Y., to Humble Oil & Refining Co., Houston, Tex. 251,298, ren. 11-26-68. Cl. 18.  
 Standard International Corp., Andover, from Lestoll Products Inc., Holyoke, Mass. 860,781, pub. 8-24-65. Cl. 4.  
 Standard Laboratories, Inc.: See—  
 Sloan, Dr. Earl S., Inc.  
 Standard Spray & Chemical Co., Lakeland, Fla. 860,809, pub. 9-10-68. Cl. 6.  
 Standard-Thomson Corp., Waltham, Mass. 860,989, pub. 9-10-68. Cl. 26.  
 Steak & Ale, Inc., Dallas, Tex. 861,153, pub. 9-10-68. Cl. 100.  
 Stearns Coal & Lumber Co., Inc., Sterns, Ky. 860,762, pub. 9-10-68. Cl. 1.  
 Stern, A., & Co., Chicago, Ill., to Kayser-Roth Corp., New York, N.Y. 504,155, ren. 11-26-68. Cl. 39.  
 Stelber Cycle Corp., Elmhurst, N.Y. 860,906, pub. 9-10-68. Cl. 19.  
 Stephens, Robert A., Shreveport, La. 860,957, pub. 9-10-68. Cl. 22.  
 Stergard Co., Santa Ana, Calif. 860,772, pub. 9-10-68. Cl. 2.  
 Stevens, Oliver R., State College, Pa. 861,041, pub. 9-10-68. Cl. 37.  
 Stock Equipment Co., Cleveland, Ohio. 860,991, pub. 9-10-68. Cl. 26.  
 Stockford, LeBaron E., Westboro, Mass. 726,598, can. Cl. 100.  
 Stormtowne Products, Inc., Chicago, Ill. 861,057, pub. 9-10-68. Cl. 39.  
 Stratford Materials Corp., North Amityville, N.Y. 860,840, pub. 9-10-68. Cl. 12.  
 Straube Industries Inc., Waynesboro, Pa. 860,982, pub. 9-10-68. Cl. 25.  
 Strauss Stores Corp., Maspeth, N.Y. 860,773, pub. 9-10-68. Cl. 2.  
 Strike-King Corp., El Segundo, Calif. 738,978, can. Cl. 22.  
 Strike-King Corp., El Segundo, Calif. 738,980-1, can. Cl. 22.  
 Super Cold Co.: See—  
 Evans, Joe I.  
 Superior Tea & Coffee Co.: See—  
 Universal Coffee Co.  
 Svenska Tobaks Aktiebolaget, Stockholm, Sweden. 860,881-3, pub. 9-10-68. Cl. 17.  
 Sweet-Orr & Co., Inc., New York, N.Y. 237,356, ren. 11-26-68. Cl. 39.  
 Takeda Chemical Industries, Ltd., Higashi-ku, Osaka, Japan. 860,789, pub. 9-10-68. Cl. 6.  
 Tarlow, I., & Son, to I. Tarlow and Sons, Philadelphia, Pa. 441,413, ren. 11-26-68. Cl. 39.  
 Tarlow, I., & Sons: See—  
 Tarlow, I., & Son.  
 Techni Electronics, Inc., Orange, N.J. 738,970, can. Cl. 21.  
 Technic, Inc., Cranston, R.I. 860,791, pub. 9-10-68. Cl. 6.  
 Tele-Tone Co., Inc., Mount Vernon, N.Y. 861,035, pub. 9-10-68. Cl. 36.  
 Telex Corp., The, Tulsa, Okla. 860,928, pub. 9-10-68. Cl. 21.  
 Texpak, Inc., New York, N.Y. 860,851, pub. 9-10-68. Cl. 13.  
 Textile Corp. of America, Los Angeles, Calif. 739,065, can. Cl. 42.  
 Textron Inc.: See—  
 Consolidated Machine Tool Corp. of America.  
 Thomas & Betts Co., The, Elizabeth, N.J. 507,682-3, ren. 11-26-68. Cl. 21.  
 Thompson Materials Corp., Belleville, N.J. 860,828, pub. 7-30-68. Cl. 12.  
 Timber Structures, Inc., to Timber Structures, Inc., Portland, Ore. 501,945, ren. 11-26-68. Cl. 12.  
 Traffic Builders, Inc., Fort Thomas, Ky. 739,027, can. Cl. 37.  
 Transcopy, Inc., Newton, N.J. 738,902, can. Cl. 6.  
 Tree Pickle Co., Inc., Cheektowaga, N.Y. 861,198, Cl. 46.  
 Triangle Business Machines, Inc., Los Angeles, Calif. 738,996, can. Cl. 26.  
 Tri-City Industrial Services, Inc., Louisville, Ky. 860,767, pub. 5-14-68. Multiple Class (Classes 2 and 23).  
 Trommer Brewing Co.: See—  
 Piel Bros.  
 True Temper Corp., Cleveland, Ohio. 860,964, pub. 9-10-68. Cl. 23.  
 Tullamore Dew Ltd., Dublin, Ireland. 861,098, pub. 9-10-68. Cl. 49.  
 Turet Products, Inc., New York, N.Y. 739,147, can. Cl. 51.  
 Turner, Jack N., d.b.a. Arcade Pharmacy, Arcade First Aid Supply Co., and Arcade Industrial Pharmacist, San Francisco, Calif. 738,921, can. Cl. 18.  
 "21" Club Selected Items, Ltd., New York, N.Y. 860,879, pub. 9-10-68. Cl. 17.  
 U-Form Associates, Oak Park, Mich. 860,835, pub. 9-10-68. Cl. 12.  
 Unarco Industries, Inc., Chicago, Ill. 860,764, pub. 9-10-68. Cl. 1.  
 Uniroyal, Inc.: See—  
 Peerless Rubber Mfg. Co.  
 Uniroyal, Inc., New York, N.Y. 861,058, pub. 9-10-68. Cl. 39.  
 United Cabinet Corp., Jasper, Ind. 861,007, pub. 9-10-68. Cl. 32.  
 United Co-Operatives, Inc., Alliance, Ohio. 861,195, Cl. 35.  
 United Paint Mfg. Co., Spokane, Wash. 860,870, pub. 9-10-68. Cl. 16.  
 United Shoe Machinery Corp., Boston, Mass. 860,853, pub. 9-10-68. Cl. 13.  
 Universal Coffee Co., to Superior Tea & Coffee Co., Chicago, Ill. 505,737, ren. 11-26-68. Cl. 34.  
 Unvertical Corp., Detroit, Mich. 860,865, pub. 9-10-68. Cl. 14.  
 Universal Foods Corp., Milwaukee, Wis. 861,081, pub. 7-23-68. Cl. 46.  
 Universal Oil Products Co.: See—  
 Johnson, Edward E., Inc.  
 Universal Oil Products Co., Des Plaines, Ill. 861,141, pub. 9-10-68. Cl. 52.  
 Upjohn Co., The, to The Upjohn Co., Kalamazoo, Mich. 503,257, ren. 11-26-68. Cl. 18.  
 VEB Ernst-Thalmann-Werk Suhl, Thuringia, Germany. 860,815, pub. 9-10-68. Cl. 9.  
 Valeron Corp., The, Detroit, Mich. 860,967, pub. 9-10-68. Cl. 23.  
 Van Buren Packing Co., Hartford, Mich. 861,087, pub. 9-10-68. Cl. 46.  
 Varo Inc., Garland, Tex. 738,966, can. Cl. 21.  
 Verplex Co., The, Essex, Conn. 860,917, pub. 9-10-68. Cl. 21.  
 Virco Mfg. Corp., Los Angeles, Calif. 861,014, pub. 9-10-68. Cl. 32.  
 Vistron Corp., Cleveland, Ohio. 860,852, pub. 9-10-68. Cl. 13.  
 Vita Zahnfabrik H. Rauter K.G., Sackingen, Germany. 861,070, pub. 9-10-68. Cl. 44.  
 Vitarline Co., Inc., The, Springfield Gardens, N.Y. 860,888, pub. 7-9-68. Cl. 18.  
 WTC Chemical Corp., Tucson, Ariz. 860,797, pub. 9-10-68. Cl. 6.  
 Walker Mfg. & Sales Corp., St. Joseph, Mo. 861,030, pub. 9-10-68. Cl. 34.  
 Wallace-Murray Corp.: See—  
 Williams-Wallace Co.  
 Warp Bros.: See—  
 Flex-O-Glass, Inc.  
 Washum Products Co., Inc., Billings, Mont. 739,174, can. Cl. 52.  
 Waterman-Bic Pen Corp., Milford, Conn., from M. L. M. A. Bich, Cléchy (Seine), France. 861,040, pub. 2-7-67. Cl. 37.  
 Weber, A. C., International, Inc., Chicago, Ill. 860,859, pub. 9-10-68. Cl. 13.  
 Weber & Sons: See—  
 Weber, Terrance L.  
 Weber, Terrance L., d.b.a. Weber & Sons, Freehold, N.J. 860,771, pub. 9-10-68. Cl. 2.  
 Weenink, Mary E. L., d.b.a. Mary Lynne, Ravenna, Ohio. 861,116, pub. 9-10-68. Cl. 51.  
 Welner, Lewis, Industries, Inc., Long Island City, N.Y. 860,862, pub. 9-10-68. Cl. 13.  
 Welsberg, Harold, d.b.a. Coq d'Or Farm, Hyattstown, Md. 739,075, can. Cl. 46.  
 Weller, Erwin, Co., Sioux City, Iowa. 860,947, pub. 9-10-68. Cl. 22.  
 West Chemical Products, Inc., Long Island City, N.Y. 861,137, pub. 9-10-68. Cl. 52.  
 Westbury Cosmetics Corp., Westbury, N.Y. 861,109, pub. 9-10-68. Cl. 51.  
 Western Auto Supply Co., to Western Auto Supply Co., Kansas City, Mo. 507,516, ren. 11-26-68. Cl. 21.  
 Western Auto Supply Co., Kansas City, Mo. 860,977, pub. 9-10-68. Cl. 23.  
 Westinghouse Air Brake Co., Chicago, Ill. 860,962, pub. 9-10-68. Cl. 23.  
 Westinghouse Broadcasting Co., Inc., Pittsburgh, Pa. 739,209-11, can. Cl. 107.  
 Westley Industries: See—  
 Bell Co., The.  
 Wham-O Mfg. Co., San Gabriel, Calif. 860,958, pub. 9-10-68. Cl. 22.  
 Whitman, Philip G., Inc., New York, N.Y. 860,758, pub. 6-25-68. Cl. 1.  
 Williams Products, Inc., Troy, Mich. 860,836, pub. 9-10-68. Cl. 12.  
 Williams-Wallace Co., San Francisco, Calif., to Wallace-Murray Corp., New York, N.Y. 241,601, ren. 11-26-68. Cl. 12.  
 Wilco Sales & Engineering Co., Flemington, N.J. 860,968, pub. 9-10-68. Cl. 23.  
 Wilton Corp., Schiller Park, Ill. 860,975, pub. 9-10-68. Cl. 23.  
 Winchell Donut House, Inc., South El Monte, Calif. 860,769, pub. 9-10-68. Cl. 2.  
 Winne, Frank W., & Son Inc., Philadelphia, Pa. 860,811, pub. 9-10-68. Cl. 7.  
 Woodstream Corp., Lititz, Pa. 860,943, pub. 9-10-68. Cl. 22.  
 Woolf, Lewis, Ltd., Birmingham, England. 739,066, can. Cl. 44.  
 World Toy House, Inc., St. Paul, Minn. 860,929, pub. 9-10-68. Cl. 22.  
 Wright Aeronautical Corp., Paterson, to Curtiss-Wright Corp., Wood-Ridge, N.J. 245,676, ren. 11-26-68. Cl. 23.  
 Wright's Underwear Corp., to Wright's Underwear Corp., New York, N.Y. 502,880-1, ren. 11-26-68. Cl. 39.  
 Wright's Underwear Corp., to Wright's Underwear Corp., New York, N.Y. 502,886, ren. 11-26-68. Cl. 39.  
 Wright's Underwear Corp., to Wright's Underwear Corp., New York, N.Y. 503,619-20, ren. 11-26-68. Cl. 39.  
 Wyrough & Loser, Inc., Trenton, N.J. 860,808, pub. 9-10-68. Cl. 6.  
 Yardley of London, Inc., Totowa, N.J. 861,117, pub. 9-10-68. Cl. 51.  
 Yardley of London, Inc.: See—  
 Yardley & Co. Ltd.  
 Yardley & Co. Ltd., London, England, from Yardley of London, Inc., Totowa, N.J. 861,105, pub. 9-10-68. Cl. 51.  
 Zaldener, Kitty, London, England. 860,980, pub. 9-10-68. Cl. 25.

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